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Understanding the Impact of Covid-19 on MSMEs in India: Lessons for Resilient and Sustained Growth of Small Firms

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The pandemic has raised an issue of survival for most of the micro, small, and medium enterprises (MSMEs) because of their vulnerability in terms of size, limited financial resources, and inefficiency to deal with unpredicted situations. Therefore, the present study has adopted the contingency theory in times of change and uncertainties caused by COVID-19 on MSMEs and found out the ways to enhance its resilience and sustained the growth of this sector. This study has applied descriptive statistics and probit regression analysis to estimate the resilience and sustained growth of the firms through a change in the variables like turnover, labour employed, investment, and age of the firm. Based on the survey of 225 firms, the study observed that around 90 percent of surveyed firms realized a decline in their turnover with a 25 percent reduction in employment that mostly occur in the informal category. Interestingly, there was some increase in formal employment in around 50 percent of firms because of the business commitment of firms, shortage of informal workers, and availability of workers at lower wages. Smaller and younger firms in terms of employment and investment have a higher possibility to be affected by the external shocks indicating that the firm agility increases with firm age and size. Support measures by the government during the pandemic were found to be insufficient and have limited relevance to the MSME sector in its revival. For enhancing the resilience and sustainability of MSMEs, the study suggests small firms should be encouraged to financial planning against business uncertainties and proposes financial security measures viz. Uncertainty Corpus Fund for Small Businesses and Small Business Insurance.

Introduction

Micro, small and medium enterprises (MSMEs) contribute significantly to the economic development of a nation through enhancement in employment opportunities, bringing technological changes, creating social stability, encouraging entrepreneurship, and fostering industrialization. Moreover, these enterprises are producing a varied range of outputs and services to accommodate the needs of the domestic as well as global market (Singh et al., 2019). By employing millions of people, these enterprises are playing a major role in income generation, poverty reduction, and creating domestic demand. These enterprises are indispensable for the smooth functioning of supply chains

in any economy. Therefore, MSMEs are crucial in maintaining the delivery of goods and services during and after any public health crisis like the COVID-19 pandemic (Burton et al., 2011; McCall, 2020). In comparison to large industries, this sector generates more employment at lower capital cost and assists the economy to promote industrialization in remote areas also, thereby, reducing regional imbalances and assuring equitable distribution of national income and wealth.

The outburst of COVID-19 and the responses of different economies have led to a decline in economic activity around the globe. The policy of restrictions on mobility within a country and between countries along with the closure of workplaces have generated economic uncertainty

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that finally resulted in shrinkage in demand and disruption in supply chains globally (Cacciapaglia et al., 2020; Kuebart & Stabler, 2020). The current crisis is different from the global financial crisis of 2008 because of its dual impact on the economy from both supply and demand sides with a significant increase in unemployment. Lockdown and other precautionary measures introduced to contain the spread of COVID-19 have severely affected all types of enterprises, but these restrictions have more severe impacts on MSMEs than on larger firms. MSMEs are most vulnerable to such unexpected situations because of the lower capital reserve, fewer assets, and lower levels of productivity (OECD, 2020). During the pandemic, a decrease in GDP and trade activity around the globe further deepen the challenges faced by MSMEs especially micro enterprises, and therefore most governments struggle to introduce effective policies for MSMEs to respond to the current crisis appropriately (Haleem et al., 2020; Nicola et al., 2020). Due to their operational size and insufficient resources, MSMEs are comparatively more vulnerable to large industries under economic uncertainty (Bartik et al., 2020; Prasad et al., 2015). These limitations of MSMEs have been realized more intensively around the globe during the pandemic. Among MSMEs, the probability of failure is comparatively high for micro enterprises (Davidsson & Gordon, 2016).

In India, there are around 63.39 million MSMEs. Among them, the majority are micro enterprises, around 99.5 percent. The MSME sector employs around 111 million workers and contributes around 40 percent to the total output producing around 30 percent of the total GDP and approximately 50 percent of the total export from India. To revive the economy and support MSMEs from the severe impacts of COVID-19, the Government of India (GOI) announced various measures under the '*Atmanirbhar Bharat*' package in May 2020. The stimulus package aimed to assist all sectors including labourers, agriculture, cottage industries, MSMEs, and industries with an emphasis on local markets and supply chains. MSMEs' definition was also revised by increasing investment limits for each subcategory of MSMEs and including turnover as an additional criterion. Reserve Bank of India has also taken some initiatives to increase liquidity in the financial market, reduce in timely repayment of debts, and provision of borrowing for individuals and industries with cheaper rates from banks to assist the MSMEs from the financial crunch. Though the economy has shown a sign of recovery after the relaxation of lockdown and containment measures gradually from June 2020, it has been difficult for many MSMEs to resume operation which further resulted in economic losses and kept many on the brink of closing permanently.

The issue of resilience and sustainability growth of the small business has been continuously evaluated by the researcher before and after the COVID-19 episode. Resilience is defined as the ability of any firm to absorb, respond, and retrieve from situations that could threaten its existence while the sustained growth rate is a rate that can be achieved by the firm on its internal resources without any external support. Most of the available studies examined the issue of resilience and sustaining the growth of

small firms from the perspective of entrepreneurial intention (Jena, 2022), strategic agility and its association with firm age, firm size, and firm performance (Reed, 2021), leadership practices and entrepreneurial resiliency (Hutchinson et al., 2021), strategic entrepreneurship for disrupted firms (Thomas & Douglas, 2021), and entrepreneurs' personality traits of resilience and high-power distance impact on consumers' evaluations of sustainability practices (Vizcaino et al., 2021). These factors are perfectly applicable in normal predictable conditions to analyze the sustainability and resilience of firms. However, during a period of forced change and uncertainty generated by COVID-19 that affect small business at the global level, the factors like the experience of the firms to handle a such crisis, firms' internal resources, financial prudence of the firms, and government support become more effective. Therefore, in the present study we have pursued to address the following research questions to understand the impacts of the current pandemic on MSMEs in India and their strategies to develop resilience and achieve sustained growth against such incidence in the future: (a) Does support measures of the government influence the resiliency of the firm and sustain growth?; (b) Does the size of the firm improve its resiliency and sustain growth?; (c) How does the experience of the firms affect its resilience and sustain growth?; and (d) Is there any impact of financial prudence of the firms on its resilience and sustain growth? To examine the above-mentioned research questions, the present paper applied descriptive statistics and probit analysis. Our empirical results provide evidence that during the pandemic small firms were facing issues from both the demand and supply sides, and that resulted in a decrease in turnover and an increase in unemployment, especially in the informal employment segment. The impact was observed more severe on small and micro enterprises among MSMEs. The majority of MSMEs suffered heavily during the pandemic, and lack of financial resources and flexibility to invest in new business opportunities during the crisis. Our findings also suggest that the supportive measures implemented by the government were too small to handle issues of large and diversified MSMEs. These findings have important policy implications for the resilience of small firms and suggest that small firms need to have a financial plan for economic shocks and business uncertainties.

The rest of the paper is prepared as follows. The theoretical background and development of the hypothesis are mentioned in the theoretical underpinning and hypotheses section. In the literature review section, the available literature is summarized with the research gap. In the next section of methodology, brief details of data collection and methods used for the current study are stated. The outcome of this study is included in the results and discussion section. The last section of the conclusion and policy recommendations discusses lessons for resilience and planning against economic uncertainties for small firms with theoretical implications and limitations of this study.

Theoretical Underpinning and Hypotheses

MSMEs are more vulnerable to the unrest created by the COVID-19 pandemic because of their limitations in terms of size, financial resources, and lack of experience to deal with such a crisis. The COVID-19-led conditions elevate the question that how a business organization can deal with the conditions of uncertainties efficiently. In this regard, the study of Vizcaíno et al. (2021) suggests that firms must promote teamwork instead of focusing on task specialization to enhance organizational citizenship behaviour. A polychronic environment will allow the firm to build a collaborative structure in which employees feel comfortable and react faster to challenging situations. Martin et al. (2020) analyzed the relationship among marketing capabilities, competitive strategy, and export venture performance under the presence of marketing communication and technological instability within the framework of resource-based theory. The results indicate that marketing communication mediates the relationship between marketing capabilities and competitive strategy to increase export venture performance. The study suggests the dual impact of technological turbulence, one to strengthen the relationships between marketing capabilities and the other, between marketing communication and competitive strategy. Based on the theory of marketing-firm, Sigurdsson et al. (2020) examined customer-firm bilateral contingencies for the aviation sector. The study shows that marketing firms' actions through social media campaigns are significant and positively related to customers' post-engagement behaviours and finally can result in a decrease in transaction costs. All these studies are indicating that how can a business organization enhance its capabilities and performance through the strategy of efficient use of internal resources under a recognized external environment. But the issues and environment (internal as well as external) faced by the small businesses during COVID-19 were entirely different. The current crisis of the pandemic which affected all sorts of business activities at the global level, contingency theory provides an appropriate framework to understand the responsiveness and adaptive nature of the small business to show their resilience and growth. The contingency theory as explained by Fiedler (1951), is used to understand the organizational decisions which are contingent on any internal and external determinants in a particular situation. Internal environments are within the control of the firm (resources, experience) and external environments (disasters, change in trends, uncertainties) are beyond the control of the firm. The theory suggests that organizations seek to improve their strategy to align with the changing external and internal environment to achieve an edge in competitiveness, growth in performance, and sustainability (Donaldson, 2001). Under these circumstances, the decisions of the firms should have to be flexible and the firm should be ready to adapt to current situations. Thus, the decisions are based on contextual factors. The contingency theory recommends that any organizational structure needs to align with three contingencies related to the external environment, size, and strategy (Donaldson, 2006). The alignment of these three contingencies variables will support the

small firms to absorb, respond, and retrieve during the COVID-19 crisis and stimulates sustainable growth.

The above discussion indicates that the crisis encountered by small businesses at the global level during and after COVID-19 can be handled appropriately with the judicious use of the internal and external environment. Since the impact of COVID-19 was comparatively severe for all types of small businesses because of their size, resources available, and financial conditions therefore these small businesses are assisted by the supportive measures of the government to revive and rebuild this sector. This helps us to construct our first hypothesis.

Hypothesis 1. *The supportive measures of the government have increased firms' resiliency and helped to attain sustained growth.*

The available literature on MSMEs suggests that firm size is associated with firm agility. Small firms are incapable to deal with such type of turbulence efficiently because of a lack of resources. The firm agility increases as the firm grow larger and enable them to reconfigure the available resources and capabilities to address such uncertainties aptly (Reed, 2021). This leads to the construction of our second hypothesis.

Hypothesis 2. *The firms' size increases firms resiliency and helps to attain sustained growth.*

As pointed out by the study of Hutchinson et al. (2021) that personal and business experiences of crisis help business owners to exercise entrepreneurial resilience effectively. The experience earns by the firms as they grow older and in the due process the firm learns how to handle rapidly changing internal and external environments successfully. This facilitates to development of our third hypothesis.

Hypothesis 3. *The firms' age increases firms' resiliency and helps to attain sustained growth.*

One of the characteristics of small firms is that they are facing an issue of a paucity of financial resources (Prasad et al., 2015). The lack of financial resources is associated with a decrease in sustainability expenditure by MSMEs (Boso et al., 2017). Investment expenditure is one of the ways by which small firms can rebuild and revive during a time of crisis. This allows us to construct our fourth and final hypothesis.

Hypothesis 4. *Investment expenditure increases firms' resiliency and helps to attain sustained growth.*

Literature Review

In response to the COVID-19 pandemic, most countries adopted containment measures such as lockdowns, quarantine, and social distancing to restrict the spread of the virus that affected the mobility of factors of production and stopped the majority of business activities (Lonergan & Chalmers, 2020). These restrictions led to the closure of workplaces, a decline in labor supply, a reduction in the supply of raw materials, and a disruption in supply chains globally (Ernst & Young, 2020). Further, the uncer-

tainty about economic recovery compelled people to decrease their expenditure, which resulted in a decline in demand. Therefore, the pandemic and its containment measures have generated both demand and supply shocks in all countries across the world (Bekaert et al., 2020; del Rio-Chanona et al., 2020; Guerrieri et al., 2020; Sharma, 2022). The world is facing challenges on all fronts such as a contraction in the gross domestic product (GDP), a decline in trade, disruptions in supply chains, inflation, and employment reduction. It has affected millions of people and all types of firms. However, small firms are at higher risk of such a crisis in comparison to large firms due to a lack of financial and human resources (Bartik et al., 2020; Prasad et al., 2015; Shafi et al., 2020).

The majority of MSMEs have been severely affected during the pandemic and facing all sorts of challenges such as paucity of liquidity, supply chain disruption, and reduction in sales, revenue, and profit (Shafi et al., 2020; Tairas, 2020; Wijaya, 2020). In addition to this, MSMEs were also facing a shortage of working capital mainly due to a reduction in cash flow and reduced access to finance. These factors collectively lead to an increase in the operational cost of MSMEs during the pandemic. From the demand side, the decline in public consumption and the increase in the prices of goods during the pandemic were responsible for the increase in the inventory of finished goods and the carrying cost of firms (Lemi et al., 2020). Most SMEs were unable to resume work because of the inability of employees to return to work, stringent lockdown policy, reduced market demand, and shortage of epidemic mitigation materials (Lu et al., 2020). Among different challenges that emerged during COVID-19, the issue of logistics, decrease in sales, lower access to finance, and reduction in capacity utilization were experienced more by small firms across the globe (Aftab et al., 2021; Juergensen et al., 2020; Nordhagen et al., 2021; Ratnasingam et al., 2020). The study by Cepel et al. (2020) evaluated the entrepreneurs' attitudes toward the selected business risks and found that market, financial, and personnel risks were considered by SMEs as the three most significant risks before and after the COVID-19 crisis.

The above discussion indicates that most of the studies focus mainly on financial and operational support along with a shift from traditional business models to the more innovation-led techno-friendly model during and after the pandemic. However, they fail to highlight the need for financial planning for small businesses in advance and suggest policy measures so that small firms can be resilient enough to face business uncertainty when it arises. Long-term planning of financial resources by MSMEs may enable them to sustain their growth during business uncertainties caused by external shocks such as a pandemic, sudden policy changes, etc. The present study is an endeavor in this direction. While understanding the impact of Covid-19 on MSMEs in India, we have tried to bring out some policy recommendations that may help the MSME sector to develop its resilience and enable it to sustain growth during any future external shocks.

Methodology

Data Collection

The study is based on primary data collected through a telephonic survey of 225 small firms located in Uttarakhand and the National Capital Region (NCR) which comprises of National Capital Territory of India, and parts of Uttar Pradesh, Haryana, and Rajasthan. Around 22.11 percent of MSMEs are in these states altogether (i.e., Delhi, Uttar Pradesh, Haryana, Rajasthan, and Uttarakhand), as per the 73rd round survey of non-agricultural enterprises, excluding construction, conducted by National Sample Survey Office, India. The survey was conducted using a semi-structured questionnaire from October 2020 to March 2021. Data about turnover, investment, and employment were collected for two financial years i.e. 2019-20 and 2020-21. Since data was collected during the financial year 2020-21, expected values of turnover, investment, and employment for the current financial year were asked from the respondent, i.e., the owner of the firm.

Out of 225 firms, around 42 percent were in Uttarakhand while the rest 58 percent were in NCR. In terms of sector-specific, 163 firms (72.44 percent) were engaged in manufacturing activities while 62 firms (27.56 percent) were engaged in service activities. Major activities of these firms include the manufacture of food products, manufacture of rubber and plastic products, accommodations, manufacture of pharmaceutical medicinal chemical and botanical products, food and beverage service activities, specialized construction activities, etc. Further, among these firms, 16 percent were micro enterprises, 48.78 percent were small enterprises and 34.22 percent were medium enterprises as per the new definition (Table 1). All firms were registered firms. Therefore, the sample firms represent only formal sector enterprises. It can be a major limitation of this study.

Model Specification

To understand the causal relationship between firm size, investment level, and age of the firm on the possible impact of COVID-19 on MSMEs, a probit regression model has been applied. Since the majority of firms have been negatively affected by the pandemic, the impact of COVID-19, the dependent variable, has been measured in terms of binary numbers for the regression analysis- 1 if the firm's turnover has declined due to the pandemic and its containment measures while 0 for the rest i.e., no change in turnover or increase in turnover. The explanatory variables - firm size, investment level, and age of the firm have been measured in terms of the number of labours employed, investment in plant and machinery/equipment, and the difference between 2020 and the inception year of the firms respectively. The empirical model has been shown in equation (1):

$$Y_i(0, 1) = \alpha_1 + \alpha_2 \text{labour employed}_i + \alpha_3 \text{Investment}_i + \alpha_4 \text{firm's age}_i + \varepsilon_i \quad (1)$$

Where i denote the number of firms considered in the study.

Probit Model

The method of ordinary least squares (OLS) is not applicable when the dependent variable is binary and takes a value between 0 and 1. This is because OLS does not guarantee that the estimated probabilities will lie within the bounds of 0 and 1. In such conditions, the probit model, which assumes a normal distribution of error terms (Xu & Long, 2005), will be applicable. The probability that unobservable utility index (I_i^*) is less than or equal to utility index (I_i) can be computed from the standard normal cumulative distribution function (CDF) as:

$$\begin{aligned} P_i &= P_r(Y = 1 | X) \\ &= P_r(I_i^* \leq I_i) \\ &= P_r(Z_i \leq BX) \\ &= F(BX) \end{aligned} \quad (2)$$

Where, i = no. of firms, $P_r(Y|X)$ = probability that an event occurs given the values of variables X , Z = standard normal variable, and F = standard normal CDF, which can be estimated as;

$$F(BX) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{BX} e^{-2^{2/dz}} \quad (3)$$

As P denotes the probability of success, it is computed by the area of the standard CDF curve from $-\infty$ to I_i . Since $I_i = BX + \mu_i$ therefore, $F(I_i)$ is called a probit function.

Results and Discussion

Impact of Change in Definition on MSMEs

One of the major policy initiatives for the MSME sector under the 'Atmanirbhar Bharat' package, announced in May 2020, was a revision in the definition of MSMEs. Under new composite criteria, MSMEs have been defined in terms of turnover excluding export, and investment in plant, machinery, and equipment. Apart from including turnover as an additional criterion for defining MSMEs, another important deviation from the old definition is increasing the investment (in plant and machinery, and equipment) limits for each category of MSMEs and having the same criteria for manufacturing and service activities (Table 1). Another significant feature of the composite criteria is the value of turnover excluding export will be considered for defining MSMEs. Therefore, it will encourage MSMEs to export more.

The increase in investment limit in plant and machinery, and equipment has a significant impact on the graduation of enterprises among their categories – i.e., micro, small, medium, and large. Further, an increase in turnover can allow the realization of economies of scale in the MSMEs sector and thus make them more competitive and economically viable. Out of 225 firms, 87.11 percent of firm owners believed that the revised definition of MSMEs is beneficial for the sector while the remaining 12.89 percent of firms said that they are uncertain about its implication. In the views of those who find it beneficial, the revised definition will allow them to increase investment level, firm size i.e., employment level, and output level, and encourage them to export more without losing their firm's categorization as MSMEs.

The immediate implications of this revision in the MSME definition are that it enables a few large firms to be categorized as MSMEs and avail benefits of policy initiatives under the 'Atmanirbhar Bharat' package announced to support and revive the MSME sector which is severely affected by the pandemic (Sharma, 2022). Though it is a small sample size, the present study of 225 firms also depicts it. If sample firms are categorized as per the old MSMEs definition, 61 firms are large, 39 firms are medium enterprises and 125 firms are small enterprises (Table 2). However, as per the new definition, 77 firms are medium enterprises, 112 firms are small enterprises, and 36 firms are micro enterprises. It indicates that with the revised definition some large firms have become eligible to be categorized as MSMEs and avail of benefits proposed for the revival and growth of the MSMEs sector.

Similar findings have been observed by other studies based on CMIE data (Nagaraj & Vaibhav, 2020) and the ASI database (Sharma, 2022). Given the high informality in the MSME sector, particularly the micro enterprises, the benefits of the schemes designed to support MSMEs are primarily availed by medium and small enterprises which represent less than one percent of firms among MSMEs. It is easier for government agencies to meet the target by lending support to a few larger firms in place of smaller firms. It makes micro enterprises less preferred beneficiaries of the MSME schemes by the lending institutions. Therefore, the revision in the definition may be more supportive for medium and small firms, which also includes a few large enterprises which have now become MSMEs, at least in the short term, particularly during the pandemic and revival phase. Later, it may encourage smaller firms, i.e., micro enterprises, to scale up without losing their MSME category.

Impact of Lockdown on Business Activities

To curb the spread of the Covid-19 virus, the government introduced a sudden and strict lockdown on 25th March 2020 with some relaxation for essential activities. It continued up to 31st May 2020 and then removed gradually after 1st June 2020. The implemented policy of lockdown disrupted all economic activities across the country. Among MSMEs under study, around 29 percent of firms reported that their businesses collapsed due to the lockdown as depicted in Table 3. The reported results show that firms were facing dual shocks in terms of paucity of raw materials and collapse of the market for the final output. The highest impact was on the decrease in demand (53 percent) followed by the supply of raw materials (36 percent) and the collapse of businesses (29 percent). Interestingly, around 4 percent of firms reported that their demand had increased.

More than 90 percent of the sample firms reported that their turnover decreased in 2020-21 as shown in Table 4. Remarkably, around 3 percent of firms reported that their turnover increased, and the rest of the 7 percent of firms reported that there was no change in their turnover during the period. These enterprises were engaged in human health activities and the manufacture of wearing apparel. Nearly 53 percent of firms reported more than a 50 percent decline in their turnover. It indicates the severity of busi-

Table 1. Revision in MSMEs Definition

MSME Category	Composite Criteria of New MSME Definition, June 2020		Criteria of Old MSME Definition, MSME Act 2006	
	Investment (In plant and machinery, and equipment)	Turnover	Investment (In plant and machinery, and equipment)	
			Manufacturing Activities	Service Activities
Micro Enterprises	<= INR 10 million	<= INR 50 million	<= INR 2.5 million	<= INR 1 million
Small Enterprises	> INR 10 million & <= INR 100 million	> INR 50 million & <= INR 500 million	> INR 2.5 million & <= INR 50 million	> INR 1 million & <= INR 20 million
Medium Enterprises	> INR 100 million & <= INR 500 million	> INR 500 million & <= INR 2500 million	> INR 50 million & <= INR 100 million	> INR 20 million & <= INR 50 million

Note: Notification by the Ministry of MSMEs, Government of India dated 26 June 2020 and MSME Development Act 2006.

Table 2. Implications of Change in Definition of MSMEs

MSME Categories	MSME Definition Criteria		
	New Criteria	Old Criteria	Percentage Change in Number
Micro Enterprises	36 (16.00)	0 (0.00)	16.00
Small Enterprises	112 (49.78)	125 (55.56)	-5.78
Medium Enterprises	77 (34.22)	39 (17.33)	16.89
Large Enterprises	0 (0.00)	61 (27.11)	-27.11
Total	225 (100.00)	225 (100.00)	

Source: Primary survey, computed by the author. Note: In parenthesis, the percentage of the firms that exist under each category has been depicted.

Table 3. Impact of Lockdown on Firms

Impact of lockdown on firms	Percent of Total Firms
No Demand/Collapse of Businesses	29.33
Production & Distribution Activities Closed	10.67
Decrease in Production Activities	29.33
Ordered canceled	7.11
Decrease in Demand	52.89
Reduction in Export	14.22
Increase in Demand	3.56
Delay in payments	17.33
Erratic supply of Raw materials	36.44
Decrease in imported raw materials	13.78
Increase in price of raw materials	17.33

Source: Primary Survey, computed by the author.

ness disruptions caused by the lockdown. Our findings are consistent with the results of other studies assessing the impact of the pandemic on the performance of MSMEs (Rathore & Khanna, 2020; Shafi et al., 2020; Tairas, 2020; Wijaya, 2020).

Among MSMEs under study, the highest decline in turnover was observed in small and micro enterprises around 60.75 percent and 43.47 percent respectively as reported in Table 5. In the case of medium enterprises, the range of percentage change in turnover is -80.00 to 25.00. It indicates that despite an average 32 percent reduction in turnover of medium enterprises under study, some of these enterprises observed an increase or no change in turnover in 2020-21. It is consistent with the findings of Table 4 which shows that around 10 percent of firms under study have observed either an increase or no change in turnover. Such enterprises were engaged in human health activities and the manufacture of wearing apparel. Further, owners of these enterprises reported that they tried to quickly adopt an e-commerce platform and they had some savings to invest for the purpose. Some enterprises switched to other economic activities such as the production of masks, sanitizers, home delivery of their products, etc. It shows that these firms had flexibility in their production process and had the resources needed for it, particularly financial resources. It infers a very important lesson for enhancing the resilience of MSMEs. Few other studies have also highlighted that firm with stronger cash positions (Roper & Turner, 2020), with an adaptation of digital technology (Akan et al., 2020; Gregurec et al., 2021; Papadopoulos et al., 2020), and with the utilization of e-commerce and social

Table 4. Impact on Turnover

Impact on Turnover	No. of Firms	Percent of Total Firms
Decrease in turnover	203	90.22
<i>Up to 25 percent decline in turnover</i>	38	16.89
<i>Between 26-50 percent decline in turnover</i>	46	20.44
<i>Between 51-75 percent decline in turnover</i>	90	40.00
<i>More than 75 percent decline in turnover</i>	29	12.89
Increase in turnover	7	3.11
No change in turnover	15	6.67

Source: Primary Survey, computed by the author.

Table 5. Average Change in Turnover of MSMEs (in percent)

	Average Change	Standard Deviation	Min. Value	Max. Value
Micro Enterprises	-43.47	20.10	-75.00	-20.00
Small Enterprises	-60.75	20.86	-87.50	-16.67
Medium Enterprises	-31.91	32.02	-80.00	25.00

Source: Primary Survey, computed by the author.

Table 6. Impact of Covid-19 on Types of Employment

Type of Workers	No. of Persons Employed		Change (In percent)
	2019-20	2020-21	
Family Workers	452	474	4.87
Formal Workers	12635	14225	12.58
Informal Workers	21675	11455	-47.15
Total Workers	34762	26154	-24.76

Source: Primary Survey, computed by the author.

media platforms (Purba et al., 2021; Suwarni & Handayani, 2021) sustain their business during and after the pandemic.

Impact of Pandemic on Employment

In MSMEs under study, 34,762 persons were employed in 2019-20, which reduced to 26,154 persons in 2020-21 indicating a decline of around 25 percent in employment due to the pandemic and lockdown (Table 6). The employment of informal workers¹ was reduced by 47.15 percent. Surprisingly, employment of formal workers and family workers increased during the period by nearly 5 percent and 12.58 percent respectively.

During the interaction, most of the firm owners reported that there was uncertainty about reopening the economic activities after the lockdown was imposed. It caused a massive plight of informal workers from their workplaces. A huge number of informal workers return to their homes

due to lockdown and containment measures. Other studies have also observed the plight of workers in India due to the lockdown (Srivastava, 2020). However, some of the informal workers were available for work near the worksite at a higher daily wage as wages had increased due to the shortage of workers. To meet the business commitments, orders taken before lockdown, or fresh orders coming during lockdown, firm owners offered them formal employment at relatively lower formal wages. Further, the government was willing to contribute 24 percent of employee provident funds (EPF) of employees, i.e., full contribution of share of both employee and employer in the EPF account, for a few months during the pandemic. For firms, it was the need of the hour to employ few formal employees and meet the commitment during the pandemic. Overall, this arrangement was beneficial for both – the workers and the employers. Workers got certainty in employment with other benefits while employers got committed employees. Out of

¹ Information about formal and informal workers was directly asked. In this study, workers are formal if they receive social security benefits while workers are informal if they don't receive any social security benefits.

a total of 225 firms, around 49 percent of firms reported an increase in formal employment. However, such employment was very few in each firm. These enterprises primarily belong to medium and small enterprises.

The increase in formal employment during the pandemic is an unusual phenomenon in the labour market. The main reasons for hiring formal workers include the plight of informal workers, the requirement for meeting business commitments, and workers are available at low formal wages. Although the share of formal employment is less in the total employment of MSMEs, this phenomenon highlights a few important things. There is a higher level of trust and commitment between employer and employee in the case of formal employment. It also indicates that with the government's incentives, formal employment in the MSME sector can be promoted.

Challenges in Business Revival

As reported by the firm owners, major challenges in business revival include paucity of working capital, lack of skilled workers, disrupted supply of raw materials, and deficiency of demand. Among these issues, the problem of working capital was the biggest one for the firm owners due to an increase in inventory and delayed payment. In this regard, the government should continue policy initiatives taken under '*Atmanirbhar Bharat*' for a long time until the MSMEs sector becomes able to cover its cost of production or achieve its breakeven point or the business environment become normal. Further, the government should strictly implement the policy of 25 percent procurement from MSMEs. As stated by the firm owners the plight of labourers led to a shortage of workforce for the MSME sector. It also affected the efficiency of the existing workforce at the workplace. Although some workers were available for employment, the majority of them lacked the required skills. Further, available workers were demanding higher wages, which led to increased labour costs.

Reduction in the supply of raw materials had enhanced disruption in supply chains, which originated due to lockdown and restrictions on mobility. Because of hoarding, raw materials were available at a higher price which reduced production further. Hoarding and cartel should be restricted properly. In some cases, the quality of raw materials was also an issue.

With the gradual relaxation in the lockdown, the economy started showing signs of improvement. However, commercial demand for products and services was very low. In view of some firm owners, it may take at least two to three years to achieve the level of January 2020. Uncertainty in the market and low demand were serious challenges in the revival of the sector. It also affected the borrowing of firms from banks for new investments.

Efficacy of Government Policies

To measure the efficacy of government schemes during the pandemic, the questions about the awareness of schemes benefits received and whether satisfied or not for the selected 10 government schemes have been asked to the

firm owners (Table 7). We observed that there is a high level of awareness about the government schemes among the firm owners under study. It may be because all firms under study were registered firms. Certainly, it might not be true for unregistered MSMEs representing a large fraction of the sector. Further, young and educated persons were operating the majority of these small firms under study. Moreover, in terms of receiving benefits, their performance was not very impressive. However, those who have received benefits under any schemes were found to be highly satisfied. It indicates that hypothesis 1 - the supportive measures of government have increased firms' resiliency and helped to attain sustainable growth - can be accepted.

Relaxation in interest payments and working capital support for the MSMEs during and after the pandemic were much needed. However, most of the firm owners reported that these support measures might only help in the survival of firms, save them to close permanently, and support them to stay in business. Further, these supports were too small to handle the financial challenges of the large and diversified MSME sector with huge dominance of informality. In their views, mere announcements would not help in reviving the MSME sector. Their implementation with transparency was more needed for its revival. Government should have been aggressive in its approach to implement these announcements properly. The sudden lockdown imposition was highly damaging for the businesses. They suggested that Government should accelerate the pace of reviving the market at any cost via financial, technical, and marketing instruments. Further, these support measures would have been more helpful to the business if the government would have focused more on the revival of the demand for products and services. Therefore, views obtained from owners of MSMEs under study emphasize that policy measures during business uncertainties caused by external shocks such as the pandemic should focus on addressing both demand and supply side challenges along with considering the diversity and informality of the sector.

Probit Regression Analysis Results

A regression analysis was conducted to understand if there is any statistically significant relationship between the negative impact of COVID-19 and firm size, investment, and age of the firm. The results of the regression analysis are shown in Table 8. The coefficients of explanatory variables - firm size (measured in terms of the number of workers), investment level (measured in terms of investment in plant and machinery and equipment), and firm's age are negative (i.e., -0.004, -0.575, and -0.561 respectively) and statistically significant (i.e., 1 percent, 1 percent, and 10 percent respectively). These findings also show that hypotheses 2, 3, and 4 are accepted. It indicates that larger firms in terms of employment and investment, and older firms have a lesser possibility to be affected by external shocks. It also infers that smaller and younger firms need more policy attention during a pandemic, external shocks, or business uncertainties.

Table 7. Efficacy of government schemes

S. No.	Name of Government Schemes	Awareness level (% of total firms having awareness)	Benefits Received (% of firms having awareness)	Satisfied (% of benefits received)
1	Prime Minister Employment Generation Programme (PMEGP)	218 (96.89)	136 (62.39)	106 (77.94)
2	Credit Guarantee Trust Fund for Micro & Small Enterprises (CGT SME)	211 (93.78)	115 (54.50)	83 (72.17)
3	Government e-Marketplace	204 (90.67)	90 (44.12)	30 (100.00)
4	Procurement and Marketing Support Scheme (P&MS)	169 (75.11)	123 (72.78)	8 (6.50)
5	TReDS (Trade Receivables electronic Discounting System)	190 (84.44)	71 (37.37)	8 (11.27)
6	MSME59	225 (100.00)	194 (86.22)	186 (95.88)
7	MUDRA Yojana	211 (93.78)	16 (7.58)	8 (50.00)
8	Distress Asset Fund –Subordinate Debt Scheme for MSMEs	225 (100.00)	141 (62.67)	125 (88.65)
9	Rescheduling of Payments – Term Loans and Working Capital Facilities	225 (100.00)	225 (100.00)	132 (58.76)
10	Initiatives under Atmanirbhar Bharat	225 (100.00)	179 (79.56)	103 (57.54)

Source: Primary Survey, Computed by the Author. Note: In parenthesis, the percentage of the firms has been shown at the awareness level, at the benefits receiving level, and at the satisfaction level.

Table 8. Results of Probit Regression Analysis

Independent variables	Coefficient	Standard Error	Z	p>z
Firm Size	- 0.004*	0.001	- 4.91	0.000*
Investment	- 0.575*	0.015	- 3.91	0.000*
Firm's Age	- 0.561**	0.317	-1.77	0.077**
Pseudo R ²	0.513 (0.000)*			

Source: Computed by the author. Note: * and ** denote significance at 1% and 10% levels, respectively. The significance of the model has been shown in parentheses.

Conclusion and Policy Recommendations

This study examines the impact of COVID-19 on MSMEs in India and assesses the efficacy of the policy measures to revive this sector. The study also suggests ways for promoting resilient and sustained growth for the sector. It is based on the primary survey of 225 small firms located in Dehradun and the NCR region engaged in both manufacturing and service activities. The study shows that the pandemic and lockdown have severely affected the MSME sector. The business of one-third of firms collapsed while more than half of the firms faced a demand reduction. Other impacts on small firms include the erratic supply of raw materials, cancellations of previous orders, delay in payments, reduction in trade, increase in the price of raw materials and production costs and decrease in production activities. The employment in firms under study was reduced by around 25 percent. The workers, who lost their jobs, were mainly engaged in informal employment.

Major challenges faced by firms in their revival include issues about working capital, delayed payments, shortage

of workers, loan and repayments issues, lack of finances for investment in new opportunities, lack of demand for products and services, huge disruptions in the supply of raw materials and increase in the cost of production. However, firms that quickly adopted e-commerce platforms and had some savings to invest for this purpose were able to maintain their previous performance level or experienced an increase in turnover. Some enterprises switched to other activities such as the production of masks, sanitizer, and home delivery of products. Therefore, firms that have financial resources, and flexibility to adopt a new business model and explore new business opportunities may survive and maintain their growth during economic shocks. This is also verified by the results of regression analysis.

With the revised definition, some large firms have become eligible to be categorized as MSMEs and avail of benefits meant for the revival and growth of the MSME sector. However, for the majority of firms under study, revision in the definition of MSMEs is beneficial for them. The revised definition allows firms to increase their size and increase

output level along with availing the benefits of MSME supporting schemes with more investment and more turnover. It will also promote export. An increase in investment can increase the productivity and competitiveness of a firm without losing its MSME categorization. Further, an increase in turnover can allow the realization of economies of scale in the MSMEs sector.

A high level of awareness about government schemes has been found among firms under study. It may be because all firms under study were registered firms and were operated by young and educated persons. Moreover, in terms of receiving benefits, their performance was not very impressive. There is a need to increase the awareness level of firms.

Lessons from the Pandemic

The world has entered the third year of the pandemic. It has given long-lasting effects on many dimensions of life. The economy has started showing recovery despite the third wave of the pandemic. However, there is huge unemployment and small firms are still struggling to survive and achieve sustained growth. The pandemic is neither the new one nor the last one. Many scientists have suggested that due to increasing climate change and global warming, there might be more pandemics and natural disasters in the future. Further, humanity may face many man-made disasters (e.g., war) or economic shocks (e.g., financial crises). There is a strong need to learn lessons from this pandemic. Based on our interaction with owners of small firms and the above discussion, the following lessons can be learned for the resilient and sustained growth of the MSME sector:

1. The Pandemic has generated both demand and supply shocks. Merely financial assistance to small businesses may help them to survive but for revival and sustained growth, the government should focus on enhancing demand also.
2. The resilience of a firm depends upon its financial resources and ability to invest in new technologies or business opportunities.
3. In general, MSMEs lack financial and human resources. Unlike small firms, large firms have financial planning for economic shocks and business uncertainties. There is a need to encourage and train small firms to plan for business uncertainties.
4. There is a need to promote the registration of small firms. Registered firms have a better awareness of government schemes and access to them.

Planning for Enhancing Resilience of the MSME Sector for Future Economic Shocks

The pandemic has exposed the vulnerability of small businesses and weaker sections of society. It has also re-

vealed the utter inadequacy of policy framework to support the vulnerable sections of the economy during policy shocks and uncertain business environments. COVID-19 is neither the first pandemic nor it is going to be the last. The world has witnessed around five other pandemics during the first two decades of this century viz. Severe Acute Respiratory Syndrome (SARS) in 2002-03, H1N1 influenza in 2009, Swine Influenza in 2009, Middle East Respiratory Syndrome (MERS) in 2009, and ZIKA virus 2015-16. However, COVID-19, the worst among these, has infected an estimated 500 million people and killed around 20-50 million people (Sarma & Sunder, 2022). Scientists believe that climate change; particularly global warming may activate several dormant viruses and cause similar pandemics/epidemics in the future.

Apart from pandemics and epidemics, several other factors including abrupt government policies, wars, floods, drought, etc. may cause business uncertainties and affect small businesses. Although business uncertainties affect all types of firms, larger firms are better equipped to face such challenges with their financial resources and plans to address such situations (Rebmann et al., 2013) while small firms lack the resources to face such shocks (Watkins et al., 2008). Further, the majority of MSMEs are in the informal sector, which makes it difficult even for the government to help them (Sharma, 2022). Therefore, large fractions of MSMEs are at a high risk of shutting down their businesses after a large-scale external shock (Rebmann et al., 2013; Schrank et al., 2013). Lack of financial resources is the biggest challenge in the recovery of small businesses (Cumbie, 2007; Farrell & Wheat, 2016). Therefore, there is a need to develop a mechanism for small businesses, which may rescue them from shutting down their businesses and support their revival during business uncertainties caused by a large-scale economic shock.

The above discussion and our interaction with owners of firms highlighted that although demand and services were scarce during the pandemic, they struggled to retain their all-work force due to a lack of financial resources and delayed payment. Even they were not able to invest in new business opportunities or equipment due to a lack of financial resources. It emphasizes the need for a provision of an emergency fund for MSMEs. With our limited knowledge, we propose two models to address this issue – (i) Uncertainty Corpus Fund for MSMEs, and (ii) Small Business Insurance.

Uncertainty Corpus Fund for MSMEs

Like Public Provident Fund² (PPF), government can initiate Uncertainty Corpus Fund for Small Businesses (UCFSB). MSMEs should be encouraged to save and invest in it. This fund can be used to meet the financial needs of small firms during business uncertainties. It can also be linked with the

² In India, Public Provident Fund was introduced in 1968 to mobilize small savings in the form of investment, coupled with a return on it. The interest earned and the returns are not taxable under Income Tax Act. Therefore, it is a savings-cum-tax saving investment vehicle

turnover of the firms – like a firm should maintain a certain fraction of their turnover, say 1 percent for example, in the uncertainty corpus fund. With this, it would be a forced saving, but it would be highly useful for small businesses during business uncertainties caused by economic shocks. The government may encourage small businesses by assuring a lucrative return on the investment through such type of corpus funds.

Small Business Insurance Scheme

Like term insurance of a person, insurance schemes for small businesses can be initiated that can be named – Small Business Insurance Scheme. There are more than 63.4 millions MSMEs in the country. If framed properly, it has huge market potential for the insurance sector. The government may encourage MSMEs in paying their premium by bearing a part of its financial burden. Given the large number of MSMEs, the government may target small businesses, particularly micro and own-account enterprises, up to a certain level of turnover.

These two financial instruments may become part of financial planning for small firms, which they lack in comparison to large firms. Small firms can use such funds for meeting working capital requirements and investment purposes at the time of need, particularly during uncertain business environments caused by policy or natural shocks. It may also be a great help for the government in times of crisis. The government may focus on addressing demand issues which is the biggest challenge faced by MSMEs during an external shock such as the pandemic.

Theoretical Implications

This study addressed the issue of resilience and sustaining the growth of MSMEs during and after the COVID-19 pandemic. The study tried to get the solutions to these issues from the lens of contingency theory. The results of this study may support supplementing the literature related to contingency theory. Further, the results of the current study validate that in the situation of crisis experience and size of the firm do matter.

Limitations and Future Research

Like any other study, the present study is also not free from limitations. First, this study includes only registered MSMEs while a larger number of MSMEs belong to the unregistered category. Second, most of the MSMEs in India fall in the category of micro enterprises while in our sample the least representation is from the micro category. Finally, the sample of the present study was restricted to north India only. Therefore, future research should have to consider the rest of the part of the country also and weightage should have to be given to any category of MSMEs in a sample based on their proportion in total MSMEs number to overcome these limitations. Additionally, the future study should also consider the personality traits of the entrepreneurs along with the discussed variables of this study to increase the applicability of the findings further.

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that enables one to build a corpus for long-run financial needs. It is a government-backed scheme and one of the best investment options for a person with a low-risk appetite. It offers guaranteed returns to protect the investment need of the people.

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