



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

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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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Abstract: *The Pandemic has raised an issue of survival for most of the micro, small, and medium enterprises (MSMEs) at global level. MSMEs sector are one of the most vulnerable sector because of their size, limited financial resources and inefficiency to deal with unpredicted situations. Based on a primary survey of 225 small firms located in Dehradun and National Capital Region, the present study investigates the impact of COVID-19 on MSMEs and find out the ways to enhance the resilience and promote its sustained growth in the presence of government supportive measures. The study observed that around 90 percent of surveyed firms realized decline in their turnover, which was mainly due to restriction in economic activities, decrease in demand, shortage of workers, and disruption in supply chains. Furthermore, the reduction in employment was around 25 percent, which was mainly in the segment of informal employment. Surprisingly, there was some increase in formal employment in around 50 percent of firms because of business commitment of firms, shortage of informal workers and availability of workers at lower wages. Smaller firms, in terms of both employment and investment, and younger firms have higher possibility to be affected by the external shocks. 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 resilience and sustainability of MSMEs, the study suggests small firms should be encouraged for financial planning for business uncertainties and proposes financial security measures viz. Uncertainty Corpus Fund for Small Businesses and Small Business Insurance.*

Keywords: MSMEs, COVID-19, Resilience, Sustained growth, India

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1. Introduction

Micro, small and medium enterprises (MSMEs) contribute significantly in 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 needs of domestic as well as global market (Singh et al., 2019). Through providing employment to millions of people, these enterprises are playing a major role in income generation, poverty reduction, and creating domestic demand. These enterprises are indispensable for smooth functioning of supply chains in any economy. Therefore, MSMEs are crucial in maintaining delivery of goods and services during and after any public health crisis like the covid19 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 responses of different economies have led to decline in economic activity around the globe. The policy of restrictions on mobility within a country and between countries along with closure of work places have generated economic uncertainty that finally resultant 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 economy from both supply and demand sides with significant increase in unemployment. Lockdown and other precautionary measures which 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. In fact, MSMEs are most vulnerable to such unexpected situations because of lower capital reserve, fewer assets, and lower levels of productivity (OECD, 2020). During pandemic, decrease in GDP and trade activity around the globe further deepen the challenges faced by MSMEs especially micro enterprises and therefore most of the governments struggle to introduce effective policies for MSMEs to respond 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 (Davidson & Gordon, 2016).

In India, there are around 63.39 million of MSMEs. Among them majority are micro enterprises, around 99.5 percent. The MSME sector provides employment to around 111 million workers, and contributes around 40 percent to total output produced, around 30 percent of total GDP and approximately 50 percent of total export from India. In order to revive the economy and support MSMEs from the severe impacts of COVID-19, the

Government of India (GOI) announced various measures under '*Atmanirbhar Bharat*' package in May 2020. The stimulus package aimed to assist all sector including labourers, agriculture, cottage industries, MSMEs and industries as a whole with emphasis on local markets and supply chains. MSMEs' definition was also revised through increasing investment limits for each sub categories 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, reduction in timely repayment of debts, and provision of borrowing for individuals and industries cheaper rates from banks assist the MSMEs from financial crunch. Though, the economy has shown a sign of recovery after relaxation in 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.

Scientists and researchers expect that such type of pandemics may occur more frequently in future (McKee & Stuckler, 2020). Therefore, it is important to understand impacts of current pandemic on MSMEs and their strategies to develop resilience and achieve sustained growth against such incidence in the future. The present study, based on primary survey of 225 small firms, investigates the impact of COVID-19 on MSMEs in India, assesses effectiveness of support measures of government and finds out ways to enhance their resilience and achieve sustained growth. Our empirical results provide evidence that during pandemic small firms were facing issues from both demand and supply sides, and that resulted in decrease in turnover and increase in unemployment especially in the informal employment segment. The impact was observed more severe on small and micro enterprises among MSMEs. Majority of MSMEs suffered heavily during the pandemic, lack 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 suggests that small firms need to have financial plan for economic shocks and business uncertainties.

The rest of the paper is prepared as follows. Section 2 contains a brief review of available literature. Section 3 describes the data sources, description of variables and method applied for data analysis. Section 4 includes the empirical results in detail, and section 5 discusses lessons for the resilient and planning against economic uncertainties for the small firms. Finally, section 6 includes the conclusion and policy implications of the present study.

2. Literature Review

In response to COVID-19 pandemic, most of the countries adopted containment measures such as lockdown, quarantine and social distancing to restrict the spread of virus that affected mobility of factors of production and stopped majority of business activities

(Loneragan & Chalmers, 2020). These restrictions led to closure of work places, decline in labour supply, reduction in supply of raw materials, and disruption in supply chains globally (Ernst & Young, 2020). Further, the uncertainty about economic recovery compelled people to decrease their expenditure, which resulted in decline in demand. Therefore, the pandemic and its containment measures have generated both demand and supply shocks in all countries across the world (del Rio-Chanona *et al.*, 2020; Guerrieri *et al.*, 2020; Bekaert *et al.*, 2020; Sharma, 2022). The world is facing challenges at all fronts such as contraction in gross domestic product (GDP), 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 to such crisis in comparison to large firms due to lack of financial and human resources (Prasad *et al.*, 2015; Bartik *et al.*, 2020; Shafi *et al.*, 2020).

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

The above discussion clearly indicates that most of the studies focus mainly on financial and operation support along with shift from traditional business models to 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 a business uncertainty when it arises. A long term planning of financial resources by MSMEs may enable them to sustain their growth during business uncertainties caused by external shocks such as 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 MSME sector to develop its resilience and enable it to sustain growth during any future external shocks.

3. Methodology

3.1. Model specification and data

The study is based on primary data collected through a telephonic survey of 225 small firms located in Uttarakhand and 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 located in these states altogether (i.e. Delhi, Uttar Pradesh, Haryana, Rajasthan and Uttarakhand), as per 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 during October 2020- 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. owner of firm.

Out of 225 firms, around 42 percent were located in Uttarakhand while the rest 58 percent were located in NCR. In term 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 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.

In order 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 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 firm's turnover has declined due to 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 number of labour employed, investment in plant and machinery/equipment, and difference between 2020 and the year of starting firm's operation respectively. The empirical model has been shown in equation (1):

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

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

3.2. Probit model

The method of ordinary least squares (OLS) is not applicable when dependent variable is binary in nature 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 condition, the probit model, which is based on the assumption of normal distribution of error term (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:

$$P_i = P_r(Y = 1 | X) = P_r(I_i^* \leq I_i) = P_r(Z_i \leq BX) = F(BX) \quad (2)$$

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;

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

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 as probit function.

4. Results and Discussion

4.1. Impact of change in definition on MSMEs

One of the major policy initiative for the MSME sector under 'Atmanirbhar Bharat' package, announced in May 2020, was 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, other important deviation from the old definition are 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 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's has significant impact on graduation of enterprises among their categories – i.e. micro, small, medium and large. Further, increase in turnover can allow 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 firm owners were of the opinion that revised definition of MSMEs is beneficial for the sector while the remaining 12.89 percent firms told that they are uncertain about its implication. In views of those who find it beneficial, the revised definition will allow them to increase investment level, firm size i.e. employment level, output level, and encourage them to export more without losing their firm's categorization as MSMEs.

Table 1: Revision in MSMEs Definition

MSME Category	Composite Criteria of New MSME Definition, June 2020		Criteria of Old MSME Definition, MSMED Act 2006	
	Investment (in plant and machinery, and equipments)	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 100 million	<INR 500 million	>INR 2.5 million or <= INR 50 million	>INR 1 million or <= INR 20 million
Medium Enterprises	<INR 500 million	< INR 2500 million	>INR 50 million or <= INR 100 million	> INR 20 million or <= INR 50 million

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

The immediate implications of this revision in the MSME definition is that it enables few large firms to be categorized as MSMEs and avail benefits of policy initiatives under ‘*Atmanirbhar Bharat*’ package announced to support and revive the MSME sector which is severely affected by the pandemic (Sharma, 2022). Though it a small sample size, the present study of 225 firms also depict it clearly. If sample firms are categorized as per old MSMEs definition, 61 firms are large firms, 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 clearly indicates that with the revised definition some large firms have become eligible to be categorized as MSMEs and avail benefits proposed for the revival and growth of the MSMEs sector.

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, The Author

Note: In parenthesis, the percentage of the firms existing under each category have been depicted.

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

4.2. Impact of lockdown on business activities

In order to curb the spread of the Covid-19 virus, the government introduced a sudden and strict lockdown on 25 March 2020 with some relaxation for essential activities. It continued upto 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 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 market for the final output. The highest impact was on decrease in demand (53 percent) followed by supply of raw materials (36 percent) and collapse of businesses (29 percent). Interestingly, around 4 percent firms reported that their demand had increased.

Table 3: Impact of lockdown on firms

<i>Impact of lockdown on firms</i>	<i>Percent of Total Firms</i>
No Demand/Collapse of Businesses	29.33
Production & Distribution Activities Closed	10.67
Decrease in Production Activities	29.33
Ordered cancelled	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, The Author

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 firms reported that their turnover was increased and rest of 7 percent firms reported that there was no change in their turnover during the period. These enterprises were engaged in human health activities and manufacture of wearing apparels. Nearly 53 percent firms reported more than 50 percent decline in their turnover. It indicates the severity of business disruptions caused by the lockdown. Our findings are similar to other studies assessing the impact of the pandemic on performance of MSMEs (Rathore & Khanna, 2020; Tairas, 2020; Shafi et al., 2020; Wijaya, 2020).

Table 4: Impact on turnover

<i>Impact on Turnover</i>	<i>No. of Firms</i>	<i>Percent of Total Firms</i>
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, The Author

Table 5: Average change in turnover of MSMEs (in percent)

	<i>Average Change</i>	<i>Standard Deviation</i>	<i>Min. Value</i>	<i>Max. Value</i>
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, The Author

Among MSMEs under study, 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 case of medium enterprises, the range of percentage change in turnover is -80.00 to 25.00. It indicates that despite average 32 percent reduction in turnover of medium enterprises under study, some of these enterprises observed increase or no change in turnover in 2020-21. It is in consistent with the findings of table 4 which shows that around 10 percent firms under study have observed either increase or no change in turnover. Such enterprises were engaged in human health activities and manufacture of wearing apparels. Further, owners of these enterprises reported that they tried to quickly adopt e-commerce platform and they had some savings to invest for the purpose. Some enterprises switched to the other economic activities such as production of masks, sanitizer and home delivery of their products, etc. It shows that these firms had flexibility in their production process and had

resources needed for it, particularly financial resources. It infers a very important lesson for enhancing resilience of MSMEs. Few other studies have also highlighted that firm with stronger cash positions (Roper & Turner, 2020), with adaptation of digital technology (Akpan et al., 2020; Papadopoulos et al., 2020; Gregurec et al., 2021), and with utilization of e-commerce and social media platforms (Suwarni & Handayani, 2021; Purba et al., 2021) sustain their business during and after the pandemic.

4.3. 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 the 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 was increased during the period by nearly 5 percent and 12.58 percent respectively.

Table 6: Impact of Covid-19 on types of employment

<i>Type of Workers</i>	<i>No. of Persons Employed</i>		<i>Change (in percent)</i>
	<i>2019-20</i>	<i>2020-21</i>	
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, The Author

During interaction, most of the firm owners reported that there was uncertainty about reopening of the economic activities after lockdown 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 plight of workers in India due to lockdown (e.g. Srivastava, 2020). However, some of the informal workers were available for work near the worksite at a higher daily wages as wages had increased due to the shortage of workers. In order to meet the business commitments, order taken before lockdown or fresh orders coming during lockdown, firm owners offered them formal employment at relatively lower formal wages. Further, 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 few months during the pandemic. For firms, it was the need of 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.

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.

Out of total 225 firms, around 49 percent firms reported 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. Main reasons for hiring formal workers include plight of informal workers, requirement for meeting business commitment 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 few important things. There is a higher level of trust and commitment between employer and employee in case of formal employment. It also indicates that with government's incentives, formal employment in the MSME sector can be promoted.

4.4. 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 increase in inventory and delayed payment. In this regard, government should continue policy initiatives taken under '*Atmanirbhar Bharat*' for a long time until the MSMEs sector become able to cover its cost of production or achieve its breakeven point or businesses 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 shortage of workforce for the MSME sector. It also affected efficiency of existing work force at the workplace. Although some workers were available for employment but majority of them lacked required skills. Further, available workers were demanding higher wages, which led to increased labour cost.

Reduction in 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 higher price that reduced the production further. Hoarding and cartel should be restricted properly. In some cases, quality of raw materials was also an issue.

With the gradual relaxation in the lockdown, the economy started showing sign of improvement. However, commercial demand of products and services were 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 the serious challenges in revival of the sector. It also affected the borrowing of firms from banks for new investments.

4.5. 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 has been asked to the firm owners (Table 7). We observed that there is high level of awareness about the government schemes among the firm owners under study. It may be because of 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 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.

Table 7: Efficacy of government schemes

<i>SN.</i>	<i>Name of Government Schemes</i>	<i>Awareness level (% of total firms having awareness)</i>	<i>Benefits Received (% of firms having awareness)</i>	<i>Satisfied (% of benefits received)</i>
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, The Author

Note: In parenthesis, the percentage of the firms has been shown at awareness level, at benefits receiving level, and at satisfaction level.

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 survival of firms, save them to close down

permanently and support them to stay in business. Further, these supports were too small to handle the financial challenges of 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 business if the government would have focused more on 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 pandemic should focus on addressing both demand and supply side challenges along with considering diversity and informality of the sector.

4.6. Probit analysis results

A regression analysis was conducted to understand if there is any statistically significant relationship between negative impact of covid19 and firm size, investment and age of the firm. The results of regression analysis are shown in Table 8. The coefficients of explanatory variables – firm size (measured in term of 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). It indicates that larger firms in terms of both employment and investment, and older firms have lesser possibility to be affected by the external shocks. It also infers that smaller and younger firms need more policy attention during pandemic, external shocks or business uncertainties.

Table 8: Results of probit regression analysis

<i>Independent variables</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>Z</i>	<i>p>z</i>
Firm Size	- 0.004*	0.001	- 4.91	0.000*
Investment Level	- 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: The Author

Note: * and ** denote significant at 1% and at 10% level, respectively. The significance of the model has been shown in parentheses.

5. Conclusion and Policy Recommendations

The present endeavor has attempted to understand the impact of COVID-19 on MSMEs in India, assess the efficacy of the policy measures to revive the MSME sector and find out 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 NCR region engaged in both manufacturing and service activities. The study shows that pandemic and lockdown has severely affected the MSME sector. Business of one-third firms were collapsed while more than half of the firms faced reduction in demand. Other impacts on small firms include erratic supply of raw materials, cancellations of previous orders, delay in payments, reduction in trade, increase in 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 pertaining to working capital, delayed payments, shortage of workers, loan and repayments issues, lack of finances for investment in new opportunities, lack of demand of products and services, huge disruptions in supply of raw materials and increase in cost of production. However, firms, able to maintain their previous performance level or had experienced increase in turnover, quickly adopted e-commerce platform and had some savings to invest for this purpose. Some enterprises switched to other activities such as production of masks, sanitizer and home delivery of products. Therefore, firms having financial resources, flexibility to adopt 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 benefits meant for the revival and growth of the MSME sector. However, for majority of firms under study, revision in the definition of MSMEs beneficial for them. Revised definition allows firms to increase their size and increase the output level along with availing the benefits of MSME supporting schemes with more investment and more turnover. It will also promote export. Increase in investment can increase productivity and competitiveness of firm without losing its MSME categorization. Further, increase in turnover can allow realization of economies of scale in the MSMEs sector.

High level of awareness about the government schemes has been found among firms under study. It may be because of all firms under study were registered firms and being 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.

5.1. Lessons from the pandemic

The world has entered in the third year of the pandemic. It has given long lasting effects on many dimensions of life. The economy has started showing recovery despite third wave of the pandemic. However, there are huge unemployment and small firms are still struggling to survive and achieve a 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 pandemic and natural disaster in the future. Further, the humanity may face many man-made disasters (e.g. war) or economic shocks

(e.g. financial crisis). There is a strong need to learn lessons from this pandemic. Based on our interaction with owners of small firms and above discussion, following lessons can be learned for the resilient and sustained growth of the MSME sector:

- a. 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, government should focus on enhancing demand also.
- b. Resilience of a firm depends upon its financial resources and ability to invest in new technologies or business opportunities.
- c. In general, MSMEs lack of 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.
- d. There is a need to promote registration of small firms. Registered firms have better awareness about government schemes and access to them.

5.2. 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 the society. It has also revealed utter inadequacy of policy framework to support the vulnerable sections of the economy during policy shocks and uncertain business environment. Covid-19 is neither the first pandemic nor it is going to be the last. The world has witnessed around five other pandemics during 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, 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 are of the opinion that climate change; particularly global warming may activate several dormant viruses and cause similar pandemic/epidemic in future.

Apart from pandemic and epidemic, there are several other factors including abrupt government policies, wars, flood, drought, etc. that may cause business uncertainties and affect small businesses. Although business uncertainties affect all types of firms, but larger firms are better equipped to face such challenges by having financial resources and plans to address such situations (Rebmann et al., 2013) while small firms lack resources to face such shocks (Watkins et al., 2008). Further, 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 (Schrack et al., 2013; Rebmann et al., 2013). Lack of financial resources is the biggest challenge in the recovery of small businesses (Farrell & Wheat, 2016; Cumbie, 2007). Therefore, there is a need to develop mechanism for small businesses, which may rescue them from shutting down their businesses and support in their revival during business uncertainties caused by large-scale economic shock.

The above discussion and our interaction with owners of firms clearly highlighted that although there was scarcity of demand and services during pandemic, they struggled to retain their all work force due to lack of financial resources and delayed payment. Even they were not able to invest in new business opportunities or equipment due to 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.

5.2.1. 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 businesses uncertainties. It can also be linked with the turnover of the firms – like a firm should maintain a certain fraction of their turnover, say 1 percent for an 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. Government may encourage small businesses by assuring a lucrative return on the investment through such type of corpus funds.

5.2.2. 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 6.4 million MSMEs in the country. If framed properly, it has huge market potential for the insurance sector. Government may encourage MSMEs in paying their premium through bearing a part of its financial burden. Given the large number of MSMEs, government may target small businesses, particularly micro and own account enterprises, up to a certain level of turnover.

These two financial instruments may become the 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 environment caused by policy or natural shocks. It may also be a great help for the government at the time of crisis. Government may focus on addressing demand issues which is the biggest challenge faced by MSMEs during an external shock such as the pandemic.

² In India, Public Provident Fund was introduced in 1968 with the objective 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 that enables one to build a corpus for the long run financial needs. It is government-backed scheme and one of the best investment options for a person with low risk appetite. It offers guaranteed returns to protect investment need of the people.

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