UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

SUSTAINABLE DEVELOPMENT GOALS

IMPACT ASSESSMENT OF COVID-19 ON INDIA'S MANUFACTURING FIRMS

SURVEY RESULTS APRIL-JUNE 2021

Acknowledgements

This report was produced by the UNIDO Regional Office in India with the support and technical assistance of UNIDO's Policy Research and Statistics Department and the Asia and the Pacific Regional Coordination Division. Special thanks go to India SME Forum, which implemented the survey, as well as to the respondents from the private sector, including micro-, small-, medium- and large enterprises, who dedicated valuable time during the second COVID-19 pandemic wave in India to contribute to the survey.

Key findings

This survey of the firm-level impacts of COVID-19 in India was conducted by the United Nations Industrial Development Organization (UNIDO) with support of India SME Forum (ISF) under UNIDO's global multi-country analysis of COVID-19's impacts and the manufacturing sector's response, with a focus on the impact of COVID-19 on firm performance; firm-level responses to COVID-19; and policy and government support for COVID-19 recovery. The online Indian survey was conducted from 1 April – 31 May 2021, which coincided with the peak of COVID-19 infections during India's second COVID-19 wave.

The key findings can be summarized as follows:

1. 489 firms responded to the survey. Of these, 438 were in operation (regular or partial), while 51 (or 10 per cent) reported that they had closed their operations. The subsequent analysis is limited to the 438 firms that remained in operation (henceforth the 'respondent firms').

2. 76 per cent of respondent firms were located in one of the five states prioritized for the survey, given their high number of manufacturing firms (i.e., Gujarat, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh). 68 per cent of respondent firms were small (less than 20 employees), 23 per cent were medium-sized (between 20 and 99 employees) and 9 per cent were large firms (over 100 employees). 77 per cent of respondent firms were engaged in manufacturing and have been divided into industries that have globally been less affected by the pandemic (49 per cent of respondent firms were classified as 'robust' such as food and pharma) and industries that have globally been more affected by the pandemic (51 per cent of respondent firms were classified as 'vulnerable', such as textile and garments, furniture, leather and footwear).

3. 'Increased costs of inputs' is the most frequently reported problem (68 per cent of respondents), followed, respectively, by 'drop in demand due to crisis' (55 per cent); 'lack of workers resulting from the restrictions imposed' (37 per cent); 'drop in demand due to government restrictions and lockdown' (30 per cent); 'suppliers unable to supply' (33 per cent); 'orders cannot be delivered' (31 per cent); 'drop in demand due to restrictions' (30 per cent) and 'lack of workers due to illness' (24 per cent).

4. Some of the manufacturing firms that remained operational reported an increase in sales (14 per cent) and 8 per cent registered increased profits. However, 61 per cent of respondent firms witnessed a decrease in sales, 51 per cent reported a reduction in profits and 56 per cent had to lay –off staff. Many firms experienced severe losses, with 38 per cent of all respondent firms reporting a drop in sales of at least 50 per cent, while 33 per cent recorded a loss of at least half of their regular profits and 41 per cent had to lay off at least one-quarter of their workforce, with relatively higher lay-offs of women than men. Across the board, non-manufacturing industries experienced higher

losses than manufacturing industries, and vulnerable industries within manufacturing reported higher losses than more robust industries.

5. The majority (84 per cent) of respondent Indian manufacturing firms have introduced operational changes to respond to the pandemic and mitigate its impacts. Manufacturing firms most frequently made 'organizational changes for health and safety' (43 per cent of respondents), 'started or increased online activities' (39 per cent), 'introduced new product(s) to address new demands' (38 per cent) 'adjusted working shifts and space layout' (33 per cent) and 'started or increased remote working' (29 per cent). Furthermore, 25 per cent of Indian manufacturing firms repurposed their manufacturing capabilities to respond to emergency requirements, such as the manufacturing of personal protective equipment (PPE), hygiene products, pharmaceuticals, etc. Moreover, Indian manufacturing firms responded by implementing new automation technologies (21 per cent of respondents) and initiated (or increased) product delivery (16 per cent of respondents).

6. 22 per cent of respondent firms received some form of government support, although the number of firms that benefitted from government funding relief efforts was higher among manufacturing than non-manufacturing industries and the relief efforts benefitted large firms more than small and medium enterprises (SMEs). The government support provided to Indian manufacturers consisted mostly of 'access to new credit' (52 per cent), followed by 'deferral or suspension of interest on credit' (37 per cent), 'deferral of tax payment' (23 per cent), 'tax exemptions or reductions' (18 per cent), 'cash transfers to businesses' (15 per cent), 'deferral of rent or mortgage' (14 per cent), 'import and export regulatory support' (12 per cent), 'public procurement' (12 per cent), 'R&D or innovation subsidy' (8 per cent) and 'wage subsidy'(8 per cent). All Indian manufacturing firm that received government support derived benefits from, on average, two policy measures or mechanisms.

7. A large majority (88 per cent of respondent firms) stated a need for government support to respond to and recover from the impacts of COVID-19 on their firms. The most frequently mentioned business needs of Indian manufacturing firms are 'access to new domestic markets' (50 per cent), 'access to new foreign markets' (46 per cent), 'business continuity plans' (44 per cent), 'development of new products' (43 per cent), 'R&D and innovation' (39 per cent), 'reorganization of supply chains' (31 per cent), 'digitalization of the firm' (30 per cent) and 'development of new skills' (30 per cent).

The overall picture that emerges is that Indian manufacturing firms face multi-facetted and integrated problems in terms of taking advantage of labour and other inputs and realizing sales and the delivery of goods and services, each of which has been affected by changing market conditions (increased prices and weakened demand due to the economic crisis), government regulations (restrictions, lockdowns and stimulus packages) as well as health and humanitarian impacts (illness of workers and loss of

incomes and livelihoods). Large firms more frequently reported to have received government support, which may have cushioned the adverse impacts of COVID-19 on their sales, profits and level of employment relative to the more adverse impacts reported by SMEs, on average.

The pandemic has exposed and exacerbated the pre-pandemic structural weaknesses in firms' capabilities and performance. The dominant micro- and small business segments derive strength from diversity, short-cycle times and lean financial, managerial and technical resources. Moreover, many are unorganized and operate informally, which hampered the access to recovery assistance through credit support and tax deferrals.

COVID-19 brought the majority of manufacturing firms, particularly micro-, small- and medium enterprises (MSMEs), to a near complete standstill during the lockdowns. The pandemic has also presented opportunities for the introduction of new business processes, models, products and/or services. Capturing these opportunities requires conducive entrepreneurial and innovation ecosystems, designed and operated in partnership with MSMEs and their employees to develop opportunities for women and youth. Inclusive and sustainable recovery from the crisis is only possible if MSMEs are supported unconditionally by all to regain their vigour and improve their efficiency and resilience.

Table of Contents

1. Rationale

The global outbreak of COVID-19 presents unprecedented socio-economic challenges for both developing and industrialized countries around the world. Countries are not only facing a health and humanitarian crisis but a subsequential economic crisis as well. Non-pharmaceutical interventions, particularly social distancing, improved respiratory hygiene and cough etiquette and use of Personal Protective Equipment (PPE), have played a key role in slowing and curtailing the spread of the virus; these interventions were enforced through restrictive measures with movement and gathering restrictions and lockdowns of (sections of) society and of the economy. These restrictive measures have slowed down society and most economic activities.

The lockdown measures, in particular, halted or reduced manufacturing activities and the production of goods and services. They have had—and continue to have—serious implications for national and global supply chains, businesses and the livelihoods of workers and communities. Depending on the nature and scale of firms, the productive output of many firms has registered significant setbacks, as have sales, profitability and employment across all firm sizes.

India is no exception. The COVID-19 pandemic resulted in negative growth of the Indian economy during the 2020-21 fiscal year (1 April 2020 – 31 March 2021), evidenced in the decline of gross domestic product (GDP) by around 7.3 per cent measured at constant prices compared to an increase of 4.0 per cent in the previous fiscal year 2019–20.[1] The Government of India implemented a comprehensive economic recovery programme, known as Atmanirbhar Bharat, in May 2020, with the aim of improving self-reliance.[2] Specific measures targeted, amongst others, the provision of credit and working capital to businesses and extending public procurement to Indian firms. Moreover, the government amended its definitions of micro-, small- and medium enterprises (MSMEs) as of 1 July 2020, based on a combination of investments in plant and machinery (up to 50 crores Indian rupees (~6.7 MUSD)) and annual turnover (up to 250 crores Indian rupees (~33.3 MUSD)).[3]

In its qualitative analysis of select Indian manufacturing clusters in April 2020 (during India's first nationwide lockdown from 25 March – 31 May 2020), UNIDO found that MSMEs' biggest concern were financial woes of depleting working capital and dwindling sales.[4] UNIDO found that firms faced unprecedented uncertainty in the wake of the pandemic due to government responses (restrictive and

[1] Ministry of Statistics and Programme Information (2021), *Press Note on Provisional Estimates of Annual National Income 2020-2021*, 31 May 2021, see: https://www.mospi.gov.in/documents/213904/416359//Press%20Note_31-05-2021_m1622547951213.pdf/7140019f-69b7-974b-2d2d-7630c3b0768d

[2] See: https://aatmanirbharbharat.mygov.in/.

[3] Micro enterprise: investment in plants and machinery or equipment does not exceed one crore rupees and turnover does not exceed five crore rupees. Small enterprise: investment in plants and machinery or equipment does not exceed ten crore rupees and turnover does not exceed 50 crore rupees. Medium enterprise: investment in plants and machinery or equipment does not exceed 50 crore rupees and turnover does not exceed 250 crore rupees. Ministry of MSME (2020), (1 crore rupee equals approximately USD 135,000) https://msme.gov.in/sites/default/files/MSME_gazette_of_india.pdf.

[4] UNIDO (2020), India's manufacturing reels from impacts of COVID-19, see: https://www.unido.org/stories/indias-manufacturing-reels-impact-covid-19

lockdown measures) and their effects on society; experienced an abrupt, sudden and often irreversible decline in markets and demand for products and services; and witnessed overnight changes in and reductions of their workforce, including due to reverse migration of migrant labourers. Moreover, firms dealt with stranded assets (un- or underutilized stocks of raw materials, intermediates and finished goods), machinery (unutilized and deteriorating equipment) and the disruption of supply chains. To support MSMEs to restart, recover and invigorate their business, the UNIDO Regional Office in India, with input from India SME Forum, UN India Business Forum and Empretec India Foundation, developed and initiated Building Back Business from Crisis: an online knowledge and exchange platform (B3C).[5] B3C provides a step-wise approach to recovery and business continuity and encourages firms to improve key business areas as part of their recovery journey in terms of e.g. financing, entrepreneurship, supply chains, manpower and operations.

At the request of its member states, UNIDO began implementing several country surveys on the impact of the COVID-19 pandemic on manufacturing firms with a particular focus on the situation of small and medium enterprises (SMEs). Several firm-level surveys were conducted during 2020 in Afghanistan, Bangladesh, Cambodia, Indonesia, Lao PDR, Malaysia, Mongolia, Pakistan, Philippines, Thailand and Viet Nam.[6] The surveys assessed the impact of COVID-19 on firms and explored strategies to address the challenges they encountered. To feed into UNIDO's flagship Industrial Development Report 2022, which focuses on the manufacturing sector's response to and recovery from the COVID-19 pandemic, the firm-level survey initiative was extended into 2021 to include additional countries, including India and China as well as middle-income and least developed countries (LDCs) in Africa and Latin America.

2. Method and data

2.1 Online survey

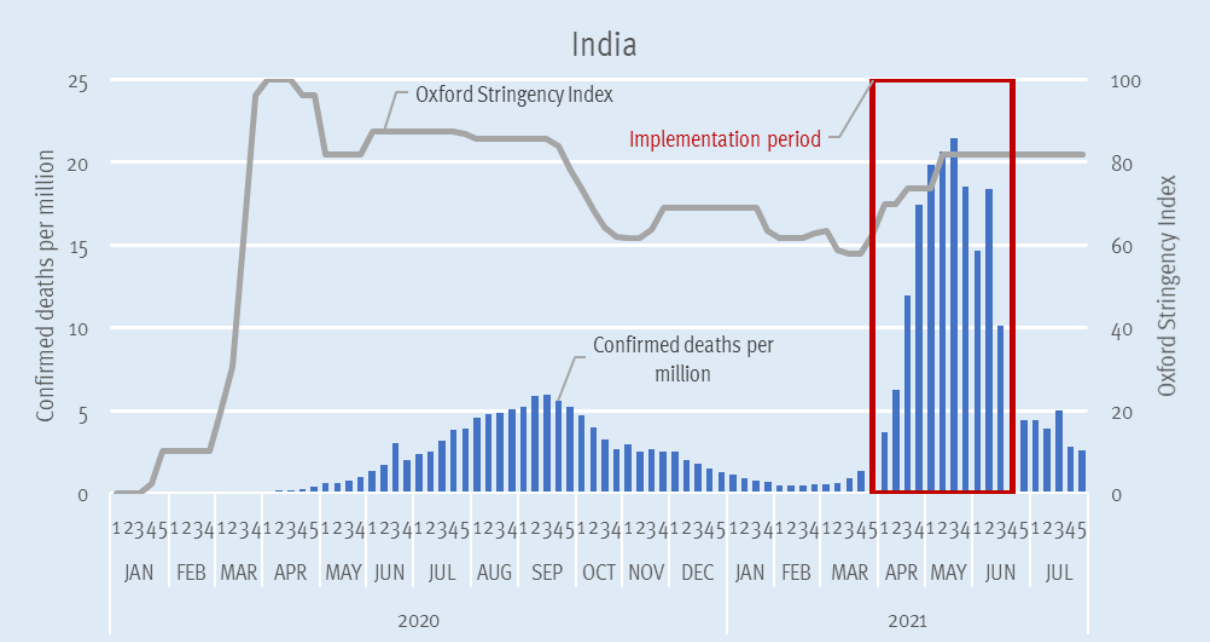
UNIDO conducted this firm-level COVID-19 impact assessment in India using its internationally tested framework, which was developed by UNIDO's Department for Policy Research and Statistics (PRS) and was further refined on the basis of the results and respondents' feedback in 11 Asian countries throughout 2020. The survey focuses on three topics: (1) the impacts of COVID-19; (2) responses to COVID-19; and (3) COVID-19 recovery and policy support for firms, combined with detailed firm characteristics in terms of industry, location, size and innovation and digitalization profiles. The survey questionnaire used in India is included in Annex 1.

[5] See: www.b3cmsme.org
[6] The country reports of the COVID-19 firm-level impact surveys can be accessed at: https://www.unido.org/COVID-19_surveys

The survey was promoted and supported by India SME Forum[7], which actively promoted survey participation among its membership lists and solicited, in particular, participation and responses from small and medium manufacturing firms in five states with relatively high numbers of manufacturing firms, namely Gujarat, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh.

The survey was conducted online using the Survey Monkey platform. It was launched on 1 April 2021 and ran until 31 May 2021.[8] The survey period coincided with the worst episode of the second COVID-19 wave in India between March – June 2021, largely attributed to the more contagious delta variant. India reported 15.9 million new COVID-19 infections during those two months, with a peak of 412,000 daily new infections in India on 12 May 2021.[9] This peak in COVID-19 cases at the time of the survey is reflected in Figure 1.

Figure 1: Sample context for India survey of firm-level impacts of COVID-19[10]



2.2 Typology of firms

Respondent firms have been categorized based on international criteria, particularly:

- *Firm size*: in accordance with international practice, the number of employees has been taken as an indicator of firm size, using the firm categories 'small' (1-19 employees), 'medium' (20-99 employees) and 'large' (100+ employees). There is no direct correlation between this

[7] India SME Forum is India's largest membership-based non-profit organization working to support the development of the SME sector in India, see: https://www.indiasmeforum.org/.
[8] Provision was made for respondents to complete the survey, which was initiated on 31 May, on or before 11 June 2021.
[9] Data taken from the COVID-19 India monitor, see: https://www.COVID-19india.org/
[10] Compiled from; University of Oxford (2021), *COVID-19 Government response tracker*, see: https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker and Our World in Data (2021), *Confirmed COVID-19 death per million*, https://ourworldindata.org/coronavirus/country/india?country=~IND.

international classification based on number of employees and the Indian definitions for MSMEs, which are based on turnover and investment in machinery and equipment. However, all small- and medium firms, and most probably the majority of large firms, would qualify as MSMEs when applying the number of employees as the criterion to determine firm size.

- *Vulnerability*: a distinction was made between the service and manufacturing sectors. Within manufacturing, a further distinction was made between vulnerable and robust industries. Vulnerable industries are those that have been impacted more severely by the COVID-19-induced crisis at the global level, while robust industries have been impacted less severely. Table 1 presents manufacturing industries based on their reported vulnerability.[11]

Table 1: COVID-19 vulnerability classification of industries

Vulnerable industries: Industries impacted more severely by the COVID-19-induced crisis at the global	**Robust industries:** Industries impacted less severely by the COVID-19-induced crisis at the global level
• Beverages • Textile • Apparel • Leather • Wood • Printing • Basic metals • Petroleum • Plastics • Other non-metallic • Metal products • Motor Vehicles • Other transport equipment • Furniture • Other manufacturing	• Food • Tobacco • Paper • Chemicals • Pharmaceuticals • Computers and medical equipment • Electric equipment • Machinery

2.3 Survey response

A total of 489 manufacturing firms responded during the implementation period (1 April – 31 May 2021). Among these, 438 firms reported that they were operational (90 per cent), while 51 firms had shut down their operations (10 per cent). Among the 438 operational firms (henceforth the 'respondent firms'), 320 (73 per cent) completed the questionnaire in full.

Figure presents the survey responses by state. The five prioritized manufacturing states (Gujarat, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh) accounted for 75.9 per cent of responses from fully operational firms. As further detailed in Table 2, these five states accounted for 30.7 per cent of

[11] This classification is proposed in *UNIDO (2021),"Industrial Development Report 2022, forthcoming*."

new COVID-19 infections in India during the same period. The share of these five states in total new COVID-19 infections during this period was lower than their respective share of regularly and partially operational firms that responded to this survey. However, firm-level impacts are likely to manifest themselves with some delay relative to the trend of new COVID-19 infections.

Figure 2: Survey response

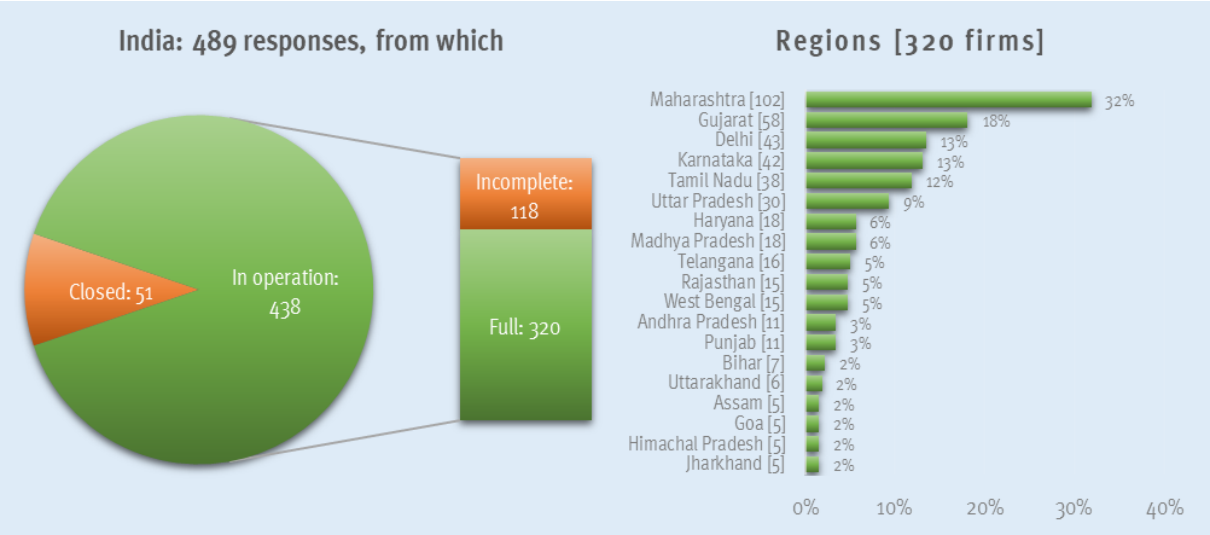


Table 2: Priority states – response rates and COVID-19 case load (in 1,000 new infections)[12]

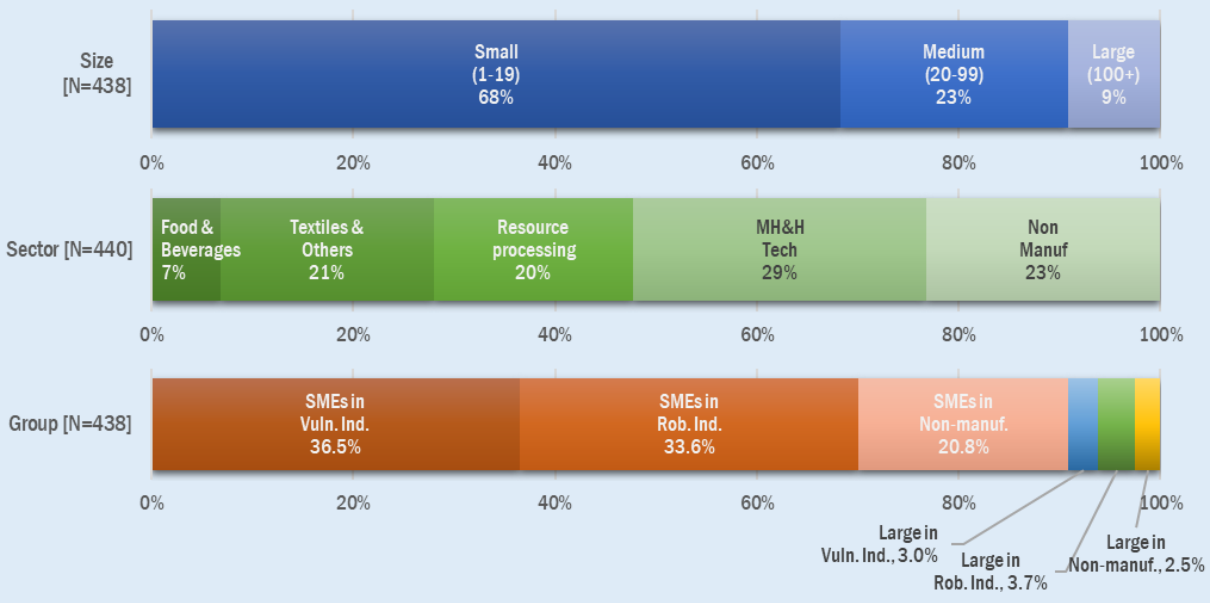
States	Total firm responses	COVID 19 cases (April – May 2021)	% of full responses from operational firms	% cases
All India	320	15,872	100.0%	100.0%
1. Gujarat	58	499	18.1%	2.5%
2. Maharashtra	102	2,890	31.9%	23.2%
3. Rajasthan	15	606	4.7%	2.7%
4. Tamil Nadu	38	1,207	11.9%	7.2%
5. Uttar Pradesh	30	1,071	9.4%	5.0%
Rest of India	77	9,599	24.1%	59.3%

Figure 3 further breaks down the survey responses of operational firms based on size, industry and group. Small firms represented 68 per cent of all respondents, medium firms 23 per cent and large firms 9 per cent. In terms of industry, 23 per cent of respondents represented non-manufacturing industries, 29 per cent the internationally recognized medium high- and high-tech (MH&H Tech) manufacturing subsectors[13], 20 per cent resource processing, 7 per cent food and beverages, and 23 per cent textiles and other manufacturing.[14] In terms of vulnerability, of the 91 per cent SMEs, 36 per cent were engaged

[12] Case date extracted from: https://www.COVID-19india.org/
[13] See: https://stat.unido.org/content/learning-center/classification-of-manufacturing-sectors-by-technological-intensity-%28isic-revision-4%29;jsessionid=B99E902A3918AB9F3DF9859923DFC4F4
[14] Textiles & others include textiles, wearing apparel, leather and related product, other manufacturing, repair. Resource processing includes natural resource processing industries such as wood and products of wood, paper and paper products, printing and reproduction of recorded media, coke and refined petroleum products, rubber and plastic products, other non-metallic mineral products, basic metals, fabricated metal products (except machinery), furniture.

in vulnerable industries, 34 per cent in robust industries, and 21 per cent in non-manufacturing industries. Among the 9 per cent of large firms, 3.7 per cent were engaged in robust industries, 3 per cent in vulnerable industries, and 2.5 per cent in the non-manufacturing industries.

Figure 3: Survey response by size, industry and group



The survey in India was conducted in parallel with identical firm-level surveys in other Asian countries, which are used as an international reference point for the Indian firm-level impact analysis in Section 3. Table 3 shows the survey responses in Afghanistan, Bangladesh, China, India, Indonesia, Lao PDR, Malaysia, Mongolia, Pakistan, Thailand and Viet Nam.

Table 3: Survey response across Asia region[15]

Country	Responses	Share
Afghanistan	113	6%
Bangladesh	124	6%
China	606	30%
India	*438*	*22%*
Indonesia	75	3%
Lao PDR	115	6%
Malaysia	47	2%
Mongolia	158	8%
Pakistan	169	8%
Thailand	64	3%
Viet Nam	111	5%
Total Asia	**2020**	**100%**

[15] Excludes responses from firms that had closed their operations.

3. Findings and analysis

This section summarizes and analyses the survey findings in three parts, namely (i) the impact of COVID-19 on firms, (ii) firms' responses to COVID-19, and (iii) COVID-19 policy and recovery support provided to firms by the government.

3.1 Impact of COVID-19 on firms

Figure 4 presents the main problems the respondent manufacturing firms faced. 'Increased cost of inputs' was the most frequently reported problem by Indian firms (68 per cent of respondents), followed by 'drop in demand due to the crisis' (55 per cent); 'lack of workers resulting from restrictions' (37 per cent); 'drop in demand due to government restrictions and lockdown' (30 per cent); 'suppliers unable to supply' (33 per cent); 'orders cannot be delivered' (31 per cent); 'drop in demand due to restrictions' (30 per cent) and 'lack of workers due to illness' (24 per cent). The ranking of the main problems Indian firms have faced during the pandemic is comparable with those faced by firms across the Asian firm sample, with only minor differences in the shares/percentages of respondents highlighting each problem. An overall picture emerges of the multifaceted problems firms face in terms of access to labour and other inputs and the sale and delivery of goods and services, which were adversely influenced by market conditions (increased prices and weakened demand due to the economic crisis), government regulations (restrictions) as well as health and humanitarian impacts (illness of workers).

Figure 4: Main problems faced by respondent manufacturing firms: India and Asia

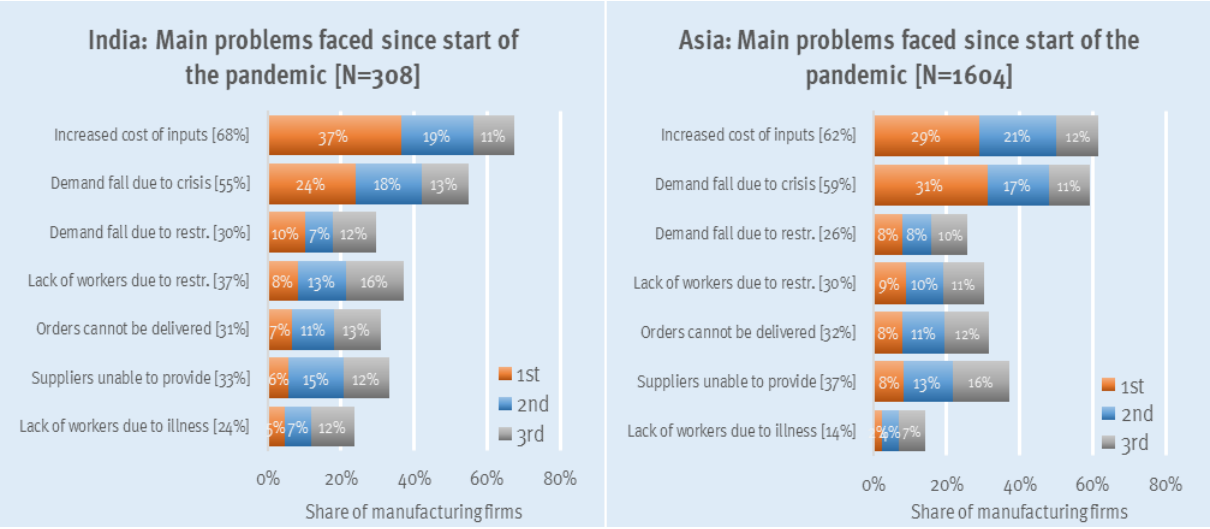


Figure 5 ranks the five problems most frequently mentioned by each category of firm based on the firms' most serious problem. Marked differences between SMEs and large firms are evident, which, however, may reflect the fact that the majority of respondent firms were SMEs (91 per cent). 'Increased cost of inputs' was more frequently mentioned as the main problem by large firms (69 per cent of firms engaged in vulnerable industries and 50 per cent in robust industries) relative to SMEs (37 per cent of firms engaged in vulnerable industries and 32 per cent in robust industries). Drop in demand posed less

of a problem to large firms, as (1) none of the respondent large firms reported ‘drop in demand due to restrictions’ as their most serious problem, while this was considered the main problem by 12 per cent and 11 per cent of SMEs operating in robust and vulnerable industries, respectively, and (2) ‘drop in demand due to the crisis’ was deemed the most serious problem by 26 per cent and 25 per cent of SMEs, engaged in vulnerable and robust industries, respectively, while these issues represented the most serious problem for 8 per cent and 14 per cent of large firms operating in vulnerable and robust industries, respectively. ‘Lack of workers due to illness’ was not mentioned by SMEs as being among their top five priority problems, while 21 per cent and 8 per cent of large firms operating in robust and vulnerable industries, respectively, stated that ‘lack of workers due to illness’ was their most serious problem.

Figure 5: Five most serious problems firms have faced since the outbreak of the COVID-19 pandemic based on manufacturing sector category *(problems ranked by share of firms indicating that the respective problem is their most serious problem[16])*

India	All firms	SMEs [N=281]		Large Firms [N=27]	
TOP 5	[N=308]	*Vulnerable Ind.*	*Robust Ind.*	*Vulnerable Ind.*	*Robust Ind.*
1	Increased cost of inputs (37%)	Increased cost of inputs (37%)	Increased cost of inputs (32%)	Increased cost of inputs (69%)	Increased cost of inputs (50%)
2	Demand fall due to crisis (24%)	Demand fall due to crisis (26%)	Demand fall due to crisis (25%)	Demand fall due to crisis (8%)	Lack of workers due to illness (21%)
3	Demand fall due to restr. (10%)	Demand fall due to restr. (11%)	Demand fall due to restr. (12%)	Lack of workers due to restr. (8%)	Demand fall due to crisis (14%)
4	Lack of workers due to restr. (8%)	Orders cannot be delivered (8%)	Lack of workers due to restr. (11%)	Lack of workers due to illness (8%)	Orders cannot be delivered (7%)
5	Orders cannot be delivered (7%)	Lack of workers due to restr. (7%)	Suppliers unable to provide (8%)	n/d	n/d

Asia	All firms	SMEs [N=1023]		Large Firms [N=581]	
TOP 5	[N=1604]	*Vulnerable Ind.*	*Robust Ind.*	*Vulnerable Ind.*	*Robust Ind.*
1	Demand fall due to crisis (31%)	Demand fall due to crisis (33%)	Demand fall due to crisis (34%)	Increased cost of inputs (34%)	Increased cost of inputs (33%)
2	Increased cost of inputs (29%)	Increased cost of inputs (27%)	Increased cost of inputs (25%)	Demand fall due to crisis (31%)	Demand fall due to crisis (22%)
3	Lack of workers due to restr. (9%)	Orders cannot be delivered (10%)	Lack of workers due to restr. (10%)	Lack of workers due to restr. (10%)	Suppliers unable to provide (12%)
4	Suppliers unable to provide (8%)	Demand fall due to restr. (10%)	Demand fall due to restr. (10%)	Suppliers unable to provide (9%)	Orders cannot be delivered (8%)
5	Orders cannot be delivered (8%)	Lack of workers due to restr. (8%)	Suppliers unable to provide (8%)	Orders cannot be delivered (6%)	Lack of workers due to restr. (8%)

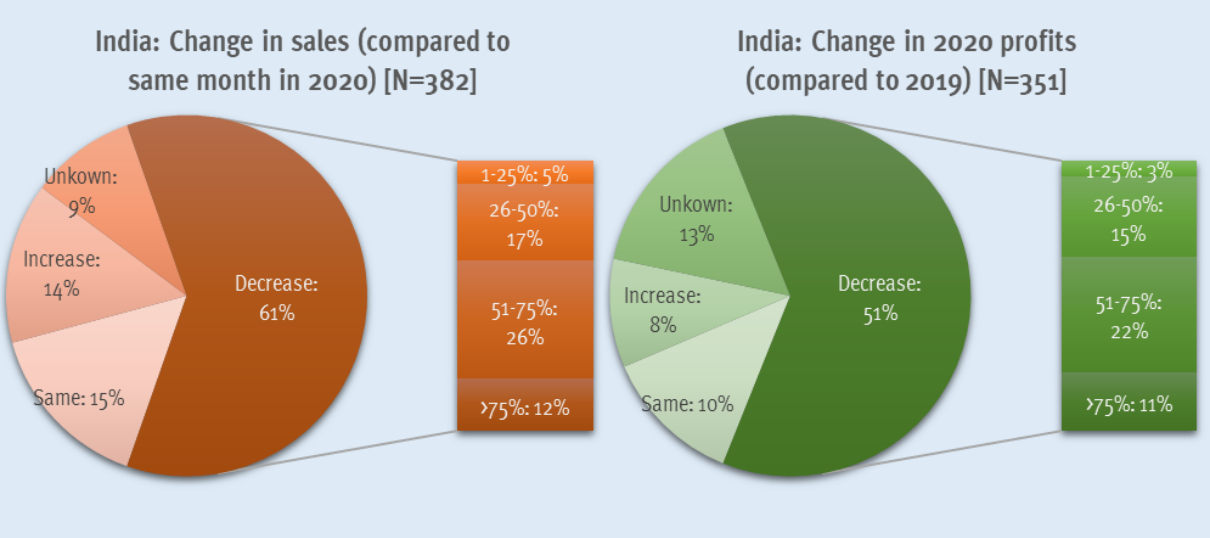
The lower part of Figure 5 provides a similar illustration for all Asian firms surveyed in parallel (covering 11 Asian countries including India). When comparing the upper and lower part of the figure, it should be kept in mind that in the case of India, large firms only made up 9 per cent of respondents, whereas large firms represented 36 per cent of all respondents across Asia. Despite the differences in relative rankings, the frequency distributions (i.e., the share of respondents) are comparable. It is interesting, however, that 'increased cost of inputs' is mentioned markedly less frequently as representing the most serious problem for Asian firms (25 per cent to 34 per cent) than for Indian firms

[16] In case of equal frequency of problems ranked as the most serious problem, these are further ranked by frequency of their rating as the second most serious problem.

(32 per cent to 69 per cent) and that, vice versa, 'drop in demand due to the crisis' is mentioned considerably more frequently as being the most serious problem Asian firms faced (22 per cent to 34 per cent) relative to Indian firms (8 per cent to 26 per cent). Moreover, the differences between large firms and SMEs appear more profound for the Asian average than for Indian firms.

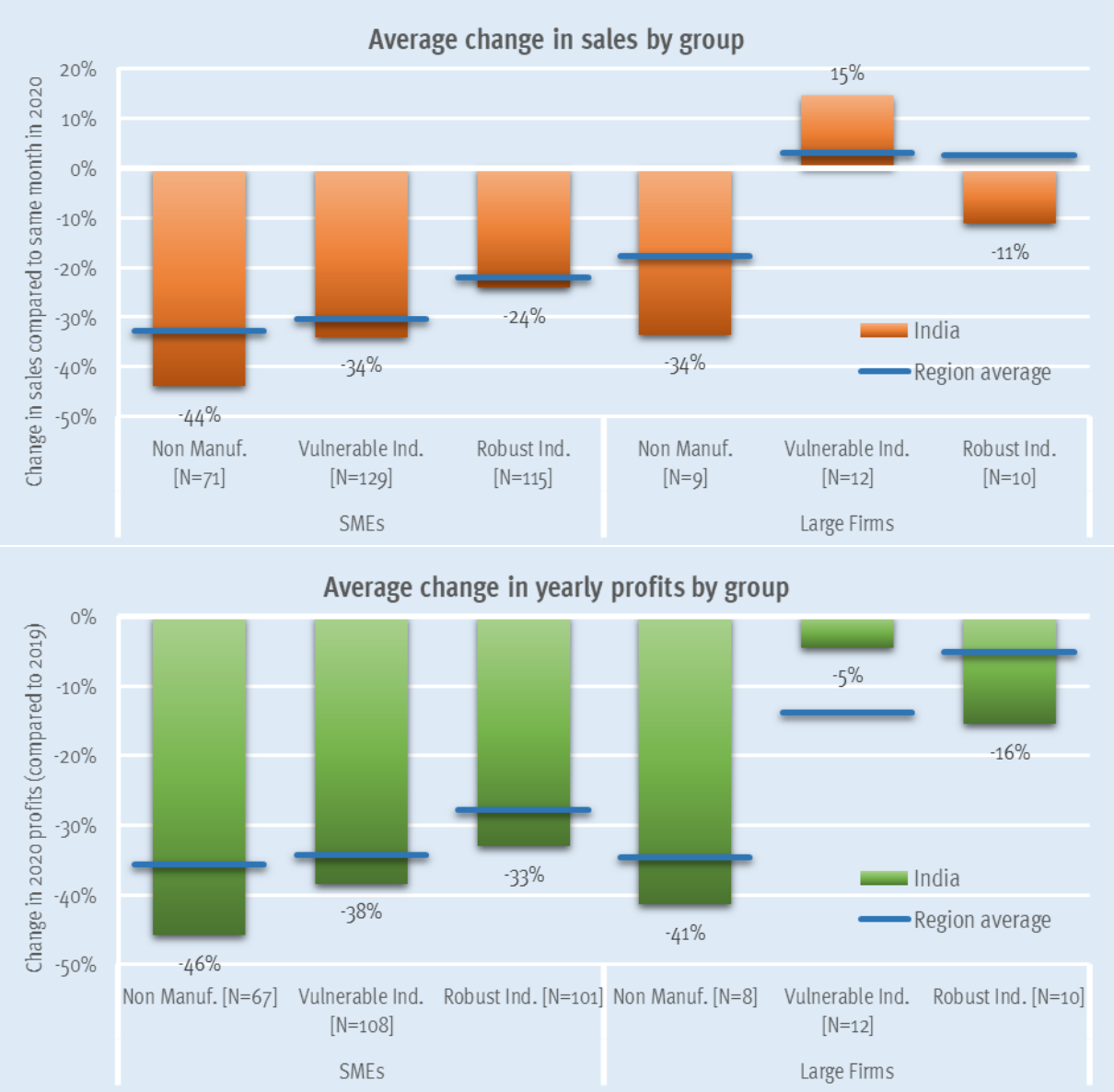
Figure 6 shows the reported impacts of the COVID-19 pandemic on the monthly sales[17] and annual profits[18] of respondent firms. Among the respondent firms, 14 per cent reported an increase in sales, while 61 per cent registered a decrease in sales. The reported decline in sales was high: 38 per cent of respondents reported a reduction of at least 50 per cent (26 per cent of respondents recorded a drop in sales of between 51 per cent and 75 per cent, and 12 per cent observed a decrease in sales of over 75 per cent). In terms of profits, 8 per cent registered an increase while 51 per cent reported a decrease in profits. The profits of 33 per cent of respondent firms dropped by 50 per cent or more (22 per cent reported a decline in profits of between 51 per cent and 75 per cent and 11 per cent observed a drop in profits of over 75 per cent).

Figure 6: Impact of COVID-19 on sales and profits



[17] Sales in January 2021 compared to sales in January 2021.
[18] Profits in fiscal year 2021 (1 April 2020 – 31 March 2021) compared to profits in fiscal year 2020 (1 April 2019-31 March 2020).

Figure 7: Impact of COVID-19 on sales and profits by firm grouping



The survey revealed significant differences in the changes of sales and profits according to industry and firm size.

- Figure 7 (top) illustrates that among SMEs, those operating in robust manufacturing industries experienced the lowest average decline in sales (-24 per cent), followed by those engaged in vulnerable industries (-34 per cent) and non-manufacturing (-44 per cent). In other words, the decline in sales of SMEs operating in vulnerable industries was 42 per cent higher than for SMEs in robust industries and for SMEs in non-manufacturing, and 83 per cent higher than for SMEs operating in robust industries. In comparison with the regional Asian averages, Indian SMEs engaged in non-manufacturing, vulnerable and robust industries experienced higher declines in sales. Large firms represented only 9 per cent of responses with regard to changes in sales, and data on large firms are therefore only indicative. However, across all sectors, large firms in India

reported that the impact of the COVID-19 pandemic on their sales was lower than it was for their SME counterparts, respectively in non-manufacturing industries (-34 per cent for large firms versus -44 per cent for SMEs), operating in vulnerable industries (+15 per cent for large firms versus -34 per cent for SMEs) and in robust industries (-11 per cent for large firms versus -24 per cent for SMEs). Remarkably, large Indian firms engaged in vulnerable industries appear to have fared better than large Indian firms in robust industries (+15 per cent versus -11 per cent change in sales). Large Indian firms operating in vulnerable industries performed better than the average for this group in Asia, whereas large Indian firms in both non-manufacturing and robust industries performed worse than the average of their respective groups in Asia.

- Figure 7 (lower part) shows that among SMEs, those operating in robust manufacturing industries reported the lowest average decline in yearly profits (-33 per cent), followed by vulnerable industries (-38 per cent) and non-manufacturing (-46 per cent). In other words, the decline in profits of SMEs operating in vulnerable industries was 15 per cent higher and in non-manufacturing 39 per cent higher than for SMEs engaged in robust industries. In all sectors, Indian SMEs reported higher declines in profit than the Asian average. Large firms accounted for only 10 per cent of responses on profits, which makes a comparison difficult. Across all sectors, however, large Indian firms appear to have registered lower declines in terms of profit than their SME counterparts, respectively in non-manufacturing industries (-41 per cent for large firms versus -46 per cent for SMEs), in vulnerable industries (-5 per cent for large firms versus -38 per cent for SMEs) and in robust industries (-16 per cent for large firms versus -33 per cent for SMEs). Remarkably, large Indian firms operating in vulnerable industries appear to have fared better than large Indian firms in robust industries (-5 per cent versus -16 per cent change in profits). Large Indian firms engaged in vulnerable industries performed better than the average for this group in Asia, whereas large Indian firms in both non-manufacturing and robust industries performed lower than the average of their respective counterparts in Asia.

- Despite the fact that 8 per cent fewer responses were received on the impact of the pandemic on profits as opposed to responses on sales, we observe that the average of reported declines in profits are higher by between 2 per cent and 20 per cent among all Indian firm groupings than the average of reported declines in sales. This is indicative of lower profitability of firms resulting from higher cost prices and/or lower sales prices (both mentioned as frequently occurring problems in Figures 5 and 6), as well as potentially negative economies of scale when volume of business output was reduced.

- In summary, the sales and profits of both large and SME non-manufacturing firms were affected more severely than manufacturing firms of the same size. Moreover, SMEs were affected more seriously in terms of sales and profits than large firms in each category.

Figure 8 depicts the responses on the impact of COVID-19 on employment. Among the respondent Indian firms, 56 per cent had to lay off workers since the outbreak of the pandemic[19], whereas 24 per cent did not lay off any workers, with a relatively large share of remaining respondents not answering the question (20 per cent). For many firms, the number of layoffs were substantial, with 41 per cent of all firms reported to have laid off at least one quarter of their pre-pandemic workforce (22 per cent laid off between 26 per cent and 50 per cent of workers, 13 per cent of firms laid off between 51 per cent and 75 per cent of workers, and 6 per cent laid off at least 76 per cent of their pre-pandemic workforce). Layoffs in India were more frequent than the average layoffs in Asia (56 per cent of Indian firms versus 36 per cent of Asian firms) and appear to have been larger in scale (41 per cent of Indian firms laid off one quarter or more of their workforce whilst across Asia, only 23 per of firms laid off one quarter or more of their workforce).

Figure 8: Impact of COVID-19 on employment

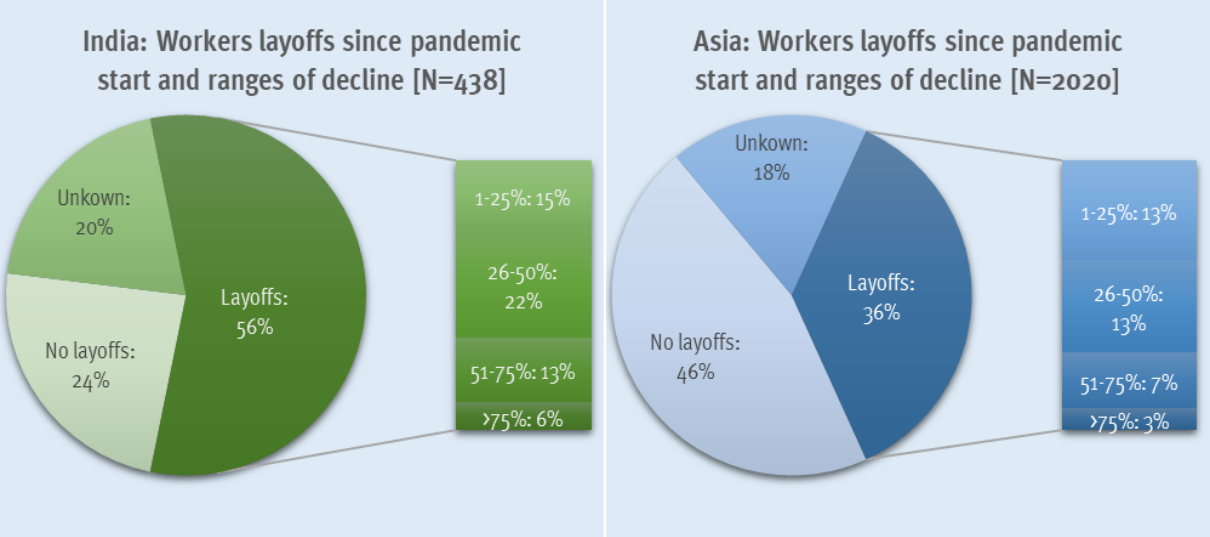


Figure 9 breaks down the average share of workers laid off by firms according to firm grouping. The differences in average layoffs in the SME segment between sectors appear marginal, with an average of 41 per cent layoffs in robust industries, 49 per cent layoffs in vulnerable industries and 47 per cent in non-manufacturing. The reported share of layoffs in large firms is similar to that of SMEs in non-manufacturing industries (44 per cent and 47 per cent, respectively), yet only half of the share of layoffs in manufacturing industries (large firms in both robust and vulnerable industries reported average layoffs of 26 per cent and 22 per cent, respectively, compared to the average layoffs in these industries among SMEs at 41 per cent and 49 per cent, respectively). For large Indian firms operating in non-manufacturing and robust industries, as well as for SMEs engaged in robust industries, the reported average layoffs were markedly higher than the average for large Asian firms, whereas in other firm groupings, the reported average layoffs were nearly identical in India and across Asia.

[19] Workers at the time of the survey (April – May 2021) compared to December 2019.

Figure 9: Average job losses by firm grouping (among firms reporting layoffs)

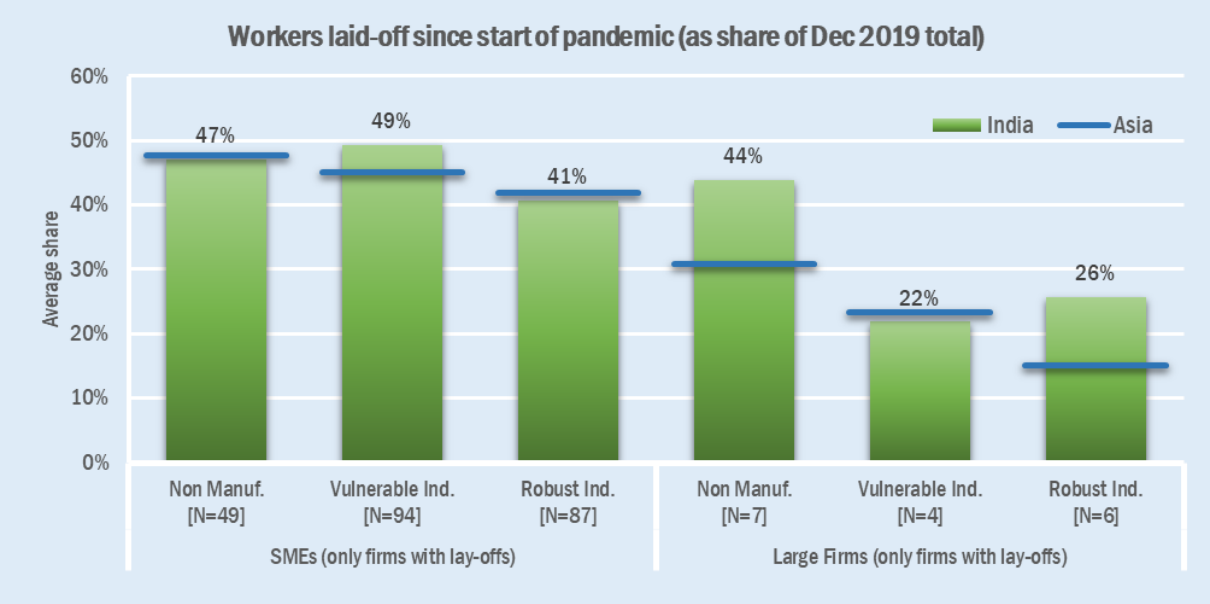
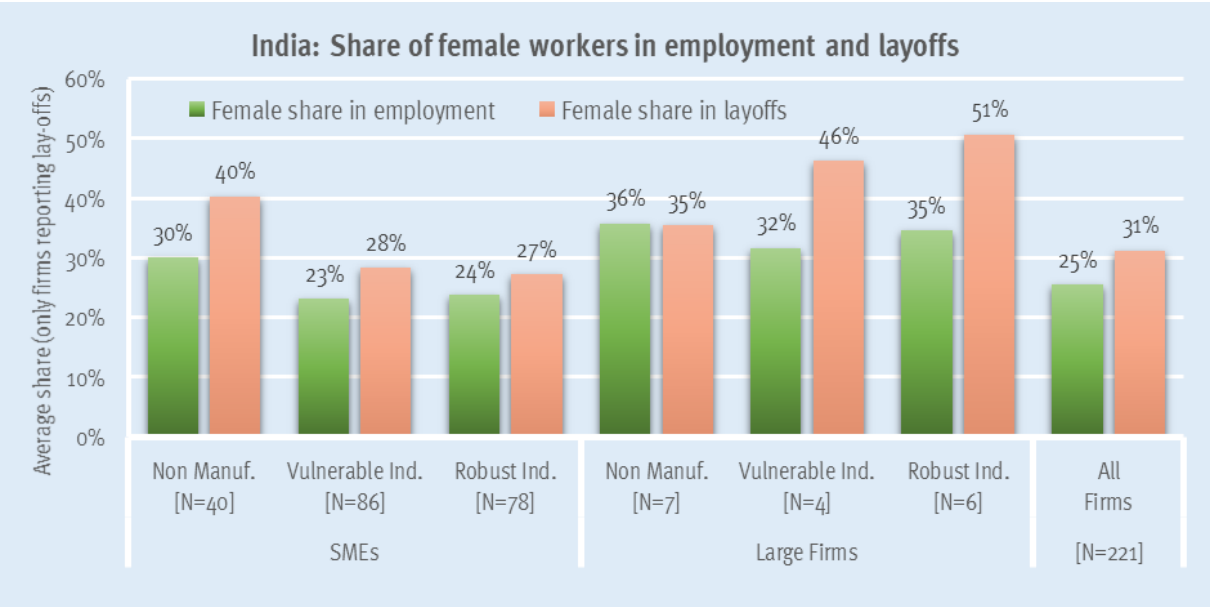


Figure 10 shows a gender breakdown of total layoffs. Among all firms that provided gender differentiated data on both their pre-pandemic workforce and their pandemic-related layoffs, women represented 25 per cent of the firms' pre-pandemic workforce and 31 per cent of layoffs due to pandemic. The female share in pandemic-related layoffs was higher than the pre-pandemic share of female workers in all firm groupings, except for large non-manufacturing firms. This implies that among all workers, women were more likely to be laid off than men during the pandemic, except in large firms in non-manufacturing industries. The most profound female gender disadvantage is found among large firms in robust manufacturing industries (51 per cent females among workers laid off against 35 per cent among those employed pre-pandemic), large firms in vulnerable industries (46 per cent females among workers laid off and only 32 per cent among those employed pre-pandemic) and SMEs in non-manufacturing industries (40 per cent females among workers laid off and only 30 per cent among those employed pre-pandemic).

Figure 10: Share of female workers in employment and layoffs in India



3.2 Firms' responses to COVID-19

In response to the challenges and impacts of the COVID-19 pandemic, manufacturing firms in both India and Asia implemented changes in their business operations and processes, as shown in Figure 11. The majority of responding manufacturing firms introduced some changes, with only 16 per cent of Indian firms and 19 per cent of Asian firms reported 'no change'. Most commonly, Indian firms made 'organizational changes for health and safety' (43 per cent of respondents), 'initiated or increased online activities' (39 per cent of respondents), 'introduced new products for new demand' (38 per cent of respondents), 'adjusted working shifts and space layout' (33 per cent of respondents) and 'started or increased remote working' (29 per cent of respondents). These were also the most frequently reported operational changes introduced by manufacturing firms across Asia. Furthermore, 25 per cent of Indian manufacturing firms repurposed their manufacturing capabilities to respond to the pandemic's emergency requirements, such as personal protective equipment, pharmaceuticals, etc. Moreover, Indian manufacturing firms responded by implementing new automation technologies (21 per cent of respondents) and started (or increased) product delivery (16 per cent of respondents). The frequency of operational changes implemented by Indian firms is highly comparable with those found among Asian firms, except for 'adjusted working shifts and space layout' which were not separately accounted for across the Asian respondent firms. Among the Indian respondent firms, 87 per cent to 98 per cent expected that the respective operational changes would remain in place, which is indicative of the irreversible impact of COVID-19 on firms' operations.

Figure 11: Operational responses by firms to COVID-19

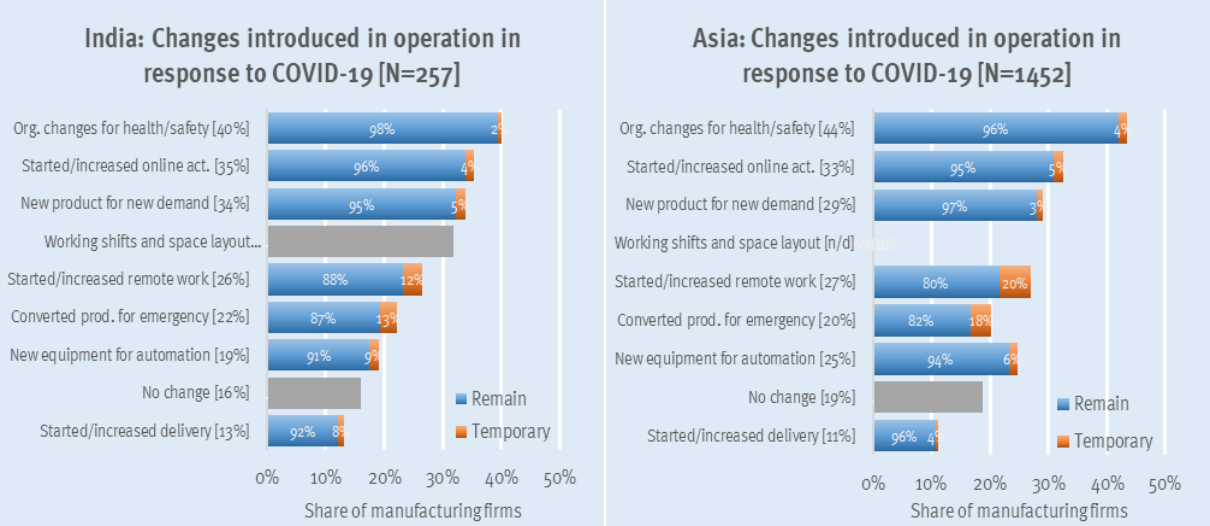


Figure 12 presents a picture of the differences in operational responses by SMEs and large manufacturing firms within both robust and vulnerable industries. The top part of the figure indicates relatively minor differences between firm groupings in India, particularly when taking the low share of responses by large firms into account (9 per cent of total responses). The three most commonly reported responses among all firms ('organizational changes for health and safety', 'initiated or increased online activities' and 'new products for new demand') are among the top five most frequently introduced operational changes among all firm groupings in India, and at least one out of every three firms in each category has implemented such changes. There is some indication that large Indian manufacturing firms introduced operational response measures more frequently, on average, than their SME counterparts. For example, 60 per cent of large firms operating in robust industries and 42 per cent in vulnerable industries made organizational changes versus 42 per cent of SMEs engaged in robust and 37 per cent in vulnerable industries. Furthermore, it is noteworthy that the highest share of firms that repurposed their production for emergency needs were large firms operating in vulnerable industries (33 per cent versus 25 per cent of all firms). The lower part of Figure 12 allows for a comparison of Indian and Asian manufacturing firms, where 'adjusted working shifts and space layout' were not separately accounted for among Asian firms whilst being the fourth most frequent operational change in Indian manufacturing firms. Instead, Asian respondent firms showed higher frequencies of 'new equipment for automation' than was the case among Indian manufacturing firms. However, it should be noted that the Asian responses included 34 per cent large firms whereas only 9 per cent of responses in the case of India were attributed to large firms.

Figure 12: Main changes introduced to regular operations since the outbreak of the COVID-19 pandemic *(changes ranked by share of firms indicating changes made in each category)*

India	All firms	SMEs [N=235]		Large Firms [N=22]	
TOP 5	[N=257]	*Vulnerable Ind.*	*Robust Ind.*	*Vulnerable Ind.*	*Robust Ind.*
1	Org. changes for health/safety (40%)	Org. changes for health/safety (37%)	Org. changes for health/safety (42%)	No change (50%)	Started/increased online act. (60%)
2	Started/increased online act. (35%)	Started/increased online act. (34%)	New product for new demand (38%)	Org. changes for health/safety (42%)	Org. changes for health/safety (60%)
3	New product for new demand (34%)	Working shifts and space layout (32%)	Started/increased online act. (36%)	Converted prod. for emergency (33%)	Started/increased remote work (60%)
4	Working shifts and space layout (32%)	New product for new demand (31%)	Working shifts and space layout (33%)	Started/increased online act. (25%)	Working shifts and space layout (60%)
5	Started/increased remote work (26%)	Started/increased remote work (24%)	Started/increased remote work (28%)	New product for new demand (17%)	New product for new demand (40%)

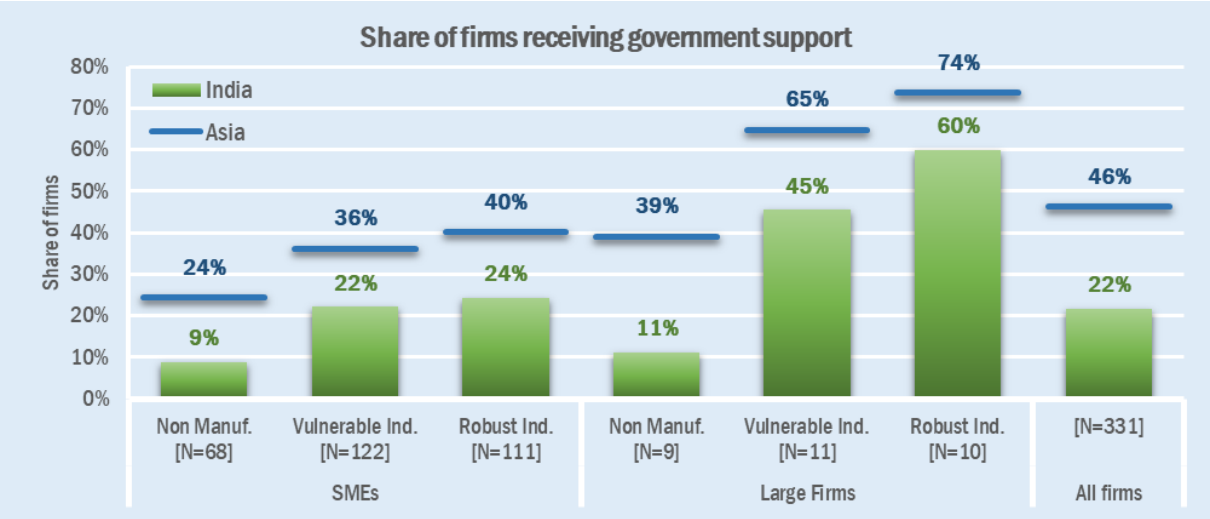
Asia	All firms	SMEs [N=922]		Large Firms [N=530]	
TOP 5	[N=1452]	*Vulnerable Ind.*	*Robust Ind.*	*Vulnerable Ind.*	*Robust Ind.*
1	Org. changes for health/safety (44%)	Started/increased online act. (31%)	Org. changes for health/safety (40%)	Org. changes for health/safety (58%)	Org. changes for health/safety (59%)
2	Started/increased online act. (33%)	Org. changes for health/safety (31%)	Started/increased online act. (34%)	New equipment for automation (35%)	New equipment for automation (38%)
3	New product for new demand (29%)	No change (26%)	Started/increased remote work (27%)	New product for new demand (32%)	Started/increased online act. (38%)
4	Started/increased remote work (27%)	New product for new demand (25%)	New product for new demand (27%)	Started/increased remote work (32%)	New product for new demand (37%)
5	New equipment for automation (25%)	Started/increased remote work (21%)	New equipment for automation (21%)	Started/increased online act. (28%)	Started/increased remote work (32%)

3.3 Policy and support for firm-level COVID-19 recovery

Figure 13 presents firms' responses about government funding relief efforts. Only 72 respondents (22 per cent of respondent Indian firms) reported that they had benefitted from at least one government relief measure. There are considerable differences in the scope of government benefits received by the firm groupings. Among the firms that reported to have received government support, the majority were robust industries (60 per cent of large firms and 24 per cent of SMEs received support), followed by vulnerable industries (45 per cent of large firms and 22 per cent of SMEs benefitted from government support), followed by non-manufacturing industries (11 per cent of large firms and 9 per cent of SMEs received government support). Large manufacturing firms appear to have been about twice as likely to benefit from government funding relief efforts than SMEs in manufacturing industries, whereas for non-manufacturing firms, firm size was not a relevant factor for government support. The share of firms

reporting that they benefited from government support is much lower in India than the average for Asia, i.e., among all Indian firms, 22 per cent received government support compared to 46 per cent of all Asian firms. These differences apply to all firm groupings, yet non-manufacturing industries stand out with the largest differences in level of support in India compared to the Asian average.

Figure 13: Share of firms receiving government support



Large firms received government support more frequently than other firms, which may have contributed to the fact that they reported less severe impacts from COVID-19 on their performance in terms of sales, profits and employment (see analysis in Section 3.1). On the other hand, SMEs received less government support, which may have exacerbated the impact of COVID-19 on firms' performance in terms of sales, profits and employment.

Figure 14 provides further details of the types of government support received by manufacturing firms. The most frequent form of government support provided to Indian manufacturing firms was 'access to new credit' (52 per cent of respondent manufacturing firms that received government support), followed respectively by 'deferral or suspension of credit or interest' (37 per cent), 'deferral of tax payment' (23 per cent), 'tax exemptions or reductions' (18 per cent), 'cash transfers to businesses' (15 per cent), 'deferral of rent or mortgage' (14 per cent), 'import and export regulatory support' (12 per cent), 'public procurement' (12 per cent), 'R&D or innovation subsidy' (8 per cent) and 'wage subsidy'(8 per cent). Each Indian manufacturing firm that benefitted from government support received government support, on average, through two policy measures or mechanisms. The level of satisfaction with each government support measure is illustrated in Figure 14, however, the low number of respondents in each category makes it difficult to arrive at any conclusions about the perceived effectiveness of different types of government support to Indian manufacturing firms. The comparison with the Asian average reveals that government support in India consisted primarily of 'access to new credit' (52 per cent in India and 24 per cent across Asia) and 'deferral or suspension of interest' (37 per cent in India and 21 per cent across Asia), while 'tax exemptions or reductions' (18 per cent in India and 56 per cent

across Asia) and 'R&D and innovation subsidies' (8 per cent in India and 21 per cent across Asia) was a significantly less frequently used support measure in India. Moreover, Asian firms reported that they received government support from, on average, 2.1 support mechanisms, compared to an average from 2.0 support measures reported by Indian firms. The other forms of government support were equally frequently provided to Indian and Asian firms.

Figure 14: Government support received by manufacturing firms

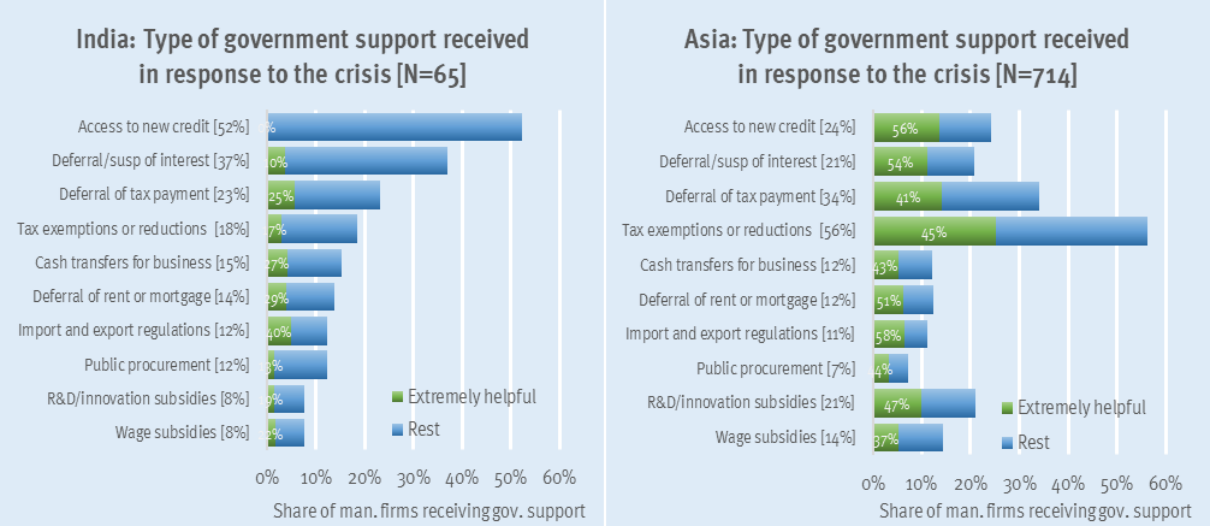


Figure 15 provides a further breakdown of government support provided to manufacturing firm groupings in India (upper section) and across Asia (lower section). Among Indian SMEs that received government support, those operating in vulnerable industries more frequently benefitted from the five most common government support measures compared to those engaged in robust industries, particularly 'deferral of tax payment' (44 per cent (vulnerable) versus 11 per cent (robust)), 'cash transfers to business' (received by 17 per cent of SMEs operating in vulnerable industries that received any form of government support), 'access to new credit' (63 per cent (vulnerable) versus 48 per cent (robust), 'deferral or suspension of interest on credit' (52 per cent (vulnerable) versus 30 per cent (robust)), 'deferral of rent or mortgage' (19 per cent (vulnerable) versus 11 per cent (robust)). A comparison with large firms is not warranted given the extremely low number of firms (5 large firms operating in vulnerable industries and 6 in robust industries). Compared with Asian manufacturing firms, all types of Indian manufacturing firms benefitted less frequently from 'tax exemptions or reductions' and 'R&D, innovation subsidies' and benefitted more frequently from 'access to new credit' and 'deferral or suspension of interest on credit', a finding that also emerges from Figure 14. Further detailed comparisons between Indian and Asian responses are not warranted given the marked differences in the share of large respondent firms (17 per cent of Indian responses and 51 per cent of Asian responses).

Figure 15: Type of policy support received in response to the COVID-19 pandemic (policy measures ranked by share of firms indicating receipt of support in each category of firms)

India TOP 5	All firms [N=65]	SMEs [N=54]		Large Firms [N=11]	
		Vulnerable Ind.	*Robust Ind.*	*Vulnerable Ind.*	*Robust Ind.*
1	Access to new credit (52%)	Access to new credit (63%)	Access to new credit (48%)	n/d	n/d
2	Deferral/susp of interest (37%)	Deferral/susp of interest (52%)	Deferral/susp of interest (30%)	n/d	n/d
3	Deferral of tax payment (23%)	Deferral of tax payment (44%)	Tax exemptions or reductions (22%)	n/d	n/d
4	Tax exemptions or reductions (18%)	Cash transfers for business (22%)	Deferral of rent or mortgage (11%)	n/d	n/d
5	Cash transfers for business (15%)	Deferral of rent or mortgage (19%)	Deferral of tax payment (11%)	n/d	n/d

Asia TOP 5	All firms [N=714]	SMEs [N=349]		Large Firms [N=365]	
		Vulnerable Ind.	*Robust Ind.*	*Vulnerable Ind.*	*Robust Ind.*
1	Tax exemptions or reductions (56%)	Tax exemptions or reductions (53%)	Tax exemptions or reductions (53%)	Tax exemptions or reductions (54%)	Tax exemptions or reductions (64%)
2	Deferral of tax payment (34%)	Deferral of tax payment (39%)	Deferral of tax payment (33%)	Deferral of tax payment (28%)	Deferral of tax payment (36%)
3	Access to new credit (24%)	Access to new credit (26%)	Access to new credit (24%)	Access to new credit (27%)	R&D/innovation subsidies (30%)
4	R&D/innovation subsidies (21%)	Deferral/susp of interest (26%)	Deferral/susp of interest (21%)	R&D/innovation subsidies (23%)	Access to new credit (20%)
5	Deferral/susp of interest (21%)	Cash transfers for business (18%)	R&D/innovation subsidies (14%)	Deferral/susp of interest (23%)	Wage subsidies (16%)

Figure 16 presents manufacturing firms' responses with regard to their needs for government support and/or their business ecosystem. The most frequently reported business needs among Indian manufacturing firms were 'access to new domestic markets' (50 per cent), 'access to new foreign markets' (46 per cent), 'business continuity plans' (44 per cent), 'development of new products' (43 per cent), 'R&D and innovation' (39 per cent), 'reorganization of supply chains' (31 per cent), 'digitalization of the firm' (30 per cent) and 'development of new skills' (30 per cent). It is noteworthy that one in eight Indian manufacturing firms (12 per cent of respondents) reported that they did not require government support to recover from the COVID-19 pandemic. Compared with the average responses of Asian firms, it appears that Indian firms claimed that they required more support for marketing and business management (at least 10 per cent more Indian firms mentioned that they required 'access to domestic markets', 'access to new foreign markets' and 'development of continuity plans' relative to the Asian average). Vice versa, Indian firms appear to have slightly less support needs

in terms of 'R&D and innovation support' and 'development of new skills' (respectively 7 per cent and 5 per cent lower in India than the Asian average).

Figure 16: Recovery support needs reported by manufacturing firms

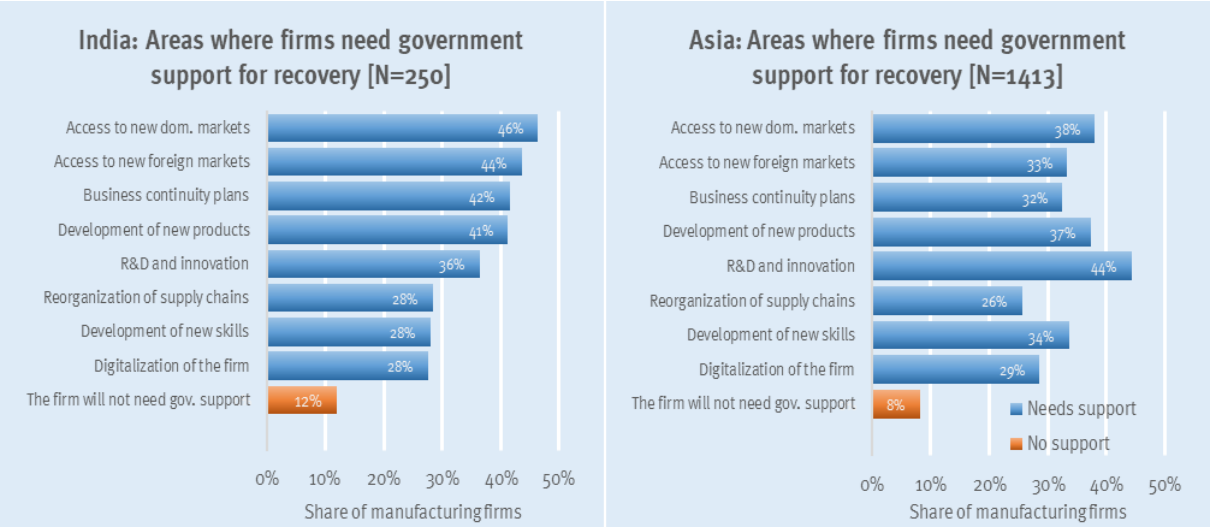


Figure 17 illustrates the ranking of reported firm-level support needs by firm groupings in the Indian manufacturing sector. There are some minor differences between the groupings. Among SMEs, SMEs operating in robust industries reported support needs more frequently than SMEs engaged in vulnerable industries, particularly with regard to 'R&D and innovation' (41 per cent of SMEs engaged in robust industries that reported a need for any form of government support relative to 31 per cent of SMEs in vulnerable industries that reported a need for any form of government support), 'development of new products' (44 per cent (robust) versus 40 per cent (vulnerable)), and 'access to new foreign markets' (45 per cent (robust) versus 42 per cent (vulnerable)). SMEs operating in vulnerable industries more frequently stated a need for support than those engaged in robust industries for 'access to new domestic markets', with 47 per cent of SMEs in vulnerable industries reporting a need for government support compared to 44 per cent of SMEs operating in robust industries and 'business continuity plans' (44 per cent and 40 per cent, respectively). Two support measures only appear among the top five needs of large firms, namely 'reorganization of supply chains' and 'development of new skills', however, large firms only made up 9 per cent of total responses.

A comparison with the Asian sample shows that more Asian than Indian manufacturing firms stated a need for 'R&D and innovation support' and 'access to new skills', as evidenced in Figure 16. Although it is difficult to compare the Asian sample of large firms, which corresponds to 36 per cent of the overall sample, and the Indian sample, where only 9 per cent of the total were large firms, it seems that across Asia, large manufacturing firms did not consider 'support for access to domestic markets' among their top 5 priorities, whilst Indian large manufacturing firms did.

Figure 17: Key areas indicated by firms as requiring government support for COVID-19 recovery

(areas ranked by share of firms indicating that the area is a priority)

India	All firms	SMEs [N=230]		Large Firms [N=20]	
TOP 5	**[N=250]**	*Vulnerable Ind.*	*Robust Ind.*	*Vulnerable Ind.*	*Robust Ind.*
1	Access to new dom. markets (46%)	Access to new dom. markets (47%)	Access to new foreign markets (45%)	Access to new dom. markets (50%)	Access to new foreign markets (60%)
2	Access to new foreign markets (44%)	Business continuity plans (44%)	Development of new products (44%)	R&D and innovation (40%)	Access to new dom. markets (60%)
3	Business continuity plans (42%)	Access to new foreign markets (42%)	Access to new dom. markets (44%)	Reorganization of supply chains (40%)	R&D and innovation (50%)
4	Development of new products (41%)	Development of new products (40%)	R&D and innovation (41%)	Business continuity plans (30%)	Development of new products (50%)
5	R&D and innovation (36%)	R&D and innovation (31%)	Business continuity plans (40%)	Development of new skills (30%)	Business continuity plans (40%)

Asia	All firms	SMEs [N=900]		Large Firms [N=513]	
TOP 5	**[N=1413]**	*Vulnerable Ind.*	*Robust Ind.*	*Vulnerable Ind.*	*Robust Ind.*
1	R&D and innovation (44%)	Access to new dom. markets (46%)	R&D and innovation (42%)	R&D and innovation (51%)	R&D and innovation (58%)
2	Access to new dom. markets (38%)	Development of new products (38%)	Access to new dom. markets (39%)	Development of new products (39%)	Development of new skills (42%)
3	Development of new products (37%)	Business continuity plans (38%)	Development of new products (37%)	Access to new foreign markets (36%)	Development of new products (36%)
4	Development of new skills (34%)	R&D and innovation (36%)	Business continuity plans (33%)	Development of new skills (35%)	Access to new foreign markets (33%)
5	Access to new foreign markets (33%)	Access to new foreign markets (36%)	Development of new skills (33%)	Business continuity plans (32%)	Digitalization of the firm (32%)

4. Inclusive and green recovery

The survey findings show that the COVID-19 pandemic, the related containment measures (i.e., restrictions and lockdowns) and the resulting global economic downturn have severely affected Indian firms. Only few operational firms performed well, with 14 per cent of respondent firms reporting an increase in sales and 8 per cent stating that their profits increased despite the pandemic. The majority of respondent firms reported a decline in sales and profits, however, and layoffs. Of all respondent firms, 38 per cent reported a loss of at least half of their regular sales, 33 per cent experienced a loss of at least half of their regular profits, and 41 per cent laid off at least one quarter of their workforce, with a gender bias towards relatively higher layoffs of women than men. Across the board, non-manufacturing firms appear to have been worse off, while within manufacturing, some industries were more robust (e.g., pharma, food, etc.) than others (e.g., textile and garments, leather and footwear, etc.). Among the respondent firms, 22 per cent benefitted from some form of government support, however, this was more frequently the case in manufacturing than in non-manufacturing firms and more large firms benefitted from government relief than SMEs.

The pandemic has exposed and exacerbated pre-pandemic structural weaknesses. The dominant micro and small business segments derive strength from diversity, short cycle times and lean financial, managerial and technical resources. Moreover, many firms are unorganized and operate informally, which represented an obstacle to benefitting from and utilizing recovery support through credit support and tax relief measures. The pandemic has underscored that it is high time to acknowledge the significance of MSMEs for the Indian economy and to commit to inclusive and sustainable recovery and growth.

The pandemic has also highlighted the need to modify workplaces and business procedures with the aim of productive collaboration in a safe and hygienic environment. Manufacturing firms have the option to turn this necessity into a new opportunity for recovery, upgrading and growth based on the principles and practices of manufacturing excellence, starting with cleaning out factories and workshops – Swachh Udyog[20]. UNIDO approaches this transformation from three angles. Firstly, it promotes efficiency in the use of inputs, particularly materials, energy, water, chemicals and energy. UNIDO in collaboration with the Bureau of Energy Efficiency has assisted 345 MSMEs with the implementation of 603 energy measures, saving 10,850 tonnes of oil equivalent to Rs 59 crore annually for a cumulative investment of Rs 90 crore. Secondly, effectiveness in terms of outputs to meet customer demand through lean manufacturing concepts and methods. Working with the Automotive Components Manufacturing Association, UNIDO has supported seven clusters of 41 MSMEs that have been able to achieve collective savings of Rs 2.8 crore, whilst also achieving significant reductions in absenteeism and eliminating unsafe working conditions. Thirdly, maturity, which relates to a firm's ability to observe,

[20] https://thedailyguardian.com/reigniting-indian-msmes-for-inclusive-sustainable-recovery-and-growth/, 15 July 2021.

understand, predict and adapt its business processes for optimal outcomes. Digital technologies play an enabling role but require parallel improvements in teamwork, anticipation and problem solving among both individuals and teams alike to deliver real-time benefits.

COVID-19 brought the majority of manufacturing firms, particularly MSMEs, to a near complete standstill during the first and comprehensive national lockdown and slow down during successive partial and local lockdowns. The pandemic, however, also presents opportunities to introduce new business processes, models, products or services. Capturing such opportunities requires conducive entrepreneurial and innovation ecosystems, designed and operated in partnership with MSMEs and their workers, with unique opportunities for women and youth. Inclusive and sustainable recovery from the crisis is only possible if MSMEs are unconditionally supported by all to reinvigorate them and improve their efficiency and resilience.

5. Annex 1: Survey questionnaire

General information

1. What is the full name of the firm?

	Insert name

2. What is the size of the firm?

	Small (1 to 19 workers)
	Medium (20 to 99 workers)
	Large (100 or more workers)

3. What is the main area of business and production activity of the firm?

	Food and beverage
	Tobacco products
	Textiles
	Wearing apparel, fur
	Leather and related products
	Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials
	Paper and paper products
	Printing and reproduction of recorded media
	Coke and refined petroleum products
	Chemicals and chemical products
	Pharmaceuticals and medicinal chemicals
	Rubber and plastics products
	Other non-metallic mineral products
	Basic metals
	Fabricated metal products
	Machinery and equipment not elsewhere classified
	Office, accounting and computing machinery
	Electrical machinery and apparatus
	Radio, television and communication equipment
	Medical, precision and optical instruments
	Motor vehicles, trailers, semi-trailers
	Other transport equipment
	Furniture; manufacturing not elsewhere classified
	Recycling

4. Did the firm use imported components or supply to overseas manufacturers during 2019?

	Yes
	No

5. Please let us know your name and contact details (optional) [With this information, we can send you a final report with the results of the survey.]

	Name: _____
	Email: _____
	Phone: _____

Current impact of COVID-19

Regular operations

6. Is the firm currently in operation?

	Yes
	No (go to question 32)

7. Did the firm temporarily suspend manufacturing operations due to the COVID-19 outbreak?

	Yes	7.a. Please specify for how many weeks the firm was closed: ____
	No	

7.1. Please indicate the level of current operations

	Partial operations
	Full operations but remotely (teleworking)
	Full operations on site

7.2. What was the firm's level of capacity utilization in the following months?

	December 2019: ____%
	January 2021: ____%

8. Has the government adopted any measure to contain the spread of COVID-19 that impacted the normal operations of the firm?

	Yes
	No (go to question 9)

8.1. Please indicate what type of measure (select all that apply):

	School closing	
	Workplace closing	
	Cancelled public events	
	Restrictions on gathering size	
	Closed public transport	
	Stay-at-home requirements	
	Restrictions on domestic movement of people	
	Restrictions on domestic movement of goods	
	Restrictions on cross-border movement of people	
	Restrictions on cross-border movement of goods	
	Requirements to use protective equipment (PPEs) and to sanitize hands and environments	
	Other restrictions (please specify) _____	

Problems faced

9. Please indicate the first, second and third most important problems faced by the firm due to the COVID-19 outbreak:

		First	Second	Third
	Clients are buying less due to the crisis			
	Clients are buying less due to government restrictions			
	Existing orders cannot be delivered			
	Suppliers are unable to provide inputs			
	Cost of materials and components has increased			
	Workers are unable to work due to illness			
	Workers are unable to work due to government restrictions			

10. Since the COVID-19 outbreak, has the firm experienced cash flow shortages?

	Yes
	No (go to question 11)

10.1. Please indicate the first, second and third main source used by the firm to deal with cash flow shortages:

		First	Second	Third
	Loans from commercial banks			
	Loans from non-banking financial institutions (microfinance institutions, credit cooperatives, credit unions, or finance companies)			
	Government grants and loans			
	Equity financing (increase contributions or capital from existing owners/shareholders or issuing new shares))			
	Delaying payments to suppliers or workers			
	Personal or family loan			
	Cutting of expenditures and/or delaying in investments			
	Tax waivers, exemptions and tax payments deferrals			
	Other source (please specify) _____			

11. Since the COVID-19 outbreak, has the firm experienced shortages in the supply of raw materials, components etc?

	Yes
	No (go to question 12)

11.1. Please indicate the first, second and third strategies used by the firm to deal with these shortage of components and raw materials

		First	Second	Third
	Reduction of production			
	Outsourcing orders			
	Seeking alternative suppliers abroad			
	Seeking alternative suppliers domestically			
	Delaying goods delivery			
	Use of inventories			
	Introduction of process innovations to save non-available inputs			
	Substitute raw materials and/or use of alternative inputs			
	Other strategy (please specify) _____			

Sales

12. Comparing the firm's sales for January 2021 with the same month in 2020, did sales increase, remain the same or decrease?

	Remain the same	
	Decrease	12.a. by what percentage did sales decrease? ____%
	Increase	12.b. by what percentage did sales increase? ____%
	Difficult to say	

12.1. Keeping the cost structure as it is now, how long would this firm be able to remain open if its sales continued as of today?

	Less than 1 month
	Between 1 and 3 months
	Between 3 and 6 months
	Between 6 and 12 months
	More than 12 months

12.2. If the COVID-19 crisis were to end today, how long would it take for this firm's sales to get back to the pre-pandemic level?

	Sales are already at the pre-pandemic level
	Less than 1 month
	Between 1 and 3 months
	Between 3 and 6 months
	Between 6 and 12 months
	More than 12 months

Jobs

13. How many people worked regularly in the firm at the end of 2019?

	Total: ____	13.a. From this total, how many were female? ___%

13.1. How many people currently work regularly in the firm?

	Total: ____	13.1.a. From this total, how many are female? ___%

14. How many people worked casually in the firm at the end of 2019?

	Total: ____	14.a. From this total, how many were female? ___%

14.1. How many people currently work casually in the firm?

	Total: ____	14.1.a. From this total, how many are female? ___%

Profits

15. What is the impact of the COVID-19 outbreak on the yearly profits of the firm during the fiscal year 2020--2021?

	Yearly profits are similar to those of FY 2019-2020	
	Yearly profits decrease as compared to those of FY 2019-2020	15.a. By what percentage do yearly profits decrease during FY 2020/21 as compared to those of FY2019/20? ____%
	Yearly profits increase as compared to those of FY 2019-2020	15.b. By what percentage do yearly profits increase in FY2020/21 as compared to those of FY2019/2-? ____%
	Difficult to say	

Expected impact of COVID-19

Investments

16. During 2018 and 20219 has the firm done investments in any of the following areas? (select all that apply)

	Training for employees
	Research and Development (R&D)
	New equipment and machinery
	New software
	None of the above (go to question 17)

16.1. Because of the COVDI-19 outbreak, do you expect these investments to increase, decrease or remain the same in the next 2 years? [follow up question for each investment category selected in question 16 (if any)]

	Increase
	Decrease
	Remain the same
	Difficult to say

International operations

17. Has the firm run part of its production activity in another country in 2019 (offshore)?

	Yes, through direct investment (i.e. foreign affiliates/controlled firms)
	Yes, through contracts with domestic firms abroad (e.g. technical/manufacturing partnership agreement, licensing agreement)
	No (go to question 18)

17.1. Is the firm planning changes in the offshoring activities due to the COVID-19 outbreak?

	Yes, the firm is planning a reduction in offshoring activities
	Yes, the firm is planning an increase in offshoring activities
	No, the firm is not planning any change in offshoring activities
	Difficult to say

Environment

18. To what extent will the pandemic triggered the adoption of new environmentally-friendly practices by the firm?

	To a great extent (go to question 18.1)
	To a moderate extent (go to question 18.1)
	Not at all (go the question 19.2)
	Difficult to say (go the question 9)

18.1. How will the pandemic improve the environmental performance of the firm? (select all that apply)

	Through new production practices (e.g. using automation, digitalization etc.)
	Through new business models (e.g. teleworking)
	Through an increased awareness of corporate social responsibility
	Through the participation in new green initiatives launched by the Government
	Through other channels (please specify) _____

Dealing with COVID-19

Change in operations

19. Did the firm experience any of the following changes in response to the COVID-19 outbreak? (select all that apply)

	Started or increased business activity online (e.g. online sales)
	Started or increased delivery or carry-out of goods or services
	Started or increased remote work arrangement for its workforce
	Introduced new equipment to reduce the workers needed on the shop floor (for instance, through the automation of some production processes)
	Converted, partially or fully, your production to address the health emergency (for instance, producing medical equipment, masks, sanitizers, sanitizing equipment)
	Released new products to meet changing market demands
	Introduced organizational changes to fulfil new health and safety requirements (i.e., new protocols or standards, new professional figures to supervise health and safety measures)
	The firm has not experienced any change (go to question 20)
	Introduced changes in working shift and/or spaced production schedules
	Other (please specify) _____

19.1. Do you expect this change(s) to remain in the future? [follow up question for each change selected in question 19 (if any)]

	Yes
	No
	Difficult to say

Government support

20. Since the COVID-19 outbreak, has the firm received any national or local government support in response to the crisis?

	Yes (go to 20)
	No (go to 21)

20.1 Did any of these measures involved any of the following (select all that apply)?

	Cash transfers for business
	Deferral of credit payments, suspension of interest payments, or rollover of private debt
	Deferral of rent or mortgage
	Access to new credit (go to q. 20.3)
	Tax exemptions or reductions (e.g. tax debt write-off, lower tax rates) (go to q. 20.3)
	Wage subsidies
	Public procurement
	Import and export regulations to support your industry (go to q. 20.3)
	R&D or innovation subsidies/grants
	Deferral of tax payment or temporary suspensions (e.g. VAT suspension) (go to q. 20.3)
	Others (please specify) _____

20.2 How helpful was this support for the firm? [follow up question for each policy selected in question 20.1]

	Extremely helpful
	Very helpful
	Somewhat helpful
	Not so helpful
	Not helpful at all

21. What policy measures, if any, would be the most effective to support the firm's recovery from the crisis? (select all that apply)

	Deferral of credit payments, suspension of interest payments, or rollover of private debt
	Deferral of rent or mortgage
	Access to new credit
	Tax exemptions or reductions (e.g. tax debt write-off, lower tax rates)
	Public procurement
	Import and export regulations to support your industry
	Deferral of tax payment or temporary suspensions (e.g. VAT suspension)
	Others (please specify) _____

22. In which of the following areas would the firm need government support for the recovery? (select all that apply)

	Reorganization of supply chains
	Exploration and access to new domestic markets
	Exploration and access to new international markets
	Development of new products / product mixes
	Development of new skills
	R&D and innovation
	Digitalization of the firm (i.e., e-commerce, tele-working, remote control)
	Development of business continuity plans
	The firm will not need government support
	Others (please specify) _____

Profile of the firm

Firm characteristics

23. On what year did the firm start to operate?

	Insert year

24. What is your position in the firm?

	Chairman, Vice Chairman, Managing Director or Owner/Partner
	CEO, Director, Deputy Director, Company Secretary
	Senior Manager (except financial)
	Chief accountant, Financial Manager
	Other (please specify) _____

25. What is the ownership structure of the firm?

	Privately-owned domestic firm with no foreign ownership
	Privately-owned domestic firm with less than 10% foreign ownership
	Privately-owned firm with more than 10% foreign ownership (Foreign-invested firm)
	State-owned firm (go to question 26)
	Other (please specify) _____

25.1. Can the firm qualify as a Women-Owned business?

		Yes
		No

Sales profile

26. In relation to the main production activity, the firm produces predominantly:

	Intermediate inputs for agriculture
	Intermediate inputs for manufacturing
	Intermediate inputs for services
	Finished goods for consumers
	Finished goods for industrial business

26.1. During 2019, did the firm participate in the supply chain of a multinational corporation or foreign-owned company operating in your country?

	Yes
	No

27. Which share of purchases of raw materials and intermediate goods corresponded to imports from foreign supplier in 2019?

	____%	

28. Which share of sales/turnover was exported abroad in 2019?

	____%	

Innovation profile

29. Has the firm introduced any of the following innovations between 2018 and 2019? (select all that apply):

	A new product or a significant improvement in the design, components or materials of established products
	A new business process, such as a new production or delivery method, supply, distribution, sales or marketing processes
	A new organizational method in business practices, workplace organization or external relations
	None of the above

Digitalization profile

30. Digitalization level of the firm

30.1. Which of the following set of technologies is currently used by the firm to support the production processes?

		Chosen option:
0	Analog systems: use of machinery that does not have electronic controls	
1	Simple and rigid automation systems: use of stand-alone CNC (Computer Numerical Control) machines and/or other non-connected, stand-alone, non-integrated machines operating independently	
2	Full or partial automation systems: manufacturing processes controlled by PLC (Programmable Logic Controller) and or with use of robots	
3	Computerized manufacturing execution systems: use of MES (Manufacturing Execution System), AGV (Automated Guided Vehicle), product identification solutions (i.e., RFID or QR Code), fully electronic production control systems, mobile production control solutions (i.e., monitor production with mobile devices)	
4	Smart production systems: use of machine-to-machine communication or other systems based on data exchange between machines and components; use of digital twin technology to model individual products; use of real-time sensors for data acquisition and adjustment; use of co-bots, augmented reality, additive manufacturing, real-time production management, artificial intelligence and/or big data analytics to support the management of production	

30.2. Which of the following technologies use the firm to support the relationship with customers?

		Chosen option:
0	Analog systems: use of phone, fax, or personal contacts	
1	Manual electronic handling of accounts and contacts: by electronic means but in an unstructured electronic format (with e-mail and e-mail attachments). Clients registration and transaction information are dispersed	
2	Sales force automation: use of CRM (Customer Relationship Management) solutions, existence of a client electronic database with account and contact records	
3	Web-based integrated support systems: use of CRM (Customer Relationship Management) solutions with multichannel integration; mobile solutions and salesforce support with mobile apps; web-based Internet sale system; social media integration; customer data analytics	
4	Client lifecycle management and control: use of connected devices for gathering and monitoring product usage data throughout lifecycle (i.e., sensors embedded in products); offer of services based on customer usage patterns (i.e., maintenance); artificial intelligence in customer service (i.e., automatic response); analysis and offer of services with support of artificial intelligence and/or big data analytics	

Location

31. In which States and Union Territories does the firm have offices or production plants? (select all that apply)?

Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal Pradesh
Jharkhand
Karnataka
Kerala
Madhya Pradesh
Maharashtra
Manipur
Meghalaya
Mizoram
Nagaland
Odisha
Punjab
Rajasthan
Sikkim
Tamil Nadu
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal
Andaman and Nicobar Island
Chandigarh
Dadra and Nagar Haveli and Daman and Diu
Delhi
Ladakh
Lakshadweep
Jammu and Kashmir
Puducherry

31.1 Is any of these offices or production plants located in a special economic zone?

	Yes
	No

Firms currently not in operation

32. Please specify since when the firm is not operating:

	Date: _____

33. Did the firm implement any of the following measures before closing operations? (select all that apply)

	Laid off of the workforce
	Reduced salary for some or all of the workforce
	Sold some of the firm's assets
	Increased the level of debt (more credit from banks or other institutions)
	Converted the production line or services offered
	Received government (national or local) support

34. Is it expected that the firm will re-open operations in the future?

	Yes
	No
	Difficult to say

Thanks for participating in this survey of UNIDO and India SME Forum!

With the last answer you have finalized the survey. Thank you very much for your time.

Your answers will inform the design of an industrial strategy for the post-pandemic recovery of the manufacturing sector in India.

Vienna International Centre
Wagramerstr. 5, P.O. Box 300,
A-1400 Vienna, Austria

+43 (1) 26026-0

www.unido.org

unido@unido.org

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION