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### Business Resilience of Bangladeshi Firms during COVID-19 and Lessons for Future Crises in South Asia

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#### ABSTRACT

While the COVID-19 pandemic unleashed unprecedented shocks on both the supply and demand sides, it is important to understand its impact on firms with different characteristics. In this regard, we use data from the Business Confidence Survey conducted on 303 firms in Bangladesh by SANEM, in collaboration with The Asia Foundation (TAF), in April 2020, to examine whether firms differing in size, stimulus package reception status, and categories across major manufacturing and service sub-sectors were impacted differently by the COVID-19 pandemic. We construct a “Business Status Index (BSI)” to assess the factors influencing a firm’s business performance during the pandemic. We employ the chi<sup>2</sup> statistic and the ordered logit model to determine whether, and to what extent, factors such as firm size, location, stimulus package reception, and sectoral variables significantly influenced business status. Our study adds value to the existing literature by addressing the knowledge gap regarding the micro-level impact of the pandemic in the context of Bangladesh. It also highlights the vulnerabilities of micro and small enterprises and exporters (e.g., RMG), which need to be considered in policymaking during times of crisis.

**Keywords:** Business Status, COVID-19, Firm-Level Survey, Ordered Logit Model, Stimulus Packages.

#### INTRODUCTION

The COVID-19 pandemic and the subsequent health policies adopted by governments had a significant impact on both firms and households worldwide (Ashraf, 2020; Liu *et al.*, 2020; Kamal *et al.*, 2022). This unprecedented situation, marked by a global shock to both supply and demand, was something neither firms nor households had encountered before (del Rio-Chanona *et al.*, 2020; Yunus *et al.*, 2021). The resulting uncertainties in business-to-business and business-to-consumer relationships reached unprecedented levels (Fready *et al.*, 2022; Kanwal *et al.*, 2023; Fayyaz and Satti, 2022). This led to a substantial decline in firms’ output, exports, investment, turnover, and employment (Bartik *et al.*, 2020; Humphries *et al.*, 2020; Irfan *et al.*, 2022). Moreover, there was an increase in business costs during this challenging period.

On 8 March 2020, Bangladesh reported its first case of COVID-19, and on 18 March 2020, the first death caused by the virus was recorded. Following the WHO’s

declaration of COVID-19 as a global pandemic on 11 March 2020, the Bangladesh government imposed the first of its series of lockdowns on 26 March 2020. As of 30 August 2022, there had been 2,011,560 confirmed cases of COVID-19 with 29,323 deaths (WHO, 2022).

The 7% and above growth rate of Bangladesh’s economy which was consistent throughout the last decade was reduced to only 3.45% in FY2019-20. However, in the following financial year, the growth rate picked up to 6.94%. According to the provisional estimates of the Bangladesh Bureau of Statistics (BBS), the GDP growth rate stood at 7.25% in FY2021-22, 0.05 percentage points higher than the target rate and 0.31 percentage points higher than the previous fiscal year (Ahmed *et al.*, 2022). The ramifications of the COVID-19 pandemic on the Bangladesh economy become more clarified when the effect of the global financial crisis in 2008 is taken into consideration. Rahman *et al.* (2010) argued that as

Bangladesh's financial and capital markets are mostly isolated from the global markets, the country's economy escaped the worst consequences of the global financial crisis. Nevertheless, during the later phase of the crisis, Bangladesh suffered from a slowdown in export earnings, a lower rate of outgoing immigrant workers, lower revenue earnings, and a loss of competitiveness. In contrast to the global financial crisis, the COVID-19 pandemic spelled trouble for the Bangladesh economy from the very beginning (Amit, 2020).

The outlook for businesses was gloomy as consumer demand plummeted, supply chains were suspended and the movement of labour and goods was forced to come to a halt. However, the question remains as to how and to what extent has the COVID-19 pandemic affected the status of firms differing in size, location, business model, ownership status, reception status of the stimulus package, and other factors. To be more precise, considering the pandemic situation, what other factors determined the firms' contemporaneous business performance and key business indicators? This is the core theme that our paper examines in the context of Bangladesh. The central questions of this paper are as follows (i) Does size matter in a firm's performance during the COVID-19 pandemic? (ii) Do firms that received the stimulus packages, perform better than others? and (iii) Which major economic sectors have fared better during the COVID-19 pandemic?

## LITERATURE REVIEW

Business status can be conceptualized through the broader framework of firm performance as understood in the study of business management. A firm's performance can be defined as a set of financial and non-financial indicators that offer information on the level of accomplishment of targets and achievements (Lebens and Euske, 2006). The traditional approach to measuring a firm's performance is based on financial indicators such as revenue growth, return on equity, and EBIT (Fernandes *et al.*, 2006); gross operating profit, net operating profit, and sales achieved, etc. (Phipps and Louvieris, 2005); sales margins and inventory turnover (Cardinaels *et al.*, 2010) and revenue growth (Craig and Moores, 2005).

However, the Business Confidence Index (BCI) survey focuses on the key financial indicators and interprets firms' perceptions of those indicators as the business status. The OECD nations update the Business Confidence Index on a regular basis. The East Asian nations routinely

track and update data on "business sentiment" ever since the Asian Crisis in the late 1990s. The majority of these nations gather this information on a regular basis, such as monthly or quarterly.

Assessment of the firm-level impact of COVID-19 in the U.S. was carried out by Bartik *et al.* (2020), relying on a descriptive approach they explored the level of financial fragility among small businesses, the extent to which small businesses temporarily closed and laid off employees, expectations about the duration of the crisis and how it affected business decisions and decisions about whether to seek funding through the CARES Act and how this impacted layoff and closure decisions. Notably, Bartik *et al.* (2020) also shed light on the difference in impact across regions and sectors.

The difference in impact across businesses was further explored by Bloom *et al.* (2021), using an innovative panel survey of business founders, they showed that the brunt of the economic impact was not evenly distributed across businesses, and these inequalities will be further exposed rather than mitigated through the recovery process.

There are a few papers that discuss the micro impacts of the COVID-19 pandemic on the Bangladesh economy. There have been some studies that attempted to analyze the sector-wise impact of the pandemic. In this regard, the assessment of the pandemic's impact on the manufacturing sector bears great significance. It has been found that at the early stage of the pandemic, 60% of firms expected revenue losses of more than 50 per cent in 2020 compared to 2019 (United Nations Industrial Development Organization, 2021).

Leitheiser *et al.* (2020) examined how Bangladesh's supply chain for source material for the apparel industry was exposed to the pandemic. It also analyzes the effects of order cancellations by brands and retailers based in the main export markets of the U.S. and EU. The RMG sector's weaknesses and challenges in terms of the size of the operation of factories, financial management, and resilience were more pronounced at the advent of the pandemic (Moazzem *et al.*, 2021).

The competitive landscape for both small and large firms has been transformed by the pandemic (Wenzel *et al.*, 2020). In the context of Bangladesh, the COVID-19 pandemic has brought to the fore the vulnerabilities of small and medium-sized enterprises (SMEs). Hossain and Chowdhury (2022) explore the vulnerabilities that have been exacerbated by SMEs' limited access to stimulus packages. They found that as production decreased by

more than 50% for all firms during the first phase of the lockdown (March-May 2020), the small firms were affected the most.

In order to tackle the challenges of the COVID-19 pandemic, the government announced a series of stimulus packages, amounting to around 4% of the GDP (Raihan, 2020). However, there is hardly any available literature on the impact of the stimulus packages on business status during the COVID-19 pandemic.

Considering the dearth of literature on COVID-19's impact on business performance in Bangladesh, our paper addresses two vital questions and the associated gap in knowledge. First, we analyze the pandemic's impact on the firm level across the major manufacturing and services sub-sectors. Second, we analyze the factors which determined the firms' status or business performance during the pandemic.

**DATA AND METHODOLOGY**

**Data**

The paper explores the research questions based on the primary data collected on 303 firms (153 manufacturing and 150 services sector firms) through the "Business Confidence Survey", conducted in April 2020 by the South Asian Network on Economic Modeling (SANEM) in collaboration with The Asia Foundation (TAF). Based on Bangladesh's latest available National Accounts Statistics, the survey covers seven sub-sectors (RMG, Textile, Pharmaceutical, Leather and Tannery, Light Engineering, Food Processing, and others) in the manufacturing industry and eight sub-sectors (Wholesale, Retail, Restaurant, Transport, ICT, Financial Sector, Real Estate, and others) in the services industry. The survey was conducted over the phone across the country.

Based on the survey responses on six indicators, namely, profitability, investment, employment, wage, export/sales, and business cost, the study created a "Business Status Index (BSI)", that ranges from a score of 0 to 100. The study then demarcated the BSI score into three categories—poor, moderate, and good business status. A firm's

business status is categorized as "poor" if the index value of the firm is less than the 25th percentile, "moderate" if the index value is between the 25th and 75th Percentile, and "good" if the index value is above the 75th percentile. The 'business status' variable categorized into "poor", "moderate" and "good" and generated from the BSI is the outcome variable of the study.

**Methodology**

To measure business performance/status, two statistical methods were employed in this paper. Firstly, a chi-square (chi2) statistic was used to understand whether the outcome variable "business status" varies across business characteristics such as firm size, location, ownership, export status, and the status of stimulus package receipt as well as across major sectors. Secondly, an ordered logit model was applied to generate more nuanced and precise estimations of the factors influencing business performance.

The specification of the ordered logit model is as follows: Let  $y^*$  be a latent continuous variable, expressed as a linear combination of some explanatory variables  $X$  plus a disturbance term  $\epsilon$ , which has a logistic cumulative distribution-

$$y_i^* = \beta'X_i + \epsilon_i \quad (i)$$

$y_i$ , the observed ordinal variable takes values from 0 to  $m$  according to the following rule;

$$y_i = j \text{ if } \alpha_{j-1} < y_i^* \leq \alpha_j \quad (ii)$$

Where  $j= 1, 2, \dots, m$  and  $\alpha_j$  are the ranges for the latent variable  $y^*$ . The probability that observation  $i$  will select alternative  $j$  is;

$$P_{ij} = P(y_i = j) = P(\alpha_{j-1} < y_i^* \leq \alpha_j) = F(\alpha_j - x_i'\beta) - F(\alpha_{j-1} - x_i'\beta) \quad (iii)$$

Where  $F(\cdot)$  is the logistic cumulative density function for  $\epsilon_i$ .

The marginal effect of an increase in a regressor  $x_r$  on the probability of selecting an alternative  $j$  is;

$$\frac{\partial P_{ij}}{\partial x_{ri}} = \{F'(\alpha_{j-1} - x_i'\beta) - F'(\alpha_j - x_i'\beta)\}\beta_r \quad (iv)$$

In this paper, the dependent variable  $y_i$  is defined in Table 1.

The explanatory variables ( $X_i$ ) used in the ordered logit model are specified in Table 2.

Table 1. Categorization of the dependent variable.

Y	Parameter	Business Status
0	Value of BSI < 25th percentile	Poor
1	Value of BSI >=25th percentile & Value of BSI<=75th percentile	Moderate
2	Value of BSI >75 percentile	Good

Source: Authors' specification

Table 2. Description of explanatory variables used in the ordered logit model.

Variables	Min	Max	Description of variables
firm_size	0	1	=1 if the firm is micro or small, 0=if the firm is medium or large
dhaka	0	1	=1 if the firm is located in Dhaka, 0=otherwise
stimulus	0	1	=1 if the firm receives any stimulus packages, =0 if the firm does not receive any stimulus packages
location	0	1	=1 if the firm is located in EPZ or an Industrial area, 0=otherwise
export	0	1	1= if the firm is an exporter, 0=otherwise
ownership	0	1	1=if the firm is a domestic private company, 0=otherwise
RMG	0	1	=1 if the firm is an RMG, 0=otherwise
pharma	0	1	=1 if the firm is a pharmaceutical company, 0=otherwise
restaurant	0	1	=1 if the firm is a restaurant, 0=otherwise
financial	0	1	=1 if the firm is a financial organisation, 0=otherwise

Source: Authors' compilation.

## RESULTS

### Descriptive and Chi2 Statistics

As mentioned earlier, the outcome variable of this study is the "business status". Among the surveyed firms, 84 firms (out of 303) were in "poor" business status. The majority share of the firms (39.6%) was in "moderate" business status. 32.7% of the firms were in "good" business status (Table 3).

Table 3. Frequency and percentage distribution of the outcome variable.

Business Status	Frequency	Percent
Poor	84	27.72
Moderate	120	39.60
Good	99	32.67
Total	303	100.00

Source: Authors' estimation based on the survey data.

Table 4 describes the percentage distribution of firms by

Table 4. Descriptive and chi2 statistics.

Indicators	Frequency	Percent	Pearson chi2(2)	Pr
Size of the firm			8.1008	0.017
Medium and Large firms	129	42.57		
Micro & Small firm	174	57.43		
Dhaka dummy			1.3037	0.521
Non-Dhaka	202	66.67		
Dhaka	101	33.33		
Whether firms received stimulus packages			14.1069	0.001
Non-recipient	258	85.15		
Recipient	45	14.85		
Location			0.4767	0.788
Outside of EPZ/ Industrial Area	250	82.51		
EPZ/Industrial Area	53	17.49		

several characteristics and also presents the Pearson chi2 statistic along with the p-value. Among the surveyed firms, 57.4% were micro and small firms, and 42.6% were medium and large firms. A significant portion, around 33.3% (101 firms) of the firms were located in Dhaka city. The firms were asked in the survey whether they received any stimulus packages announced by the Government of Bangladesh (GoB). Around 15% of firms received at least one instalment of the stimulus packages. The location-wise distribution further illustrates that 17.5% of firms were located in export processing zone (EPZ) or special economic zone (SEZ) or industrial areas and the rest 82.5% were outside of these areas. The share of exporters among the surveyed firms was 39.3%. Disaggregation by ownership characteristic revealed, that 96% were domestic private companies. The sector-wise distribution shows that 17.5% of firms were from the RMG sub-sector, 5.6% were from the pharmaceuticals sub-sector, 5% were from the financial sub-sector, and 4% were from the restaurant businesses.

Export status			4.5537	0.103
Non-exporter	184	60.73		
Exporter	119	39.27		
Type of ownership of the firm			4.3365	0.114
Otherwise	12	3.96		
Domestic private company	291	96.04		
RMG dummy			10.7705	0.005
Non-RMG	250	82.51		
RMG	53	17.49		
Pharmaceutical dummy			12.1982	0.002
Non-pharma	286	94.39		
Pharma	17	5.61		
Restaurant dummy			9.7740	0.008
Non-restaurant	291	96.04		
Restaurant	12	3.96		
Financial sector dummy			11.9139	0.003
Non-financial	288	95.05		
Financial	15	4.95		

*Source: Authors' estimation based on the survey data.*

To understand whether there is any association between the characteristics of firms and business status or performance, the chi-square test was applied. The chi-square test was used for each of the explanatory variables with the "business status" variable. The Pearson Chi2 statistic along with the respective p-value shows that firm size, the status of stimulus package reception, RMG dummy, pharmaceutical dummy, Restaurant dummy, and financial sector dummy variables are statistically significant, indicating these variables might be associated with the business status.

#### **Results from the Ordered Logit Model**

Since the paper run ordered logit, which is a single equation model, there will be one set of coefficients with two intercepts, and there will be three sets of marginal effects, one for each category. Table 5 shows the coefficients and odds ratio estimated from the ordered logit model. From the coefficient estimates, it can be observed that the business status for all the firms during the pandemic was better (from poor to moderate to good) with the recipient of stimulus packages, and the status of pharmaceutical & financial sector firms was healthier compared to the non-pharmaceuticals & non-financial firms. On the other hand, the business status of the micro and small firms, RMG and restaurant business was worse than the medium and large firms, non-RMG and non-restaurant businesses. However, the coefficient estimates cannot provide to what extent firms were better or worse

during the pandemic. Hence, the paper was needed to estimate the odds ratio which was simply obtained by inserting 'or' after running the ordered logit. If the odds ratio is larger than 1, it means things are getting better, whereas the value of the odds ratio is less than 1 means things are becoming worse.

The coefficient of the firm size variable is found to be negative and statistically significant. For the Micro and Small enterprises, the odds of being in good business status versus the combined moderate and poor business status are 0.513 times lower than for large enterprises, given that the other variables in the model are held constant. Likewise, it can be said that the odds of the combined categories of good and moderate business status versus poor business status is 0.513 times lower for Micro and Small enterprises compared to large enterprises, given the other variables are held constant in the model.

The variable 'dhaka' is found to be negative and statistically significant. For the firms located in Dhaka city, the odds of being in good business status versus the combined moderate and poor business status are 0.503 times lower than for non-Dhaka, given that the other variables in the model are held constant. The coefficient of stimulus is found to be positive and statistically significant. The odds of being in good business status versus the combined moderate and poor business status are 2.458 times higher for the firms who received stimulus packages than those who did not.

Table 5. Coefficients and odds ratio of the ordered logit model.

VARIABLES	(1) coefficients	(2) odds ratio
firm size	-0.667** (0.288)	0.513** (0.148)
Dhaka	-0.688*** (0.259)	0.503*** (0.130)
Stimulus	0.899** (0.353)	2.458** (0.868)
Location	-0.0122 (0.312)	0.988 (0.308)
Export	-0.180 (0.309)	0.836 (0.258)
Ownership	-0.914 (0.635)	0.401 (0.255)
RMG	-0.826** (0.356)	0.438** (0.156)
Pharma	1.488*** (0.568)	4.428*** (2.513)
Restaurant	-1.815*** (0.639)	0.163*** (0.104)
Financial	1.642** (0.672)	5.166** (3.471)
Constant cut1	-2.581*** (0.709)	0.0757*** (0.0537)
Constant cut2	-0.671 (0.694)	0.511 (0.355)
Observations	303	303
LR chi2(10)	52.44	52.44
Prob > chi2	0.0000	0.0000
Pseudo R2	0.0795	0.0795

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The coefficients of export, location, and ownership are found to be insignificant. Among sectoral variables, the coefficients of 'phrama' and 'financial' are found to be positive and statistically significant. For the pharmaceutical firms, the odds of being in good business

status versus the combined moderate and poor business status are 4.428 times higher compared to the non-pharmaceutical firms. The odds of being in good business status versus the combined moderate and poor business status are 5.166 times higher for financial sector firms compared to the non-financial sector firms. In contrast, the coefficients of RMG and restaurants are found to be negative and statistically significant. For the RMG firms, the odds of being in good business status versus the combined moderate and poor business status are 0.438 times lower than for non-RMG firms. The odds of being in good business status versus the combined moderate and poor business status are 0.163 times lower than for restaurants as opposed to non-restaurant businesses.

The paper also reports the average marginal effects for each category of business status variable (Table 6). Compared to medium and large firms, the Micro and Small are 12% more likely to be in poor business status, 1% more likely to be in moderate business status, and 13% less likely to be in good business status. The firms located in Dhaka compared to those located outside of Dhaka are 16% less likely in poor business status, 1% less likely in moderate business status, and 17% more likely in good business status. The RMG firms as opposed to non-RMG firms are 15% more likely to be in poor business status, 1% more likely in moderate business status, and 16% less likely in good business status. Compared to the non-pharmaceuticals' firms, pharmaceuticals firms are 27% less likely in poor business status, 1% less likely in moderate business status, and 28% more likely in good business status. The restaurant business is 33% more likely in poor business status, 2% more likely in moderate business status, and 35% less likely in good business status than the non-restaurant businesses. The financial sector compared to the non-financial sector is 30% less likely in poor business status, 1% less likely in moderate business status, and 33% more likely in good business status.

Table 6. Average marginal effects derived from the ordered logit model.

Business Status	Average Marginal Effects for Poor Business Status	Average Marginal Effects for Moderate Business Status	Average Marginal Effects for Good Business Status
firm size	0.120** (0.051)	0.007 (0.010)	-0.127** (0.054)
Dhaka	0.124*** (0.046)	0.007 (0.011)	-0.131*** (0.048)
stimulus	-0.162*** (0.063)	-0.009 (0.014)	0.171*** (0.066)

location	0.002 (0.056)	0.0001 (0.003)	-0.002 (0.060)
export	0.032 (0.056)	0.002 (0.004)	-0.034 (0.059)
ownership	0.164 (0.114)	0.010 (0.015)	-0.174 (0.120)
RMG	0.149** (0.063)	0.009 (0.013)	-0.157** (0.067)
pharma	-0.268*** (0.103)	-0.016 (0.022)	0.283*** (0.103)
restaurant	0.327*** (0.109)	0.019 (0.030)	-0.346*** (0.122)
financial	-0.296** (0.121)	-0.017 (0.025)	0.313** (0.123)
Observations	303	303	303

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

One of the strong assumptions of the ordered logit model is the parallel regression assumption. That is, the ordered logit assumes that the parallel regression assumption holds. If the assumption does not hold, then the researcher needs to run the generalized ordered logit model. Table 7 presents the results of the parallel regression assumption for the estimated ordered logit model. The p-value for each of the variables is found to be insignificant, meaning that the parallel regression assumption holds.

Table 7. Brant test of parallel regression assumption.

	chi2	p>chi2	df
All	10.880	0.367	10
firm size	0.690	0.408	1
Dhaka	0.160	0.686	1
stimulus	0.000	0.971	1
location	0.010	0.903	1
export	0.430	0.512	1
ownership	0.630	0.429	1
RMG	1.570	0.210	1
pharma	0.000	0.964	1
restaurant	0.000	0.957	1
financial	2.360	0.124	1

A significant test statistic provides evidence that the parallel regression assumption has been violated.

**DISCUSSION**

The study aimed to explore the factors associated with a firm’s performance during the pandemic. Both bivariate (Chi-square statistic) and multivariate analysis (Ordered

logit model) were employed to reach our findings. We found that the business status or business performance was worse for small and medium-sized firms compared to large firms. This result aligns with the findings of Hossain and Chowdhury (2022). Adian *et al.* (2020) argued that the impact of the COVID-19 pandemic on businesses varied in size, but they argued that small and medium-sized enterprises (SMEs) are particularly vulnerable. This vulnerability stems from the fact that SMEs are prevalent in countries and sectors, making them more susceptible to various channels of the pandemic’s impact compared to larger firms in the same country and sector. Additionally, SMEs may have fewer options or avenues to respond effectively to the challenges posed by the pandemic. We observed that business performance in Dhaka city was poorer compared to areas outside Dhaka. This can be attributed to Dhaka city’s high population density and rapid spread, coupled with the implementation of strict restrictions primarily within the capital.

One of the crucial findings of the study is that those firms who received stimulus packages performed better than those who did not. Our results are parallel with the findings of Chetty *et al.* (2020), Granja *et al.* (2020), Cui *et al.* (2020), De Mel *et al.* (2012) and Bruhn (2020). In contrast, Vu *et al.* (2021) found that stimulus packages did not accelerate the growth of stock returns in all sectors.

It was found that RMG firms were in dire situations as opposed to non-RMG firms during the pandemic. This aligns with the observations made by Islam *et al.* (2020),

who argued that the RMG industry, grappling with production delays and order cancellations due to the ongoing COVID-19 pandemic, experienced detrimental effects such as job losses, salary reductions, and health-related issues for employees. A similar perspective was shared by Ali *et al.* (2021), who concluded that the RMG industry confronted substantial challenges as buyers unexpectedly cancelled a significant volume of orders, attributing these setbacks to the widespread and unforeseen consequences of the pandemic. Likewise, Kabir *et al.* (2021) contended that the COVID-19 pandemic is likely to have enduring impacts on garment workers, particularly concerning their health, financial hardships, challenges in affording essentials like food, and future employment opportunities.

Our study found that, during the pandemic, the performance of restaurant businesses was comparatively poorer when compared to other types of businesses. These findings align with the findings of Nhamo *et al.* (2020), which contended that the closure of restaurants for dine-in services became widespread due to increased government regulations on social distancing and lockdowns. This had a particularly negative impact on various types of establishments such as fine dining restaurants, family restaurants, pubs, and taverns. Fast-food outlets also experienced significant disruptions, with many operating at less than 20% of their capacity. Consequently, the industry faced substantial financial losses, leading to both direct and indirect job losses and placing numerous restaurants in unprecedented financial difficulties. During the height of the pandemic's impact in the USA, millions of restaurant workers found themselves unemployed.

Our study revealed that pharmaceutical companies outperformed non-pharmaceutical firms during the crisis, aligning with the conclusions drawn by Shraah *et al.* (2022). Additionally, we observed that financial sector firms exhibited stronger performance compared to their non-financial sector counterparts. This finding contradicts the findings of Feyen *et al.* (2020), Aldasoro *et al.* (2021), and Akhtaruzzaman *et al.* (2021).

A limitation of our study lies in its inability to quantify the specific impact of the COVID-19 pandemic on the business status or performance of the firms under investigation. Instead, our focus was directed towards identifying the factors associated with firm performance during the pandemic. Future research endeavours could aim to undertake comprehensive assessments that quantify the

direct effects of the pandemic on business performance, providing a more nuanced understanding of the challenges and opportunities faced by firms in such exceptional circumstances.

## CONCLUSION

To examine the impact of the pandemic on firms differing in size, the status of stimulus reception, and categories across major industry and services sub-sectors, we use the “Business Confidence Survey” conducted by SANEM in April 2020. We created a “Business Status Index (BSI)” —demarcated into “good”, “moderate” and “poor”—based on survey responses on six indicators of profitability, investment, employment, wage, export/sales, and business cost. Using a chi<sup>2</sup> statistic, we found that firm size, the status of stimulus package reception, RMG dummy, pharmaceutical dummy, restaurant dummy, and financial sector dummy are statistically significant, indicating these variables might be associated with the business status. Secondly, using an ordered logit model we found that the odds of being in good business status as opposed to the combined moderate and poor business status are lower for the micro and small firms, the RMG firms, and restaurant businesses respectively in comparison with medium and large firms, non-RMG firms and non-restaurant businesses. In contrast, for the stimulus recipient firms, the pharmaceutical firms, and the financial sector firms respectively in comparison with non-recipient firms, non-pharmaceutical firms, and non-financial sector firms, the odds of being in good business status as opposed to the combined moderate and poor business status are higher. Similarly, the average marginal effect derived from the ordered logit model illustrates that the micro and small firms, the RMG firms, and the restaurant businesses, respectively in comparison with the medium and large firms, the non-RMG firms, and the non-restaurant businesses, are more likely to be in poor business status and less likely to be in good business status. The stimulus recipient firms, the pharmaceutical firms, and the financial sector firms respectively in comparison with the non-recipient firms, non-pharmaceutical firms, and non-financial sector firms are less likely to be in poor business status and more likely to be in good business status. The results of this paper imply that, in the context of Bangladesh, fiscal stimulus and liquidity support need to be prioritized for micro and small firms and RMG firms which stand to be the most vulnerable in any occasion of

supply chain disruptions induced by an exogenous shock.

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