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Assessing the Impact of COVID-19 on Small-scale Manufacturing Establishments in Ethiopia *

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Abstract

Following the first confirmed cases of COVID-19 pandemic in mid-March 2020, the Ethiopia government imposed stringent measures to combat the spread of the virus including borderland control measures, travel restrictions, social distancing measures, and lockdowns. This article assesses the impact of the pandemic on small-scale manufacturing enterprises in Ethiopia. We conducted a survey of 627 randomly selected small-scale manufacturing firms in different parts of Ethiopia. The large majority of firms remain operational during the COVID-19 pandemic. However, over 95% of firms have experienced a decline in sales revenue, by 55% on average, in September 2020 compared with the same period in the previous fiscal year. Similarly, firms have laid-off employees during the COVID-19 pandemic. Loss of customers due to mobility restrictions is reported as the biggest business challenge during the pandemic. Firms indicate that business loans are the most appropriate policy response to mitigate the negative impact of the pandemic on their business. Lastly, we find that business owners' expectation about recovery and the future is bleak, almost 87% of firms expected a reduction in their sales revenue for the next 30 days compared to their sales revenue in the same period of last year.

Keywords: : COVID-19; SMEs; Pandemic Response; Ethiopia

JEL classifications: D22 ; L23 ; L25 ; O12

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1 Introduction

The COVID-19 pandemic reached Ethiopia in mid-March 2020. Fear of dealing with a new virus in the context of ill-equipped health systems and a vulnerable economy energized the country's leadership to the early imposition of stringent measures including borderland control measures, travel restrictions, social distancing measures, and lockdowns. However, these containment measures exerted potential pressure on small-scale manufacturing firms' business operations as they are highly dependent on their daily business activities and mostly unprepared for such disruptions. At the same time, small-scale establishments play important roles in creating jobs and employing more than two million workers. In addition, they are a vital source of employment opportunities for low-income households particularly for low-skilled women.

In this paper, we explore the impact of COVID-19 on the small-scale manufacturing enterprises in Ethiopia, defined as those that employ less than ten workers and use power-driven machinery. To this end, we have conducted a survey of 627 randomly selected small-scale manufacturing firms from a recent database of the Central Statistics Authority (CSA) of Ethiopia. The survey was conducted over the phone in early October 2020. The main questions of the survey were constructed to measure whether the COVID-19 pandemic caused negative consequences on the overall firms' operations including change in production, supply chain disruptions, financial fragility, and laying off employees. In addition, we collect data on the type of containment measures taken by the establishments. Firms were also asked to propose the appropriate government responses to mitigate the negative impacts of the COVID-19 pandemic on their operations.

We discuss the key findings as follows. A large majority of businesses, close to 95%, remain operational during the pandemic. Fewer than 1% of businesses, in our sample, were temporarily closed because of government mandate and roughly 1.4% of businesses were closed due to challenges related to the COVID-19 outbreak. Although majority of firms remain open, the pandemic has reduced firms' sales revenue and increased workers lay-offs. Of the 627 surveyed establishments, over 95% of firms have experienced a drop in sales revenue with an average decline of 55% in September 2020 compared with the

same month in previous fiscal year. Many workers in small-scale firms have lost their jobs and income as a result of the COVID-19 pandemic; 17.3% and 17.2% of workers experienced temporary and permanent lay-offs respectively, while 18.3% of workers faced a reduction in earnings. The lay-offs, temporary and permanent, are a relatively lower for firms with more than five employees. For firms that employ more than five workers, 12.2% and 10.0% of workers experienced temporary and permanent layoffs respectively, while 15.9% of workers faced a reduction in earnings.

The survey reveals that 90% of the firms have reported lack of demand as the main challenge for their business operations. Two thirds of firms reported difficulty of accessing customers due to mobility restrictions imposed by the government while the remaining quarter of firms reported the loss in demand caused by other reasons unrelated to government mobility restrictions. Only 4.6% of establishments have reported accessing suppliers due to mobility restrictions imposed by the government as the third challenge they faced, in line with the COVID-19 effects of supply shocks.

Moreover, our results show that small-scale manufacturing firms are financially fragile. About 83% of firms did not have line of credit from financial institutions before the pandemic. Furthermore, our results show that 91% of firms reported that they do not currently have a credit facility. We also find that more than half of firms (55%) have a very limited cash on hand (just less than 25,000 Birr, \$659) to run their own business, indicating the unique vulnerability of small-scale firms to the COVID-19 crisis. We also find that business owners' expectation about recovery and the future is bleak. About 40% of firms' owners believe that their business would not recover within a year, 33% believe their business would recover in less than 6 months. Only less than 1% of firms' owners believe that their business would never recover. Almost 87% of firms expected a reduction in their sales revenue for the next 30 days compared to their sales revenue in the same period of last year.

Lastly, we find that 42% of firms indicated that business loans are the most appropriate policy response to mitigate the negative impact of the pandemic on their business operations. Among alternative policy instruments, 21% and 15% of firms proposed tax

cuts and provision of subsidies respectively. Similarly, only 6% of businesses indicated cash transfers or unemployment benefits is the appropriate policy response.

This study contributes to the growing body of literature on the effect of COVID-19 on the macro-economy outcomes such as GDP (Guerrieri et al., 2020; IMF, 2020; Ludvigson et al., 2020; Bartik et al., 2020), and international trade flows (WTO, 2020; commission, 2020). del Rio-Chanona et al. (2020) estimates the demand and supply shock of COVID-19 on the US economy using the occupation and industry data, while Barrot et al. (2020) estimated the sectoral effects of social distancing.

This study also contributes to studies focusing on examining the impact of COVID-19 on small-scale firms in developing countries. For example, Selim and Miri (2021) find that SMEs in Uganda have experienced 51.9% drop in profits, 22.5% and 6.5% temporarily and permanently laid-off of workers respectively. Malik et al. (2020) examine the impact of COVID-19 on the future of microfinance in Pakistan and find that week-on-week sales and household income both fell by about 90 percent. Dai et al. (2020) investigate the impact of COVID-19 on small and medium sized enterprises in China and find that 80 percent of SMEs are temporarily closed in February 2020. Few studies investigate the effects of COVID-19 on firms' operations in Ethiopia. Mengistu et al. (2020) provide survey evidence from firms in Ethiopia industrial park on the impact of the COVID-19 crisis. They document that about 10% of firms were temporarily closed due to COVID-19 and over 75% of firms have experienced a decline in sales revenue and production volumes. More specifically, on average, firms experienced a decline in sales revenue by 42% and production by 40% and employment by 40%. In a similar study, Abebe et al. (2020) report findings from a survey among 441 firms in Addis Ababa. They document that COVID-19 reduced real wages of high-skilled and low-skilled workers by 14.1% and 3.7% respectively in April 2020. Our paper contributes to this body of literature by examining the impact of COVID-19 on small-scale manufacturing firms which are uniquely positioned to be hardest hit.

The rest of the paper is structured as follows. Section 2 provides background information for COVID-19 in Ethiopia and the government response. Section 3 describes the

datasets and descriptive statistics. Section 4 presents the results and discussion. Section 5 concludes.

2 COVID-19 Timeline and Government Policies

In Ethiopia, the first COVID-19 case was observed on 13 March 2020. Fear of dealing with the virus in the context of ill-equipped health systems and a vulnerable economy, the government of Ethiopia took several stringent measures to halt the spread of COVID-19. Table 1 shows the timeline of key measures the government has taken between April 2020 and September 2020 including State of Emergency (SOE), closing land borders, quarantining infected people and incoming people from abroad, banning inter-regional public transports and public gatherings, closing schools, ordering the shutting of nightclubs and entertainment outlets, and announcing social distancing measures.

Figure 1 shows the daily new confirmed COVID-19 cases per million people in Ethiopia and Africa. The number of COVID-19 cases between November 2020 and February 2021 in Ethiopia is lower compared to the averages of Africa. As restrictions loosened with the lifting of the State of Emergency (SOE) in September 2020, confirmed cases have been on the rise. The daily new confirmed cases were all time high ranging between 15% to 20% positivity rate in April 2021 but declining afterwards.

Figure 1: Daily new confirmed COVID-19 cases per million people in Ethiopia and Africa



Note: This figure shows the overtime aggregate export of coffee for Ethiopia and Kenya in thousands of ton. Source: Johns Hopkins University

The government has implemented several relief packages to mitigate the negative im-

Table 1: Key Measures by the Ethiopian Government

Date	Government Measures
March 2020	<ul style="list-style-type: none"> - COVID-19 confirmed in Ethiopia - Government introduced several measures including closing of schools, banning of public gathering, closing of land border ordered the shuttering of nightclubs and entertainment outlets and announced social distancing measures etc, - National Bank of Ethiopia injected \$450 million to solve private banks' liquidity problem.
April 2020	<ul style="list-style-type: none"> - Council of ministers declared a five-month long state of emergency - Prime Minister's office announced a COVID-19 Multi-Sectoral Preparedness and Response Plan, with prospective costing of interventions of US\$1.64 billion - IMF Executive Board approves \$411 in Emergency assistance to Ethiopia to address the COVID-19 pandemic - The Council of Ministers approved measures to support firms and employment, including forgiveness of all tax debt prior to 2014/2015, a tax amnesty on interest and penalties for tax debt pertaining to 2015/2016-2018/2019 and exemption from , personal income tax withholding for 4 months for firms who keep paying employee salaries despite not being able to operate due to Covid-19.

pacts associated with the containment measures. For example, on March 23, 2020, the government announced a stimulus package of US\$154 million to build resilience against the pandemic. On March 27, 2020, the Central Bank of Ethiopia (CBE) committed to inject US\$456 million liquidity for private banks to enable them to provide debt relief and additional loans to their customers in need. The World Bank Group approves US\$82.6 million (US\$41.3 million grant and US\$41.3 million credit) from the International Development Association. Similarly, AfDB and the IMF approved US\$165 million and US\$411 million emergency assistance to Ethiopia, respectively. On April 3, 2020, the government announced a COVID-19 Multi-Sectoral National Emergency Response Plan (NERP), which requires US\$1.64 billion in funding. To support local businesses, the government of Ethiopia itself announced a tax relief of close to US\$2.44 billion. The tax relief package also includes forgiveness of all tax debt prior to 2014/2015, a tax amnesty on interest and penalties for tax debt pertaining to 2015/2016-2018/2019 and exemption from personal income tax withholding for 4 months for firms who keep paying employee salaries despite not being able to operate due to COVID-19.

3 Survey Description and Summary Statistics

3.1 Survey Description

In 2019, the Central Statistical Authority (CSA) of Ethiopia conducted annual survey of approximately 10,800 small-scale manufacturing establishments, which we considered as our sampling frame. From this sampling frame, we have conducted a survey of 627 randomly selected small-scale manufacturing firms. By using the recent CSA survey as a sampling frame, we make sure recently established firms to be included in our sample as the younger and new firms could have higher chance to be affected by the COVID-19 shocks. The survey was conducted over the phone in early October 2020 and most respondents were firm owners or firm managers.

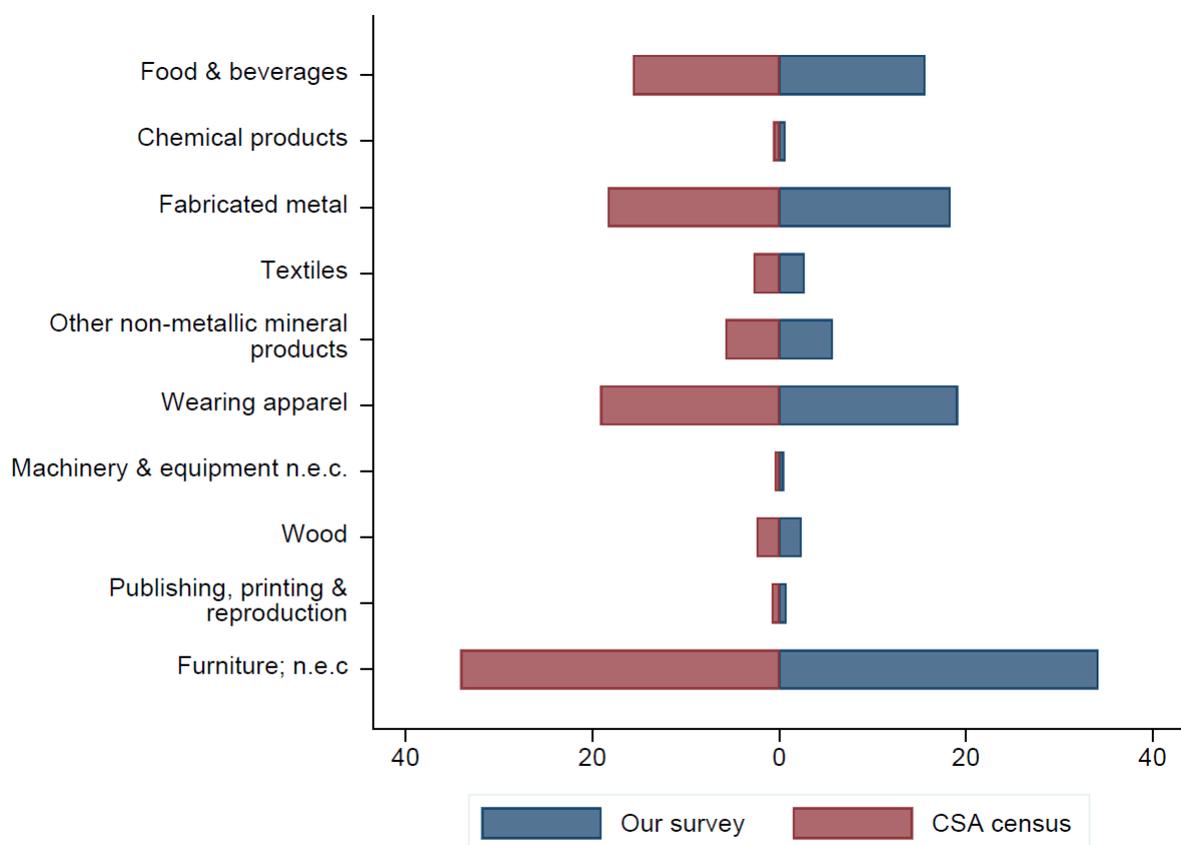
Our survey instrument has four main components. The first part of the questionnaire asks basic information about the establishment. The second part focuses on the operation of the firm. The third part asks whether the COVID-19 crisis imposed negative impacts on their business operations including change in production, supply chain disruptions, financial fragility, and reduce the number of employees. The fourth part asks firms view about the appropriate government responses to mitigate the negative impacts of the COVID-19 pandemic on their operations. We also asked establishments about their expectations of recovery and their future prospects. The core of the survey in this part relates to the expectation of small business owners about their businesses and the COVID-19 crisis in the future periods.

3.2 Firm Representativeness and Characteristics

To check the representativeness of the establishments we surveyed to the CSA census data by broad industry classifications, we compare our survey data with the CSA data in few observable dimensions. Figure 2 compares the revenue distribution of our survey respondents with the distribution of establishments' data collected by the CSA. In Figure 3, we do the same analysis for employment. At broad sector, both figures confirm the representativeness of our survey of the establishments to the country's census of the small-

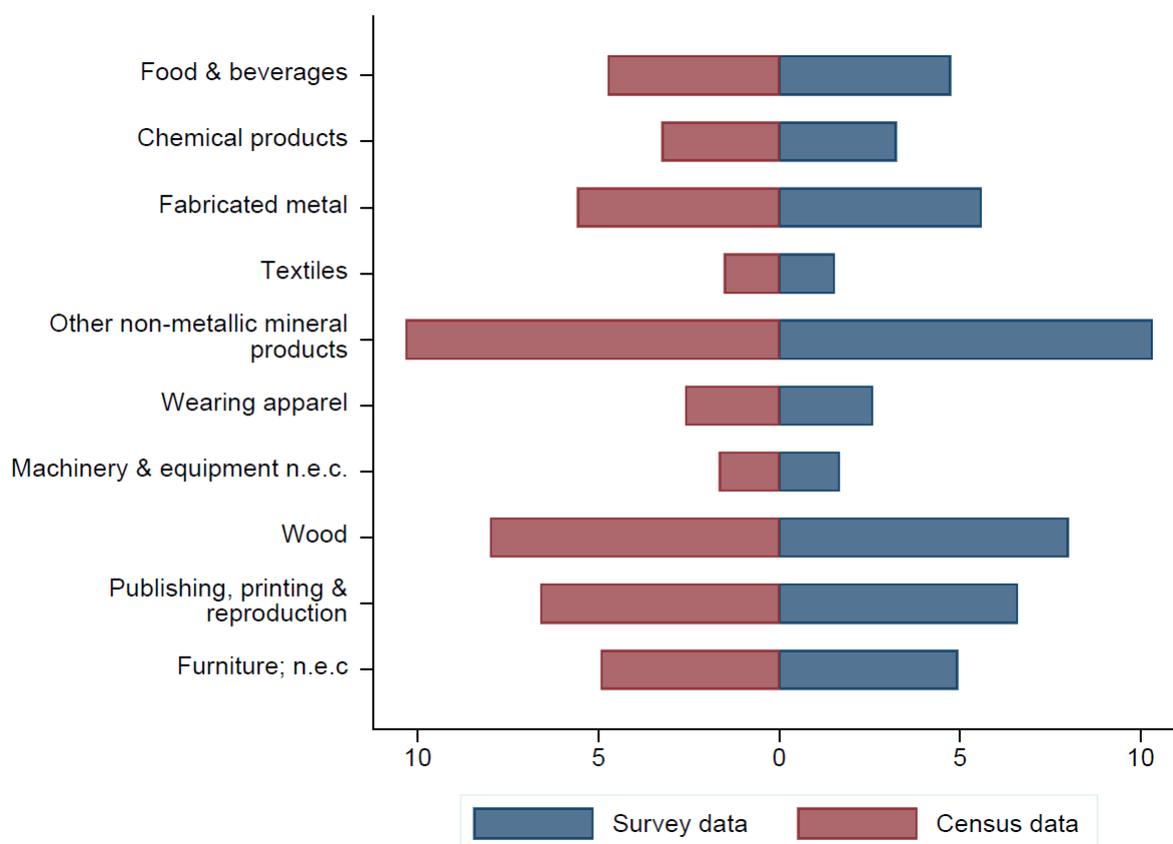
scale manufacturing establishment collected by the CSA. With respect to geographic representativeness, we survey firms from six different cities in Ethiopia viz.: Addis Ababa, Hawassa, Gonder, Bahir Dar, and Adama (see Appendix Table 1A). Of our total samples, 57% were from Addis Abeba followed by Bahir Dar (16%) and Hawassa (11%). In general, the previous discussion shows that our survey is largely a representative of the small-scale manufacturing establishments of Ethiopia, providing an important insight to the whole SMEs in Ethiopia.

Figure 2: Firm’s revenue distribution of the CSA census and our sample survey



Note: The horizontal axis shows the percentage of firms. The sample size for the survey is 626 firms

Figure 3: Firms employment distribution of the CSA census and sample survey



Note: The horizontal axis shows the percentage of firms. The sample size for the survey is 626 firms.

Table 2 presents the summary statistics of the survey of the establishments by broad sectors. These firms' employee a total of 3,045 workers, excluding the owners. The average and median number of workers employed in the firms are five and four respectively. Average annual sales revenue in 2019 was 386,467 Birr (approximately \$10,000). Close to 70% of firms in our sample had less than five paid employees, with the average employment stands at three. For the remaining 30% of firms in our sample, the average paid employees was 10 and their sales revenue was three times larger than firms that have below five paid employees. Demographically, approximately 36% of small-scale firms have at least one female owners. Looking by sectors, the majority of our establishments are from furniture (34.1%), wearing apparel (19.1%), fabricated metal products (18.3%) and food products and beverages (15.6%). The highest average employment is from non-metallic mineral products with 10.3 employment while the lowest is in textiles (1.5).

Table 2: Establishment’s basic characteristics

ISIC Sector	# Firms	Total employee	Average employees	Annual sales
Furniture; n.e.c	214	1057	4.9	305766
Food products and beverages	98	465	4.7	664036
Chemicals and chemical products	0.18	0.17	0	1
Wearing apparel	0.19	0.17	0	1
Fabricated metal products	0.33	0.24	0	1
Textiles	0.29	0.45	0	1
Other non-metallic mineral	0.63	0.48	0	1
Machinery and equipment n.e.c.	0.26	0.44	0	1
Wood	0.10	0.30	0	1
Publishing, printing and reproduction of recorded media	0.5	0.5	0	1
Number of employees < 5	0.02	0.15	0	1
Number of employees \geq 5	0.02	0.15	0	1
Grand Total	0.02	0.15	0	1

4 Results and Discussion

In this section, we present and discuss the main results of the study. It is structured as follow. First, we discuss the impact of COVID-19 on the business operations. Second, we report our results on the challenges faced by business owners during the crisis. Third, we turn to business’s expectations about recovery. Fourth, we discuss coping strategy and policy responses government followed and whether firms are benefiting from those policies. Finally, we present results on the expectation of business.

4.1 COVID on Firms Business Operations

It is evident that the Covid-19 pandemic and its containment measures induced several challenges to firms and their business operations. Several economists argue that COVID-19 pandemic has combined both demand and supply shocks ([Baldwin and Di Mauro, 2020](#)). As briefly discussed in section 2, following COVID-19 outbreak the Ethiopia

government has imposed different restriction on mobility and other activities. These restrictions affect establishments' business operations and lower their production and capacity utilisation, creating supply shocks. Workers were unable to work because of mobility restrictions, sickness, and take care of kids at home. For firms that depend on supply chains for their production—both domestic and international, may find difficult to get their inputs affecting their production capacity. In addition, COVID-19 also creates a potential demand shock. Workers were laid-off, and thus lost their income and the uncertainty associated with the disease makes consumers to spend less on consumption, creating a negative demand shock, and these may in turn worsen investment spending.

Business Closure: In the survey, we asked business owners, “What is the current status of your business?” Table 3 shows that the large majority of businesses, close to 95, remains operational during the pandemic. Fewer than 1% of the business in our samples are temporarily closed because of government mandate and roughly 1.4% of business are closed due to challenges related to the COVID-19 outbreak. 1.7% of business are either temporarily or permanently closed due to factors unrelated to the COVID-19 outbreak. Only 1.1% of the firms are permanently closed due to challenges related to the COVID-19 outbreak.

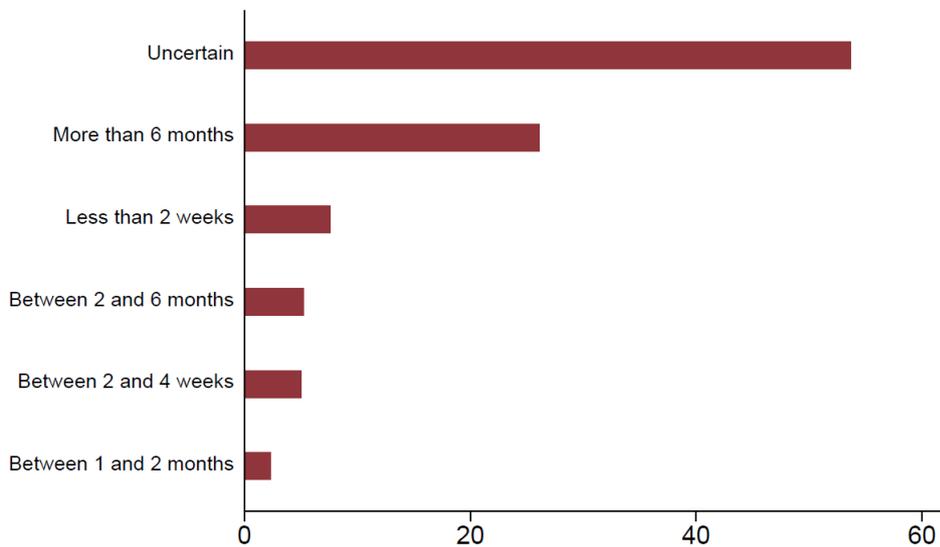
For businesses that remained open, we asked “Under current conditions, for how much longer do you think you will be able to keep your business open?” Figure 4 shows that among those whose business is opened (i.e., 95% of business), more than 54% of firms reported that they are uncertain on how much longer they will be able to keep their business open. 27% business reported they will be able to keep their business open for more than 6 months under the current condition, while 19% responded they only keep their business open for below 6 months.

Sales: We asked firms whether their sales revenue for the last 30 days before the survey is higher or lower compared to their sales revenue in the same period of last year. We also ask firms about their expectation of sales revenue for the next 30 days compared to their sales revenue in the same period of last year to be “higher” or “lower”, and also

Table 3: COVID-19 and Business Closure

Current status of the business	Percent
Business remains open	94.74
Temporarily or permanently closed due to factors unrelated to the COVID 19 outbreak	1.75
Permanently closed due to challenges related to the COVID-19 outbreak	1.12
Temporarily closed due to challenges related to the COVID-19 outbreak	1.44
Temporarily closed by government mandate	0.64
Do not know	0.32

Figure 4: *Under current conditions, for how much longer do you think you will be able to keep your business open?*



by how much will it be lower/higher? Panel A of Figure 5 shows that over 95% of firms have seen a drop in sales revenue in September 2020 compared with the same period of last year. We also find that firms have experienced a 55% reduction in sales revenue in September 2020 compared with the same period of last year.

With respect to expectation of firms' owner about future prospects of their sales revenue, the business outlook is bleak. Over, 87% of firms expected their sales revenue to decrease for the next 30 days compared to their sales in the same period of last year. On the other hand, about 15% of female-owned businesses and 11% of male-owned businesses expect their sales revenue for the next 30 days to be higher compared to sales revenue

in the same month of last year. The panel B of Figure 5 shows that businesses expected their next month sales to fall by more than 50% compared with the same period of last year. In general, there is not much noticeable difference in expectation of sales revenue between female- and male-owned businesses. At sectoral level, Figure 6 shows the change in sales revenue in the last 30 days compared to the same period of last year. Our findings reveal that some of the sectors are more affected by the COVID-19 pandemic than others. Particularly, wearing apparel (66%) and machinery and equipment (63%) sectors have experienced the largest decline in sales revenue while manufacturing of chemicals and chemical products (38.8%) and manufacturing of other non-metallic mineral products (38%) saw the smallest declines in sales revenue.

Figure 5: *Were your sales/revenue in the last 30 days “higher” or “lower” compared to your sales/revenue in the same period last year?*

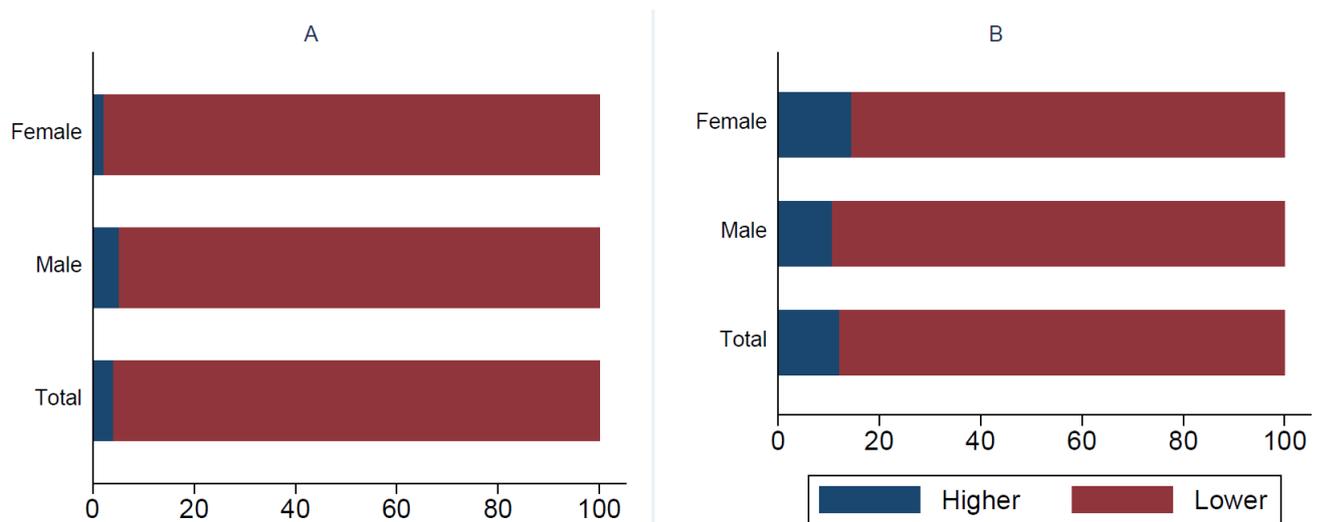
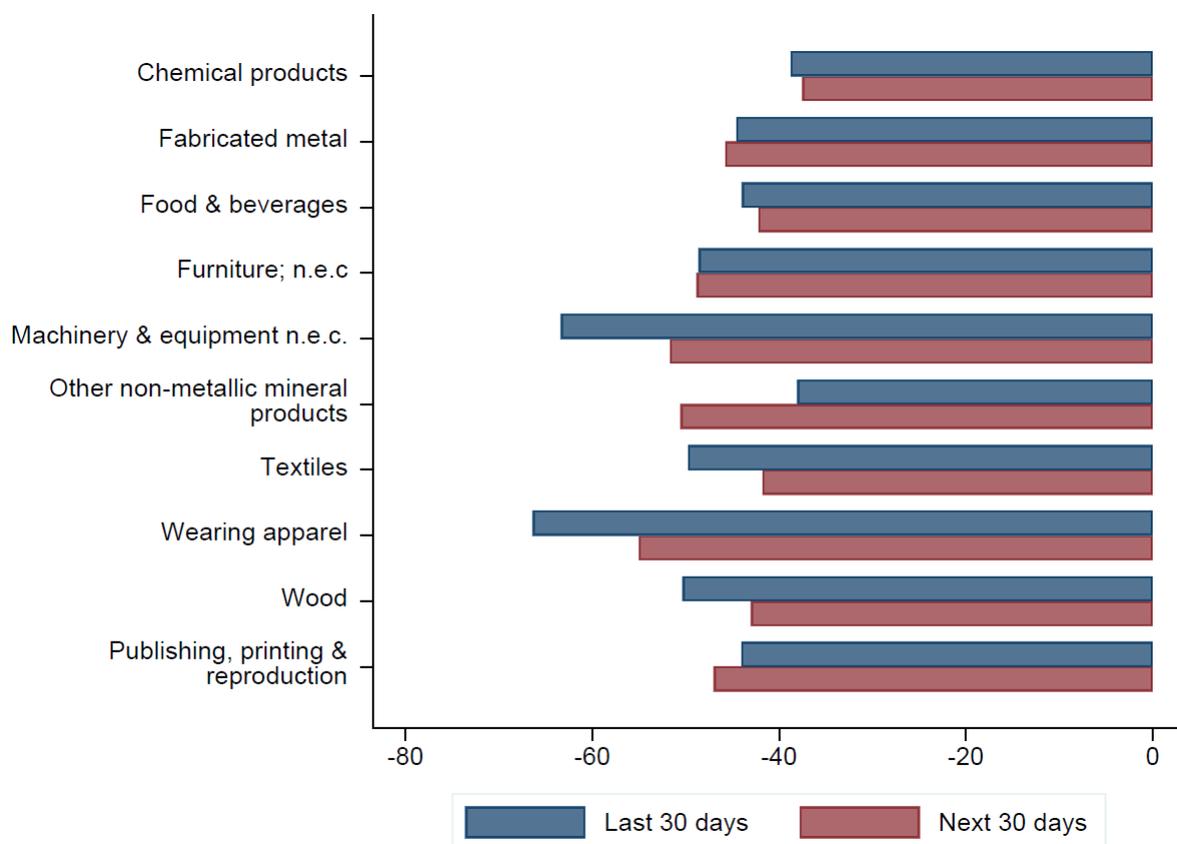


Figure 6: *Do you expect your sales/revenue in the next 30 days compared to your sales/revenue in the same period last year to be “higher” or “lower”? How much lower/higher?*



Employment: To examine the effects of the COVID-19 pandemic on the workers hired by SMEs in our sample, we asked businesses “Since the pandemic, how many of your workers experienced any of the following as a result of the coronavirus/COVID-19-19 outbreak and related restrictions?” Figure 7 presents firms’ response to this question. Although close to 95% of businesses remained opened, many workers have lost their jobs and income because of the COVID-19 pandemic. In addition, several firms have laid-off their workers temporarily or permanently. Figure 7 shows that since the pandemic, 17.3% and 17.2% of workers experienced temporary and permanent laid-off respectively, while 18.3% of workers faced a reduction in earnings. Also, Figure 8 shows that since the pandemic 28% of firms had permanently laid-off their workers and 24.5% of firms had reduced earnings for their workers. It also shows that 28.4% of firms had also temporarily laid-off their workers.

Figure 7: *Since the pandemic, how many of your workers experienced any of the following as a result of the coronavirus/covid-19 outbreak and related restrictions?*

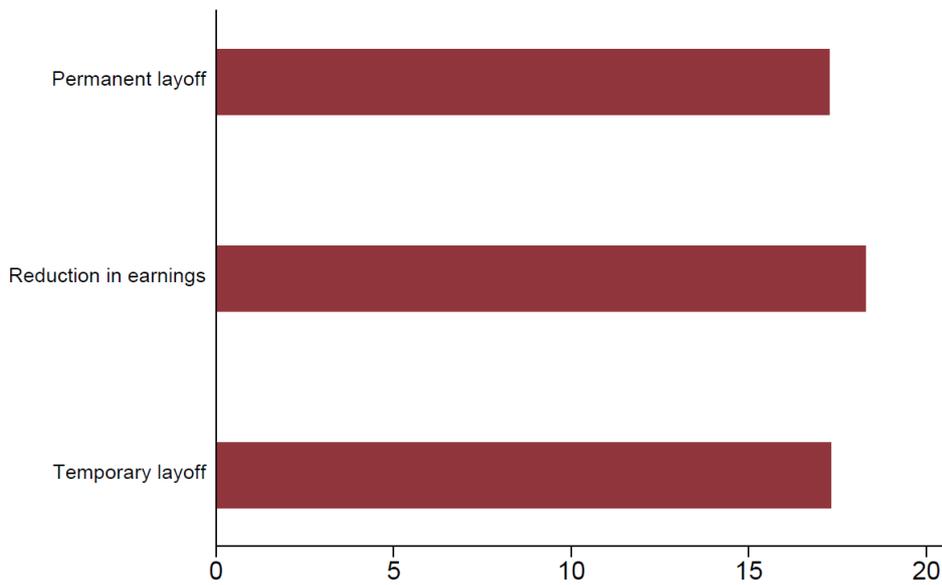
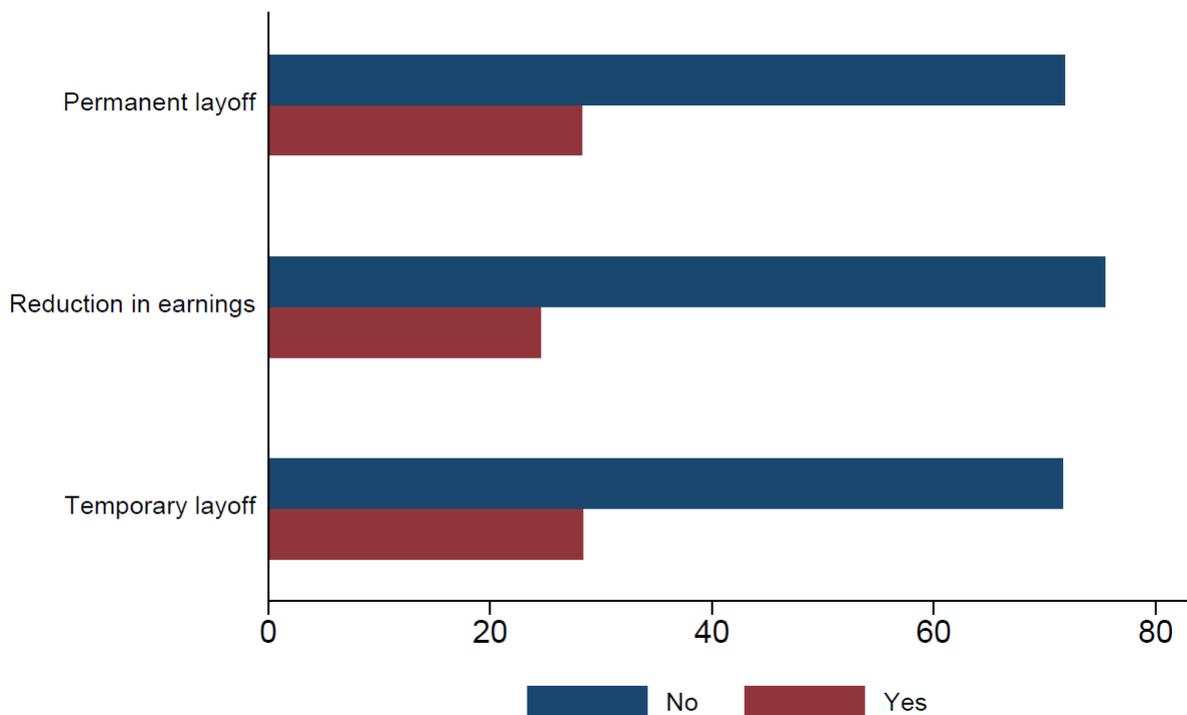


Figure 8: *Since the pandemic, the share of firms that experienced any of the following as a result of the coronavirus/covid-19 outbreak and related restrictions?*



4.2 COVID and Main Challenges

Figure 9 shows the list of potential challenges small-scale manufacturing firms faced due to the COVID-19 outbreak and its related containment measures. Two thirds of firms reported that difficulty of accessing customers due to mobility restrictions imposed by the government is the main challenge they faced in their business operations. Similarly, close to a quarter of firms reported that the loss in demand was caused by other reasons unrelated to government mobility restrictions as the second major challenge for their business operation. It means that almost 90% of the firms identified lack of demand as a main challenge for their business operations, either due to government mobility restrictions or other reasons. The third most common main challenge, reported by 4.6% of establishments, was difficulty in accessing suppliers due to mobility restrictions imposed by the government. Worker's absentees, depreciation of capital and securing access to finance because of restrictions imposed were less of a concern.

Furthermore, we have also asked firms to rate the difficulties resulting from supply chain disruptions, loss in customer demand, and employees' health disruptions due to challenges of COVID-19 in two scales. The first scale asks businesses to rate each of the disruptions as "Not a concern", "Minor Disruption, Moderate Disruption", and "Very severe disruption", and the second scale asked businesses to rate the disruptions on a 1 to 100 scale. Figures 10 and 11 present the result associated with these questions. Consistent with previous results, Figure 10 shows that loss of consumer is considered as a very severe or major disruption by 43% and 30% of firms respectively. In sum, 93% of firms cited loss of customers as a result of COVID-19 as a significant disruption to their business activity. Disruptions to supply chain is also reported as a serious problem while disruptions due to employees' health disruptions is less of a concern for firms. Figure 11 shows that firms rated loss in customer (demand loss) to be 62 on the 100-point scale. The supply chain disruptions are rated as 48. Concern on employees' health disruptions is the least concern, with an average rate of 8.5 on the 100-point scale. These results suggest that demand loss is the main challenge businesses were facing, with concern on employee health disruptions less pronounced.

Figure 9: *Main challenges establishments faced due to COVID-19 and its restriction.*

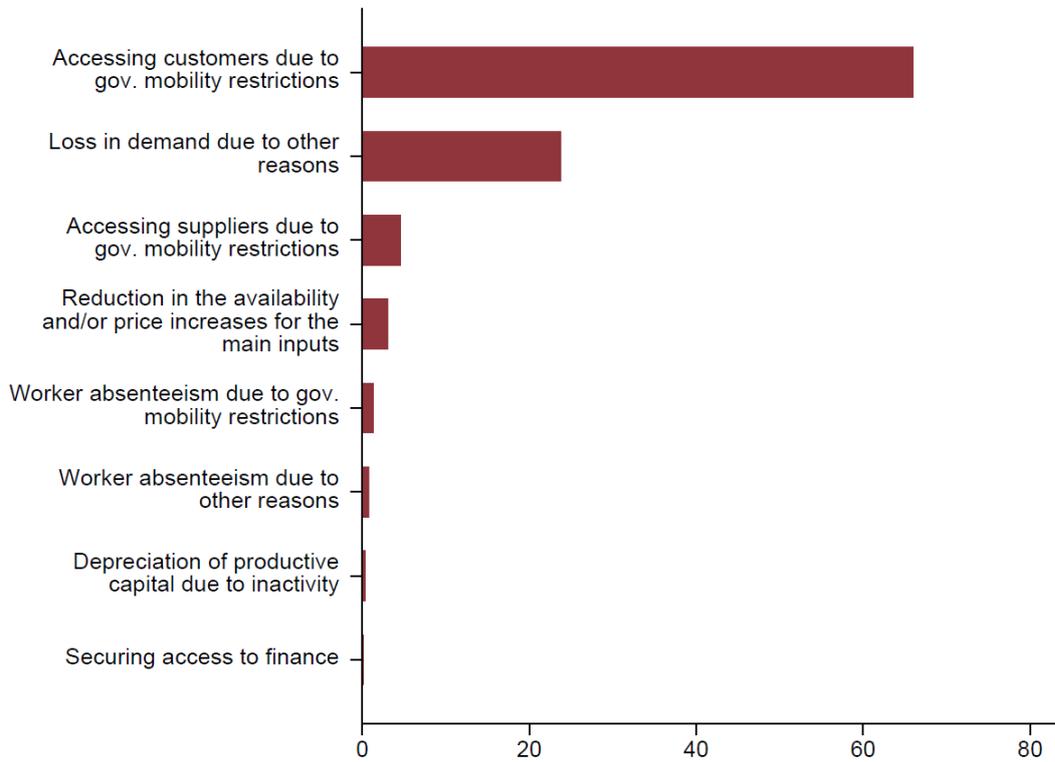


Figure 10: *How would you rate the difficulties (disruptions) resulting from the following challenges due to COVID-19? Please circle your response.*

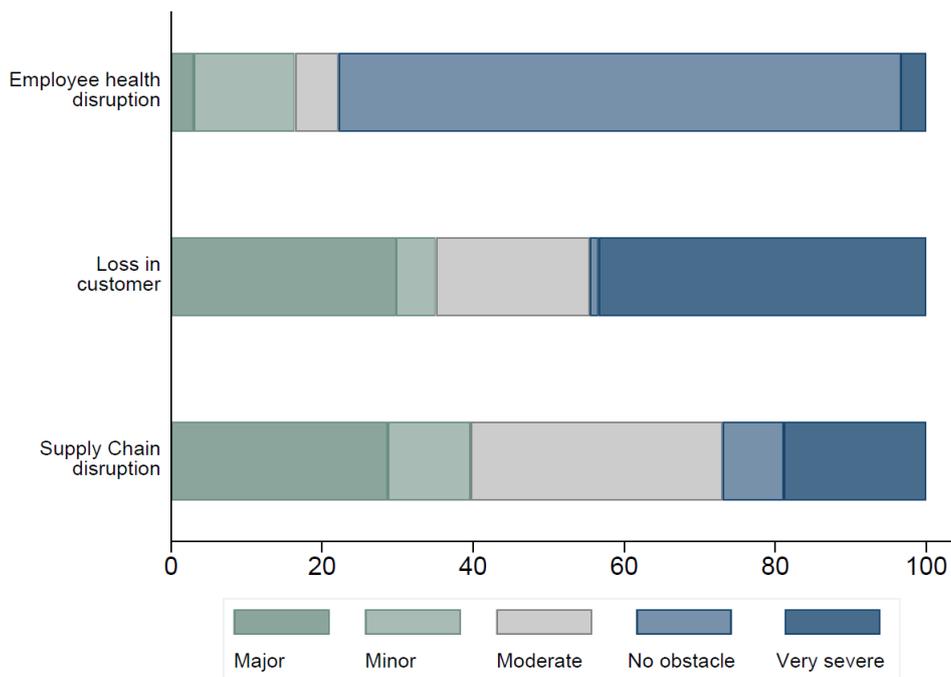
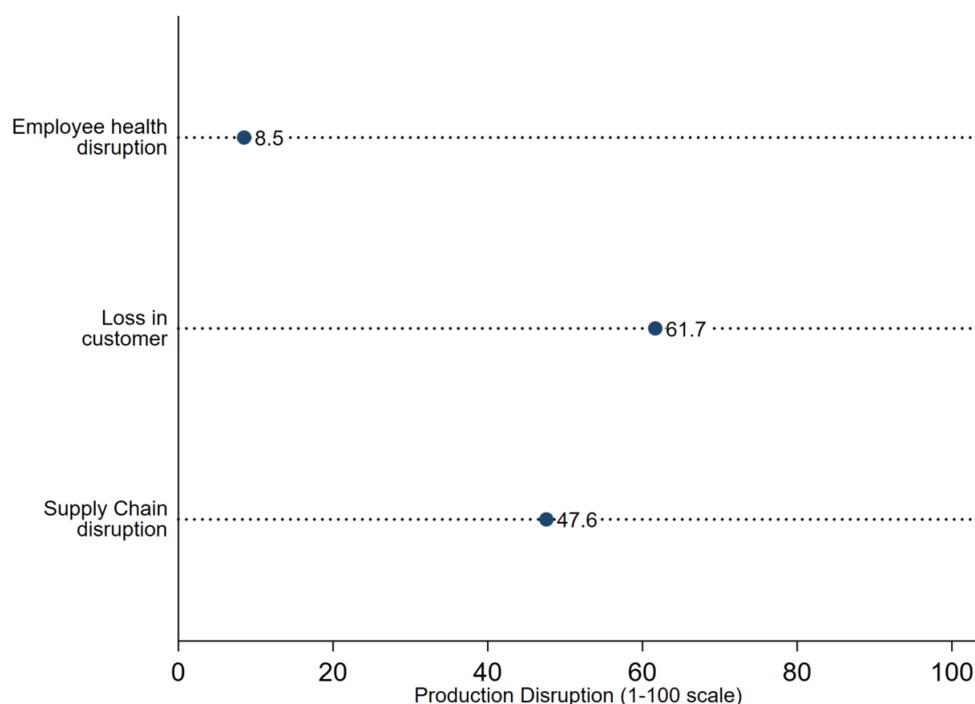


Figure 11: *COVID-19 and Production Disruption (1-100 scale) How would you rate the difficulties (disruptions) resulting from the following challenges due to COVID-19? Please circle your response.*



4.3 Coping Strategies

In the survey we have asked firms several questions about the different coping strategies that firms have employed to mitigate the impact of COVID-19 on their business operations. We first have asked whether small-scale firms adjusted their business model to reduce being directly in physical proximity with customers. Figure 12 shows that close to two-thirds of firms reported that no change in their business models. However, almost 23% of small-scale business reported changing of their business model using phones for placing order, marketing, and other activities. Only a small proportion of firms (2.9%) switched products they sold.

Second, we have asked firms what type of coping mechanisms they used since the start of the COVID-19 pandemic to mitigate its negative impact. We have also asked businesses owners about what type of coping strategies they are planning to do because of Covid-19/coronavirus or related restrictions? Figure 13 shows the responses of business to both questions. We find that savings is the most commonly used coping strategies

against the negative consequences of the pandemic. More specifically, more than 46% of firms reported that they used their savings to support their business operations. This is also the most commonly used coping strategies female- and male-owned firms. The second and third most used coping strategies are finding another job/occupation and violate containment measures. With respect to their coping strategies for the coming weeks, the right side of Figure 13 shows that 47% of firms reported that they planned to spend savings and 17% of them reported finding another job or violate containment measures to maintain the daily operations of their businesses. Figure 13 reports that close to half spent saving to cover living expenses. Around 16% find another occupation while a tenth of firms reported violating the containment measures to maintain a living. Less than 2% of firms reported permanently migrated back to their original home place. There is no difference in ranking among coping strategies between female and males but there seems to appear minor differences. Among male, 49% responded by saying spending money while the figure is 41.16% for female.

Figure 12: *Has your business adjusted its business model to reduce being directly in physical proximity with customers?*

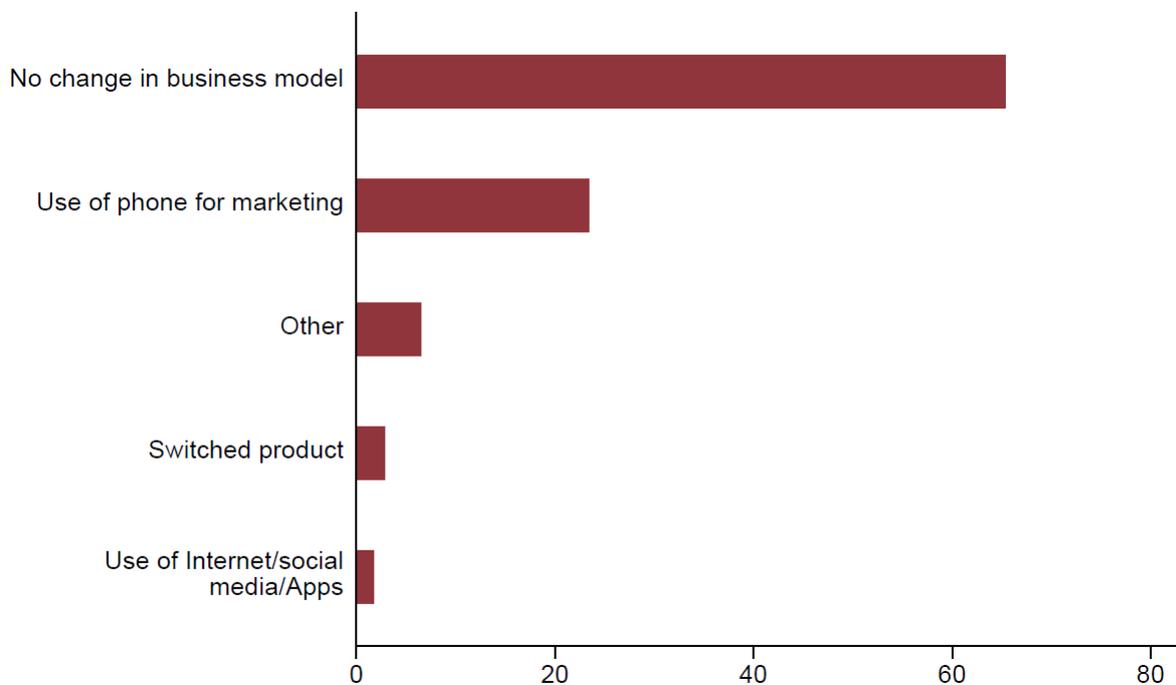
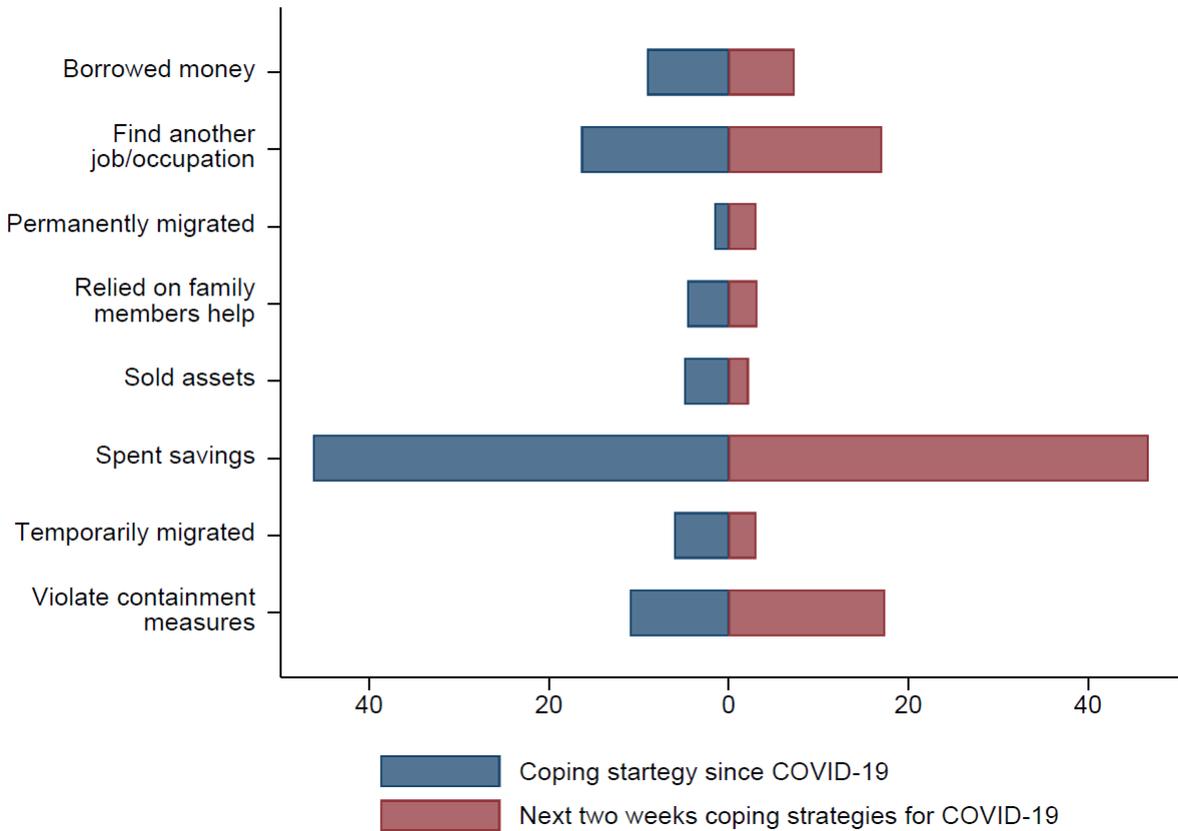


Figure 13: *Since the COVID-19 pandemic, have you had to do any of the following?*



4.4 Financial Fragility

One of the reasons why small-scale firms are uniquely positioned to be affected by the COVID-19 pandemic and its containment measures is related with their financial fragility to shocks. In other words, the COVID-19 pandemic may potentially worsen the already financial fragility of SMEs (e.g., Le and Doan, 2020). To understand whether firms were already financial fragile before the pandemic, we asked firms four questions. The first question asked is “Did this establishment have a line of credit or a loan from a financial institution at the beginning of the fiscal year in 2019?” This question helps us to indicate whether firms were in good financial situations before the pandemic. The second question is “Does this establishment have a credit facility now?” Figure 14 shows firms’ responses to these questions. We find that about 83% of firms did not have line of credit from financial institutions before the pandemic in 2019. Figure 14 shows that around 91% of firms also reported that they do not currently have credit facility indicating the unique

vulnerability of small-scale firms to the COVID-19 crisis.

To further examine firms' financial fragility, the third question we asked firms is "What is the typical monthly expenses prior to the COVID-19 crisis?" and the fourth question is "Roughly how much cash (e.g., in savings or checking accounts) do you have access to without seeking further loans or money from family or friends to pay for expenses related to your business operations?" Figure 15 presents firms' responses to third and fourth questions. It shows that 36% of small-scale firms have less than 10,000 Birr (or \$264) cash or credit access without seeking further loans or money from family or friends to pay for expenses related to their business operations. More than half of the firms (55%) have a very limited cash on hand (just less than 25, 000 Birr, \$659) to run their own business.

Finally, we also asked firms to rate how the COVID-19 as an obstacle to get loans from banks as "No obstacle, Minor obstacle, Moderate obstacle, Major obstacle and very severe obstacle". Figure 16 shows that 55% of firms reported that COVID-19 is not an obstacle to obtain credit from financial institutions. This result may have an important association with the result we find that large majority of the firms, in our sample, do not have a credit facility. As a result, this result may not surprising.

Figure 14: *Financial Fragility*

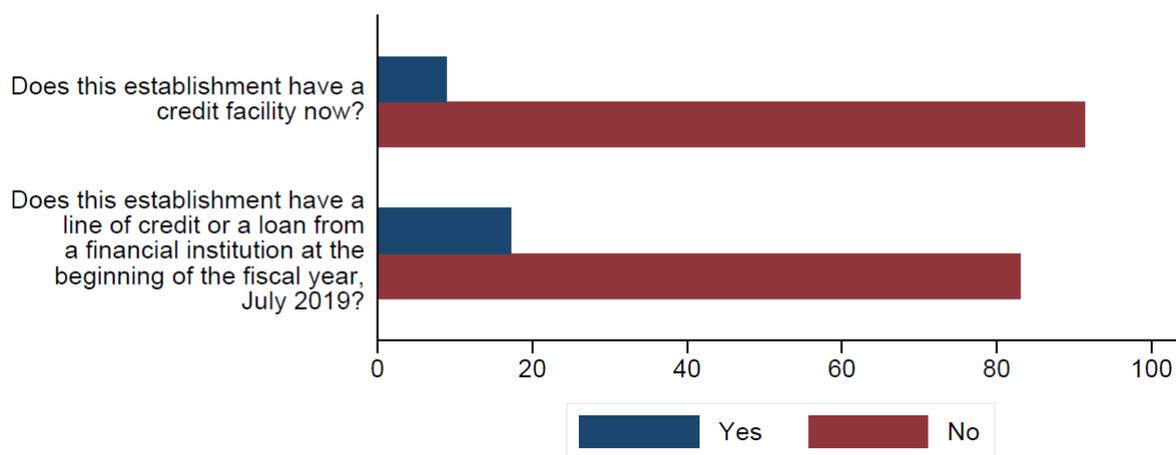


Figure 15: *What are the typical monthly expenses prior to the COVID-19 crisis?*

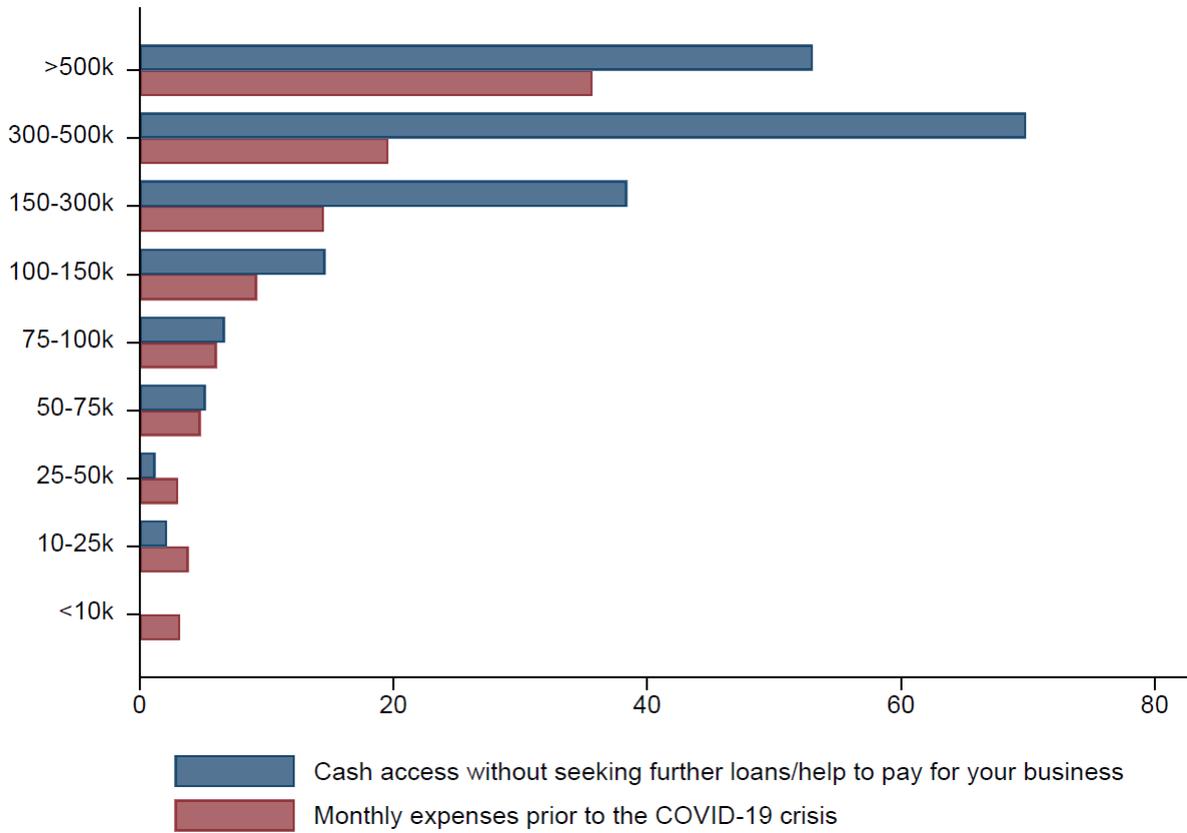
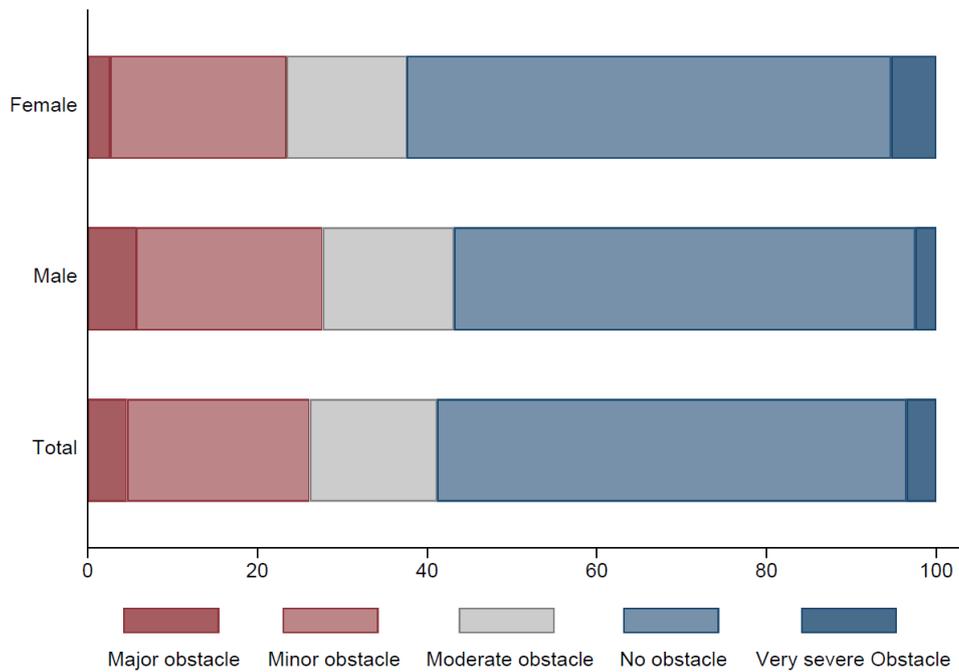


Figure 16: *To what degree you consider COVID-19 an obstacle to get loan from banks?*



4.5 Policy Responses

We have asked firms what the most needed policy would be to support their business operations during the COVID-19 crisis. Figure 17 shows that 42% of firms believe providing business loans is the most appropriate policy response followed by tax cuts (21%). Only 15% and 6% of firms believe that provision of subsidies and cash transfers or unemployment benefits are the appropriate policy responses, respectively. Following the outbreak of the COVID-19 pandemic, the government of Ethiopia provided various supports to business such as deferral of tax payments to mitigate the negative consequences of the pandemic. However, when firms were asked whether they are currently receiving any government supports for their business, most of them have reported that they are not receiving any government supports at all. Figure 18 shows that more than 75% of the firms are not currently receiving any help at all. Less than 15% of firms are getting either business loan or tax credit. This shows that only few firms are benefiting from the government support schemes. A further examination reveals that half of the firms have not applied to any government support program at all. This raises a question why firms have not applied to the support program. To this end, we have asked firms why they have not applied for any government support programs. Figure 19 shows that more than 60% of the firms do not believe that they will get any supports even if they applied, followed by 25% these firms are not aware of any government support programs.

Figure 17: *What would be the most needed policy to support your business over the COVID-19 crisis?*

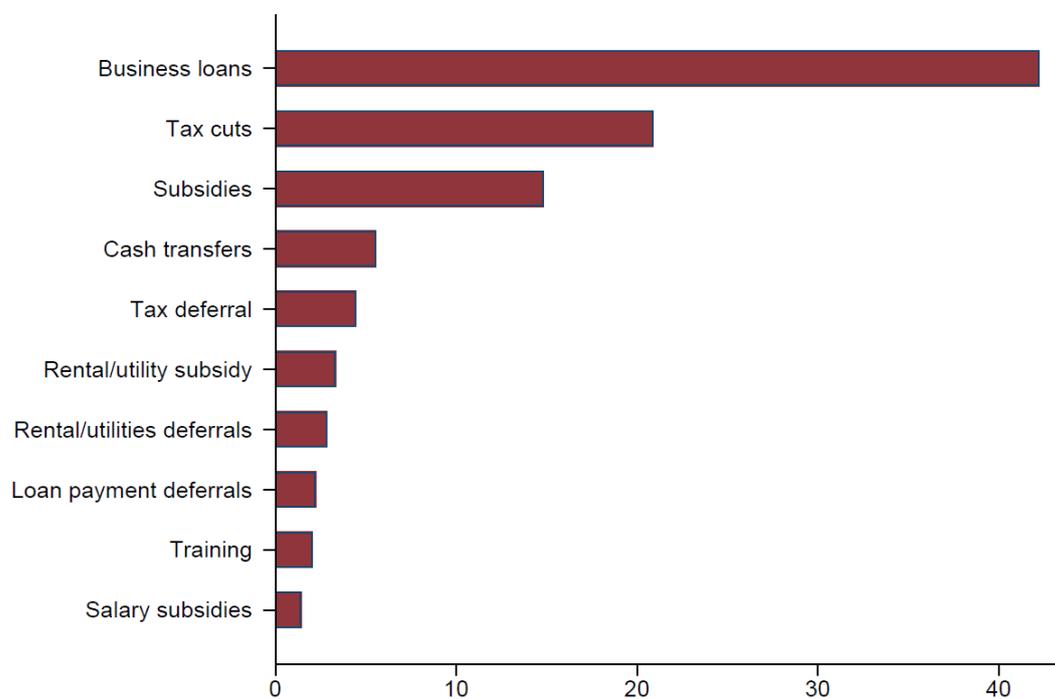


Figure 18: *Are you currently receiving any government programs to support businesses like yours?*

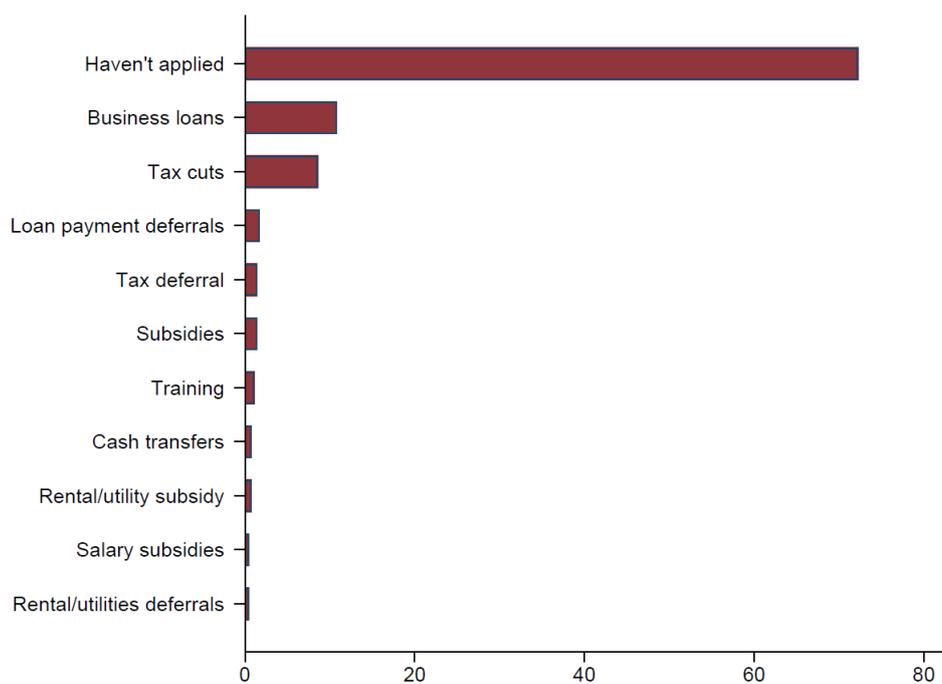
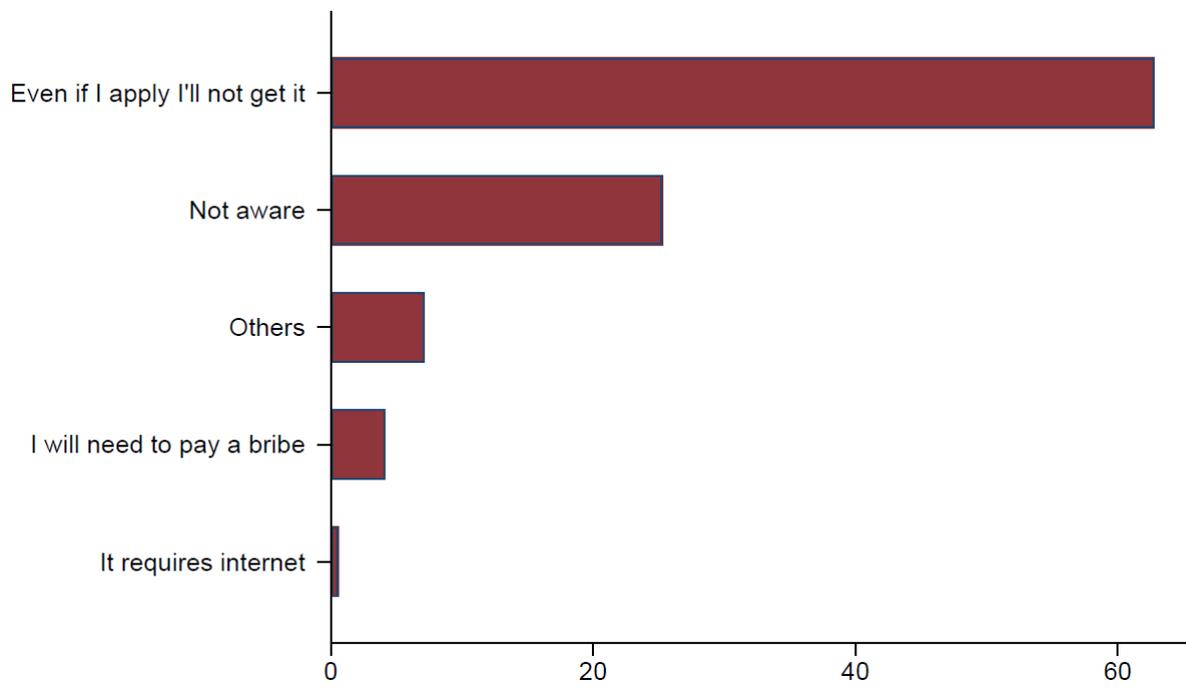


Figure 19: *Why have you not applied to any government programs?*



4.6 Expected Time of Recovery

To measure firms' expectation about their optimism and expected time of recovery we asked them several questions. The first is "What is your expectation (likelihood) of permanent closure of your establishment in the next six months?" and the second is "What is your expectation about how long it will take the business to recover?" In general, business owners' expectation about recovery and the future prospect of their business is negative. Figure 20 shows that 39.8% of firms' owners believe that their business would not recover within a year, 32.9% of them believe that their business would recover in less than 6 months. Only less than 1% of firms' owners believe that their business would never recover. There is very little difference between female- and male-owned firms in terms of optimism and expected time of recovery. Figure 21 reports that firm's response to the (likelihood) of permanent closure of their establishment in the next six months. Close to 50% of firms responded that the likelihood of permanent closure in the coming six month is zero. Only 2% of the business reported that their business would be closed permanently for the coming six months with 100% likelihood.

For firms the has employed more than five people, Figure 22 shows that several firms expect lay-off and reduced earnings for their workers. In addition, over 87% of the same group of firms also expect that sales revenue over 2020 to be lower by 49%. At the same time, about 94% of firms also expect that their investment to be lower in 2020 compared with 2019 by more than 50%.

Figure 20: *What is your expectation about how long it will take the business to recover?*

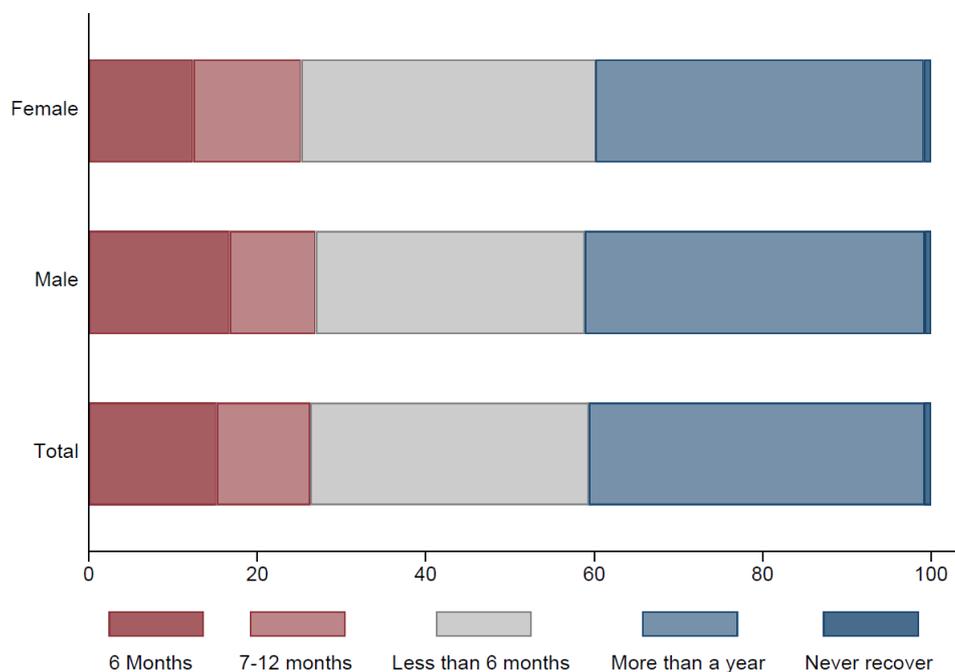
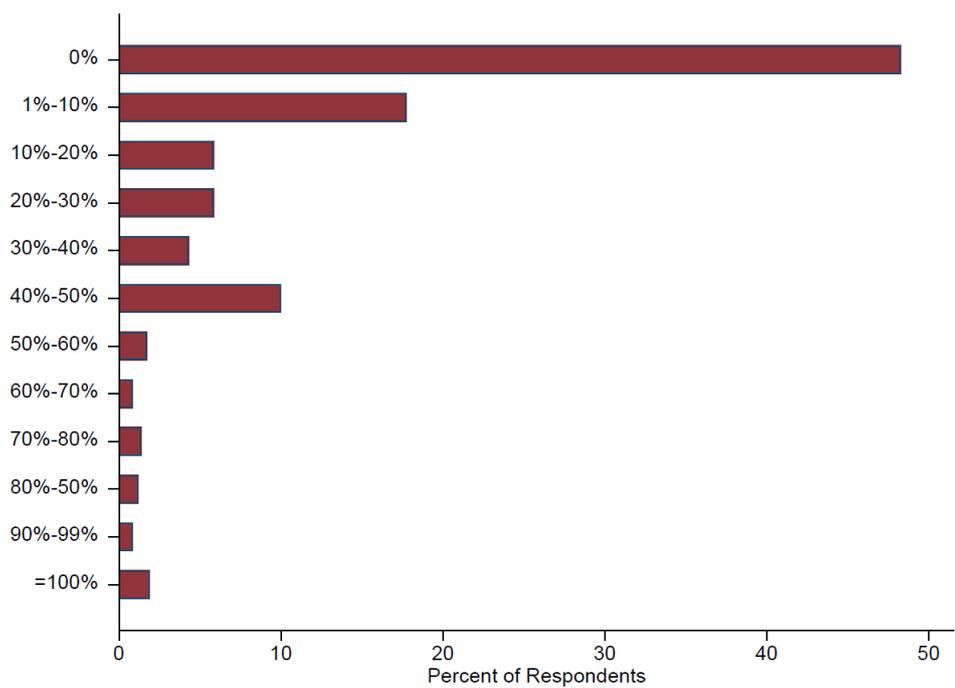


Figure 21: *What is your expectation (likelihood) of permanent closure of your establishment in the next six months? Permanent closure*



5 Conclusion

Following the first confirmed cases of COVID-19 pandemic in mid-March 2020, the Ethiopia government imposed stringent measures to combat the spread of the virus including borderland control measures, travel restrictions, social distancing measures, and lockdowns. However, these containment measures exerted potential pressure on small-scale manufacturing firms' business operations as they are highly dependent on their daily business activities and mostly unprepared for such disruptions. In this paper, we explore the impact of COVID-19 on the small-scale manufacturing enterprises in Ethiopia. To this end, we have conducted a survey of 627 randomly selected small-scale manufacturing firms from a recent database of the Central Statistics Authority (CSA) of Ethiopia. We provide four main findings. First, though most firms remain open, small business owners had already been severely impacted by COVID-19-related disruptions. Over 95% of them have seen a drop in revenue, by 55% on average, in September 2020 compared with the same period last year. Firms have also reported laying off workers and among the channels through which COVID-19 affects firms' business operations, loss in demand is found to be the most important challenge.

Second, looking at the channel, close to 90% of the firms identified lack of demand as the main problem for their business operations, largely because of difficulty accessing customers due to government-mandated mobility restrictions. The second most common main challenge was accessing suppliers due to mobility restrictions imposed by the government. Third, the findings indicate that firms perceive the provision of business loans would be the most effective policy for the government to undertake to mitigate the negative effects of the pandemic. These findings suggest large economic benefits from policies that target reducing interest rates and increasing access to finance for SMEs.

Lastly, we find that business owners' expectation about recovery and the future is bleak. About 40% of firms' owners believe that their business would not recover within a year, 33% believe their business would recover in less than 6 months. Almost 87% of firms expected a reduction in their sales revenue for the next 30 days compared to their sales revenue in the same period of last year.

Overall, this paper offers insights into how the pandemic affects small-scale manufacturing firms in Ethiopia, what kind of policy supports firms prefer to see enacted and the extent of government support coverage. From this work, we note two potential implications for policymakers to consider. First, though the government of Ethiopia provided various supports to business such as deferral of tax payments to mitigate the negative consequences of the pandemic, 75% of the firms are not currently receiving any government support at all. One of the reasons is that firms are not aware of any government support programs. As such, the government of Ethiopia should consider instruments to raise awareness about its support programs. Second, overwhelming majority of firms (90%) report that the provision of business loans would be the most effective policy for the government to undertake to mitigate the negative effects of the pandemic. Thus, the Ethiopia government may introduce measures that incentivise commercial banks to expand their lending to SMEs.

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Appendix

Table 1A: Distribution of establishments by cities.

Town	Firms	%
Addis Ababa	357	57%
Hawassa	69	11%
Adama	50	8%
Bahir Dar	101	16%
Gonder	50	8%
Grand Total	627	100%

Figure 22: *In the next 6 months, how many of your workers do you expect will experience any of the following as a result of the coronavirus/covid-19 outbreak and related restrictions?*

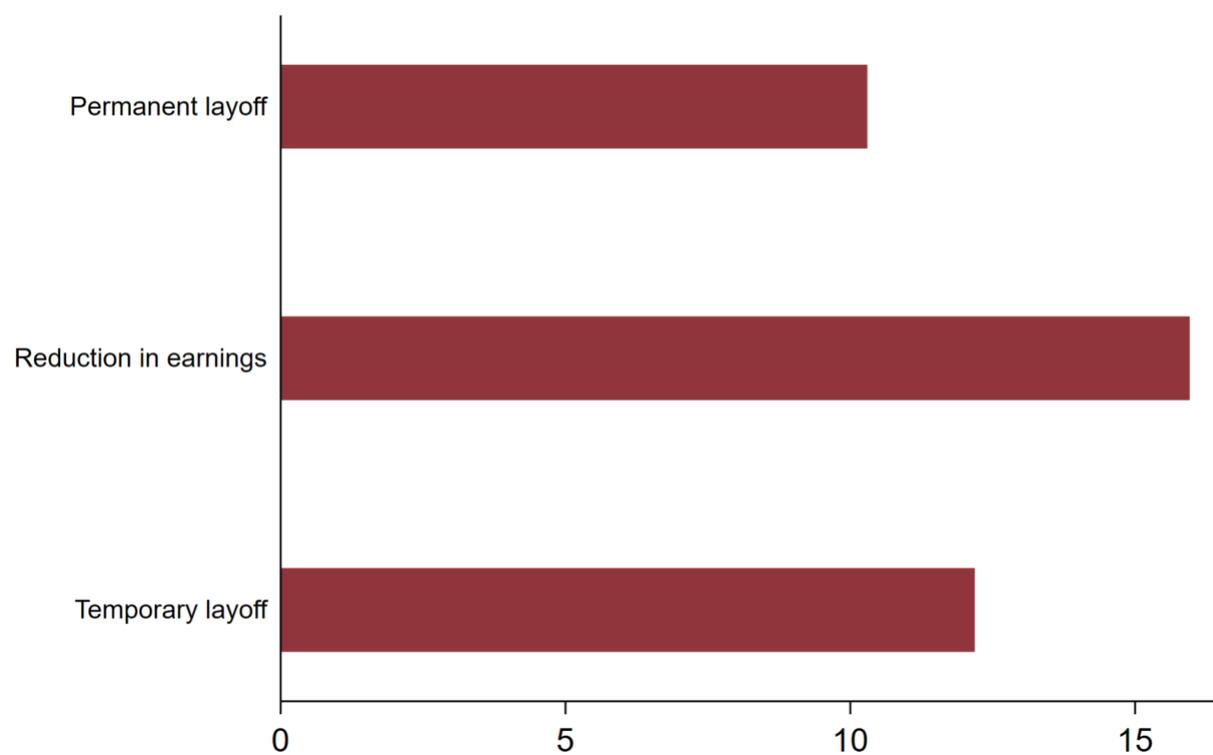


Figure 23: *If the number of employees is greater than 5: COV10. Since the COVID-19 pandemic, have you had to do any of the following?*

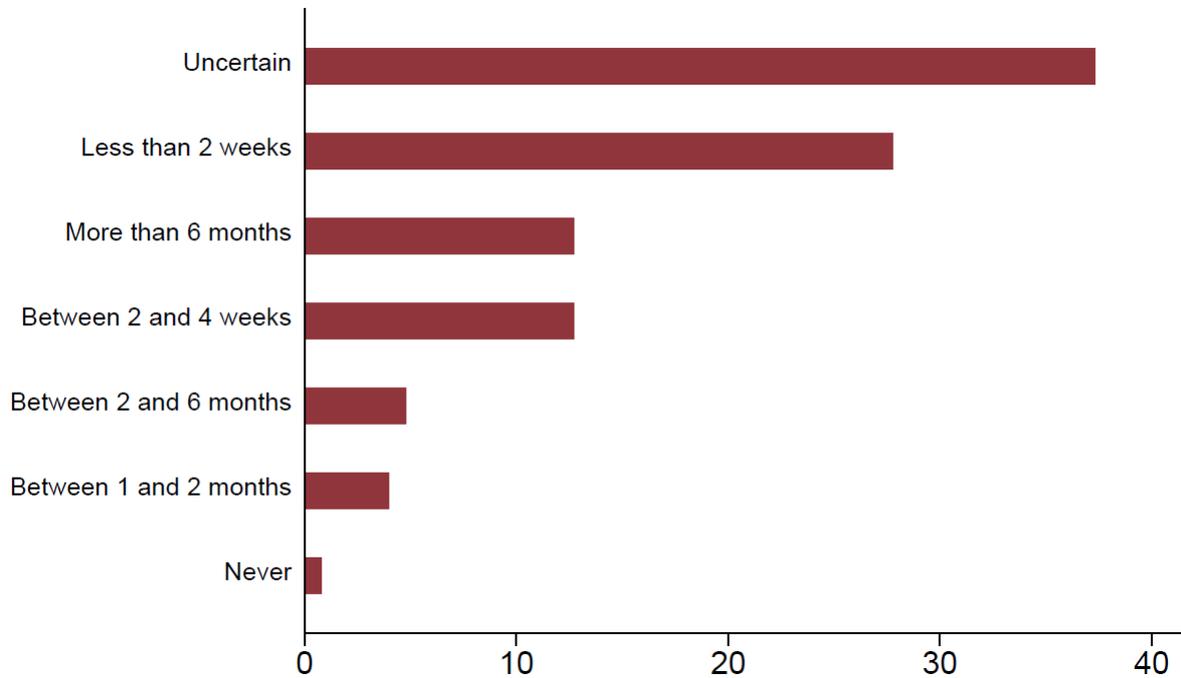


Figure 24: *Over 2020, do you expect your business' total sales to be "higher" or "lower" compared to 2019?*

