SERVICE CUSTOMIZATION APPROACH FOR SME RISK ASSESSMENT

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Abstract: *Small and medium-sized enterprise (SMEs) are the backbone of growth and development of developed countries economies. Across Europe, especially in the emerging European regions, there are numerous SMEs from variety of industries with sound business projects that are constantly seeking for organizations that can support them in access to necessary funds. In many cases, those SMEs are not able to access loan finance from traditional funding institutions (i.e. banks) due to a lack of collateral and own funds. Therefore, the role of professionals and institutions from the guarantee societies provide a substitute for the missing collateral and allow the credit institution to grant the loan by sharing in the default risk. This paper presents the methodology that could be used by guarantee funds when assessing the risk level of their SME clients. The methodology can be adapted and its integral parts can be modified depending on the type of industry in which SMEs that may seek support from guarantee societies are operating. In addition, the software application that allows operational service customization directed towards different SME needs by the guarantee funds employees is presented.*

Key Words: ***Small and medium-sized enterprises, Service customization, Guarantees***

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) are defined differently depending on the country in which they operate. Legal framework of the European Union, adopted by the Republic of Serbia, defines the SME sector in line with the recommendation of the European Commission of 6 May 2003 as a company which has fewer than 250 employees, an annual turnover of less than EUR 50 million turnover, and with total assets of not exceeds 43 million euro (sufficient is one of the last two conditions). [1] The SME sector also includes micro-enterprises.

Table 1. shows the EU methodology for classification of micro, small and medium enterprises. The European Commission as the key segments of the SME sector recognizes construction industry, processing industry, trade, tourism and catering, and business services.

Table 1. *Categorization of SMEs according to the methodology of the European Commission*

Enterprise category	Number of employees	Annual turnover	OR	Total assets
Medium	<250	≤ 50 mil €		≤ 43 mil €
Small	<50	≤ 10 mil €		≤ 10 mil €
Micro	<10	≤ 2 mil €		≤ 2 mil €

SME sector is considered as the basis of the private sector in developed countries. In these countries, SMEs make up 99.8 percent of the total number of enterprises, their share in the net value added of the whole EU economy is 58%, the share of gross domestic product is over 55% and they employ over 66 percent of employees in the private sector. [2] Taking into account the above data it is expected that in these countries there are a large number of public and private agencies that provide support to the sector through access to development funds, consulting services in various fields (law, finance, human resources, and other specific areas of interest to companies) and backing of the business process. What characterize developed economies is the availability of cheap capital, developed network of service providers, developed and simplified legislature and the significant investment in the development of the SME sector by the state itself. The most important obstacles are finding the adequate market and finding the appropriate managers.

As part of Yugoslavia until three decades ago, the economy of the Republic of Serbia economy was based on planned quotas with strong government support to large industrial systems, which at that time were the backbone of the economy. It was not until the late 80s of the last century that saw the emergence of the first private companies. Since the 2000s the state has recognized the importance of the SME sector and made serious steps towards the regulation of the sector and the creation of support institutions. Today the SME sector in the Republic of Serbia makes 99.8% of the total number of companies, employs around 66% of total employment in the private sector and participates in the gross domestic product of about 34% [3]. The Republic of Serbia, as a candidate country for membership in the European Union, has done a lot of institutional support to the sector; however the lack of support in the legislative has been noted. Also, a big problem is the lack of support from private companies, primarily banks, which are reflected in the inability to obtain cheap capital for creation of new enterprises, mostly due to the great conservatism of banks in granting loans to finance the creation of new jobs. [4] Although there is a problem of funding in the Member States of the European Union, it is more pronounced in Serbia due to the increased perception of risk in SME sector.

Comparing the status of the SME sector in the Republic of Serbia and the European Union the conclusion can be made that SME sector in the European Union is significantly better developed, as indicated by statistically significantly higher share of the sector in the gross domestic product, than in the Republic of Serbia. The reasons can be many: the quality of the goods, the inability of export, lack of competitiveness in foreign markets, lack of skilled labor, poor entrepreneurial skills of owners and managers, the inability to purchase new technologies etc. Some of these reasons can be overcome by better support of institutions, especially financial support. In order to enable entrepreneurs to acquire favorable funds, institutions must take account of the risks associated with entrepreneurial business since they will be indirectly exposed to risks through business with the SME sector. The potential risks in the enterprise business will be discussed in the sequel of the paper.

2. BUSINESS RISKS IN SMALL AND MEDIUM ENTERPRISES

Entrepreneurs may face many risks during their operation. Berk, DeMarzo and Harford [5] divided those risks into common and specific risks. Common risks are those risks which may equally affect all market participants while the participants themselves cannot directly affect their probability. Common risks include:

- Exchange rate risk - the probability of a change in exchange rate between different currencies,
- Credit risk - the probability of changes in market interest rates,
- Political risk - the probability of changes in certain laws and policies.

The individual risks are specific to each company and the company can directly influence the probability of certain risk events realization. These risks are important to assess since guarantee funds should be able to assess the probability of the common risks, while individual risks may vary from company to company. The individual risks include:

- Liquidity risk - the probability that the company will not be able to settle its outstanding liabilities,
- Credit risk - the likelihood that one party will not perform contractual obligations under the loan agreement,
- Operational risk - the probability that an error occurs in business due to human factor, poor procedures or problems with the necessary tools,
- Market risk - the probability that the product or service will not be placed on the market,
- The risk of exposure - likely to come to exposure to a single entity or a group of related entities.

Most of the institutions for the SME sector support, both public and private, are faced with individual risks assessment, depending on the type of support they provide. Specific for the both types of support institutions is that they generally use historical data obtained from different financial statements (Balance sheet, income statement, cash flows) that can be quantified, to estimate the risks. These data are good because they can be verified, but they relate to the past, not to the future activities of entrepreneurs, and often create unnecessary amounts of data. For risk assessment in future operations qualitative methods of evaluation by means of projections made by the entrepreneur himself are mostly used. These data are mostly unverifiable and derived from the business plan of the applicant. The risk that is often neglected is the operational risk associated with the entrepreneur.

Public institutions in Serbia are exposed to additional pressure due to lack of available funds from banks. Since the policy of the state is to promote the development of the SME sector, public institutions are often forced to allocate funds to companies that might have a problem with allocated funds return, while some do not use those funds according to its purpose. In order to prevent possible problems it is necessary to identify the most important parameters of the business operation of SMEs and to assess them appropriately.

3. PARAMETERS FOR RISK ASSESMENT FOR SMALL AND MEDIUM ENTERPRISES

When allocating the funds the guarantee funds should take into account several parameters in order to reduce their exposure to risk through companies that they support. In assessing the significance of the risk parameters for SME guarantee funds need to respond to the following questions:

1. Does the entrepreneur have enough knowledge in order to achieve its objectives?
2. Is there a need in the market for the product / service supplied by the company?
3. Will the company be able to repay the borrowed funds?
4. Will the funds be spent appropriately?

These are the questions that need to be answered in relation to the situation when the focus is on available loans for SMEs. As there are different forms of assistance, certain questions cannot be raised, depending on the type of assistance (grants, assistance in export subsidies). For every question there is an answer, either quantitative or qualitative.

The most important quantitative indicators to assess the risk in small and medium-sized enterprises are indicators of liquidity (general and rigorous liquidity ratio) that demonstrate the company's ability to cover outstanding liabilities from its own highly liquid assets. The ideal value of the indicator, which represents the ratio of highly liquid assets and short-term liabilities, is 1. Another important indicator is an indicator of indebtedness, particularly the debt / assets ratio, which demonstrates the burden of debt that the company has to creditors in comparison with its property. Institutions should avoid companies whose mentioned indicators have high values because it shows that there might be problems in return of borrowed funds. Some other indicators that can be used as the profit margin, return on assets, indicators of activity (asset turnover ratio, inventory turnover ratio), but they do not play a key role in the risk assessment and as such they should not be given too much attention. Also, future cash flows may show company future profit, but they are based on estimates and may not be accurate; moreover, they can be significantly different from the real assessment. The biggest problem that occurs with quantitative indicators is that they are affected by estimates of entrepreneurs that are often unrealistic. Quantitative indicators correspond to the third question.

The most important qualitative indicators are business plan, CV of the entrepreneurs, managers and others involved in the operation of enterprises and association of entrepreneurs or business with other entrepreneurs or companies. A business plan can help institutions to find out the key parameters of the current and future business operations as well as product, service, market and business model that the company uses. Of crucial importance is that the institution itself makes as realistic as possible assessment of the market and products / services, because entrepreneurs have an optimistic attitude towards its success. CV of the entrepreneur shows the knowledge and skills of entrepreneur, both formal and business. Formal skills of the entrepreneurs do not necessarily have an impact on business operations, but it is important to assess business skills of entrepreneurs, which would be taken by the institution that provides assistance. The same applies to the assessment of managers in the company. The association of companies with other companies is essential that, in the event that one or more of the related companies have bad indicators, a company that seeks help from guarantee funds can serve to help put healthy capital into companies that have a financial or other problems, for which this kind of financial assistance from the guarantee funds is not intended. Competence is essential for appraisers of qualitative indicators who work in the institutions, because only on the basis of their assessment can management of the institution come to the right judgment. These three indicators together correspond to the other three questions.

Table 2. *Matrix of parameter significance for risk assessment of SMEs*

	Quantitative	Qualitative
Significant	• Liquidity ratio • Debt / asset ratio	• Market assessment • Product assessment • Business skills of the entrepreneur
Less significant	• Activity ratios • Profitability ratios	• Formal education of the entrepreneur

It should be noted that there are no insignificant parameters. Any information can help in consideration of the potential risks of enterprises; just some indicators are significantly better suited for SMEs. Overview of the significance of the parameters is given in Table 2.

4. METHODOLOGY FOR RISK ASSESSMENT AND SOFTWARE APPLICATION

Recognition and singling out of risks is first step towards good decision process of choosing an adequate applicant for grant or other type of support from guarantee institution. Next step is to assess all significant entrepreneurial risks and make the right decision concerning the impact that certain types of risks can have on different types of companies. Since guarantee institutions usually support different types of SMEs, the methodology for risk assessment must be adjustable to the needs of different calls for support, providing guarantee funds with modular risk assessment platform and service customization with the help of software application.

Companies that are supported by guarantee funds may vary between already established SMEs, start-ups, to individual entrepreneurs and small farmers. Some parameters that are important for risk assessment cannot be assessed the same way in all calls for support. Namely, for companies that exist for over a year guarantee funds can use balance sheet and different financial statements for liquidity risk assessment, while only way to assess liquidity risk for start-ups is to check entrepreneurs previous behavior concerning payment obligations.

The authors identified 4 risks that are common for each type of company/entrepreneur that should be assessed according to the matrix of significance parameter:

- Liquidity risk – risk that company/ entrepreneur will not timely settle obligations,
- Market risk – risk that product / service will not be accepted on the market due to the pricing, distributive channel, marketing or generally inadequate business model,
- Indebtedness risk – possibility that company / entrepreneur will stop returning loans due to the large amount of borrowed funds compared to its own funds,
- Reputational risk – possibility of spending loans on different ways not intended by the guidelines of support.

To measure liquidity risk, the guarantee institution should check liquidity ratio and previous payment of obligations needed for business operation. Liquidity ratio can be assessed for the companies that must have published balance sheet; however it is impossible to calculate liquidity risk for start-ups and other applicants that does not have audited balance sheet. For companies that does not have audited balance sheet for any reason, only way to check their liquidity risk is by checking payments of obligations needed for successful business operation (phone bills, electricity bills etc.)

Market risk can be measured by qualitative assessment of market potential and business model by the experienced appraiser from the guarantee institution. The appraiser can assess business model from the business plan proposed by the company/ entrepreneur, and by field inspection. The assessment must take into consideration the product/ service, existence of the market for product/ service, pricing model, competition and knowledge of the person/ team that will execute the project. Besides that, profitability can be measured for companies that have balance sheet; however the result should be taken with caution since it shows previous state, not the future one.

Measuring indebtedness risk may vary depending on the time of foundation of the company and its legal obligations. For companies that have balance sheet debt/ asset ratio should be used as a measuring tool. For other entrepreneurs and start-ups, the measure for indebtedness should be ratio between personal debts of the entrepreneur and national average wage. That ratio shows personal indebtedness of entrepreneur and can be used instead of debt/ asset ratio in this case. For other possible applicants for guarantee institution funds that do not have obligation to publish balance sheet, such as farmers, but do have some form of financial reporting, ratio between agricultural holding debt or, if not possible, personal debt and value of assets of agricultural holding should be used.

Reputational risk should be measured both quantitatively and qualitatively. Quantitative measure can be done by checking tax payments and loan repayments (if applicant had any loans). Qualitative check should be done by appraiser from guarantee institution, assessing the character of the entrepreneur.

All risks mentioned should be quantified and given certain number of points or grades, depending on the needs of guarantee institutions. Each type of risk can also be given different weight, in order to appraise them in the manner that each guarantee institution finds adequate to their business model. At the end, by simple addition of points or grades, the risk of landing funds or help to each SME that has applied for help form the guarantee institution can be calculated. In order to make the whole process of assessment and its fine tuning easier, the software application should be developed.

Software application for risk assessment was written in programming language C# (Visual Studio 2015). Graphical user interface allows easy, practical, and efficient work. There is a form where user can enter input data and the button Next. Based on input data, the report in PDF format will be created by clicking on button Next. The report will be show in a new form where user can check report. If some input data is not correct, the user can click on the button Back. User can save report by clicking button Save. After that, user can decide to back on the first form and make another report, or program will be close. This software application provides an easy data processing and estimation of the risk. The whole procedure is based on previous scientific and technical considerations, and has a very wide range of use.

5. CONCLUSION AND FURTHER RESEARCH

Determination of the observed parameters significance should help employees in guarantee funds to better assess the risks that companies from the SME sector commonly encounter. By focusing on specific indicators employees can make better decisions and better allocate resources to companies that will properly utilize them. Proposed methodology and software application allows for easy customization of the methodology according to the needs of different open calls by the guarantee funds.

As qualitative indicators are based on expert judgment, they remain subject to errors due to the subjective feeling of appraisers. Further improvement of the methodology would require quantifying qualitative indicators, especially business skills of entrepreneurs, through a behavioral assessment.

6. ACKNOWLEDGEMENTS

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7. REFERENCES

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