

# THE EFFECT OF COVID 19 ON THE RESILIENCE OF SMALL AND MEDIUM-SIZE FIRMS

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## ABSTRACT

**Purpose**–The prevalence of Covid-19 in the world has brought about considerable problems and affected small and medium-size firms' resilience. We can refer to employment, flexibility, innovation, and activity change. The present study attempts to assess the effect of the Covid-19 on the resilience of small and medium-sized firms. In other words, this paper aims to figure out whether or not the Iraqi SME firms can tolerate the emerging epidemic of the Covid-19.

**Design/Methodology/Approach**– For the study, a questionnaire is designed with 28 questions (3 questions about covid-19 and 25 questions from Conner and Davidson's questionnaire on resilience). Using simple random sampling, the questionnaire is distributed among 151 subjects from small and medium-size firms' staff and managers. After analyzing the questionnaire's reliability and validity, the hypothesis is assessed using the structural equation method.

**Findings**– The obtained results from hypothesis testing show the positive and significant effect of the Covid-19 virus on small and medium-size firms' resilience.

**Originality/value**– Since it is the first study in Iraq on the effect of covid-19 on SME firms' resilience, it can contribute to the development of science and knowledge in this field.

**Keywords:** Covid-19, The Resilience Of Small And Medium-Size Firms, Global Economy

## INTRODUCTION

The contemporary business world's present trend is toward economic globalization that targeted various international firms, enhanced the global economy's competitive power, presented new business types, changed the business structure and leadership styles, and affected workplace diversity. Globalization primarily changes small and medium-size firms in the national economy and influences their performance and path. That means SME firms create new jobs and contribute to economic development (Tomas & Markovic, 2018). However, in globalization, business firms are exposed to economic shocks and global epidemics (including financial crises and dangerous pandemics, like the Covid-19) (Shafi et al., 2020) that are unpredictable and affect the performance and profitability of SMEs (Shafi et al., 2020; Juergensen et al., 2020; Dai et al., 2020; Bouey, 2020). Therefore, organizations should rely on strong leadership, understand the work setting, be adaptable and responsive to quick changes, to be considered flexible (Markovic & Tomas, 2018). However, they are flexible in dealing with a dangerous and unpredictable business environment, such as the epidemic of the Covid-19.

In this paper, we attempted to assess the answer to the proposed question in Iraqi SME firms and propose recommendations for improving Iraqi SME firms' resistance and resilience. In other words, we attempted to determine the effect of Covid-19 on the resilience of Iraqi SME

firms, to show the reaction of such firms against unpredicted shocks, like the Covid-19, and to indicate whether they can resist against health protocols, social distancing, mandatory lockdowns due to the prevalence of Covid-19 or not.

Therefore, since no study carried out so far in Iraq on such an issue, the present study results can provide us with useful information. Second, this paper's results can contribute to developing science and knowledge in this field. Third, since before the Covid-19 Iraq was encountered with the problem of ISIS and civil wars, we predict that the effect of covid-19 on SME firms in this country is higher than that of other countries because most of the jobs and SME firms in this country were inevitably forced to lockdown their business due to insecurities raised by ISIS and presently covid-19 has exacerbated the issue. Hence, assessing such a topic in Iraq with special economic-political conditions can yield intriguing results. In the following, we discuss theoretical principles, hypothesis development, methodology, data analysis, and finally, discussion and conclusion.

## **Theoretical Principles and Hypothesis Development**

### **Covid-19**

Covid-19 virus refers to a large family of viruses and subtypes of Covid-19 that range from the common cold virus to the cause of more severe illnesses such as SARS, MERS, and Covid 19. The covid-19 virus was discovered in the 1960s and was continued to be studied until the mid-1980s. This virus is naturally prevalent in mammals and birds, yet seven types of Covid-19 virus transferred to humans have been discovered so far. The last type of Covid-19 virus, severe acute respiratory syndrome 2, spread in humans in December 2019 in Wuhan, China (Saeb Nia and Karimi, 2020). These intense, expansive challenges point to the management's need for a framework that addresses broad global, technological, and structurally unrelated variables to understand the impact and potential responses to the Covid 19 epidemic on salesforce. The technical and social systems theory emphasizes the importance of social interaction (people and their interaction) and technical aspects (steps and related knowledge, including software and hardware). The results of the model and the model of organizational change can certainly be such a foundation.

### **Resilience**

There is a plethora of research on which organizations of any size can plan to prepare for a disaster or crisis, identify hazards, and reduce the likelihood of occurrence (Hatton et al., 2012). In other words, organizations should improve their resilience. Today, there is a growing interest in developing corporate resilience, which includes planning for crisis and providing companies with capabilities by which they can survive and grow despite adverse conditions (Hatton et al., 2012). Organizational resilience is the capacity to resist and recover from disasters, shocks, or natural disasters that can affect an organization or system, internally or externally (Annarelli & Nonino, 2016). Resilience was also defined as effective negotiating compliance or managing significant injury sources (Jones, 2015). In order to study resilience, its causes are also important. In the literature, there are empowerment causes that foster the development of resilience at the organizational level. These causes include agility, adaptation, coordination, common goal, evaluation, balancing the long-term and short-term horizons, capacity building, leadership, interaction, knowledge sharing, willingness to explore current knowledge and accept new perspectives, relationships, and respectful interaction, the use of social capital and thinking and acting by helping each other (Emmons, 2013). Scholars have examined the resilience of small

and medium-sized businesses to understand how such companies cope with unpredictable changes in the global scenario, such as the global economic crisis or changing consumer behaviour and expectations (Conz & Zucchella, 2016). Along with this concept, despite facing similar shocks and situations, some businesses overcome these conditions and adapt, while others do not succeed. It should be said that the response to unexpected events depends on the resilience of companies (Scholten et al., 2014).

## Hypotheses Development

The Covid-19 virus appeared at the end of December 2019 in Wuhan, China, and was declared an epidemic by the World Health Organization on March 12, 2020, after being transferred to many countries. Meanwhile, many financial markets and businesses did not react to it due to having incomplete information. However, after spreading the virus in various countries, financial markets and businesses fell due to fear. Because the spread of the disease and high mortality rate had adverse economic effects, the Covid-19 is not just a major health crisis. The virus is changing the structure of the global order in businesses (McKinsey, 2020). Few studies have addressed the issue of business resilience in social and economic crises. As an emerging field of research, resilience is analyzed from different perspectives, and as a result, some different meanings and perceptions are sometimes discussed or contradicted (Brown, 2014). Small and medium-size companies do not seem to cope with the uncertainty created by the Covid-19 virus. Small and medium-size companies are often forced to operate in a competitive business environment due to their limited size, scale, and financial resources. It is well-known that small and medium-size companies have overcome obstacles and transformed themselves into large companies in the future, even with limited resources. These companies include Facebook and Amazon, which could survive and grow, despite scarce resources and in all economic conditions and financial crises. Small and medium-size enterprises can also grow to confront the great challenge of Covid-19 (Qamruzzaman, 2020). During the Covid-19 virus pandemic, small and medium-size companies also face other problems, including the payment of instalments, workers' wages, and rental costs. The potential impact of the Covid-19 on the global economy is a wide-ranging debate, and Iraq is no exception. In a study conducted by McCloskey & Heymann (2020), the reason for disruption in the supply chain, trade closure, and low market demand could be the recession during the Covid-19. Analyzing the factors affecting the resilience of small and medium businesses, Garmestani, et al., (2016) have stated that the company's capacity to manage turbulence and create new solutions depends on, at the organizational level, company dynamics and, at the geographical level, on the location and proximity to other companies. Evaluating the effects and policy of responding to the Covid-19 crisis in small and medium-size European companies, Juergensen, et al., (2020) concluded that the pandemic virus's sudden onset acts as an economic shock affects how small and medium-size businesses operate. Prohorovs (2020) dealt with the preparation of small and medium-size companies in the face of the Covid-19 virus epidemic. The results showed that companies acted according to the existing conditions during the Covid-19 virus crisis and suffered less damage. Small and medium-size businesses also had better economic conditions in the pre-Covid-19 era. Nomita (2020) addressed the challenges and opportunities of small and medium-size enterprises during the Covid-19 virus pandemic. The results showed that the Covid-19 pandemic destroyed many start-ups, small and medium-size. But the old companies adopted themselves with the Covid-19 crisis and continued to operate. Qamruzzaman (2020) examined the impact of the Covid-19 virus on small and medium-size enterprises in Bangladesh and showed that the government, through cooperation and banking and non-banking guidelines, had significant effects on efficient investment redistribution. Hence, unemployment, stunting, and social insecurity will be effective in the long run. Studies such as

Shafi, et al., (2020), Juergensen, et al., (2020); Dai et al., (2020); Bouey (2020) showed that the Covid-19 virus affects the corporate performance of SMEs and their profitability.

Examining the effect of digital maturity on the resilience of small and medium-size businesses during the Covid-19 pandemic in educational and research institutions in Tehran, Zolfagharian (2020) concluded that digital maturity has a positive and significant effect on the resilience of small and medium-size businesses during Covid-19 pandemic. Saeb Nia & Karimi (2016) investigated the effect of the Covid-19 virus on the performance of small and medium-size businesses in Ardabil province. The results showed that a positive and significant relationship between the Covid-19 virus and customer performance with a coefficient of the impact of 0.73 was confirmed. A significant relationship between the Covid-19 virus and market performance with a coefficient of 0.69 was confirmed. A positive and significant positive relationship between financial performance and the Covid-19 virus with an Impact coefficient of 0.71 was confirmed. Finally, suggestions were presented based on the research results for improving business performance. Shahabi & Radfar (2020) designed the resilience model of cooperation networks during the Covid-19 virus outbreak. Accordingly, while reviewing and interviewing informants and drawing a rich picture of the current situation, the model for network leadership resilience was drawn by the complementary method of comprehensive interpretive structural modelling. Comparing the rich image and the proposed model showed that the dynamic capabilities act as the network resilience model's cornerstone. Accordingly, structural suggestions were proposed to increase collaboration networks' resilience during and after the outbreak of the Covid-19 virus. Ebrahimi, et al., (2017) conducted a comprehensive analysis of organizational resilience factors in small and medium-size industries. They interviewed 10 experts and managers and identified factors affecting resilience using the theme analysis technique. They then ranked these factors using questionnaires and applied the hierarchical analysis technique by 14 experts. The results showed that internal factors have a greater impact on corporate resilience than external factors. By evaluating the resilience components of small and medium-size enterprises in auto parts manufacturers, Chit sazan, et al., (2015) concluded that three factors (organizational assets and resources, dynamic competitiveness of the organization, learning, and organizational culture) are involved in the resilience of and small and medium-size businesses. Therefore, according to what has been said, the research hypothesis is as follows:

*H1: Covid-19 has a significant effect on the resilience of SMEs in Iraq.*

## **RESEARCH METHODOLOGY**

The present study is applied in terms of purpose and descriptive and survey-based in terms of method and mixed-method research (first qualitative and then quantitative). The study's statistical population is the employees and managers of small and medium-size companies in Iraq in 2020 (1399). For statistical sampling, 249 employees and managers of small and medium-size companies in Iraq were selected using simple random sampling and Cochran's formula, and then 151 employers were selected. Also, 165 standard questionnaires were distributed to ensure the adequacy of returnable questionnaires so that the number of received questionnaires could cover the minimum statistical sample size. A questionnaire was used to collect information. The questionnaire was organized into three sections: accompanying letter, demographic information, and specialized questions. The first part, entitled "accompanying letter," and stating the research title, the purpose of collecting information by questionnaire, and the need for sincere cooperation of respondents in completing the questionnaire, was explained. The demographic section included questions about respondents' general characteristics such as gender, age, education level, and years of service. The last section also included specific questions about independent and

dependent variables. The researcher made questions related to the Covid-19 virus (3 questions), and the questions related to resilience were selected from a 25-item questionnaire by Connor & Davidson (2003). Also, the five-point Likert scale was used. This scale, in particular, has five points: never, rarely, sometimes, often, and always. Accordingly, the members of the statistical sample were asked to answer questions based on the Likert scale. Structural Equation Modeling (SEM) and Smart PLS software analysed the data. The reason for using this method is its capability for low volume data as well as abnormal data. In this approach, the model fit is examined in three modes: the measurement model (reliability of introducers or the factor loading of indicators, reliability including Cronbach's alpha and hybrid reliability and validity including convergent and divergent validity, structural model (coefficient of determination) and the general model (fitting goodness index). The alpha of this questionnaire was above 70%, which indicates the acceptable reliability of this questionnaire.

<b>Structure</b>	<b>Question sign</b>	<b>Factor load before correction</b>	<b>Factor load after correction</b>	<b>Reliability and validity before correction</b>	<b>Reliability and validity after correction</b>
Corona condition	q1	0.730	0.738	Cronbach's Alpha 0.763 combined reliability 0.858 divergent validity 0.669	Cronbach's Alpha 0.783 combined reliability 0.851 divergent validity 0.671
	q2	0.829	0.821		
	q3	0.887	0.891		
Resilience of small and medium-sized firms	q4	0.694	0.701	Cronbach's Alpha 0.928 combined reliability 0.937 divergent validity 0.364	Cronbach's Alpha 0.945 combined reliability 0.950 divergent validity 0.502
	q5	0.668	0.647		
	q6	0.222	-		
	q7	0.344	-		
	q8	0.243	-		
	q9	0.669	0.658		
	q10	0.292	-		
	q11	0.333	-		
	q12	0.705	0.692		
	q13	0.722	0.743		
	q14	0.720	0.751		
	q15	0.693	0.725		
	q16	0.769	0.767		
	q17	0.780	0.779		
	q18	0.742	0.744		
	q19	0.644	0.635		
	q20	0.633	0.615		
	q21	0.726	0.739		
	q22	0.799	0.811		
	q23	0.661	0.681		
q24	0.714	0.739			
q25	0.628	0.659			
q26	0.720	0.750			
q27	0.583	0.571			
q28	0.306	-			

As the information in Table 1 related to divergent validity shows, the relationship between each construct and its indices is much higher than the relationship between that construct and other ones. Thus, it can be said that the measurement model has an approved fit. Also, q6, q7, q8, q10, q11, and q28 were removed due to operating factors less than 0.4 after correction.

<b>Structure</b>	<b>Resilience of small and medium-sized firms</b>	<b>Corona condition</b>
Resilience of small and medium-sized firms	0.708	
Corona condition	0.706	0.819

Now that the research measurement model shows a good situation, it is necessary to approve the structural model fit.

## Research Findings

### Demographic Features

Analysis of demographic characteristics of respondents is shown in Table 3.

	<b>Class</b>	<b>Frequency</b>	<b>Frequency percentage</b>
<b>Gender</b>	Female	60	39.8
	Male	89	58.9
	No answer	2	1.3
<b>Status</b>	Female	127	84.1
	Male	22	14.6
	No answer	2	1.3
<b>Work experience</b>	Less than 5 years	17	11.3
	6-10 years	57	37.8
	11-15 years	21	13.9
	16-20 years	28	18.5
	More than 20 years	26	17.2
	No answer	2	1.3

The table above shows that the highest number of respondents were men, with 58.9%, 84.1% married, and 37.8% between 6 and 10 years of service.

<b>Structure</b>	<b>R Square</b>	<b>R Square Adjusted</b>	<b>Q<sup>2</sup></b>
Resilience of small and medium-sized firms	0.499	0.496	0.216

Hypothesis path	Path coefficient	Standard error	T statistic	Significance
Corona conditions <- Resilience of small and medium-sized firms	0.706	0.032	22.262	0.000

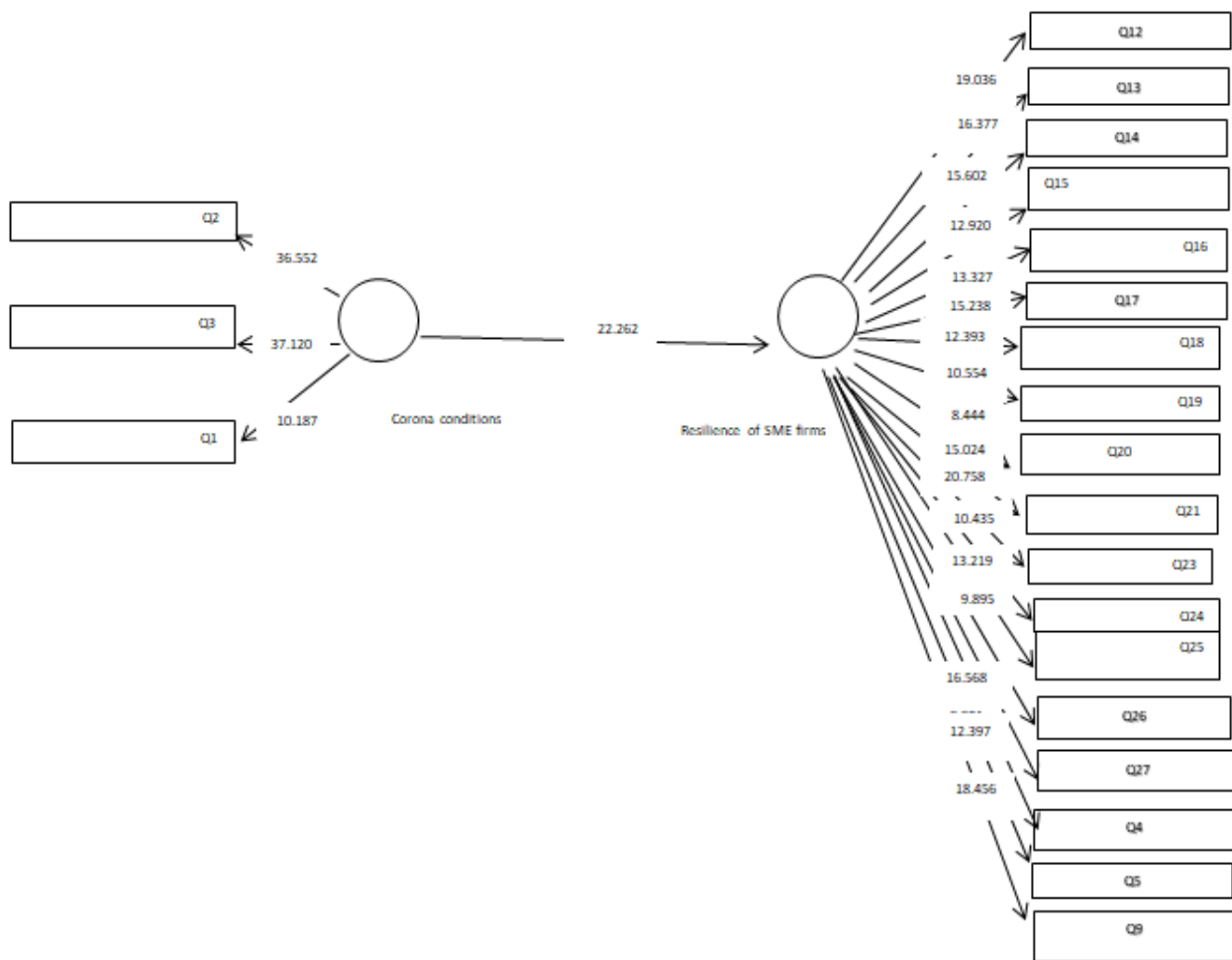
\*p<0.1; p<0.05; p<0.01; ns: Not Significant

**Testing Hypothesis**

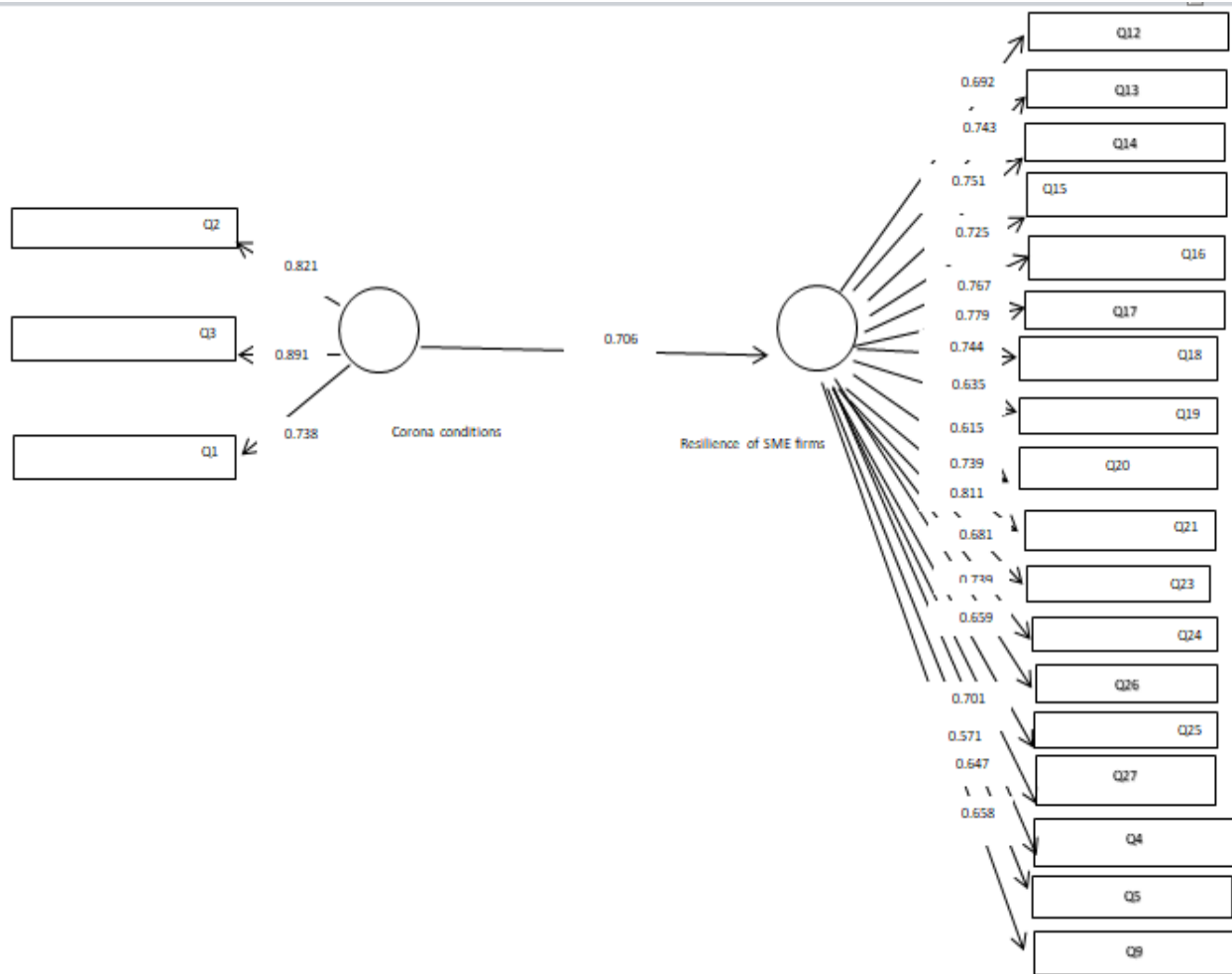
Table 4 shows the status of fit indices of the structural model for this study.

As shown in Table 4, all results are in good condition for the coefficient of determination and the Stone Geiser criterion. Therefore, it can be said that the structural model also has an approved fit.

Now that the research's measurement and the structural model show a good situation, it is necessary to test the research hypothesis. The bootstrap method based on regression in PLS has been used to test the research hypothesis. Table 5 summarizes the path coefficient, which indicates the effect of variables on each other and the significance of these coefficients.



**FIGURE 1**  
**T STATISTIC**



**FIGURE 2**  
**PATH COEFFICIENT AFTER CORRECTION**

Based on the model output and path analysis obtained in the standard coefficient mode and the significance of the model, considering that the value of the statistic (t) of the resilience of small and medium-size enterprises is greater than 2.57, it can be said at 99.99% confidence level and 0.01 error level, Covid-19 conditions affect the resilience of small and medium-size enterprises.

**DISCUSSION AND CONCLUSION**

The Covid-19 virus pandemic was a bitter experience for most businesses globally, and they were reminded that if they don't keep pace with trends and techniques, they will be doomed to fail. One of these trends is digitalization. The use of technology is to advance the business's goals and strategies and gain a competitive advantage, and perhaps, beyond that, survive and prevent bankruptcy and destruction in some businesses. The present study aimed to explore the effect of the Covid-19 on the resilience of small and medium-size companies in Iraq. In this study, the final sample of 151 employees and managers of small and medium-size companies during the Covid-19 virus pandemic were surveyed. After data collection and analysis, the



hypothesis was tested. The results showed that the Covid-19 has a significant and positive effect on small and medium-size enterprises' resilience. The results of the present study are consistent with the results of Prohorovs (2020); Nomita (2020); Qamruzzaman (2020). This indicates that companies have come to the aid of businesses by having alternative programs and pre-determined scenarios in this direction. On the other hand, the Covid-19 conditions in which the company may have trouble financing have increased businesses' resilience. The power of business cooperation and creating a better working environment with partners, suppliers, distributors, and buyers have enabled small and medium-size companies to stand up to the Covid-19 while having various protections. According to the research findings, managers of small and medium-size companies are recommended to continue their activities by observing health protocols and a minimum of employees. It is also recommended to use postal services to send customer orders and attract online customers due to the existing Covid-19 limitations. For future research, it is suggested that this research study in different industries and examine the impacts of the Covid-19 on the resilience of small and medium-size enterprises with the mediating variable of government support. One of the limitations of this study was the lack of cooperation of some respondents to the resolved questions.

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