CREDIT UNIONS' ACTIVITY AND FACTORS DETERMINING THE CHOICE OF THEM IN LITHUANIA

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Abstract. *In the recent years, the role of credit unions in the financial sector of Lithuania has gradually become more significant. The number of credit unions grew together with their assets, number of members, and deposits. The beginning of a rapid process of credit unions' establishment and development caused unmeasured risks which led to a suspended activity of several credit unions in 2013. This caused an insignificant migration of credit unions' shareholders (members) from one union to another, retirements, etc. Although residents haven't lost the confidence, this fact demands to investigate and analyse the factors determining the choice of a credit union. After a survey of credit union members in Lithuania, the factors most significant for shareholders were determined. Also, the factors least significant for the choice of a credit union were determined, and conclusions and recommendations for managers of credit unions were given. Conclusions and recommendations can help the management to choose the strategy which would result in a higher level of new members' involvement in the union.*

Key words: *credit union, credit union members, credit union performance, factor analysis, criteria of choice*

Introduction

In the recent 150 years, credit unions and other cooperatives were able to strongly affect many human lives by contributing to seeking for a better quality of life, improving welfare, increasing confidence and the feeling of tolerant interaction by influencing solidarity, co-operation, responsibility, and establishment of a democratic self-governance. Credit unions and cooperatives play an important social role which is very important for the new developing democracies. The idea of a credit union was born in southern Germany in the middle of the 19th century. The first financial cooperative was formed in Hedersdorff (Germany) in 1847. It was founded by F.W. Raiffeisen, the mayor of the town.

In the second half of the 19th century, the idea of credit unions rapidly spread in Germany and other Western European countries.

In 1900, F. Raiffeisen's idea reached North America: Alphonse Desjardins established the first credit union in Canada (Quebec), and the first credit union (St. Mary's Bank) was established in 1913 in the USA. In the area of financial services, credit unions

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were introduced later than banks (banks in Lithuania originated after the abolition of serfdom (1861), when landlords and peasants sought to get rid of expensive usurers' services. Meanwhile, the first credit enterprises acting according to principles of credit cooperatives were established in 1873 when banks were not able, or aimed, to serve small low- and medium-income customers (Preidys, 2011).

Lithuania's credit unions: a brief history

One of the most developed movements of credit unions is located in Canada. Since 1955, Lithuanian Canadians have established four credit unions which played an important role in postwar Lithuanian immigrants' economic life, especially in granting mortgage loans and improving the welfare of people in general. The structure of the Lithuanian credit unions' system closely reflects Desjardins' credit union model, because in this country credit unions started their activities in 1994 with a financial support of the Canadian International Development Agency, of other donors, and with a strong know-how support of Desjardins credit unions' movement. Therefore, initially the laws regulating credit unions' activity in Lithuania were drafted according to the practice of Desjardins' credit unions. Only later, when Lithuania was preparing to join the European Union, laws were harmonized with the EU legal environment.

Lithuanian and foreign researchers differently define the concept of credit unions, but all these concepts are similar in terms of the common features of credit unions. Many authors underline the membership principles. Also, mutual assistance, voluntaryism, social contribution, democratic governance and other principles are underlined.

The literature does not distinguish between single universally accepted definitions of credit unions. It should be noted that different sources, even in the same organization, use a variety of terms. There is not a single concept of a credit union, but the terms such as a self-help micro-credit organization, cooperative bank, credit or financial cooperative are used (Igarytė, 2009). In terms of credit union operations, in theory there are several systems of developing the levels of credit unions. It should also be noted that there is no single classification, and different authors identify it in different ways. Some authors give the following levels: the initial level of development, the transition rate, and the mature state. Other authors present the following system development stages: the formation stage and the system of national and international stages. The Lithuanian credit union system could be attributed to the two classifications of secondary phases, because in the recent years credit unions have been gaining in importance in the economy of Lithuania. Credit unions have become large-scale ones, and there is a need to make their legal regulations more detailed (what has already been partially done). The need for a higher professionalism, information technology development, growth and highlights of operational efficiency are also recognised (Igarytė, 2011). Considering the fact that

Lithuania's credit unions' history is not very long, there is no need for large research projects. Activities of credit unions and their development have been relatively poorly analysed in Lithuania.

The Law on Credit Unions was passed by the Parliament of Lithuania in the beginning of 1995, at the very start of the credit unions' movement.

The first credit union was established in the end of 1995. After the adoption of the law, the movement of credit unions started to develop faster, and new credit unions started to be established. Their establishments reached the peak in 2003 (Fig. 1).
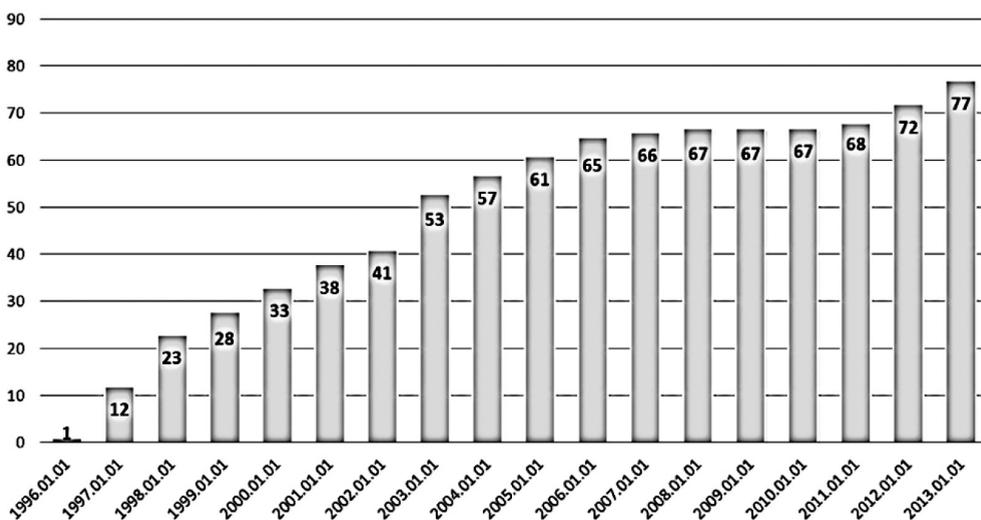

FIG. 1. **The number of credit unions in Lithuania. Source: Bank of Lithuania.**

In this year, even 12 credit unions were established. Despite the increasing number of Lithuanian credit unions' members, the number of credit unions is quite small in comparison with other countries. Members of credit unions amount to 4.9 percent of all residents of Lithuania. As mentioned above, considering quite liberal requirements for establishing credit unions, their number constantly increases. The peak was reached in 2003 when 12 credit unions were established and their number amounted to 53. In 2008, the number of credit unions increased to 67. This figure did not change till 2010, but starting from 2011, when establishment of credit unions started again, their number in Lithuania increased to even 77 as of the beginning of 2013.

In the recent years, the increase of credit unions' members is noted. In the beginning of 2013, the number of credit unions' members increased to 146,000. In comparison with 2009 when there were 96,000 members of credit unions, this figure increased by more than 50 percent. Therefore, it can be stated that with the increasing number of credit unions, the number of their members increases as well.

Credit unions and their members constitute the first level of the credit unions' system in Lithuania. According to the Lithuanian banking legislation, only credit unions and commercial banks have the status of a credit institution and are allowed to accept deposits from the public. Credit unions, together with commercial banks, are included into the state deposits' insurance system and supervised by the Central Bank of Lithuania. On the second level of the co-operative system, two organizations have been established: the Lithuanian Central Credit Union and the Association of Lithuanian Credit Unions. The Lithuanian Central Credit Union is a co-operative member-based financial institution which provides all necessary services to credit unions. Its main functions are as follows:

- to ensure the liquidity of credit unions. In order to fulfil this function, the Liquidity Reserve from credit unions deposits is established (credit unions shall hold 1.2% of their deposits in this reserve);
- to restore impaired solvency of credit unions. The Stabilization Fund was established in order to maintain the financial stability of credit unions (credit unions pay the annual fee of 1.5% from their deposits);
- to provide financial services (deposits, loans, current accounts, etc.) to members – credit unions;
- to provide payment services. The Central Credit Union credit unions are related to the Payment and Clearing Centre of the Central Bank and the Payment Cards Authorization Centre;
- to fulfil the other functions necessary for credit unions (IT systems, marketing, training, consultations, etc.) (Igaryte, Bubnys, 2010).

This leads us to the conclusion that the larger the part of residents of Lithuania are members of credit unions, the more relevant and important is to investigate their needs and to analyse the actions that determine the choice of a credit union.

The relevance and recency of the study. A rapid pace of establishment and activity of credit unions have been noted throughout Lithuania. Quite a large amount of them covers almost the whole territory of Lithuania; however, despite such a successful expansion, in 2013 the activities of three credit unions were suspended. The Bank of Lithuania conducted a research on the impact of these suspensions (LB, 2013), which has proven that credit unions play an important role in the financial system of Lithuania, and it is relevant to investigate and analyse not only their activities, but also the factors that determine the choice of a definite union by potential members.

The object: members of credit unions.

The aim: to analyse the tendencies of activity development of credit unions, to reveal the issues and factors that determine the choice of a credit union, and to elucidate those most significant and making the strongest impact.

Methodology: analysis of scientific literature, financial reports, interviews, surveys of shareholders of credit unions, summarising the results by applying the factor analysis.

The concept, activity, and issues of credit unions

Individual authors define a credit union differently. The Law on Credit Unions specifies that a credit union is a credit institution which satisfies its members' economic and social needs, has the licence for deposit-taking, and takes deposits and other payable funds from non-professional market participants defined in this law, finances them, and also has the right to provide other financial services as defined by this law with taking the related risks and responsibilities.

According to G. Kancerevyčius (2006), credit unions are financial intermediary institutions which attract savings from persons; they possess common features and provide only their members with support and loan financing.

The importance of credit union membership principles has been revealed by G. Dubauskas (2012). He states that a credit union is a credit cooperative which provides a group of people united by common membership principles with financial services. Meanwhile, O. Buckiūnienė (2002) characterises credit unions as institutions providing services. She states that a credit union is a fund organization on a cooperative basis, and with united common savings in which people lend to each other at agreed interest rates.

Foreign authors (Ryder, Chambers, 2009) state that credit unions are financial cooperatives fulfilling the needs of its members, and Ferguson and McKillop (2007) state that credit unions are mutual-assistance, saving and lending organizations serving for the needs of its members.

Most authors admit that credit unions have to follow the basic principles such as mutual assistance, voluntarism, democratic governance, social contribution, cooperation.

These principles give the possibility to credit unions to stand out from other financial institutions.

While the number of members of credit unions in Lithuania is increasing, assets controlled by unions increase as well. As their deposit interest rates are higher than in banks, the volumes of deposits in them increase rapidly. For instance, in the beginning of 2013, the average deposit interest rate was 3.14 percent in the LCKU-owned credit unions, meanwhile the average deposit interest rate of three largest commercial banks in Lithuania (SEB, Swedbank, DNB) amounted to only 0.4–0.55 percent; the deposit interest rates differed 6–7 times. Similar differences among these credit institutions were noted throughout the whole analysed period. For this reason, only in 2012 the volumes of their deposits increased by LTL 417 million, or approximately by 30 percent. Due to the application of different deposit interest rates, the ratio of credit unions' and banks' deposits was gradually increasing. In 2008, the deposits of credit unions amounted to 1.56 percent of deposits taken by the banks and in 2012 to 4.18 percent (excluding three credit unions whose licences were suspended – 3.78 percent).

The credit unions' market share of banking assets starting from 2009 was gradually increasing and as of the beginning of 2013 amounted to 2.61 percent. Respectively, the deposits and assets of the unions were also increasing starting from 2009 and as of the beginning of 2013 amounted to LTL 1822 million deposits and LTL 2055.8 million assets.

Assets of credit unions increased quite rapidly, and due to the higher interest rates (as compared with those of banks) their deposits also increased. In addition, their market share increased: assets increased from 1628.5 to 2055.8 LTL million by 2013.01.01. (Fig. 2).
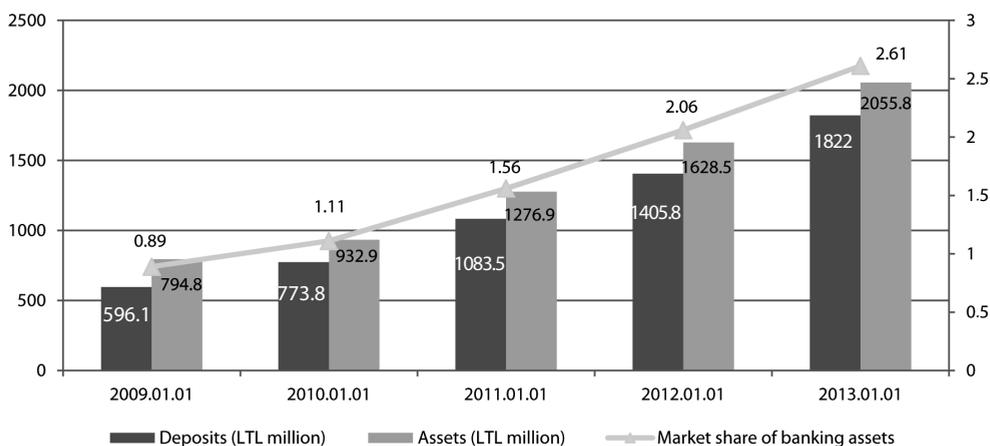
FIG. 2. **Dynamics of credit unions' assets and deposits. Source: Bank of Lithuania.**

Upon comparing the structure of the credit unions' loan portfolio in the recent five years, it can be stated that the volumes of loans granted to legal entities increased significantly and by the beginning of 2013 amounted to 34 percent of total loans granted by credit unions. This increase significantly increased the credit risk. This caused issues in some credit unions. In the recent years, the quality of the loan portfolio has deteriorated, what led to losses in some credit unions. The main customers (members) of credit unions are private persons who are mostly granted small consumer loans, loans for construction, housing repair, small and medium business start-up or expansion, studies, agricultural activity, etc. As of 2012, 34.2 percent of total loans were granted to legal entities and 65.8 percent to private persons. Also farmers become more actively engaged in credit unions' services. In 2010, 62 percent of financed farmers were financed by credit unions, and their average loan amounted to LTL 56.3 thousands (Kozlovskaja, 2012). In 2009, the credit unions faced the LTL 5.3 million loss.

As of January 1st, 2009, 47 credit unions, i.e. about 70 percent, reported a profit, and 20 credit unions reported losses. The losses significantly increased and as of January 1st

2013 amounted to LTL 55.1 million. As of the end of 2012, 52 credit unions (67.5 percent) reported a profit and 25 losses; if the results of the National Credit Union and "Švyturio taupomoji kasa" (their licences have been revoked) were excluded, the activity indices of the credit unions would be profitable, the amount of profit being LTL 3 million.

These data show that the poor results of the credit union sector are caused by large losses of individual credit unions.

One of the most significant issues is the inappropriate credit risk management, the lack of detailed debtors' financial situation analysis, the irresponsible lending policy. Moreover, managers' decisions regarding loan granting are not economically reasoned and are opaque. Often, especially in the credit unions which are treated as risky, managers' decisions are directed to fulfilling the needs of a specific group of members.

The rapid growth of deposits and assets in some credit unions raises a concern about the ability of a credit union to manage all risks related to rapid expansion.

While attracting funding by a higher price and aiming to ensure a profitable activity, credit unions are forced to invest their funds more riskily, i.e. to invest in higher return assets – loans.

In loan portfolios of credit unions, especially those located in large cities, a rapid growth of loans granted to associated members – legal entities is noticed. These loans are treated as riskier, because some of credit unions have no appropriate risk management systems, and the risk management in legal entities is much more complex and requires more know-how than loans granted to union members – private persons (LB, 2013).

Another issue is that the business model of credit unions itself already includes specific issues, because there is a number of shareholders in a credit union, but none of them one wants to take responsibility. If it is none necessary to solve the capital problems, no one wants to cover the accumulated losses of a credit union.

The law on insurance of deposits and liabilities to investors itself includes the factor of "moral hazard", because shareholders of credit unions even don't put any efforts to evaluating the risk of losing money because in the case of bankruptcy they suffer least if the deposit is less than EUR 100,000, because it is the specified amount whose compensation is guaranteed by the government of the Republic of Lithuania. Recently, the tendency of credit unions' growth has been noted. Increasing requirements and related expenses force small credit unions to merge because of the inability to fulfil these requirements. According to them, credit unions must maintain the appropriate staff policy and allocate higher administration costs, have appropriate IT technologies, which often leads to higher expenses than the limited costs of credit unions.

In summary, it may be stated that in five years not only the number of credit unions' members increased in Lithuania, but at a more rapid pace increased also the assets controlled by credit unions and their share in banks' assets. Despite such a growth, the

operating losses of credit unions increased. Once again, this confirms the importance of the analysis and investigation of credit unions and its need not only for the financial system of Lithuania, but for society as well.

Factors determining the choice of credit unions in Lithuania

Methods

A research was carried out to identify the criteria that affect clients' choice of a credit union by using the model of factor analysis. The factor analysis is based on a model when one or two not directly observable variables affect several observable variables. This type of analysis is not as popular as the wide-spread co-relation, regression, data envelopment analysis methods, but it is successfully applied in the financial sector.

Here, we should identify the purpose of the present study to help us identify the factors that describe the behaviour of variables and reduce the number of the variables that need to be analysed. In this case, the choice of a credit union by different criteria can be affected by many of the elements that appear in the analysis as observable variables. The observable variables are: convenient in the territorial approach; deposit interest rate; loan interest rate; membership fees; service culture; effective advertisement; the manager's and CEO reputation; the small number of associate members; transparent activity (a credit union informs the public about the union's work and its results); participation in the EU programs.

Data. There were 487 respondents (associate members of credit unions) from almost all Lithuanian towns. Almost 88% of them were older than 30 years, and more than 44% were members of the credit unions of Vilnius, Kaunas, Klaipėda, and Šiauliai. The respondents' survey was conducted in credit unions; also, respondents could provide answers in the online way.

People give priority to different criteria in the credit union choosing process. All possible answers in the questionnaire were ranked from 1 to 10, where number 1 means the most important and number 10 a very unimportant criterion. Previously, there have been no research to determine which factors cause the residents to choose this or that union, but in scientific literature there are different researches in which the researcher seeks to reveal the factors that are treated as determining ones by the respondents. Such questions were already investigated (Jasevičienė, 2013; Jasienė, Staroselskaja, 2010), but actually the factors determining the choice of banks were analysed.

Results

The purpose of this factor analysis was to establish observable variables – the common factors that exercise the biggest influence on respondents when it comes to choosing a credit union. The key stages of the factor analysis include:

- checking and testing data for suitability;
- identification of factors;
- *Varimax* rotation;
- calculation of factor values.

The data checking and testing stage is defined by its underlying characteristic that the observable variables X must correlate, because a factor analysis cannot be applied to non-correlated data. The correlation of variables is estimated using Barlett's test of sphericity. This criterion is employed to check the hypothesis that the variable correlation matrix is unitary. If the value of this criterion is $p < α$, the hypothesis is dismissed, and the available data can be analysed using the factor analysis approach to reveal a correlation among the observable variables.

Another widely recognised criterion for making data checks is the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy. This is a comparative index of the empirical and partial values of the correlation coefficients. Their values ought to be bigger than 0.5, because only then the data will be adequate and suitable for analysis. The higher the value means, the better the analysis results.

The sample adequacy measure established the measure of adequacy of each variable; this means that variables with a low sample adequacy values should be eliminated from the analysis to ensure a higher precision and reliability of results.

Identification of factors is done in the process of the principal component analysis when the correlation of many variables can be appraised by variation coefficients. This analysis establishes the linear combinations of non-correlated variables.

Varimax rotation is one of the tools that facilitate data interpretation, because the initial weight matrix does not explicitly identify the solution itself. A variable can be tied to as many as several factors with a weight ratio of at least 0.4, and that is where *Varimax* rotation comes in. The application of this method can alter the results of the interpretation, but this will also mean that it can be understood more easily.

Calculation of factor values does not follow any clear and well-defined approach, and therefore the values are usually calculated using the smallest square method or regressive analysis.

For the purposes of this survey, factor analysis was done using the statistical package for social sciences (SPSS).

Application of factor analysis and its results to credit union members

The first stage of the factor analysis was aimed to test the data for suitability and adequacy as far as the further factor analysis is concerned. The tests use the KMO adequacy measure, the compatibility criterion chi-square, and Barlett's test of sphericity (Table 1).

TABLE 1. **KMO and Barlett's test**

Kaiser–Meyer–Olkin measure of sampling adequacy.		.753
Bartlett's test of sphericity	Approx. chi-square	512.864
	df	45
	Sig.	.000

On the basis of these tests, we can say that these data are suitable and adequate for the further factor analysis. Notably, the KMO value is quite high (0.753), which only supports the suitability of these data (typically, the KMO value should not be below 0.5).

Table 2 shows the common characteristics of the initial data for private individuals. Based on these data, we can decide which variables should be eliminated. In this case, only the data that have the lowest value (below 0.2) can be eliminated. Since the lowest value here is 0.498, no variables need to be eliminated from this study.

TABLE 2. **Common characteristics of the initial variables**

	Initial	Extraction
Convenient by territorial approach	1.000	.752
Deposit interest rate	1.000	.580
Loan interest rate	1.000	.498
Membership fees	1.000	.533
Service culture	1.000	.497
Effective advertisement	1.000	.624
Manager's and CEO reputation	1.000	.599
Small number of associateD members	1.000	.746
Transparent activity (credit union informs the public about the union's work and its results)	1.000	.763
Participation in the EU programs	1.000	.773

Extraction method: principal component analysis.

Communality is the proportion of variance accounted for by the common factors of a variable. Communalities range from 0 to 1 when zero means that the common factors don't explain any variance; 1 means that the common factors explain all the variance. Summing up the data presented in Table 2, we can say that the values of the common characteristics of the variables are quite high. This fact only further supports the suitability of the data for the further analysis and for the next stage – identification and interpretation of the factors (see Table 3).

This table is the initial solution table, and the eigenvalue is the total variance explained by each factor. Any factor that has an eigenvalue of less than 1 does not have a total variance enough to represent a unique factor.

TABLE 3. **Total variance explained**

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.387	33.869	33.869	3.387	33.869	33.869	2.682	26.823	26.823
2	1.959	19.590	53.459	1.959	19.590	53.459	2.047	20.466	47.289
3	1.020	10.197	63.657	1.020	10.197	63.657	1.637	16.368	63.657
4	.883	8.829	72.486						
5	.659	6.585	79.071						
6	.603	6.027	85.098						
7	.560	5.597	90.695						
8	.375	3.749	94.444						
9	.306	3.059	97.503						
10	.250	2.497	100.000						

Extraction method: principal component analysis.

This table shows the amount of the total variance of variables that can be attributed to each factors identified by the principal component analysis. Each factor has its own share of variance assigned, and the highest value of that share belongs to the first factor and, combined with the amount of variance of the second and every subsequent factor amounts to the share of the cumulative variance.

The factors and their weights as displayed in this table also reflect the three factors identified by the principal component analysis, which have their eigenvalues above unity, based on the total of the initial proper values. This means that the three underlying factors account for as much as 63.657 percent of the total variance of variables.

The section dealing with the rotation sums of squared loadings presents information about the share of the overall variation of variables that can be attributed to each factor, and the total amount of the overall variance that can be attributed to the first underlying factors following the rotation procedure, i.e. to the final results.

The data in Table 4 present a matrix of weights for the factors. This matrix shows correlations between the variables and the factors. However, it should be noted that a variable itself often carries a certain amount of weight across some or all factors, which challenges their interpretation.

The factors presented in Table 4 are the final data for the credit union choosing process. They show that there are three underlying factors that credit union members rely on when choosing their credit union. These are the internal factor, the interest rate and good service factor, and the external factor. Each of the factors consists of different criteria and has a unique composition. There is an effective advertisement criterion whose weight in

TABLE 4. **The factors' weight**

	Component		
	Internal factors	**Interest rate and good service factor**	**External factor**
Convenient by territorial approach	.056	.556	.664
Deposit interest rate	.182	.730	.117
Loan interest rate	.611	.351	-.037
Membership fees	.673	.273	.068
Service culture	.317	.616	-.132
Effective advertisement	.542	.242	-.521
Manager's and CEO reputation	.691	-.019	-.349
Small number of associated members	.749	-.402	.154
Transparent activity (credit union informs the public about the union's work and its results)	.774	-.321	.247
Participation in the EU programs	.701	-.465	.254

Extraction method: principal component analysis.

internal and external factors is 0.542 and 0.521. These factors can help credit unions to attract new members and to choose certain strategies in order to form a credit union's public image. They also could be useful for a credit union in meeting the expectations of the available members. The interest rate and good service factors impact the members who are focused on real benefit or gain. If this group of members is the target of a credit union, then its strategy should be focused on convenience and benefit. The external factor group shows how the different criteria influence the members. The convenience (territorial) approach and effective advertisement could help a credit union to attract more new members or to manage their other plans. Internal factors such as the loan interest rate, membership fees, managers' and CEO reputation, transparent activity and other criteria could be useful for unions' managers and help them to show a good, right, and transparent activity in society.

Summing up, we can say that credit union members care about the interest rate and good service, external factors (convenient in the territorial approach, effective advertisement) and internal factors (good reputation, loan interest rate, membership fees, etc.) in the credit union choosing process.

Conclusions and recommendations

Credit unions are organized non-profit credit institutions acting on the co-operative basis and providing services to its members. They are characterized by mutual support, democratic management, voluntary, community-based and other cooperative principles. Although the credit union market share is not substantial enough, the increasing number

of credit union members allows to state that credit unions are popular in Lithuania. The increasing requirements and operational costs will force small credit unions to merge since they are not able to fulfil these requirements themselves. This would modernize its operations by installing the advanced, computerized technology. The rapid growth of credit unions has been largely determined by rapidly attracting deposits through offering higher interest rates than those of banks. The rapid growth of some credit unions' deposits and assets raises a concern that these credit unions will not be able to manage properly all risks associated with their considerable expansion. To attract financial resources for a higher price and to ensure lossless activities, credit unions are forced to invest into loans – a more risky product but with a higher return. The lack of credit risk management and of responsible lending principles of non-compliance has caused problems in some credit unions. Recently, the operating licences of three credit unions have been revoked, and on several credit unions limitation of activities was imposed.

After a survey of credit union members and the analysis of their responses, we can conclude that credit union members are influenced by several factors in the credit union choosing process. In particular, the members focus on three main aspects – internal and external factors including interest rates and good service. Credit union members take into consideration the external (convenience in the territorial approach, effective advertisement) and the internal factors (good reputation, loan interest rate, membership fees, etc.). A more detailed overview of the factors shows that internal factors include the union activity transparency, participation in the EU programs, a relatively small number of members, managers reputation, loan interest rate, and membership fee.

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