

COVID-19 impact and firm reactions towards crisis: Evidence from a transition economy

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Abstract

PURPOSE: The new situation arising from the COVID-19 pandemic has brought many difficulties for companies worldwide. To combat the pandemic, governments have enforced lockdown and closure of businesses, and in response, companies have developed various reactive strategies to ensure their survival. The purpose of this study is twofold: to examine the impact of COVID-19 on firms and examine firm reactions towards the COVID-19 crisis. The study analyses the impact of COVID-19 on firm size, ownership type, and industry characteristics. Secondly, to analyze firm reactions based on four components: technological preferences, strategic behavior, management practices, and social networks. **METHODOLOGY:** This study employs a quantitative method, using a survey of 320 firm owners and managers conducted in Kosovo by the Institute of Entrepreneurship and Small Business. **FINDINGS:** Findings suggest that income dropped significantly for SMEs based on the firm size. Based on industry characteristics, findings show that all industries have been influenced negatively. Regarding the ownership type, findings suggest that family firms are more affected by COVID-19 than non-family firms. Factor analysis suggests that the

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*technological preferences, managerial practices and strategic behavior, and social networks effectively responded to the crisis derived from COVID-19. Findings also suggest that firms did not employ a single reaction (e.g., technological change) but combined several reactions where one reaction led to another reaction that proved effective and led to firm survival during the crisis. **IMPLICATIONS:** The implications of this study are as follows: firstly, this study examines the impact of COVID-19 and, at the same time, firm reactions to the crisis; secondly, contrary to previous studies, this study shows that all industries have been influenced negatively, including all SMEs; thirdly, this study shows that ownership type was an important factor concerning the impact of COVID-19, where family firms were influenced more than non-family firms; this is due to the distinct characteristic of organizational structure that family firms have, including the involvement of members of family firms. Last, this study shows that a single reaction of firms does not lead to survival, but the chain of reactions combined with dimensions shown above. **ORIGINALITY/VALUE:** Despite growing theoretical and empirical literature about COVID-19 and firms, this study shows the impact and firm responses towards the crisis of COVID-19. Furthermore, focusing on the context of Kosovo, the study contributes to the challenges that firms face in different cultural and institutional settings.*

Keywords: COVID-19 impact, firm reactions, technological preferences, strategic behavior, management practices, social networks, Kosovo.

INTRODUCTION

The outbreak of COVID-19 in early 2020 has influenced the global economy, leading many countries into recession. Governments around the globe responded by introducing a 'lockdown of economies' to stop the spread of the virus, leading to the deepest global recession since the last world war (World Bank, 2020). The enforced lockdown and closure of businesses in response to the COVID-19 pandemic has resulted in economic crises, bringing attention to entrepreneurship and its importance to economic recovery (Krasniqi et al., 2021). As a result, many governments took radical policies and responded to the crisis by introducing more than 1,600 policy responses to stimulate the private sector (Cirera et al., 2021). According to estimates, the global economic output for 2021 will be 4 percent higher despite these policy measures, but it will be 5 percent below pre-pandemic projections. Based on these projections, the pandemic impact will have a long-lasting negative impact on the economy, with a growth rate projected at 3.8 percent in 2022. In addition, low-income countries will face uncertain growth outcomes as these countries face several challenges, and the recovery from the pandemic will be slow, where the output is estimated to be 5.2 percent below pre-pandemic projections 2021 (World Bank, 2021).

Governments during the crisis supported the economy through various incentive schemes to lower the short, medium, and long-term consequences. In comparison to the global financial-economic crisis of 2008 that influenced firms and industries negatively (Roper & Turner, 2020; Cowling et al., 2015; Bartz & Winkler, 2016; Burger et al., 2017), the current crisis differs in many aspects from the previous crisis, as firms faced a shortage of supply, uncertainty, and the lockdown of the economy to respond to increased cases of COVID-19 (Donthu & Gustafsson, 2020; Belhadi et al., 2021). Studies show that COVID-19 has hampered firms and industries negatively and they face liquidity challenges (De Nicola et al., 2021; Shen et al., 2020; Ahmad et al., 2021), particularly threatening the survival of small and medium-sized enterprises (SMEs), which comprise 90% of businesses worldwide and contribute to 70% of total employment worldwide (Stephan et al., 2020). SMEs play a significant role in generating innovation, especially growth-oriented firms, and should be the focus of policymakers (Hashi & Krasniqi, 2011; Krasniqi & Desai, 2016). In this vein, policymakers, owners and managers must understand how firms respond to the crisis (Ebersberger & Kuckertz, 2021). Emerging entrepreneurship literature suggests that firms build immediate response strategies to mitigate the risk and ensure survival. Studies maintain that common firm responses during the COVID-19 were: digitalization (Guo et al., 2020; Ahmad et al., 2021) and a focus on innovation to respond to the emerging needs of customers (Hanisch & Rake, 2021; Liu et al., 2021; Ferrigno & Cucino, 2021).

Despite the growing body of literature, there is a gap on the impact of COVID-19 and firm responses in different contexts worldwide. Cirera et al. (2021) argue that lessons learned from the previous crisis (e.g., the financial crisis in 2008) are essential sources of evidence for policymakers and practitioners to respond to the first response phase. Drawing on data from in-depth research based on multiple case studies, Domi and Krasniqi (2019) showed that small firms had successfully chosen to diversify and expand into new business areas to compensate for low demand during the previous financial crisis. However, policymakers and practitioners lack data and evidence regarding the design of policies and responses to the pandemic. In addition, the impact and firm responses may vary depending on the context in which firms face the challenges in low-income countries.

Based on the discussion above and the gap in the literature, the purpose of this study is twofold: Firstly, to examine the impact of COVID-19 on firms and, secondly, to examine firm responses to the crisis caused by the pandemic situation of COVID-19. For this purpose, the study utilized the recent SME survey conducted with 320 entrepreneurs by the Institute for

Entrepreneurship and Small Businesses in Kosovo in the first half of 2021. This study addresses the following research questions:

RQ1) What are the effects of COVID-19 on firms?

RQ2) What reactions did firms show against COVID-19?

The aim of this study is twofold: first is to analyze the impact of COVID-19 on firm incomes based on firm size, ownership type, and industry characteristics; second is to examine firm responses divided into four components: technological preferences (acceleration of the use of digital technologies, forcing to use e-commerce, selecting employees with high technological skills); strategic behavior (organizational learning and efficiency; firm responses to the crisis and analyzing the future potential challenges, changing strategies based on customer preferences; changing investment strategies); management practice (communication preferences, managerial changes, decision-making processes); social networks (social networks helped firms overcome the challenges; inefficient supplier relations during the pandemic).

This study contributes to the literature and an ongoing discussion on the impact of COVID-19 and firm responses to COVID-19. Regarding the impact of COVID-19, this study shows that besides firm size and industry characteristics, there is a varying impact of COVID-19 based on ownership type. Furthermore, this study contributes to the literature on firm reactions and shows that the combination of various reactions is more effective than a single firm reaction strategy to COVID-19.

The structure of this article is as follows: The first section reviews the literature on the impact of COVID-19 and firm responses; the second part presents the research method, and the third part the results of the research. The last section presents the discussion of the study, managerial and policy implications, limitations, and future research suggestions.

LITERATURE REVIEW

The impact of COVID-19 on firms

The uncertainty derived from the economic crisis directly negatively affects the national economy and firms. The survival of SMEs and large firms is crucial for economic recovery (Pedauga et al., 2021). Studies show that crises negatively influence firms of all sizes and industries (Shen et al., 2020) but are most vulnerable for SMEs where millions of jobs are at risk (Stephan et

al., 2020). COVID-19 had a significant negative impact on SMEs and firms that operated in industries that were most vulnerable to the pandemic (Belhadi et al., 2021; Eggers, 2020; Castro & Zermeño, 2020; Guo et al., 2020; Stephan et al., 2020). Specific industries, such as transportation, hotels and restaurants, are amongst the most vulnerable due to COVID-19.

COVID-19 had a considerable impact on firms' sales resulting in firm liquidity constraints and putting firms' survival at risk (Kuckertz et al., 2020). This negative impact on firms is related to several factors: disconnected supply chain, the challenges that firms face regarding logistics, the lack of critical resources, price distortions, customer pessimism, the lack of trust in global trade, and government restrictions (Morgan et al., 2020). Apedo-Amah et al.'s (2020) study shows that the impact of COVID-19 on firms was on sales as the virus continued spreading, financial instability due to the decrease in income, employment adjustment, and an increased reliance on digital platforms as a response to COVID-19.

The impact of COVID-19 differed among firm and industry characteristics. For example, firms operating in vulnerable industries that were influenced negatively by pandemic situations had lower cumulative abnormal returns characterized by fixed assets and a high percentage of institutional investments (Rapaccini et al., 2020). Industries such as tourism, catering, transportation, and food and beverage experienced a pronounced decline in production, operations, and sales (Chowdhury et al., 2020; Shen et al., 2020). Industries such as construction, information transfer, computer service and software, and health care did not experience adverse effects COVID-19 (Guo et al., 2020). This study also shows that larger firms experienced a lesser decline in their sales than private, state-owned, and foreign-owned firms. In addition, Kuckertz et al. (2020) report that the crisis did not influence some firms, as the relevance of their way of doing business remained resilient and already took measures to respond to the crisis.

Due to the uncertainty that the pandemic produced around the world, firms adopted various reaction strategies to respond to the negative impact of COVID-19 and ensure their survival. The following section reviews the literature on firm reactions based on four components: technological preferences, strategic behavior, management practices, and social networks.

Firm responses as a source of survival towards COVID-19

As soon as the crisis of COVID-19 emerged, firms employed various response strategies to ensure their survival and attempt to leverage from the crisis. Although COVID-19 did not have a uniform impact across industries and firm sizes, it caused uncertainty for all firms and industries in the world. The

uncertainty derived from the crisis may hinder the ability of entrepreneurs to discover new opportunities (Bartz & Winkler, 2016; Nguyen et al., 2021) even though these exogenous shocks like COVID-19 may have an impact on entrepreneurial opportunities (Morgan et al., 2020; Kuckertz et al., 2020), the resilience of entrepreneurs and the skills they have shown lead firms to adopt and build strategies to face the challenges (Castro & Zermeño, 2020).

Due to the restrictions implemented to avoid increasing COVID-19 cases, namely social distancing, firms employed digital technologies as a source of their competitive advantage (Guo et al., 2020; Ahmad et al., 2021). At an industry level, findings show the automobile industry's mitigating strategy was to develop localized supply and take advantage of advanced 4.0 technologies. The airline industry responded to the crisis by defining their operations within the airports and flights. For these two industries, Big Data Analytics played an essential role in offering information regarding supply chains and overcoming the challenges derived from COVID-19. In addition, the cooperation among supply chain stakeholders and employing advanced technologies were critical factors in managing the risks of pandemics (Belhadi et al., 2021). However, firm responses through digitalization and building resilience need adequate elasticity and IT infrastructure, ensuring enough human resources to manage wide-range interruptions (Rapaccini et al., 2020).

There was some common strategic behavior that firms employed to cope with uncertainty, leverage from the crisis, and ensure survival and competitive advantages. Among these were focusing on learning and increasing firm efficiency, responding to the situation by analyzing the potential future challenges, changing strategies according to customer needs, and changing their investment strategies. Analyzing the crisis and the potential challenges that could derive in the near future is crucial for the firm. During COVID-19, firms face financial crises resulting from the negative impact that may reflect in their survival (Cowling et al., 2020). Even if start-ups take advantage of the current crisis and focus on innovation in the long term, they may be exposed to risks. Therefore, a combination of policy measures and providing (removing) cash flow, in the long run, can create a friendly ecosystem for beginners (Kuckertz et al., 2020). This is related to the uncertainty that the COVID-19 outbreak has brought, creating a new situation where the short-term consequences are somehow known, but in the long term, uncertainty is evident. Nagarajan and Sharma (2021) show that COVID-19 has a cross-industry and cross-economic impact, and firms with a higher proportion of foreign assets may experience more significant long-term losses.

Firms focused on strategic behavior by changing their strategies and adapting them according to customer needs, created by urgent circumstances derived from COVID-19. The emergence of COVID-19 leads to new innovative

solutions, significantly as the changing environment changes the innovation environment and other challenges it brings to the world economy and people worldwide (Ebersberger & Kuckertz, 2021). Introducing new products, new services, and new ways of doing business will be crucial to overcoming the pandemic crisis (Roper & Turner, 2020). During COVID-19, firms used various coping strategies, and one mechanism when the crisis began (Kraus et al., 2020) was to focus on innovation by introducing new products among these strategies. The focus on innovation was a necessary response to the pandemic, followed by firms in the health sector (Hanisch & Rake, 2021). During this period, new opportunities emerged for firms that produced hygiene products and developing digital work solutions (Kuckertz et al., 2020). The innovation trends highlighted during this period include the intersection of health, data, urbanization, and connecting the world through online or offline and commerce (Ebersberger & Kuckertz, 2021).

Firms changed their investment strategies to maximize the crisis by introducing new products. For example, the purpose-led actions by firms in the short-term may focus on fighting the crisis by producing products for the benefit of society in the short term. In contrast, these short-term, purpose-led actions may influence firms positively, where firms connecting their short term activities may focus on medium-term R&D innovation and manufacturing strategies (Ferrigno & Cucino, 2021). Another study shows that start-ups responded faster to opportunities derived from the crisis than more established firms or research institutions (Ebersberger & Kuckertz, 2021).

Regarding communication preferences, and depending on firm size, findings suggest that digitalization positively influenced SME's performance (Guo et al., 2020). This communication preference enables firms to respond more quickly to changes in the market and customers' needs and demands. Managerial changes in changing the managerial team or changing decision-making process practices are essential reaction strategies for firms. The emergence of COVID-19 influenced the firm's innovation management and decision-making process. Building resilience and decision-makers' ability to take risks is crucial when designing response strategies (Guderian et al., 2021). Studies show that senior management and the ability of firms to diffuse technological infrastructure had a positive impact on firms' digital transformation and organization performance (Ahmad et al., 2021). Another study shows that in contrast to openness to change and proactiveness of firms, creativity, the ability of a firm to take risks, and the orientation towards the future had a positive impact on firm performance (Zainal, 2020).

In this vein, the way in which firms saw the crisis and built crisis management was an essential coping strategic reaction. Kraus et al.'s (2020) study shows that for strategic reflections, family firms employed

retrenchment in the short term during the lockdown, which were valuable and focused on process streamlining. Preserving in the short term was used as a reactive strategy to operative crisis management, and in the long term, reflection. Innovation in the short term was mainly used to temporarily adjust the business model. These strategies depended on situations, and in some cases, firms followed a crisis management strategy despite the low impact of crisis which went beyond preserving. Hence, the entrepreneurial orientation of the management team was of crucial importance to help the firm see the crisis as an entrepreneurial opportunity.

Rapaccini et al. (2020) proposed a four-stage model for crisis management to respond to the crisis derived from COVID-19. The first stage is 'Calamity,' which consists of understanding the phenomenon, increasing awareness inside the firm, and responding accordingly. The second stage is 'Quick and Dirty' and the key here is agility, during which phase the firm aims to increase the safety protocol inside the firm. The third stage is 'Restart,' which is related to elasticity and the firm is organized to restart the business and respond to customer needs during this phase. The last phase is 'Adopt to Next Normal,' which is related to redundancy, during which phase the firm aims to adapt its strategies to new circumstances and enter into a normality phase.

Leveraging from social networks was an important factor for firms to cope with the crisis derived from COVID-19. Social networks are crucial for survival during and post COVID-19 by managing their relations with buyers and suppliers (Sharma et al., 2020). The relational capabilities to mobilize internal resources and combine them with external resources through their networks, including the goodwill of partners, joint support of the start-up community, and using brokers to access social capital, were crucial for firms to overcome the crisis (Kuckertz et al., 2020). The support of social networks depended on the characteristic of their relations before COVID-19. For example, during the crisis, weak ties had little or no impact, which then forced the firms to seek new relationships. In contrast, strong ties increased their resilience, supported each other by developing new relationships. At the same time, they could be an essential factor to build new business model transformations for the firm (Fath et al., 2021). Another important factor for firms was co-opetition, which played a crucial role for retailers through the sharing of information about stock levels, or pharmaceutical firms cooperating to develop vaccines, technological firms cooperating on food production, and the alliances built by charities for a joint cause to fight the virus, were other examples of networks (Crick & Crick, 2020).

METHODOLOGY

In line with the aim and research questions, this study employs a quantitative methodology strategy to analyze the impact of COVID-19 on firms and firm reactions towards the crisis caused by COVID-19. The study uses firm survey data collected by Institute for Entrepreneurship and Small Business (IESB) with 320 business owners/managers in January-March 2021 in ten major cities in Kosovo. The purpose of the survey is to examine the impact of COVID-19 on business activities, identify company reactions, and make policy and managerial recommendations. The questionnaire consists of 32 questions divided into six main topics. Besides the demographic questions, the questionnaire was designed to measure the impact of COVID-19 on firm managerial practices, human resources, technology, strategic behavior and social networks. Within these dimensions, the study focuses on the types of reactions adapted by a firm based on the impact of COVID-19. Thirty-two questionnaire items are used for factor analysis. The items with a factor load of less than 0.45 were excluded as a result of the factor analysis.

Sample

This selected sample was randomly drawn from the electronic database of active taxpayers kept at the Kosovo Tax Administration. Google form questionnaire is used to send an electronic questionnaire to companies that are active taxpayers. The number of active taxpayers during 2020 was 52,839, whereas the number of passive taxpayers was 49,142. Based on active taxpayers, the percentage of selected firms in this study was 0.61 percent in the total population of active taxpayers. The questionnaire was sent to 553 firms, of which 320 completed the questionnaires, leading to a response rate of 57.87.

Before designing the survey, we conducted a detailed literature review analyzing various country-level reports on the impact of COVID-19 on the economy. The purpose of searching the literature and analyzing the reports was to design the questionnaire and use the questionnaires used by other studies, but always consider the Kosovo context. After reviewing the reports and detailed literature, we asked for the opinions of local experts regarding the designed questionnaire. In this study, we designed it by considering the time the survey took place and the crisis faced by the companies. After the questionnaire design, the Institute of Entrepreneurship and Small Business and Business Support Center Kosovo provided experts' support and opinions for topics raised in the survey. The survey instrument is based on a Likert scale, taking a minimum value of 1 and a maximum of 5. Before conducting

field research, a research team first implemented a pilot project and sent the questionnaire to 30 companies to ensure the structural validity of the research questions. The results obtained from the pilot project showed that the questionnaire is sufficient in terms of content and structural validity, except for the human resources management dimension. The Cronbach alpha, which determines the reliability values of the questionnaires, is expected to be at least 0.600 or above. The alpha values of the four sub-dimensions of the questionnaire are between 0.624-0.736. These data show that the survey is reliable (see Table 4 for the Cronbach alpha values).

Data analysis

In this study, the R-based Jamovi Program and SPSS 21 software were used to analyze the data, produce the frequency tables, and then examine whether the data fulfilled normal distribution criteria. We checked the normal distribution of data usage in arithmetic mean, mode, median, skewness, and kurtosis coefficients (Hair et al., 2013). The skewness and kurtosis coefficients of the data being in the range of ± 1.5 indicated that the data were distributed normally (Tabachnick et al., 2007). Then we performed other analyses such as frequency analysis, difference analysis (t-test and One-Way ANOVA), correlation analysis, factor analysis, and reliability analysis.

RESULTS

Descriptive statistics

Based on the data from 320 firms, this selected sample based on firm size is as follows: 56.9% of the firms have 0-49, 35.3% 50-249, 6.6% 250-499, 4% have 500-1000 employees. Hence, based on the distribution of these data, 92.2% of firms consist of SMEs, and 7.8% consist of large firms. Concerning the ownership structure, 65.3% are family firms, and 34.7% are non-family firms. The distribution of firms is based on industries where they operate, 34.1% of the firms are in manufacturing, 47.8% are in services, and 18.1% are in retail industries. In addition, 52.5% of our sample operate in urban areas, whereas 47.5% in rural areas.

Table 1. Demographic indicators (N 320)

Number of employees	Number of employees	Firms incomes during 2020 (in Euro)	Firms incomes during 2020 (in Euro)
0-49	0-49	0-50,000	0-50,000
50-249	50-249	50,001-249,000	50,001-249,000
250-499	250-499	250,001-500,000	250,001-500,000
500-1000	500-1000	500,001-1,000,000	500,001-1,000,000
Ownership type	Ownership type	1.000.001 and over	1.000.001 and over
Family firm	Family firm	COVID-19 influenced our firm (%)	COVID-19 influenced our firm (%)
Non-family firm	Non-family firm	Income decrease	Income decrease
Industry type	Industry type	0-20 %	0-20 %
Manufacturing	Manufacturing	21-40 %	21-40 %
Services	Services	41-60 %	41-60 %
Retail / Wholesale	Retail / Wholesale	61-80 %	61-80 %
Location of firm	Location of firm	Does your firm export?	Does your firm export?
Urban	Urban	No	No
Rural	Rural	Yes	Yes
Year of firm establishment (Mean year)	Year of firm establishment (Mean year)	Do you plan to export?	Do you plan to export?
		No	No
		Yes	Yes

As shown in Table 1, the incomes that firms declared during 2020 are as follows: 26.6% of the companies are between 0-50,000 Euro, 43.1% are between 50,001-249,000 Euro, 22.8%, are between 250,001-500,000 Euro, 6.6% are between 500,001-1,000,000 Euro and 0.9% declared over 1,000,001 Euro. Findings also show that the vast majority of firms (85.9%) declared that COVID-19 influenced their finances negatively. Based on income decrease, findings show that 42.5% declared that their incomes decreased by 0-20%, 30.0% declared their incomes decreased by 21-40%, 23.4% of firms declared their incomes decreased by 41-60%, and 4.1% stated that their incomes decreased by 61-80%. In addition, findings also show that 19.1% are exporting firms while 20.9% of firms plan to export in the near future. However, 80.9% of firms stated that their main market is the domestic market.

Difference analysis of variables

Table 2 shows the difference analysis, and findings suggest that variables that differ significantly in the degree of exposure to COVID-19 are ownership type and income decrease. Findings also show that family firms were affected more than non-family firms ($p < 0.026$) by COVID-19. Based on firm incomes, firms that declared a decrease of incomes of 21-40% during COVID-19 ($p < 0.000$) were the most affected by COVID-19. In addition, findings show no difference between the degrees of exposure of different groups to COVID-19 based on variables such as the exporting firms or firms that plan to export, location, the industry where firms operate, and the number of employees ($p > 0.05$).

Table 2. Difference analysis of variables

Number of employees	Results (n, %)	P-value
0-49	182 (56.9)	0.293
50-249	113 (35.3)	
250-499	21 (6.6)	
500-1000	4 (1.2)	
Ownership type		
Family firm	209 (65.3)	0.026
Non-family firm	111 (34.7)	
Industry type		
Manufacturing	109 (34.1)	0.0526
Services	153(47.8)	
Retail/Wholesale	58 (18.1)	
Location of firm		
Urban	168 (52.5)	0.658
Rural	152 (47.5)	
Does your firm export?		
No	259 (80.9)	0.547
Yes	61 (19.1)	
Do you plan to export?		
No	253 (79.1)	0.447
Yes	67 (20.9)	
How much was your firm incomes during 2020?		
0-50,000 Euro	85 (26.6)	0.326
50,001-250,000 Euro	138 (43.1)	
250.001-500.000 Euro	73 (22.8)	
500.001-1.000.000 Euro	21 (6.6)	
1,000,001 and over Euro	3 (0.9)	

Income decrease		
0-20%	136 (42.5)	
21-40%	96 (30.0)	0.000
41-60%	75 (23.4)	
61-80%	13 (4.1)	

Correlation analysis

The factors included in the correlation analysis are management practice, technological preferences, strategic behavior and social network (Table 3). Findings show that there is a weak positive relationship between management practices and firm technological preferences. These findings show that during COVID-19, firms changed their management practices using digitalization to respond to the crisis of COVID-19. Findings also suggest that there is a weak positive relationship between management practices and strategic behavior. A stronger positive relationship is found between technological preferences and strategic behavior. This result shows that firm strategic behavior moved towards employing new technologies as a strategic response to the crisis. In addition, findings show that there is a negative relationship between social networks and management practices.

Table 3. Correlation analysis

		MP	TP	SB	SN
Management practices	Pearson's r	—			
	p-value	—			
Technological preferences	Pearson's r	0.257***	—		
	p-value	< 0.001	—		
Strategic behavior	Pearson's r	0.247***	0.348***	—	
	p-value	< 0.001	< 0.001	—	
Social network	Pearson's r	-0.17**	-0.057	0.013	—
	p-value	0.002	0.31	0.819	—

Note: * p < 0.05, ** p < 0.01, *** p < 0.001; MC: Management Practices, TP: Technological Preferences, SB: Strategic Behavior, SN: Social Network.

Factor analysis

We performed the Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy test and examined p-values to find whether the questionnaire consisting of 29 items was suitable for factor analysis (Table 4). The results show an

acceptable KMO value of 0.732 (Barlett test; and Sig. 000), suggesting the use of explanatory factor analysis. The main components in the questionnaire were analyzed, and items were returned with the varimax method. After this process, four dimensions were obtained with an eigenvalue of 1 or above. These dimensions are named: technological preferences, management practice, strategic behaviour and social network. The total variance extracted from the scale is 57.432%. In social sciences, the range of 40% to 60% is accepted as adequate for total variance extracted (Karagöz, 2017). In this regard also, the scale can be said to satisfy the necessary conditions to be used.

Moreover, factors are determined based on eigenvalue, too. According to the Joliffe criterion, an eigenvalue of not less than 0.7 is acceptable (Karagöz, 2014). In this study, the smallest eigenvalue was found to be 1.254. This shows that the scale has an appropriate factor distribution. 16 statements with factor loadings below 0.45 were eliminated.

Table 4. Factor analysis and explained variance

Kaiser–Meyer–Olkin measure of sampling adequacy		0.732	
Bartlett's test of sphericity	Approx. chi-square	961,84	
	df	78	
	p	0.00	
Total variance explained (% 57,432)	Cronbach's alpha	0.737	
	Factor load	Explained variance	Cronbach's Alpha
Technological Preferences (Eigenvalue 3.352)		24.698	0.736
Accelerated use of digital technologies	0.713		
Forced use of e-commerce	0.645		
Hiring employees with high technological skills	0.548		
Technological choices of the firm	0.547		
Strategic Behavior (Eigenvalue 1.727)		11.977	0.707
Organizational learning and efficiency	0.694		
The firm responded to the crisis and analyzed the potential challenges in the near future	0.657		
Changing strategies based on customer preferences	0.510		
Changing investment strategies	0.502		
Management Practice (Eigenvalue 1.607)		11.606	0.695
Communication preferences	0.903		
Managerial changes	0.685		
Decision-making processes	0.459		

Social Network (Eigenvalue 1.254)	9.15	0.624
Social networks helped the firm overcome the challenges	0.991	
Inefficiency of the supplier relations during the pandemic	0.472	

Note: Extraction Method: Maximum Likelihood; Rotation Method: Varimax with Kaiser Normalization; A Rotation converged in five iterations.

The first factor was defined as technological preferences, and accelerated use of digital technologies, forced use of e-commerce, selecting employees with high technological skills, and technological choices of the firm, were the items gathered under this factor. The second factor is identified as strategic behavior (firm-level). Evaluated under this factor were organizational learning and efficiency, the firm responded to the crisis and analyzed the potential challenges in the near future, changing strategies based on customer preferences, and changing investment strategies. The third factor was management practices, including communication preferences, managerial changes, and decision-making processes. Finally, the fourth factor was defined as social networks, which included social networks helped the firm overcome the challenges and inefficient supplier relations during the pandemic items. The first factor explains 24.70% of the variance, the second factor explains 11.98%, the third factor explains 11.61%, and the fourth factor explains 9.15% of the variance. The announced variance with four dimensions was 57.432%. After the results of the factor analysis, 16 items were extracted from the questionnaire.

DISCUSSION

The purpose of this study was twofold; firstly, to examine the impact of COVID-19 on firms in Kosovo, focusing on firm size, industry characteristics and ownership type. Secondly, to examine firm responses to the crisis based on four dimensions: technological preferences, strategic behavior, management practices, and social networks. This study employed a questionnaire, using data from 320 firms in the case of Kosovo.

Regarding the impact of COVID-19 on firms, we analyzed the impact of COVID-19 based on the firm size, industry characteristics, and ownership type. The impact of COVID-19 based on firm size suggests that 92.2% of SMEs reported that their incomes decreased. These findings are in line with previous studies (Pedauga et al., 2021; Stephan et al., 2020; Shen et al., 2020; Krasniqi et al., 2021; Nguyen et al., 2021), suggesting that SMEs are vulnerable to COVID-19 and face challenges to ensure firm survival and sustainability due

to decreased incomes and low performance. It is important to emphasize that SMEs in Kosovo faced constant growth challenges even during the pandemic situation (Krasniqi, 2007) due to the failed attempt of the government to ensure a stable institutional and business environment (Kryeziu & Coşkun, 2018). The pandemic situation has worsened the situation of SMEs and firms from all industries. Findings suggest that, based on the characteristic of industries, all industries have been influenced negatively by the crisis of COVID-19. These findings are not in line with Shen et al. (2020) and Chowdhury et al. (2020), who suggest that COVID-19 influenced particular industries that were more vulnerable to the pandemic situation. The possible explanation on why all industries in the case of Kosovo have been negatively influenced is that industries are not as developed due to the lack of technological capabilities and focus on becoming more competitive in international markets, due to uncertainty in the business environment and a lack of consistent pro-market reforms (Kryeziu & Coşkun, 2018; Krasniqi, 2007).

Based on ownership type, findings suggest that family-owned firms were more negatively influenced by COVID-19 than non-family firms. The explanation is possibly down to the distinct organizational structures that family firms have, family members' decision-making, and control of the family firm (see: Astrachan, 2010; Zahra & Sharma, 2004). As a result, family firms may have found it more challenging to respond to the negative impact of COVID-19 and adapt to new circumstances derived from COVID-19. Furthermore, another explanation may be that the current situation derived from COVID-19 may reinforce the resource constraints of family firms and the danger of losing family socio-emotional wealth. They also suggest that, as a result, family firms may display behavioral changes that may impact their organizational level, such as building new alliances, adopting digital platforms, and increasing the firm's adaptive capacity. These findings also are in line with the current discussion in family business literature (Soluk et al., 2021; De Massis & Rondi, 2020) and support previous studies and show that firm characteristics may be important factors during the recession (Cowling et al., 2015; Bartz & Winkler, 2016).

The second purpose of this study was to examine firm reactions to the crisis derived from the COVID-19 pandemic situation. Findings suggest that the first firm reaction focused on changing technological preferences, accelerating digital technologies, using e-commerce, selecting employees with high technological literacy, and using other technology choices. The use of technologies was typical for all firms, as the social distancing imposed by government restrictions forced firms to react accordingly and respond to customer needs and the source of their survival. These findings support previous studies that suggest that employing technology was the primary

response strategy to the crisis and had positive outcomes (Ahmad et al., 2021; Guo et al., 2020; Kraus et al., 2020; Rapaccini et al., 2020) as firms could respond more quickly to the crisis, and was employed as an exit strategy from the crisis (Guo et al., 2020). Findings also support the study from Rapaccini et al. (2020) that suggests that firms' sales decreased during COVID-19, and in response, firms focused on e-commerce to increase their sales. These findings align with Alves et al. (2020), who suggest that small firms' strategic responses, such as reducing costs, increasing efficiency, and increasing communication with customers, are essential strategic responses of companies in responding to the COVID-19 outbreak situation. In addition, these findings support Foss's (2020) claim that the use of technologies shapes organizational design.

The second firm reaction was strategic behavior as a response to the crisis. Findings suggest that firms focused on organizational learning and efficiency, analyzing the potential challenges in the near future, and changing strategies according to customer preferences combined with changing investment strategies. The possible explanation regarding organizational learning and efficiency, including analyzing challenges in the near future, is related to technological preferences, where firms focus on the digitalization of firms and increasing their efficiency. These responses lead firms to change strategies according to customer needs and change investment strategies. These findings contribute to the literature and show which strategic behavior firms employed to respond to the crisis and supports the literature that the speed of firm reaction was crucial for firm survival during COVID-19 (Castro & Zermeño, 2020; Roper & Turner, 2020). These findings align with Tortorella et al. (2021), who suggest the importance of organizational learning as an essential component of strategic behavior during COVID-19. It is important to emphasize that the change of investment strategies is not directly related to investing in innovation as previous studies suggest (Hanisch & Rake, 2021; Ebersberger & Kuckertz, 2021; Ferrigno & Cucino, 2021), but firms focusing on investing in technological preferences, hence, integrating technological preferences with firm strategic behaviour. Furthermore, another possible explanation of why firms in Kosovo focused on these strategies is that they may lack internal capabilities, financial stability, the lack of internal intellectual capital, and the experience to respond to opportunities in the market.

The response to the crisis through technological preferences and strategic behavior was also reflected in firm management practices, which was the third response to the COVID-19 crisis. Findings suggest that management practices changed by focusing on communication preferences, managerial changes, and decision-making processes. These responses are combined with reactions, as mentioned earlier. For example, digitalization

leads to a change of communication preferences within and outside the firm, the managerial changes needed to build a more effective reactive strategy, and last, this influenced the decision-making process. These findings support previous studies suggesting the importance of change in managerial practices as a firm response to the crisis (Zainal, 2020; Guderian et al., 2021; Kraus et al., 2020). However, although significant, the change in managerial practices was not at an advanced level, such as building a crisis management team and developing plans in detail, as other studies suggest (see Kraus et al., 2020; Rapaccini et al., 2020). The possible explanation is inexperience and the size of firms, namely SMEs, the mindset of doing business, and most importantly, the context where these firms operate.

The last firm reaction was maximizing social networks. Findings suggest that social networks were an essential factor in the response to the crisis. During the crisis, evaluating the extent suppliers was effective and, as a result, old suppliers were replaced with new ones to respond more effectively to the crisis. These findings contribute to the literature and show the vital role of social networks during COVID-19 (Kuckertz et al., 2020; Sharma et al., 2020; Fath et al., 2021). These findings align with scholars suggesting that firms restructured their relationship with suppliers (Chowdhury et al., 2020; Sharma et al., 2020), and these relations may help the firm build new business transformations (Fath et al., 2021).

CONCLUSION

Policy implications

Several policy implications derive from this study. The policy implication is related to the negative impact that the COVID-19 crisis had on family firms compared to non-family firms and SMEs in general. Family firms comprise a vital contribution to the world's economy (La Porta et al., 1999; Rovelli et al., 2021), including SMEs. A drastic decrease in income in family firms and SMEs directly influences their cash flow, which influences their relations with their suppliers. Therefore, when designing policies, policymakers need to focus on firms' liquidity problems and provide policies such as tax delays, incentives, grants, and loans favorable for firms.

The ability of firms to react to the crisis through new management practices, employing new technologies, and strategic behavior is promising that firms could cooperate with relevant institutions and coordinate their activities to overcome the impact of the COVID-19 crisis. Hence, the government needs to build effective communication with the private sector,

analyze their current situation, focus on the latest data, and recommend policies accordingly. In addition, according to this study's findings, the use of digital technologies in firms has increased due to the COVID-19 crisis. Therefore, policymakers can support these firms through policies to increase advanced technologies and help firms change their business models.

Another policy implication is related to lessons learned and how firms changed their behavior accordingly. The communication between policymakers and the private sector may increase the speed of overcoming the crisis and offer more tailor-made policies for SMEs in the post-pandemic world. This cooperation between policymakers and the private sector is crucial as 80.9% of firms in our study depend on the domestic market. Therefore, designing policies to promote exports on the one hand, and increase the buying power of customers on the other, may help the country lower the negative impact of the pandemic in the national economy in the shorter term.

Managerial implications

Three primary common responses characterize firms: changing investment strategy, focusing on digitalization, and the inadequacy or inefficiency of existing supplier relationships. The first managerial implication concerns investment strategies. An essential reaction in the short term may prove to be a 'backlash' for firms in the medium and long term. For this reason, managers need to focus on the medium and long term and make decisions accordingly. The second managerial implication is the digitalization of firms. We advise managers to use the company's digitalization as the first step and increase their efforts towards innovation, considering the demand in the domestic and foreign markets by developing existing products or designing new ones after the pandemic. The third managerial implication concerns social networks. In addition to developing supplier relationships that will increase their innovation capabilities after the pandemic, managers should focus on developing crisis-resistant, trust-based and efficient supplier relationships in the medium and long term.

Limitations and future suggestions

The study contributes to the entrepreneurship and SME literature by investigating the entrepreneurial reaction during the COVID-19. However, it has several limitations. The first limitation is related to the survival bias. The study does not capture the bankrupt firms during the crisis or due to the crisis (Lajqi & Krasniqi, 2017; Krasniqi, 2010). Second one, given that the pandemic is lasting, we still do not know the overall effect on firms and the economy.

The third limitation, methodologically, stems from the use of a cross-sectional study method. Cross-sectional studies reveal the current status of the investigated phenomenon by collecting data on research variables at once (Jap & Anderson, 2004; Podsakoff et al., 2003). This data collection technique does not examine the longitudinal changes and developments in the cases studied (Rindfleisch et al., 2008). However, the uncertainty and problems in the COVID-19 process make a longitudinal study especially difficult. The closures that businesses experienced in specific periods made the data collection process very limited. Therefore, it was preferred to conduct cross-sectional research to reveal the current situation and present a roadmap to policymakers and businesses.

Despite limitations, the study stimulates the discussion and opens the way for future studies. Future studies should consider examining the impact of the pandemic in other contexts, allowing heterogeneity of institutional settings and policy responses to crises to be brought into the discussion. A second, future suggestion is related to the digitalization of firms and how firms changed their organizational structures and management practices accordingly. This is particularly important in family firms with family members' involvement and the extent to which family members are willing to change previous managerial practices and organizational structure. A third, future suggestion is related to social networks where, as shown in this study, firms did not expect suppliers support and, hence, searched for new suppliers to adapt to the crisis of COVID-19. Therefore, it would be interesting to expand on this and investigate whether firms changed their logic of selecting social networks and focusing on knowledgeable and experiential networks to help the firm become innovative. Our last, future suggestion relates to methodology, in that we would recommend the examination of case studies to show firm reactions longitudinally.

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Abstrakt

CEL: Nowa sytuacja wynikająca z pandemii COVID-19 przyniosła firmom na całym świecie wiele trudności. Aby zwalczyć pandemię, rządy wprowadziły blokadę i zamykanie przedsiębiorstw, a w odpowiedzi firmy opracowały różne strategie reagowania, aby zapewnić sobie przetrwanie. Cel tego badania jest dwojaki: zbadanie wpływu COVID-19 na firmy i zbadanie ich reakcji na kryzys COVID-19. Ponadto analiza wpływu COVID-19 na wielkość firmy, rodzaj własności i charakterystykę branży oraz reakcje firm w oparciu o cztery elementy: preferencje technologiczne, zachowania strategiczne, praktyki zarządzania i sieci społeczne. **METODYKA:** Niniejsze badanie wykorzystuje metodę ilościową z wykorzystaniem ankiety przeprowadzonej w Kosowie przez Instytut Przedsiębiorczości i Małego Biznesu wśród 320 właścicieli i menedżerów firm. **WYNIKI:** Ustalenia sugerują, że w oparciu o wielkość firmy dochód w przypadku MŚP znacznie spadł. Na podstawie cech branżowych wyniki pokazują, że wszystkie branże zostały dotknięte negatywnym wpływem. Jeśli chodzi o rodzaj własności, ustalenia sugerują, że firmy rodzinne są bardziej dotknięte przez COVID-19 niż firmy nierodzinne. Analiza czynnikowa sugeruje, że preferencje technologiczne, praktyki menedżerskie i zachowania strategiczne oraz sieci społeczne skutecznie zareagowały na kryzys wywołany przez COVID-19. Wyniki sugerują również, że firmy nie zastosowały jednej reakcji (np. zmiany technologicznej), ale połączyły kilka reakcji, w których jedna reakcja doprowadziła do innej, która okazała się skuteczna i doprowadziła do przetrwania firmy podczas kryzysu. **IMPLIKACJE:** Po pierwsze, badanie to analizuje wpływ COVID-19 i jednocześnie stanowcze reakcje na kryzys. Po drugie, w przeciwieństwie do poprzednich badań, niniejsze badanie pokazuje, że wszystkie branże zostały dotknięte negatywnym wpływem, w tym wszystkie MŚP. Po trzecie, badanie to pokazuje, że rodzaj własności był ważnym czynnikiem wpływu COVID-19, gdzie firmy rodzinne były pod większym wpływem niż firmy nierodzinne; wynika to z wyraźnej charakterystyki struktury organizacyjnej firm rodzinnych, w tym zaangażowania członków firm rodzinnych. Wreszcie, badanie to pokazuje, że pojedyncza reakcja firm nie prowadzi do przetrwania, ale łańcuch reakcji w połączeniu z przedstawionymi powyżej wymiarami. **ORYGINALNOŚĆ/WARTOŚĆ:** Pomimo rosnącej literatury teoretycznej i empirycznej na temat COVID-19 i firm, badanie to pokazuje wpływ i stanowczą reakcję na kryzys związaną z COVID-19. Ponadto, koncentrując się na kontekście Kosowa, badanie przyczynia się do wyzwań, przed jakimi stają firmy w różnych kontekstach kulturowych i instytucjonalnych. **Słowa kluczowe:** wpływ COVID-19, reakcje firm, preferencje technologiczne, zachowania strategiczne, praktyki zarządzania, sieci społeczne.

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Conflicts of interest

The authors declare no conflict of interest.

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