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**INTERNATIONAL MAY CONFERENCE ON
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THE ENTERPRISE SIZE AND AGE AS DETERMINANTS OF SMEs FAILURE

Andelka Stojanović*, Ivan Mihajlović, Isidora Milošević, Nenad Milijić, Ivan Jovanović

University of Belgrade, Technical Faculty in Bor, Serbia

Abstract: This paper presents an analysis of the failure determinants of small and medium enterprises in Serbia. The aim is to examine the relationship between size and age, and the failure of small and medium-sized enterprises. The analysis was performed on data from a survey conducted in Serbia in small and medium-sized enterprises during 2018 and 2019, which had financial difficulties and at some point ceased or dramatically changed the business operations. Separate statistical analyzes were conducted for the size of small and medium enterprises and the factors of failure, and for the age of enterprises, in order to determine the categories that are more sensitive to financial distress than others. The results indicate that enterprises in Serbia are differently affected by the financial crisis when looking at the size of companies, while attitudes about certain factors of failure do not differ. Further, in the case of the age of the enterprise, the results show that younger enterprises are more prone to financial crises and bankruptcy than more mature enterprises.

Keywords: enterprise size, enterprise age, small and medium enterprises, failure

1. INTRODUCTION

Small and medium enterprises (SMEs) are the backbone of the progress of any economy, given that they are the bearers of development, employment and innovation. The SME sector is particularly important in countries that have gone through a transition and a period of disintegration of large state-owned companies. The interest in SMEs failure is increased after the financial crisis in 2008 when a large number of SMEs closed, provoking an increase of unemployment. Monitoring and understanding the reasons for the SME's failure is of great significance for policymakers, enterprises, the financial institutions, in order to propose adequate measures to help preserve and develop this vital economic sector. The main problem SMEs face is very limited resources and significant financial difficulties if unexpected disturbances occur (Jung et al., 2018). In order to overcome financial difficulties, SMEs reduce investments in research and development, reduce the number of employees, change the scope or type of products and services they offer, which leads to further degradation of business performance or complete cessation of business activities.

To this day, the classification of enterprises by size has remained a topic of discussion. Most often, each country defines its own criteria for classification. The criteria for classification are the number of employees, legal status, industrial sector, size of assets, and

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capital investments (El Kalak & Hudson, 2016). The classification of SMEs in Serbia was performed according to the number of employees, where micro-enterprises are defined as those with up to 9 employees, small enterprises with 10 to 49 employees and medium-sized enterprises are those with 50-249 employees. Entrepreneurs are persons who independently perform activities and are classified as micro-enterprises (Ministry of Economy, 2018).

In the Republic of Serbia, according to the report of the Ministry of Economy, the SME sector accounts for 99.9% of total active enterprises and employs 44% of registered employment (Ministry of Economy, 2018). The largest percentages of SMEs are entrepreneurs 71.9%, followed by micro-enterprises 24.36%, 2.96% small and 0.7% medium-sized enterprises. Statistics show that on average, in Europe, 39% of established SMEs fail in the first 3 years of operation, while only 48.38% survive after the 5th year (Mihajlović & Stojanović, 2019). Such a high failure rate of SMEs deserves additional attention from researchers in this field.

This paper examines the responses of SMEs in Serbia to financial distresses depending on the size of the enterprise and the age of the enterprise at the moment the financial crisis. The study is based on data collected during a survey conducted in 2018-2019, which aimed to examine entrepreneurs who had financial difficulties and determine which factors significantly influenced the failure of their enterprise (Mihajlović & Stojanović, 2019; Milošević et al., 2019).

2. LITERATURE REVIEW

The failure of SMEs is a topic that researchers often address from various aspects, trying to develop models that would identify risks and predict methods for their reduction (Gupta et al., 2018). Monitoring the failure and identifying the characteristic reasons why SMEs fail is not an easy task given that respondents are difficult to find and persuade them to participate in the research since the failure can be very stressful and personal, and that can lead to biased answers (Altman et al., 2010). Also, when studying failure, different variations of the definition of failure occur. Some authors see the failure as bankruptcy and the cessation of the business entity, while others define it as a change in the company's activities from production to services, voluntary closure, or a merger with a larger company (Esteve-Pérez et al., 2008; Pretorius, 2009; Tobbäck et al., 2017), etc.

Many authors suggest that financial problems are the main reason for the failure of SMEs while others point to a lack of managerial skills and planning (Hutchinson & Xavier, 2006); Altman et al., 2010). Lukason and Laitinen, (2019), examining the risks and stages of the enterprise failure process, have concluded that annual and accumulated profitability are the most important contributors to company failure. Franco and Haase (2010) in their study marked off two groups of influencing factors that classify the challenges faced by SMEs that lead to poor performance and failure. The first group includes external factors that encompass limited access to finance, poor market conditions, competition, unsatisfactory staff and lack of institutional support, while the second group includes internal factors such as lack of cooperation and networking, outdated technology, lack of entrepreneurial competencies and weak strategy and vision.

In a previous study, Milošević et al. (2019) proposed three factors that affect the failure of SMEs: personal - related to the personal characteristics of entrepreneurs and motivation to start the business; internal - representing the organizational and financial components that affect the failure; and external - where the most significant elements of political, economic and social influence are taken into account. This research confirmed the

significant influence of the personal factor on the deterioration of SMEs. On the other hand, Nikolić et al. (2018) concluded that external influences, such as political, economic and social, can significantly affect the failure of SMEs and their ability to recover.

A small number of researchers in their research make a difference between enterprises by size, because micro, small and medium-sized enterprises are most often treated as a homogeneous group (Gupta et al., 2018). However, size has a significant impact on the financial results of enterprise and the difficulties that SMEs meet in doing business do not affect enterprises of all sizes equally. Arguments in support of this are the fact that larger firms have more financial and personal resources with which can absorb increased operating costs (Williams & Uwi, 2014). Also, access to external sources of funding, which is considered a significant factor in the development and potential failure of SMEs, is a significant limiting factor for smaller SMEs (Gupta & Gregoriou, 2018). In a study on the failure factors of SMEs in the United States, Gupta et al. (2018) present evidence of varying degrees of failure of SMEs of different sizes. Also, in this research, it was confirmed that the influencing factors do not affect companies of different sizes equally, while it was not confirmed that the influencing factors are different.

Researches show that the ways in which SMEs respond to challenges arising from financial difficulties depend on enterprise characteristics (Latham, 2009; Archibugi et al., 2013). SMEs that constantly innovate their products and services increase their competitive power (Aghion et al., 2014). In contrast, in a period of the financial crisis, SMEs face declining sales and downsizing investment in innovation. This trend is particularly noticeable in smaller companies (Jung et al., 2018). El Kalak and Hudson, (2016), comparing SMEs failure prediction models, suggested that SMEs, especially micro and small, should be separately observed because their financial statements do not provide sufficient information on failure predictions as opposed to medium-sized enterprises where influential variables can be determined.

The age of the enterprise can affect financial difficulties (Gupta et al., 2018). Firm age is used in the context of the assumption that older firms have more resources and experience than firms that operate for a shorter period of time and are more likely to survive financial difficulties (Williams & Uwi, 2014), as well as a solid basis to change activities in response to problems. Kücher et al. (2020) showed in their research that younger enterprises fail mainly due to internal shortcomings, while more mature enterprises are less responsive to external influences. At the very beginning, newly established enterprises have initial capital and the risk of bankruptcy is moderate. As time passes, start-ups face specific challenges such as market barriers, weak connections and networks, and problems in recruiting adequate staff, start-up capital decreases and the next stage may be an early failure (Strotmann, 2007; Kücher et al., 2020). On the other hand, company age can also be a problem in mature enterprises that develop strong inertia and become less flexible in responding to challenges (Kücher et al., 2020).

3. DATA AND METHODS

The research was carried out during 2018 and 2019, where the respondents were owners or managers of SMEs who had financial difficulties due to which they had to close the enterprise or change activities. It was adopted definition according to which financial difficulties imply bankruptcy, but also a drastic change in the company's activities. The research was conducted through a structured questionnaire in which the respondents rated the statements about SME failure on a Likert five-point scale where 1 represented "completely

disagree" while 5 represented "completely agree". Data analysis was performed on a sample of 128 correctly completed questionnaires.

The sample was analyzed from the aspect of size and age of the company, performing univariate analyzes, using factors defined in the research of Milošević et al. (2019) and by conducting the successive analysis of variance tests.

4. RESULTS

First, the focus is on the size of enterprises, where, in the sample, are 94 micro-enterprises, which represent 73.4% of the total number of respondents, 25 small enterprises, which is 19.5%, and 9 medium-sized enterprises, which is 7.0% of the respondents.

The analysis of the data showed that the largest percentage of micro-enterprises after financial difficulties discontinued operations, 55.3%. The response of small and medium enterprises to financial difficulties is an attempt to develop new services, which is decided by 44.0% of small and 55.6% of medium enterprises Figure 1.

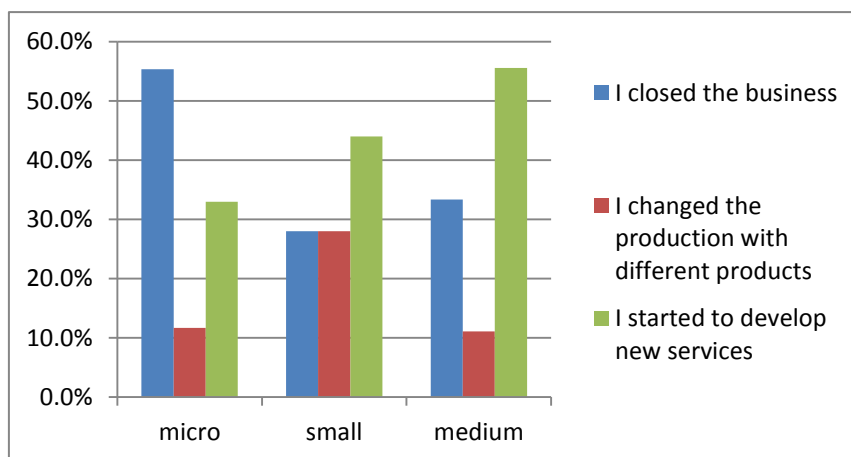


Figure 1. Analysis of SME response to the financial crisis in relation to size

The results of the analysis of variance of SMEs failure factors generated in the study by Milošević et al. (2019) in relation to the size of the enterprise are presented in Table 1. A more detailed analysis of factors influencing failure, using successive ANOVA tests, found there are no statistically significant differences that would confirm that the personal characteristics of entrepreneurs influence the response to financial difficulties. The second proposed factor, internal, as well as the third, external, also do not show statistically significant differences depending on the size of the enterprise.

Table 1. Analysis of variance of failure factors in relation to the size of the enterprise

Factors	Considered variable	Question	F	Sig.
PERSONAL (PF-PM)	PF1	Self confidence	.378	.686
	PF2	Need for achievement	1.043	.355
	PF3	Creativity	2.097	.127
	PM1	Desire to be independent	1.471	.234
	PM2	Self-fulfilment	.021	.979
	PM3	Good networks	1.528	.221
INTERNAL (IF-IO)	IF1	Delay in fulfilling bank obligations	.219	.804
	IF2	The level of fixed assets free from any burden/inscription	.499	.608
	IF3	The level of clearing/ barter transaction	.908	.406
	IO1	Difficulties in absorption/acquisition of new technologies/innovation	.920	.401
	IO2	Inability to find new potential shareholders/ partner	1.918	.151
EXTERNAL (E)	E1	Political issues	.506	.604
	E2	Economic issues	.556	.575
	E3	Social issues	.016	.984

When it comes to the age of enterprises in times of financial problems, the sample includes 35 enterprises that operate for less than 3 years (27.3%), 26 enterprises that operate between 3 and 5 years (20.3%) and 67 enterprises that operate for more than 5 years (52.3 %). Respondents' responses to the financial crisis depending on the age of the enterprise are presented in Figure 2.

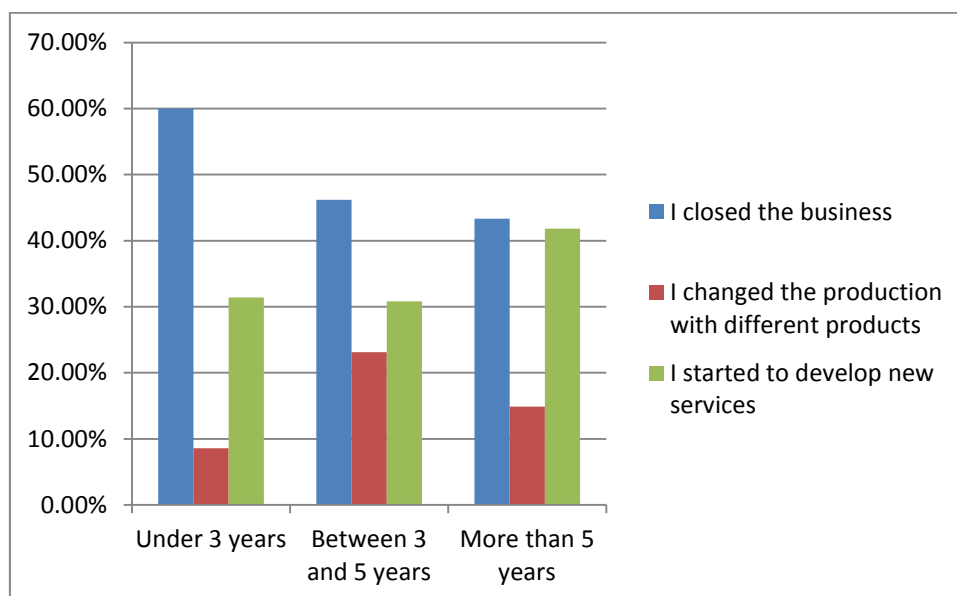


Figure 2. Analysis of SME response to the financial crisis in relation to age

The results indicate that young enterprises in 60.0% of cases respond to the financial crisis by closing, while that percentage decreases with the number of years of operation.

Table 2 shows the results of the analysis of variance of factors that in this case, instead of individual variables, were taken as a group of questions. This analysis showed that there are no statistically significant differences in the attitudes of entrepreneurs about the elements that affect business, regardless of the age of the enterprise.

Table 2. Analysis of variance of failure factors in relation to the age of the enterprise

Factors	F	Sig.
PERSONAL (PF-PM)	.493	.612
INTERNAL (IF-IO)	.426	.654
EXTERNAL (E)	1.160	.317

5. DISCUSION

In order to better understand the causes and failure process of SMEs, two significant demographic factors, size and age of SMEs, were considered. Through the results presented in this study, it has been shown that the size of SMEs has a significant impact on the response of SMEs to financial difficulties. Micro-enterprises and entrepreneurs, that make the largest share in this sector, in a large number of cases close their enterprises. Research conducted in other countries has also shown that micro-enterprises are the largest group of those in financial problems with a tendency to go bankrupt (Gupta et al., 2018).

It was also confirmed that another demographic factor, the age of the enterprise, plays a significant role in the enterprise's response to financial distress. In line with other research, in this study the results indicate that the age of the company affects the ability to overcome the financial crisis in business (Kücher et al., 2020) and that older companies have a better chance of overcoming the crisis and recovery than younger companies.

The results related to the examination of individual failure factors differ slightly from previous research (Nilolić et al., 2018; Milošević et al., 2019) since has not been demonstrated that attitudes about personal, internal and external influences cause different implications depending on size, as well as depending on the age of the enterprise.

6. CONCLUSION

Whether bankruptcy or financial crisis of SMEs is considered, consequences on entrepreneurs and the economy are significant. In this research, a sample of 128 respondents from Serbia was used, based on which results the useful implications can be provided. It has been shown that smaller enterprises find it harder to bear financial losses than larger ones. The reasons for this are less available human and financial resources as well as limited access to external sources of finance. When it comes to the age of companies, it has been shown that younger companies face greater challenges during the financial crisis and close their businesses more often, while older companies have to find ways to follow rapid changes in the environment. The results do not deviate from those obtained in research conducted in

much more developed economies than the Serbian economy (Strotmann, 2007; Gupta et al., 2018). The consistency of the results indicates that SMEs in Serbia face similar problems as in other countries.

The results of the research can be useful to managers, financial institutions and governments because adequate consideration of the position of an SME at a time of financial crisis in terms of size and age, can contribute choosing the right steps to enable SME survival and increase survival rate throughout the sector.

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