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INDUSTRY AFFILIATION AS A FACTOR OF ENTERPRISES' VULNERABILITY IN CRISIS CONDITIONS

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Abstract: *Crisis situations make enterprises vulnerable. To be resilient in times of crisis, enterprises have to try to adapt to changing circumstances. In that sense, the subject of the paper is the analysis of the impact of the latest, still on-going crisis on business performance of enterprises that belong to different industries. The subject of the analysis are enterprises operating at the territory of the Republic of Serbia, of different size and industry, in order to establish potential significant differences in the manifestation of the effects of the crisis on their performance. Data analysis, as well as testing the significance of the difference in the examined values of selected indicators with regard to size and industry, will be conducted by using adequate statistical methods. The aim of the analysis is to identify short-term consequences of the crisis, as well as preconditions for their easier overcoming.*

Key words: *enterprises' vulnerability, crisis, industry, data analysis.*

JEL classification: C15, D24, L60

1. INTRODUCTION

Resilience, as a concept, can be analyzed at three different levels: (1) at the micro level, when talking about the resilience of individual organizations, (2) at the meso level, when talking about the resilience of the industry, i.e. branches of the economy, and (3) at the macro level, when talking about the resilience of the economy as a whole. It is usually seen as a developmental process that includes four stages, namely: vulnerability, resistance, reorientation or reorganization (Neise et al., 2021, p. 2). To be resilient in times of crisis, organizations must try to adapt to changing circumstances. In this sense, the subject of the paper is the analysis of the impact of the latest, still current crisis on business performance of enterprises belonging to different economic branches. In fact, the aim of the work is to determine whether there is a difference in the degree of vulnerability of enterprises belonging to different industries, that is, in their ability to reorient or reorganize in order to adequately respond to changed, crisis conditions.

There is no doubt that the current crisis affects the entire world and the overall economy in all channels and in all directions where economic activities take place (Kikuchi et al., 2020, p. 3). However, numerous authors have come to the conclusion that the current crisis has not had the same impact on economic entities, that is, that this impact is significantly different, when it comes to the size of the enterprises or the branch of industry to which they belong. In this sense, some authors point out that the crisis deepened inequalities. By drawing a parallel between different aspects of inequality and the effects of the crisis, one comes to the conclusion that the crisis intersects with a multitude of pre-existing and emerging forms of vulnerability (Robinson et al., 2021, p.). The analysis conducted based on the data that reflects the state of the economy in the Republic of Serbia will show whether the inequality of the crisis is manifested in our country as well.

2. VULNERABILITY OF ENTERPRISES IN CRISIS CONDITIONS

Numerous authors have dealt with the analysis of the vulnerability of enterprises in crisis conditions. In order to reduce the vulnerability of enterprises, that is, to minimize the consequences of the crisis, the application of statistical methods in the process of making business, economic and financial decisions can be of great help. Apart from quantitative methods, some authors suggest that universities in crisis situations can play a key role, thanks to relevant human resources, i.e. competent individuals. Nevertheless, the scope of the aforementioned ways of reducing vulnerability largely depends on the impact of the crisis on a specific industry, more precisely on the limitations of its development (Grondys et al., 2021, p. 4186).

The recession generally affects different groups of firms and individuals in different ways, but the impact on the distribution of problems caused by the Covid-19 pandemic appears to be different from previous major recessions that have occurred over the past century. The crisis caused by the pandemic directly affects industries that are subject to the risk of infection and that require more social and direct activities, that is, it affects occupations that are not so flexible and that do not allow jobs to be carried out remotely (Kikuchi et al., 2020, p. 4).

According to the results of a study conducted by the McKinsey consulting firm, the effect of the crisis that began in 2019 on the performance of SMEs across the United Kingdom is enormous. Of the total number of small and medium-sized enterprises surveyed, 80% report stable or growing revenues for 2018, in contrast to 2019 when their revenues declined (Albonico, 2020, p. 3). In addition to the decline in financial performance, many SMEs have faced the need to reduce the number of employees in response to the pandemic or, at least, to reduce the working hours of staff: 29% of SMEs reported reduced working hours as a result of the pandemic, compared to 5% where an increase in working hours was recorded. At the same time, the pandemic affected wages in SMEs more negatively than positively, as 9% of SMEs reported a decrease in wages, while 6% reported an increase in wages (Annual Report of SMEs - 2020/2021, pp. 33-34). As consumers face employment uncertainty and financial constraints, this reflects on SME performance, most obviously through a sharp drop in demand (Juergensen et al, 2020, p. 500). At the same time, the results of a survey by the McKinsey consulting enterprise, conducted in August 2020, including 2,200 SMEs in five European countries — France, Germany, Italy, Spain and the United Kingdom — show how badly their prosperity has been affected by the crisis (Dimson et al., 2020, p. 2).

The greater vulnerability of small and medium-sized enterprises compared to large ones is confirmed by many studies, and this can be observed in the short and long term. In the short term, most SMEs faced logistical challenges in addition to demand disruptions, although the severity varied across countries and industries, while in the long term there are different challenges and opportunities depending on the type of SME. As the authors argue that policy interventions should be sensitive to different types of SMEs, rather than adopting a 'one size fits all' approach (Juergensen et al, 2020, p. 499), it is useful to analyze vulnerability across industries.

SMEs are generally more vulnerable compared to large ones, due to their main characteristics. The results of research conducted in 2020 confirmed this assumption. Based on the results presented in the Annual Report of Small and Medium Enterprises, 21% of respondents in Europe were temporarily closed in the period January - May 2020, as a result of isolation, as one of the measures of the pandemic. However, this percentage was not the same for all EU countries, for example, only 8% of German businesses reported being closed. In addition to those closed, in the same period, 61% of respondents stated that their sales fell, and 22% reported a reduction in the number of employees (Annual Report of MSP - 2020/2021, pp. 12-15).

The crisis caused negative effects that were already evident in the first few months. For example, the number of active business owners in the United States dropped by 3.3 million, or 22%, during the key two-month period from February to April 2020. This percentage was even higher for women business owners—a 25% drop in business activity and for Afro - American enterprises - a 41% drop in business activity. Therefore, it may be said that women business owners were disproportionately affected (Fairlie, 2020, pp. 748-749).

3. ANALYSIS OF ENTERPRISE VULNERABILITY ACCORDING TO INDUSTRY AFFILIATION

The aim of the research, which results are presented in the continuation of the paper, is to identify the differences between economic entities belonging to different industries, when it comes to the selected business indicators. The research was conducted on the basis of secondary data. The subject of the research carried out in Serbia is all enterprises and entrepreneurs who did business in the period 2018-2020. Data about these economic subjects were obtained from administrative sources (Business Register Agency and Tax Administration), as well as from statistical sources (research results of the Statistical Office of the Republic of Serbia). The analysis includes the following macroeconomic indicators: number of economic subjects (enterprises and entrepreneurs), number of employees; turnover; Gross Value Added (GVA) and GVA per employee. Selected macroeconomic indicators are presented at the level of the contingent of micro, small, medium and large enterprises, as well as the contingent of entrepreneurs. In addition, aggregate data for the sector of micro, small and medium-sized enterprises and entrepreneurs (SMEs) is presented - which is in accordance with international standards (Burzanović, 2022, pp. 102-130).

In 2018, 375,842 economic entities from the sector of small and medium enterprises and entrepreneurs and 540 large enterprises were active in the Republic of Serbia, while in 2020 there were 403,288 economic entities from the sector of small and medium enterprises and entrepreneurs and 588 large enterprises. The structure of active business entities according to selected macroeconomic indicators in 2020 is shown in Table 1.

Table 1. Structure of the enterprises in Serbia according to selected indicators

Enterprise size	Share of business entities	Share of employees	Turnover	GVA
Entrepreneurs	73.96%	28.22%	18.40%	23.54%
Micro	22.34%	17.33%	19.95%	15.33%
Small	3.02%	25.57%	29.05%	26.97%
Medium-sized	0.67%	28.88%	32.60%	34.17%
Total SMEs	100.00%	100.00%	100.00%	100.00%
	99.86%	65.06%	66.37%	59.22%
Large	0.14%	34.94%	33.63%	40.78%

***Source*:** Authors, according to data from https://www.stat.gov.rs/sr-latn/oblasti/strukturne-poslovne-statistike

The analysis of GVA per employee in different industries includes only data concerning industries where the GVA per employee indicator decreased in the observed years. Also, the emphasis is on the analysis of small and medium-sized enterprises, since previous research has shown that these enterprises suffered greater consequences compared to large enterprises.

Table 2. Changes in GVA per employee at the level of all economic entities

Industry	2019/2018	2020/2019
Manufacturing industry	9.49%	-3.76%
Construction	9.22%	-9.07%
Transport and storage	9.20%	-9.25%
Accommodation and catering services	8.71%	-20.29%
Real estate business	8.54%	-23.79%
Professional, scientific, innovative and technical activities	9.20%	-10.21%
Education	9.21%	-6.15%
Arts, entertainment and recreation	10.11%	-28.26%

***Source*:** Authors, based on data from Burzanović, M. (2022). *Preduzeća po veličini i preduzetnici u Republici Srbiji 2018-2020*. Statistical Office of the Republic of Serbia, https://publikacije.stat.gov.rs/G2022/Pdf/G20226002.pdf

Based on the changes in GVA per employee calculated at the level of all economic entities in the Republic of Serbia, it can be concluded that the biggest decline in this indicator in 2020 has been achieved in the following industries: Art, entertainment and recreation, Real estate business and Accommodation and catering services.

Table 3. Changes in GVA per employee in small enterprises

Industry	2019/2018	2020/2019
Construction	15.65%	-4.48%
Transport and storage	11.73%	-6.61%
Accommodation and catering services	7.73%	-33.43%
Information and communications	6.56%	-5.06%
Real estate business	42.16%	-29.12%
Administrative and auxiliary services	32.63%	-27.79%
Education	-6.22%	-8.77%
Arts, entertainment and recreation	-28.21%	-48.41%

***Source*:** Authors, based on data from Burzanović, M. (2022). *Preduzeća po veličini i preduzetnici u Republici Srbiji 2018-2020*. Statistical Office of the Republic of Serbia, https://publikacije.stat.gov.rs/G2022/Pdf/G20226002.pdf

In small enterprises, the highest GVA per employee is realized in Real estate business (6,142 million RSD in 2019, 4,354 million RSD in 2020) and Information and Communications (2,728 million RSD in 2019, 2,590 million RSD. in 2020). The industries most affected by the crisis in this category of business entities are Art, entertainment and recreation, Accommodation and catering services, Real estate business and Administrative and auxiliary services.

Table 4. Changes in GVA per employee in medium-sized enterprises

Industry	2019/2018	2020/2019
Construction	23.90%	-4.80%
Accommodation and catering services	3.33%	-49.89%
Information and communications	13.96%	-6.58%
Real estate business	23.24%	-29.40%
Professional, scientific, innovative and technical activities	-0.68%	-8.46%
Education	-6.07%	-1.77%
Arts, entertainment and recreation	-7.51%	-43.67%
Other service activities	-16.70%	-12.35%

***Source*:** Authors, based on data from Burzanović, M. (2022). *Preduzeća po veličini i preduzetnici u Republici Srbiji 2018-2020*. Statistical Office of the Republic of Serbia, https://publikacije.stat.gov.rs/G2022/Pdf/G20226002.pdf

In medium-sized enterprises, the highest GVA per employee is achieved in the Information and Communication industry (3734 million RSD in 2019, 3488 million RSD in 2020) and Professional, scientific, innovative and technical activities (2737 million RSD in 2019). year, RSD 2505 million in 2020). The activities most affected by the crisis in this category of business entities are Accommodation and catering services, Arts, entertainment and recreation and Real estate business.

Table 5. Industries most affected by the crisis

Industry	All business entities	Small enterprises	Medium-sized enterprises
Construction	-9.07%	-4.48%	-4.80%
Accommodation and catering services	-20.29%	-33.43%	-49.89%
Real estate business	-23.79%	-29.12%	-29.40%
Education	-6.15%	-8.77%	-1.77%
Arts, entertainment and recreation	-28.26%	-48.41%	-43.67%

***Source*:** Authors, based on data from Burzanović, M. (2022). *Preduzeća po veličini i preduzetnici u Republici Srbiji 2018-2020*. Statistical Office of the Republic of Serbia, https://publikacije.stat.gov.rs/G2022/Pdf/G20226002.pdf

Based on the data from Table 5, it can be seen which industries are equally negatively affected by the crisis, both for small and medium-sized enterprises. What can also be observed is that small and medium-sized enterprises from certain industries are in a significantly worse position compared to the data at the level of all business entities, especially when it comes to the industries: Art, entertainment and recreation and Accommodation and catering services.

CONCLUSION

To compare enterprises belonging to different branches of industry, for the sake of data comparability, as indicators of the effects of the crisis, data related to GVA per employee were used. The analysis shows that the crisis led to a stagnation in the growth of the observed indicator, generally speaking. However, on the other hand, the analysis of the mentioned indicator by different industries points to the uneven impact of the crisis on the enterprises' operations. Such results point to the fact that the support of institutions must be in line with the negative effects of the crisis, that is, that enterprises belonging to the most threatened industries must have a privileged status when it comes to the aid of the state and other institutions that play a significant role in times of crisis. In order to identify an adequate way of providing assistance and support to enterprises of the most vulnerable industries, future research will be focused on the collection and analysis of empirical data, obtained by interviewing owners and managers of enterprises from the mentioned industries. In this way, it will be possible to identify their perception and data evidence about the negative effects of the crisis, as well as ways to neutralize the negative effects of the crisis.

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SUMMARY

Crisis situations make enterprises vulnerable. To be resilient in times of crisis, enterprises have to try to adapt to changing circumstances. In that sense, the subject of the paper is the analysis of the impact of the latest, still on-going crisis on business performance of enterprises that belong to different industries. Previously conducted researches have shown that some industries confronted great problems due to the crisis caused by COVID-19 pandemic situation. One of the trends of consumer consumption during the pandemic has been panic buying and, therefore, the intensified imbalance and disequilibrium between supply and demand, threatening the response of the food supply chain to tackle the vulnerabilities resulting from the COVID-19 pandemic. Due to the product characteristics, the food supply chain is long and to makes resilience efforts a daunting task for food firms complex. Beside food industry, negatively affected sectors were logistics, construction, and agriculture, with significant reductions in revenue. However, it seems that service industries were more severely affected by the pandemic, particularly hospitality related sectors and travel industry. Beside the tertiary sector that was hit in all affected countries, the manufacturing industry was also the most severely affected and confronted negative consequences. The subject of the analysis are enterprises operating at the territory of the Republic of Serbia, of different size and industry, in order to establish potential significant differences in the manifestation of the effects of the crisis on their performance. Data analysis, as well as testing the significance of the difference in the examined values of selected indicators with regard to size and industry, will be conducted by using adequate statistical methods. The aim of the analysis is to identify short-term consequences of the crisis, as well as preconditions for their easier ove.