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Imagining the Growth in Small and Medium Enterprises (SMEs) of Pakistan under COVID19 Outbreak

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ABSTRACT

Pandemics affect the performance of almost all firms globally. COVID-19, which is considered a pandemic, has disturbed firms worldwide but this impact is more intense on small and medium-sized firms. This study aims to investigate the impact of COVID-19 on the growth performance of majorly export-oriented firms in Pakistan. We surveyed 400 local and exporting firms in Pakistan using random sampling technique. We examined the firm's growth using the structural equation modeling technique and identified that firm's finances are not affected much during the pandemic but it has impacted the firm's operations, supply chains, and labor retention. We further observed that firms 'efforts in improving their online presence have improved during the pandemic which shows people can change their business strategies according to the changing contingencies. Technology adoption proved one of the dominant strategies for survival under pandemic. We have shared some approaches and policies for curtailing the impact of COVID-19 and improving the firm's situation.

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1. Introduction

Coronavirus disease (COVID-19) is a transmittable disease caused by a newly discovered coronavirus. That originated in China in December 2019 and spread over the globe (Sun, Zhang, Dinca, & Raza, 2021). According to World Health Organization (WHO, 2020), this is a pandemic as it has affected people worldwide. It has disturbed the health systems and economies of all countries. Global economic development will decline further because of COVID-19 (Zou, 2021). Due to the strong integration of countries and dependence on each other for their businesses operations, firms have been distressed significantly (McKibbin & Fernando, 2021). If this situation continues then the world can enter into a global recession (Xiang et al., 2020). Due to the loss

of jobs and economic activities, it was also expected that half a billion people might slip below the poverty line in developing countries due to job loss.

Pakistan is also affected by COVID-19 and is taking many precautionary measures to avoid the spread of this virus-like other countries. As every country is facing a shortfall in their reserve capabilities to overcome the impact of the virus but developing countries are more deficient to handle the current situation (Chohan, 2020). Due to COVID- 19 firms observed lockdowns in many countries (Shen, Fu, Pan, Yu, & Chen, 2020). In the same way, Pakistan imposed a lockdown by closing all businesses and other institutes. This closure has restricted the trade of goods and services. That resulted in lowering production, declining sales, and disturbing the supply chains of firms (Kumar, Luthra, Kumar Mangla, & Kazançoğlu, 2020). Businesses in Pakistan that are mostly small and medium-sized are severally affected due to the COVID-19 outbreak and lockdowns (Shafi, Liu, & Ren, 2020). This lockdown Impacted society and the economy by restricting labor mobility, travel prohibitions, airline deferments, and closing industry operations that reduced capacities to cover the costs of firms and forced them to minimize their workforce or reduce their salaries. Employees in many firms were not willing to work at low wages so companies faced a shortfall of competent employees that dropped their production further, making them fail to fulfill the demand of their customers. According to the economic survey of Pakistan 2019-20, Pakistan's exports have declined by 2.4 %. It was reported in March 2020 that the stock market declined by 1500 points daily and the overall economic growth of Pakistan which was declining previously, declined further due to COVID. According to SMEDA, 90% of Pakistan's firms are small and medium enterprises and they inject a considerable amount into Pakistan's economy. Most of these businesses are not registered so their employees are affected more due to job loss during COVID. To overcome these circumstances and economic resilience sturdy policies are required that can be implemented with a comprehensive analysis of the country's situation. Keeping in view the situation in Pakistan during COVID, the impact of COVID-19 on firms in Pakistan is examined in this research. We have investigated determinants that are affecting the growth of firms. We have also focused on the techniques for improving a firm's operations, enhancing innovation, and financial arrangements that can be used to enhance the SMEs' performance.

The remainder of this paper is organized as follows. Section 2 presents the literature review and hypothesis development. Sections 3 outline the methods and data descriptions. Section 4 presents the discussion and theoretical implication. Limitations of the study are given in section 5. References are given at the end of the study.

2. Literature Review

There are many types of disruptions that economies face and can get into recessionary phases due to their impact. In many calamities such as hurricanes, earthquakes, and floods, firms can incur damage to materials or capital equipment, in some disasters firms' infrastructure or physical property is damaged (Helgeson et al., 2022). Along with these personal effects, some calamities impact on firm's production, supply chains, sales, and other routine operations. As natural calamities not only disturb human lives but also affect the performance of the economic structure, with unconstructive impact on resources, production factors, and impairment to community infrastructure including the power source, communication, firms 'efficiency, or jobs. (O'Neill et al., 2014). There are many examples in the past where these natural disasters affected a lot such as swine –flu which was discovered in 2009 and became a pandemic likewise Influenza affected thousands of lives were affected.

In the same way, another disease reported by the world health organization (WHO)[1] was pneumonia of unknown cause discovered on 31st December 2019 that was later identified as

[1] World Health Organization. (2020). Novel Coronavirus (2019-nCoV): situation report, 11.

coronavirus. After the first report from China coronavirus blow out across the world and affected thousands of lives worldwide (Umakanthan et al., 2020). Aside from the health impact of coronavirus it also has affected economies. Borders were closed to restrict people and commodities to move (Alsiri, Alhadhoud, & Palmer, 2021). It has decelerated numerous economies by disturbing several businesses (Afridi, Jan, Ayaz, & Irfan, 2021). Numerous well-known economies around the world were required to observe a complete lockdown, which resulted in the closure of manufacturing and disturbed supply chains (Kumar et al., 2020). COVID-19 not only affected brick businesses but also has a huge impact on online businesses (Khan, Liaquat, Sheikh, & Pirzado, 2021). Although the impact on all businesses was not the same such as the businesses like tourism, transportation, entertainment, restaurants, etc. greatly influenced by COVID (Shen et al., 2020). But some businesses benefitted in this situation with the increased demand for their products such as masks, gloves, ventilators, sanitizers, etc. so some firms shifted their units to fulfill this demand (Kumar et al., 2020).

Many firms faced a shortage of employees due to health issues, as in the US 50% decline in employment was observed due to COVID 19 (Gillani, Shafiq, Ahmad, & Zaheer, 2021; Kumar et al., 2020). There are some businesses that were forced due to pandemic to cut down their workforce or lowering their wages. This unemployment has also impacted the demand of many goods as people are more likely to spend on crucial items such as food, medicine etc. and declined spending on luxury items resulted in ;dropped production for those products (Barua, 2020). According to Mengistu, Krishnan, Maaskant, Meyer, and Krkoska (2020), the access to foreign inputs at reasonable prices and the accessibility of workforce are major described production limitations during pandemic. Another major issue that affected exporting firms was the restriction of some countries on their imports to prevent transmission of virus (Shen et al., 2020). Exporting firms are more affected by COVID 19 policies as compare to local firms (Shen et al. 2020) and also are more vulnerable to global economic conditions (Sadaf & Ishaq, 2018). Many firms tried some innovation practices to deal with the disruptions of COVID19 (Jin, Zhang, Sun, & Cui, 2022).

Literature has also documented some factors that contributed to lowering the firm's performance includes supply disturbances in developed countries that created worldwide complications of production (di Mauro, 2020; Noshad, Amjad, Shafiq, & Gillani, 2019). Furthermore firm's performances also declined due to shortage of funds and investments as many firms and people tend to hold cash to meet emergencies during pandemic (Shen et al., 2020). Limited access to resources is a hindrance for small businesses to revamp their position that was before these crises (Samantha, 2018). Due to this situation many businesses have been severely impacted and they are confronting declining sales and profits (Shafi et al., 2020) and it is important to analyze these impacts to recover the economy to its original position. Same as other countries businesses in Pakistan facing problems due to COVID like reduction in production, unemployment and devaluation of money leads the country to the deprived state. Unemployment rate that was 5.8 % in 2017-2018 is expected to further decline.

2.1 Hypothesis Development

There are different types of determinants of firm's growth as mentioned by Sarwoko and Frisdiantara (2016); Shafi et al. (2020); Shen et al. (2020). We have taken the following determinants to observe growth during covid-19: survival, innovation, supply, finance, labor, policies, and firms operations. Considering the significance of these factors we have developed the following hypothesis.

H1: Financial arrangements affect firm's growth

H2: Firms' operations affect firm's growth

H3: Firm's innovation is positively and significantly correlated with firm's growth

H4: Labor issues affects firm's growth

H5: Online presence of firm improves firm's growth

H6: Supplies issues affect firm's growth

H7: survival issues affect firm's growth

3. Methodology and Data Collection

400 Samples were used from the SMEs in Pakistan. An online survey form was designed to disseminate the survey among firms' heads. The stratified and purposive sampling technique was used for selecting the sample size from the study area. The sample included small and medium businesses in Pakistan that employ between 10 and 250 employees. Responses are collected from the business heads of these selected SMEs. We have chosen these SMEs which contribute about 90% of employment in Pakistan. Primary data has been used to evaluate COVID's impact through questionnaires from exporting and non-exporting firms. Research has used the inductive method (Ngozwana, 2018); hypotheses are designed to be assessed for validation. This approach is imperative to assess the impact of COVID-19 on the performance and growth of SMEs.

We used structural equation modeling to evaluate gathered data from exporting and non-exporting firms. The partial least square method was used to analyze the research model. We examined the structural model and measurement model including convergent and discriminate validity according to SEM procedures (Sarstedt, Marko, Ringle, & Hair, 2020). Smart PLS method for the measurement model and the structural models to assess instantaneously and to confirm the convergence and discriminate validity of the measure (Ringle, Da Silva, & Bido, 2015).

Structural equation modeling has been applied in many disciplines including the fields of sociology, marketing, and psychology but less application is seen in the areas of economics and finance (Janggu, Darus, Zain, & Sawani, 2014). It is extensively applied in many social science fields (Sarstedt et al., 2020). In behavioral sciences, most constructs are with an error such as measuring happiness, satisfaction, etc. so to measure these complex constructs structure equation model is used. The structural equation model is a blend of regression analysis, factor analysis, measurement theory, and path analysis (Westland, 2015). It's useful in complex latent and observed variables relationships (Hwang, Sarstedt, Cheah, & Ringle, 2020). We used bootstrapping method to analyze the significance of loadings and path coefficients, because to test the normality of data is significant in structural equation modeling.

3.1 Description of the Variables

The questionnaire is developed based on previous literature for assessment. To assess the impact of COVID we have created a model based on the following latent variables; financial arrangements, innovation, online presence labor training, and motivation and their impact on the firm's growth. This is documented in previous literature that a firm's growth depends on financial arrangements, and is also detrimental to the progress of a business (Liu & Hsu, 2006). As emphasized by (Du & Girma, 2012) growth is related to the internal finances of firms. Financial arrangements we used as variable includes: managing cash flow shortages and financing by loan.

Other factors such as the smooth running of the firm's operations are also very imperative that can be affected due to the unavailability of resources such as labor, raw material, etc. (Aftab,

Naveed, & Hanif, 2021) because a firm's operation's capability enhances its performance (Tan, Kannan, & Narasimhan, 2007), and Low availability of skilled labor results in less productivity in business ventures (Karimi, Taylor, Dadi, Goodrum, & Srinivasan, 2018). Firms' operations include the effect on operations, operating pressures, and the development of safety measures. Along with these factors, another significant factor is the capacity of the firm to innovate its products and processes and innovation is valuable for achieving the firm's high growth. (Cucculelli, Le Breton-Miller, & Miller, 2016).

Table 1
Effect-on-Operations of Firms with Local and Foreign Sale

	[2]Effect-on-Operations						
Orientation of firms		**1**	**2**	**3**	**4**	**5**	**Total**
foreign-or-local-sale	100% local	18	25	25	6	4	78
	75% local 25% foreign	7	19	10	5	2	43
	50% local 50% foreign	20	15	15	0	2	52
	25% local and 75% foreign	16	22	14	5	3	60
	0% local and 100% foreign	35	62	58	9	3	167
	Total	96	143	122	25	14	400

Source: Author's own calculations

Research shows that there is a positive relationship between a firm's innovation and growth with the varying impact of product innovation and process innovation (Audretsch, Coad, & Segarra, 2014). According to Coad, Segarra, and Teruel (2016) young firms have a greater impact of R&D on their growth. Firms with a higher level of innovation are more likely to survive and grow in an innovative environment. For innovation, we have included indicators: impact on technological innovation, and employee training. Failure to manage the supply chain can have a substantial adverse influence on a firm's performance (Altay & Ramirez, 2010). Firms' cash flows have an impact on firms' growth, especially small-level firms that face a decline in growth when they have low availability of finances (Honjo & Harada, 2006). Supply impact includes peak working months, impact on raw material supply, and supply issues. Online presence includes online willingness to sell, online presence, and work from home and online work importance Survival: firm's age, owners' qualification, survival period, and firm size. Labor: fired employees during COVID, induction of employees, impact on performance, and psychological impact on employees. Growth: Foreign or local sales, firm's long-run growth, growth in sales, and overall firm growth.

4. Results and Analysis

The questionnaire was developed to gather data from the different small and medium firms in Pakistan to analyze the impact of COVID-19 on the performance of these firms. The sample size for the survey was 400 firm's owners as respondents.

The data shows the varying performance of exporting and non-exporting firms. As firm's operation impact on foreign and local firms is shown in table 1. Most of these surveyed firms are selling their products in foreign markets. It is observed that firms dealing majorly locally are of the view that they are barely managing their operations. Moreover, 30% of total firms observed a smaller impact, leading to some difficulties in business operations however they were able to maintain stability in overall operations of the firm. But 24 % of firms have serious impact, leading

[2] 1. Serious impact, leading to serious difficulties in business operation and bankruptcy
2. Great impact? Leading to difficulties in operation barely maintained
3. Small impact, leading some difficulties in business operation, but the overall operation remains stable
4. No significant impact
5. Positive impact, providing a new opportunity for firm development

to serious difficulties in business operation and bankruptcy. However, small proportion of the firms agreed with the opportunities provided by market development under Covid19.

It is observed that exporting firms have a stronger capacity to survive during these fluctuations as compared to local operating firms. Table 2 shows the survival period of local and foreign operating firms, it shows that most of the foreign firms reflect to survive for more than a year. 28% of the total firms have less than two months' chances to survive and 12 % of these firms are operating as purely local firms.

Table2

Survival-period * foreign-or-local-sale Cross tabulation

		foreign-or-local-sale					
		100% local	**75% local 25% foreign**	**50% local 50% foreign**	**25% local and 75% foreign**	**0% local and 100% foreign**	**Total**
survival-period	< 2 months	50	2	22	35	4	113
	3-5 months	16	8	3	11	28	66
	6-9 months	4	3	13	9	20	49
	10-12 months	10	8	2	8	27	55
	> 12 months	28	15	9	9	56	117
	Total	55	32	28	40	126	400

Source: Author's own calculations

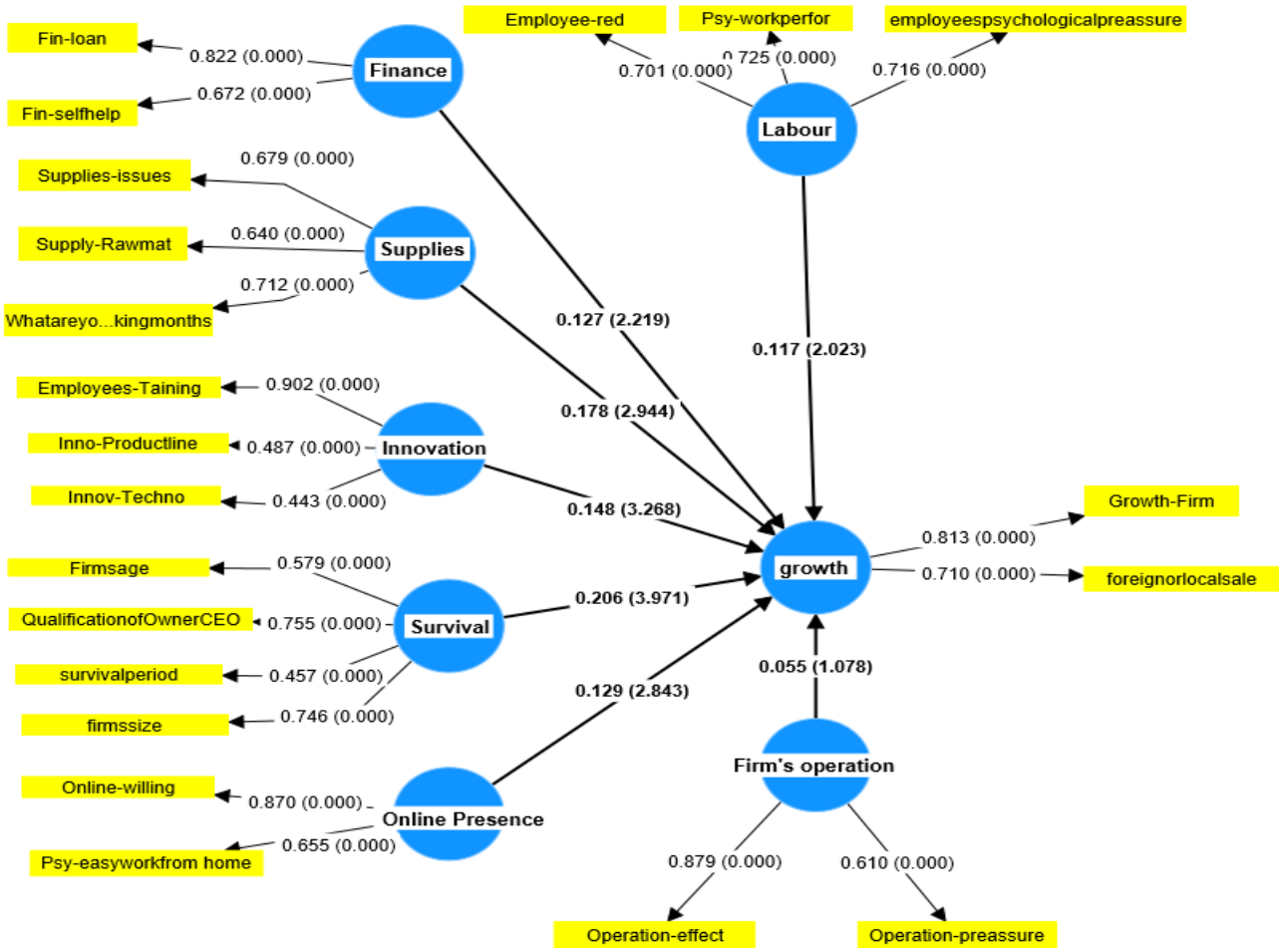

Figure 1: Measurement Model

According to researchers reliability of an exploratory study should be at least 0.60, although the reliability of established measures research should be 0.70 or more (Roldán & Sánchez-Franco, 2012). So as for our study, we developed a new survey and it is an exploratory study we have considered 0.6. The measure model is shown in figure 1.

4.1 Internal Consistency Reliability

We have measured consistency reliability using composite reliability. As higher values indicate higher reliability so our values are more than the standard value, which is 0.6 in this study. The AVE of all the constructs are higher that according to Sarstedt et al. (2020) should be above 0.5. Construct validity is shown in table 3.

Table 3
Construct Reliability and Validity

Constructs	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Finance	0.266	0.505	0.656	0.415
Firm's Operations	0.332	0.416	0.717	0.459
Growth	0.404	0.598	0.734	0.417
Innovation	0.316	0.239	0.718	0.563
Labor	0.599	0.313	0.721	0.572
Online Presence	0.611	0.292	0.735	0.582
Supplies	0.389	0.519	0.757	0.51
Survival	0.574	0.364	0.74	0.592

Source: Author's own calculations

4.2 Discriminate Validity

Discriminant validity refers to whether variables are different that are supposed to be different. The table below shows that the square root of the AVE of all the constructs is higher than the correlation of latent variables' representing acceptable discriminant validity (Xiang et al., 2020). In research, it is suggested that the maximum acceptable value of inter-correlations is 0.9 and our table shows 0.75 is the highest and no value is higher than the benchmark.

Table 4
Discriminant Validity

Constructs	Finance	Firm's Operations	Growth	Innovation	Labor	Online Presence	Supplies	Survival
Finance	0.755							
Firm's Operations	0.453	0.649						
Growth	0.41	0.533	0.605					
Innovation	0.331	0.397	0.379	0.762				
Labour	0.368	0.389	0.469	0.232	0.673			
Online Presence	0.177	0.316	0.413	0.253	0.148	0.684		
Supplies	0.394	0.455	0.492	0.357	0.431	0.281	0.668	
Survival	0.33	0.387	0.391	0.303	0.239	0.258	0.24	0.662

4.3 Structural Model

Structural model shows relationship between constructs that include path coefficient and R2. Significance of 5 percent ($p< 0.05$) is used. The results are presented in table 1 that shows Finance has positively and significantly related with growth ($\beta = 0.127$; $p < 0.05$). Firm's Operations ($\beta = 0.055$; $p > 0.05$). Innovation ($\beta = 0.148p < 0.05$). Labor (β, 0.117; $p < 0.05$) Online Presence (β 0.129; $p < 0.05$) Supplies (β 0.178; $p < 0.05$) and survival (β 0.206; $p < 0.05$).So Firm's finance, innovation, labor, online presence, supplies and survival have positive relationship with growth but operations has negative correlation with growth. Therefore, we can

say firm's operations of Pakistan's exporting and non-exporting firms are not affected during COVID. But firm's supplies, innovation, labor, online presence and supplies has impacted firm's growth. According to (Hair) R2 shows us the extent of effect so table: 1 values are depicting moderate impact of these variables.

Table 5
Path coefficient and their significance

	Coefficients (B)	t-Statistics	P values
Finance -> growth	0.127	2.219	0.027
Firm's operation -> growth	0.055	1.078	0.281
Innovation -> growth	0.148	3.268	0.001
Labour -> growth	0.117	2.023	0.043
Online Presence -> growth	0.129	2.843	0.004
Supplies -> growth	0.178	2.944	0.003
Survival -> growth	0.206	3.971	0.000

5. Discussion and Theoretical Implication

This study hypothesized six variables that impact the growth of the firm during COVID-19. The variables are finance, operations, and the online presence of firms, innovation and supply issues on growth. The impact of these variables on firms' growth is explored by different studies but how unusual circumstances such as COVID-19 affect prospects of these indicators as of adaptability in accordance to the recent changes in the economy and working operations and eventually its effect on firm's growth is still lacking in current literature. Our results in Smart-PLS show that all variables are significant except operations. This depicts that the firm's growth is not much affected by the firm's operations in Pakistan under recession-like conditions such as COVID-19. But the firm's financial arrangements, innovation, supplies, labor retention, survival, and online presence have a significant impact on the firm's growth. As the lockdown situation and disruptions in supply chains embarked undesirable impacts on the firm's growth. Similar to the Raj, Mukherjee, de Sousa Jabbour, and Srivastava (2022) firms are advised to better manage supply chain by modifying their supply chain systems and change their production capacities towards the products that are more required during these pandemics. In the same way firms that have qualified owners with longer firm age are more likely to survive during the COVID-19 shock. Furthermore, firms that have changed their ways of working and adapting innovative procedures of working or implemented online technologies have experienced fewer disruptions in their growth. The firm's growth was also affected during the pandemic due to the low availability of labor and their health issues. Administrators should consider the changes in the external environment and regulate their business strategies accordingly. Firms need to change their business strategies to adapt to the changing environment such as they can think of producing products that are more required these days. They can move towards online selling as in Pakistan this trend is not prevailing due to a lack of information technology knowledge.

5.1 Limitation of Study

This study is conducted with few variables so future research can consider more variables to assess growth such as competitive pressure and government support etc. Furthermore, this research can also be conducted for large-scale businesses as this study has taken small and medium-sized enterprises. Moreover, this study can also be applied to service-oriented firms. Post-COVID changes in firm's operations and new-normal can be assed to see firms' growth.

Authors Contribution
Arshia Ishaq: contributed in data analysis and paper writing
Mamona Sadaf: conceived and designed the survey and analysis
Amjad Ali: analysis tools and paper writing
Sehrish Naz: data collection and paper writing

Conflict of Interests/Disclosures

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