Policy brief
BDG-20211 | May 2021

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The economic effects of COVID-19 on garment factories in Bangladesh

In brief

- COVID-19 poses a challenge to the future of Bangladesh's apparel sector and its economy. This research provides evidence on its economic impact from a survey with a representative random sample of members from the Bangladesh Garment Manufacturers and Exports Association (BGMEA)'s members.
- Our survey shows that, on average, BGMEA member factories experienced a decline in revenue of almost 17.4% in 2020 compared to 2019. A shock of this magnitude translates to a multibillion-dollar slump in export earnings in a sector that directly employs nearly 5 million workers.
- Employment declined by 7.4% in the second half of 2020 compared to pre-COVID-19 levels. Factories that employ relatively higher shares of women experienced much larger employment declines (-12.9%) compared to those employing relatively more men (-3.5%).
- The pandemic did not lead to widespread, sustained factory shutdowns. Excluding a government-declared public holiday, 25% of factories report closing for at least one day due to the pandemic. 5% of factories reported closing since the onset of COVID-19 and still being closed at the time of the survey.
- This brief explores how this evidence can be used to inform an appropriate policy response and facilitate planning for recovery from the pandemic.

This project was funded by IGC Bangladesh. The authors gratefully acknowledge financial support from the Private Enterprise Development in Low-Income Countries (PEDL) Initiative and would like to express their sincere gratitude to staff at the BGMEA.

Summary of findings

COVID-19 poses a considerable challenge to the future of Bangladesh's apparel sector and to Bangladesh's economy more broadly. In light of COVID-19's continued economic and health impact, this research provides systematic evidence on COVID's economic effects from a survey with a representative random sample of BGMEA members. This evidence can be used to inform an appropriate policy response and to facilitate planning for recovery from the pandemic.

Our survey shows that, on average, BGMEA member factories experienced a decline in revenue of almost 17.4 percent in 2020 compared to 2019. A shock of this magnitude is unprecedented in recent history: It translates to a multibillion-dollar slump in export earnings in a sector that directly employs nearly 5 million workers.

The impact on employment appears to be moderate: Employment declined by 7.4% in the second half of 2020 compared to pre-COVID-19 levels. Factories that employ relatively higher shares of women experienced much larger employment declines (-12.9%) compared to those employing relatively more men (-3.5%). That said, there is no indication that factories changed the gender ratio of their workforce in response to the downturn. About 70% of factories also engaged in labour cost saving measures, including reducing working hours and delaying wage payments and/or reducing wages.

BGMEA member factories report loss in demand as the most important pandemic-related challenge faced in 2020. In-country containment measures, including mobility restrictions and supply chain disruptions, also ranked highly.

We find strong evidence that buyers' responses to the pandemic, in terms of whether they cancelled or renegotiated orders, varied substantially. Order cancelations and re-negotiations are an outcome determined by factories' buyers rather than their destination markets.

Overall, the pandemic did not lead to widespread, sustained factory shutdowns. Excluding the government-declared public holiday, 25% of factories report closing for at least one day due to the pandemic. 5% of factories reported closing since the onset of COVID-19 and still being closed at the time of the survey.

Factories vary widely in their robustness and resiliency to this extraordinary shock. The BGMEA comprises around 4500 factories,[1] and there is substantial variation among factories in terms of their physical capital, numbers of employees, managerial practices, and other characteristics.

1. Approximate number of BGMEA member factories. Source: https://www.bgmea.com.bd/page/aboutus.

Factories that were smaller, older, less well-managed, and selling to more different buyers experienced larger revenue losses in 2020.

COVID-19 caused some factories to delay or to decrease planned investment, including in increasing automation. This effect may not only perpetuate manufacturing of low value-added apparel and but also erode productivity growth.

10% of smaller factories sold physical capital due to the pandemic, while larger factories were not forced to divest.

Nearly 87.4% of factories report receiving some form of recovery stimulus support. By far, the most common type of support that factories report receiving was the loan program to cover employees' wages, which 71.5% of factories participated in.

As of late 2020/early 2021, on average, 3.6% of factories' workers had experienced symptoms of or tested positive for COVID-19. This is likely a lower bound on the true rates.

Data and methodology

In collaboration with the BGMEA, the International Growth Centre (IGC) Bangladesh, the BRAC Institute for Governance and Development (BIGD), BRAC University, and with financial support from the Private Enterprise Development in Low-Income Countries Initiative (PEDL), we conducted a phone-based survey of BGMEA member factories to generate evidence on how COVID-19 is affecting their businesses.

In order to obtain a representative view of COVID-19's impacts, we conducted the survey with a randomly selected sample of BGMEA member factories; 241 factories participated. The survey methodology section provides more information on the sample selection and the response rates. The survey was conducted from late November 2020 to March 2021. Table 1 presents basic summary statistics for respondent factories.

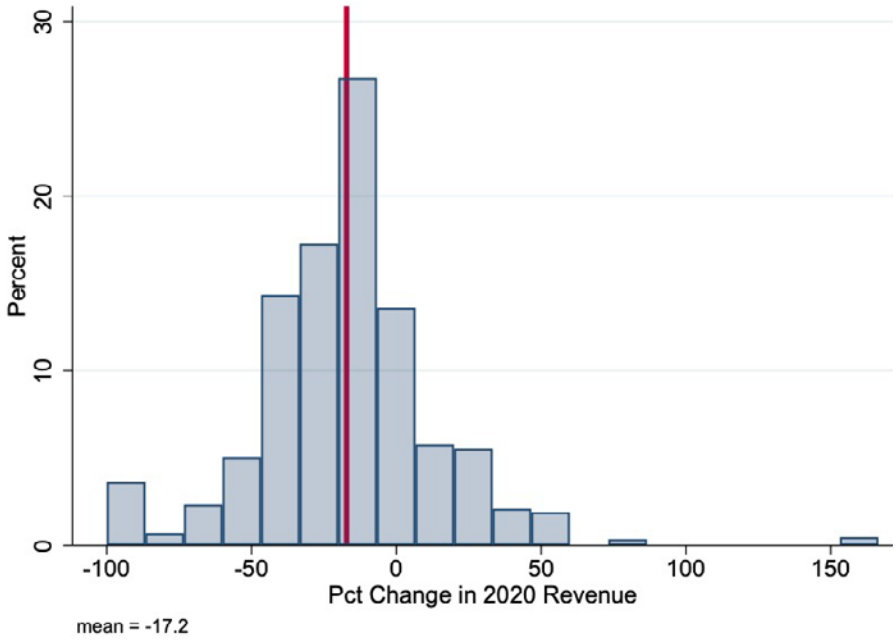
Table 1: Summary statistics

Variable	Mean/(Standard deviation)
Respondent position	
HR & Compliance Manager	22.1%
HR Manager	9.2%
Managing Director	16.5%
Respondent tenure in current position (in years)	8.51
Sales in 2019 (millions of BDT)	6,582 (53,623)
Number of workers, Jan 2020	2,718 (7,267)
Percent of female workers	60%
Number of buyers, 2019	10.80 (42.26)
Factory located in EPZ	10.2%
Factory location	
Dhaka	72.2%
Chittagong	10.2%
Other	17.6%
Multi-establishment firm	58.8%
Company type	
Privately held, single-family owned	52.5%
Privately held, partnership owned	31.1%
Publicly traded	1.7%
Unknown	14.6%
Product types	
Woven	43.3%
Knit	23.6%
Knit/Woven	9.4%
Sweater	11.1%
N/A	12.5%

Findings

On average, BGMEA members sales revenues declined by 17.4% in 2020 compared to 2019. Figure 1 shows the distribution of revenue changes for sample factories; most factories experienced revenue declines in 2020 compared to 2019. Despite the wide variation in losses, on average, the reported revenue loss mirrors the aggregate 16.9% decline in RMG export earnings that Bangladesh experienced in calendar year 2020 (USD 27.47 billion) compared to 2019 (USD 33.07 billion). Our survey indicates that revenue losses were larger for smaller factories, older factories, less well-managed factories, and factories selling to more different buyers, controlling for several other of factories' characteristics.

Figure 1: Percent change in sample factories' sales revenue, 2019-2020



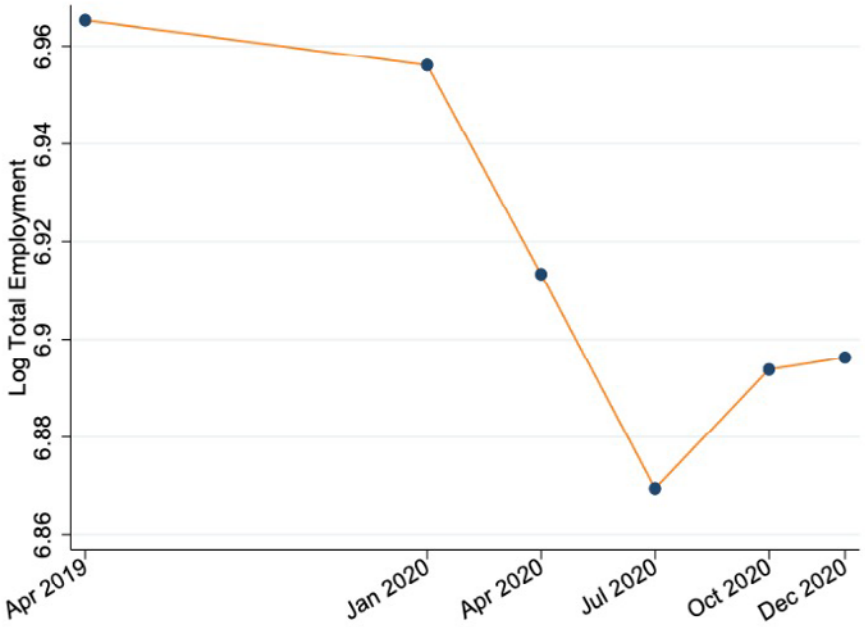
Overall, the pandemic did not lead to widespread, sustained factory shutdowns. Excluding the government-declared public holiday, 25% of factories report closing for at least one day due to the pandemic. Closures peaked during the second quarter of 2020, when factories were closed for an average of 4 days outside of the public holiday. Five percent of factories report closing since the beginning of the pandemic and still being closed at the time of the survey; among these, managers at 64% of factories thought that it was likely that their factory would reopen. Smaller factories and factories selling to more different buyers were more likely to remain closed, controlling for several other of factories' characteristics. [2]

Factories' total employment fell by 7.4% in the second half of 2020 compared to pre-COVID-19 levels (Figure 2), controlling for factories' fixed characteristics. While a meaningful decline, this statistic masks heterogeneity in employment declines across factories: Factories employing relatively higher shares of women (above the median share in the survey data) experienced much larger declines. For these factories, employment fell by 12.9%, while for factories employing relatively lower shares of women, employment fell by 3.5%. This pattern of impacts may be related to factories' product types, as factories producing woven goods employed more women and experienced greater revenue declines during the pandemic.

2. The research team also spoke to six factories that were closed prior to the COVID-19 pandemic. Three of these six factories reported having plans to reopen in 2020 that they canceled due to COVID-19. This type of determent effect is a less easily measured, adverse effect of COVID-19. These factories' responses are not used in our analysis.

This suggests that female garment workers may have been more adversely impacted by job loss. That said, factories did not change their mix of female and male workers, as the proportion of workers employed by factories who are female remained the same. Perhaps unsurprisingly, factories that experienced greater revenue loss also experienced larger declines in employment.

Figure 2: Average total employment, sample factories



16.3% of factories report temporarily or permanently laying off workers during the first through third quarters of 2020. The incidence of permanent layoffs (with or without pay) appears to have peaked in April-June 2020 but remained low at 4.8% of factories. Factories also report taking other measures to curb labour costs in response to COVID-19: About 60% report reducing overtime hours, 43% report reducing regular hours, 36% report delaying payment, and 29% report cutting wages during the second quarter of 2020. Many continued these practices during the third quarter of 2020. Factories also report strong uptake of the stimulus support for wage payments, with nearly 72% availing of these benefits.

COVID-19 caused factories to delay or to decrease planned investment in increasing automation. Prior to COVID-19, 58.2% of factories reported plans to make investments to increase automation in 2020. Among these factories, 38% report delaying and a further 26% report decreasing investments due to COVID-19. While in the medium-term, this may increase their reliance on labour, in the longer-term, it may delay or erode Bangladesh's ability to move into higher value-added segments of the global apparel market, translating into fewer and potentially lower quality jobs for workers.

COVID-19 caused smaller factories to sell land, buildings, or equipment, but not larger factories. About 10% of smaller factories report selling physical capital because of COVID-19. In contrast, less than 1% of larger factories report selling physical capital because of COVID-19. We define small factories as those with below the median pre-COVID number of employees in the survey data, which is 1,050 or fewer employees.

Factories' main COVID-19-related challenge from the first through third quarters of 2020 was loss in demand (**Table 2**). The share of respondents experiencing a decline in demand peaked at 60.1% of respondents during the second quarter of 2020 but remained high, at 44.9%, during the third quarter. Respondents also report facing many other types of challenges during this time, including supply chain disruptions, production shutdowns, difficulties with absenteeism, and challenges to maintain COVID-19 health and safety measures.

Table 2: Reported challenges faced by firms (by quarter)

	Quarter, 2020		
Challenge	**1st (January-March)**	**2nd (April-June)**	**3rd (July-September)**
Loss in demand	21.6	60.1	44.9
Difficulties in accessing suppliers due to mobility or other restrictions imposed by government	9.3	41.4	27.0
Temporary production shut-down due to government-mandated closures	12.1	36.8	14.0
Difficulties with worker absenteeism arising from mobility restrictions imposed by the government	5.7	35.8	21.9
Reduction in the availability and/or price increases for the main inputs	6.1	23.2	21.5
Difficulties in accessing customers due to mobility restrictions imposed by government	4.5	19.2	14.8
COVID-19 health and safety measures imposed on operation procedures	3.4	17.9	19.9

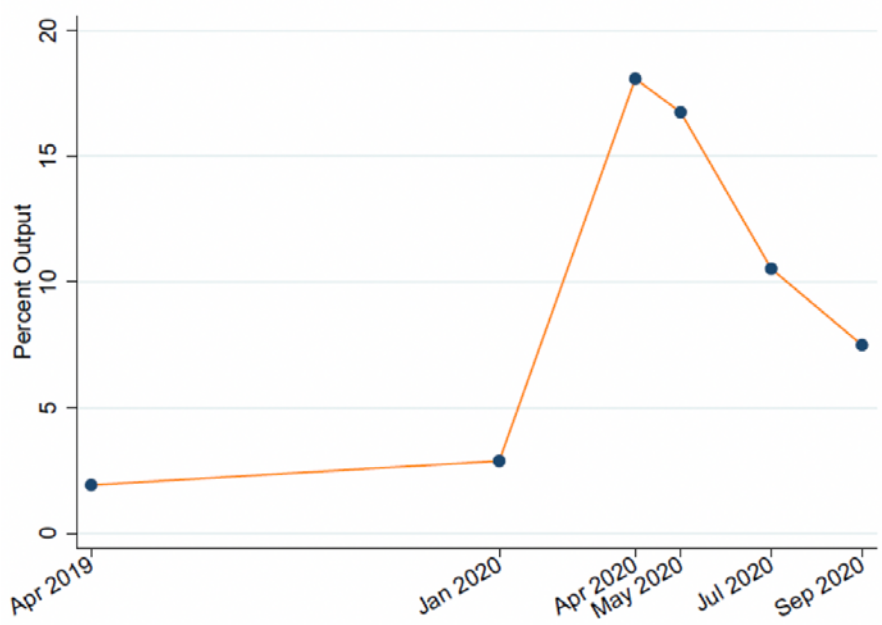
	Quarter, 2020		
Difficulties with worker absenteeism arising from other reasons	1.7	17.4	12.1
Difficulties with managers or executive personnel absenteeism arising from mobility restrictions imposed by the government	3.1	13.8	7.4
Depreciation of productive capital due to inactivity	1.2	11.3	4.8
Restriction of opening hours imposed by the government	1.0	10.4	14.7
Difficulties in securing access to finance (e.g., banks are closed or operate at restricted capacity)	1.5	10.3	6.1
Difficulties with managers or executive personnel absenteeism arising from other reasons	0.7	4.2	3.5
No particular challenge, things have proceeded as normal	60.1	4.1	25.5

Factories report substantial increases in the share of their output that became stuck in Bangladesh. Surplus finished apparel items are commonly known as stock lots in the apparel sector. Stock lots can occur due to a variety of reasons, with the main ones being rejection due to quality issues, cancellation of shipment, and delays in shipment, either due to buyers' being unwilling to accept the goods or delays with export processing. [3] [4]As of April 2020, about 17% of factories' output was stuck as stock lots in Bangladesh.

3. M. (2015, July 2). Surplus Garments. Garments Stock lots. https://garmentsstocklots.com/surplus-garments/

4. An overview of RMG of surplus (stock lot) business. (2017, January 23). Textile News, Apparel News, RMG News, Fashion Trends. https://www.textiletoday.com.bd/overview-rmg-surplus-stock-lot-business/

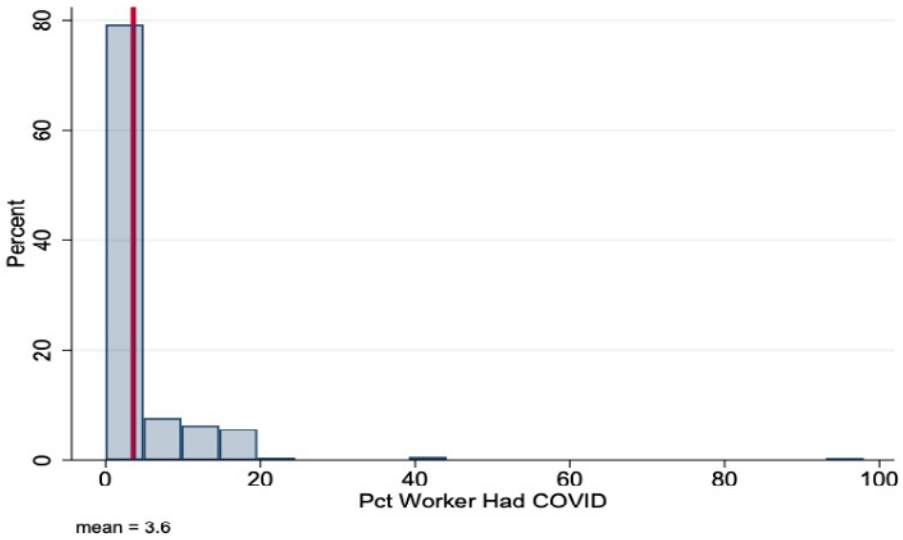
Figure 3: Average share of output stuck as stock lots in Bangladesh



51% of factories report experiencing a shortage of raw materials due to delayed or cancelled import shipments. 25% of factories report experiencing a shortage of raw materials due to delayed or cancelled material shipments from within Bangladesh. The most common sourcing country for raw materials is China; 81% of respondents report that China is one of their main sourcing destinations; of these, 50% report experiencing shipment delays or cancelations. Interestingly, 37% of respondents report switching from importing to sourcing locally for one or more of their input materials due to COVID-19

On average, factories report that 3.6% of their workforces were suspected to or tested positive for COVID-19 (as of late 2020-early 2021). As with estimated COVID-19 rates in other settings, this is likely a lower bound on the true share of workers who contracted COVID-19. Controlling for factories' size and other characteristics, factories with better management practices and factories selling to more different buyers reported higher COVID-19 rates. While it may be surprising that factories with better management practices report higher COVID-19 rates, it may be the case that these factories were more likely to measure and to track COVID-19 symptoms and viral tests among their workforces, which would lead to higher rates of detection.

Figure 4: Pct worker had COVID based on April 2020 employee count



Factories' take-up of the government's stimulus package support program was high: 87.4% of respondents report receiving some type of support (Table 3). By far, the most common type of support that factories report receiving was the loan program to cover employees' wages, which 71.5% of factories participated in. Factories report some challenges to accessing the funds, in particular, slow arrival speeds, burdensome administrative systems to access the support, and workers' not having mobile financial services (MFS) to receive transfers.[5]

Table 3: Support from government and banks

	Percent
Types of support received:	
Stimulus loan program to cover employees' wages	71.5%
Stimulus interest payment subsidy program	14.1%
Bangladesh Bank pre-shipment refinance scheme	7.6%
Suspension on recognition of interest income	5.5%
Facilitate raw materials imports	5.5%
Has not received support from stimulus package	12.4%

5. In March 2020, the government allocated BDT 50 billion for export-oriented industries to pay the wage bill for three months (extended as a 2-year loan to factory owners at 2% rate of interest). The government required stimulus receivers to pay the wages through bank account transfers or MFS (digital payment gateways). Source: https://www.bb.org.bd/mediaroom/circulars/brpd/apr082020brpdl14.pdf.

	Percent
Respondent does not know	0.2%
Challenges faced when getting access:	
Slow processing time/delay in arrival of support	31.2%
Burdensome administrative systems to access support	24.8%
Workers do not have MFS/Bank accounts	21.4%
Amount of support available is insufficient given needs	17.2%
Factory not up to date with salary	5.7%
Type of support available does not match needs	0.6%
No challenges	31.3%
Respondent does not know	3.0%

Buyers matter for explaining COVID-19's impacts on factories. We find strong evidence that buyers' responses to the pandemic, in terms of whether they cancelled or renegotiated orders, varied substantially across buyers. Further, we find that order cancelations and re-negotiations are an outcome determined by factories' specific buyers, as opposed to their destination markets, which are not strong predictors. We asked factories about their largest buyer, second largest buyer, newest buyer, and oldest buyer's responses to the pandemic; 17.2% of unique buyer-factory relationships experienced at least one order cancelation and 46.5% of them experienced at least one order renegotiation due to the pandemic.

Discussion and policy implications

Aggregate statistics, while informative, mask substantial variation in COVID-19's economic effects on BGMEA members. COVID-19 caused greater revenue losses for smaller factories, older factories, less well-managed factories, and factories selling to more different buyers, controlling for several other of factories' characteristics. In terms of employment, factories employing relatively higher shares of women experienced significantly larger declines. In terms of capital divestment, smaller factories were more likely to sell physical capital, while larger factories were not forced to divest.

These heterogeneous patterns of effects suggest substantial scope for targeting of government-provided support to factories and to workers that are differentially more affected. Targeting needs to consider both allocative efficiency and workers' short-term welfare. By allocative efficiency, we mean that the government should aim to provide resources to factories that have the ability to recover competitiveness with the government's helping hand. In other words, it is natural for struggling firms to exit, and the government does not want to prop up inefficient firms. But it does want to support struggling firms that have the potential to become competitive again. By workers' short-term welfare, we mean that the government should consider

that, at least in the short-term, due to the industry-wide downturn, it would likely be difficult for laid-off workers to find employment. This provides a social rationale for providing laid off workers with temporary income support.

Buyers matter in determining the economic impacts on BGMEA members. Different buyers adopted very different tactics in terms of whether they cancelled or renegotiated existing orders; these buyer-level differences were much more important in explaining factories' outcomes than the destination country of the exports. This suggests that Bangladesh may benefit not only from trying to attract demand by appealing to destinations such as the US or the European Union, but also appealing to the types of buyers that develop stronger relationships with their suppliers.

Factories that sell to fewer buyers, which may be factories that have stronger relationships with their buyers, had higher revenues in 2020, controlling for their pre-COVID revenues and several other of their characteristics. The fact that factories selling to fewer buyers also had lower COVID-19 infection rates among their workers suggests an important direction for research to understand the source of this correlation. For example, do buyers that value better working conditions also source more intensively from their suppliers? Or are factories that employ better practices overall the ones that are able to meet these buyers' quality and other standards?

The survey also reveals some of COVID-19's subtler effects: The pandemic has delayed or deterred factories' planned capital investments, deterred some firms from reopening existing factories, and disrupted supply chains. These disruptions suggest some of the possible channels through which COVID-19 may have adverse effects on the sector in the longer-term even if demand were to fully recover and the public health impacts to cease. On a more positive note, the fact that 37% of factories report beginning to source inputs in Bangladesh in response to the pandemic suggests that there may be upsides to the development of domestic markets for raw materials. This possibility warrants further investigation.

The very high take-up of the government's stimulus package support program, despite some challenges to access it, suggests that the support program may have played an important role in assisting firms to tide over a few very difficult months. As all BGMEA members had access to the support, however, it is impossible for us to determine its causal impact on their outcomes.

Survey methodology

In collaboration with the BGMEA, the International Growth Centre (IGC)-Bangladesh, and the BRAC Institute for Governance and Development (BIGD), and with financial support from the Private Enterprise Development in Low-Income Countries Initiative (PEDL), we conducted a phone-based

survey of BGMEA members to generate evidence on how COVID-19 is affecting their businesses.

In order to obtain a representative view of COVID-19's impacts, we conducted the survey with a randomly selected sample of BGMEA members. The target sample size was 558 factories, which were selected from a list of 4,699 factories provided by the BGMEA. During survey implementation, the research team found that 21.3% of factories on the list had closed prior to the beginning of 2020. Excluding these factories, the research team had a response rate of 54%; including them, the response rate was 42%.

The survey was conducted from late November 2020-March 2021.