



# The Effect of Covid-19 First Wave on Online Business Performance Using Balanced Scorecard: Bangladesh Perspective

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**ABSTRACT:** When a natural disaster hits the world, every sphere of life gets affected. The research identified the running corona virus (Covid-19 or C-19) impact and its effect on the performance of the online business in Bangladesh. The famous performance measurement metric - Balanced scorecard with four dimensions – financial, customer, business growth & development, and internal process- has been used to understand the impact of Covid-19 on the country's online businesses. One hundred online business organizations from different areas have been surveyed through a structured questionnaire using their social media page. Based on correlation and regression analysis using SPSS 17 version, the results show that the financial, the customer, the business growth & development dimensions of BSC have a positive impact, and the internal process has a negative effect on online business performance. This research ends with some well-pointed implications, along with the future scope of study.

**KEYWORDS:** Balanced score card, Bangladesh, business performance, Covid-19, online business.

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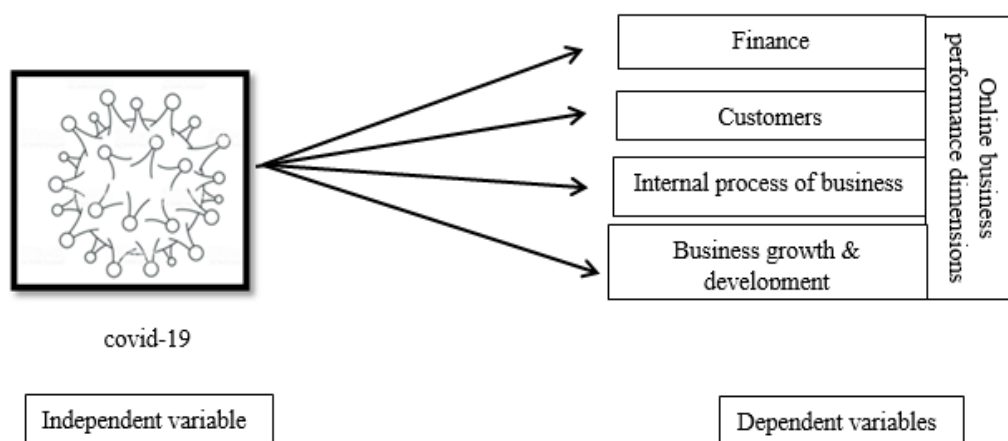
## I. INTRODUCTION

A novel corona virus, designated as 2019-nCoV, emerged in Wuhan, China, at the end of 2019, attacking human beings, by the leaps & bounds. As of January 24, 2020, at least 830 cases were diagnosed in nine countries: China, Thailand, Japan, South Korea, Singapore, Vietnam, Taiwan, Nepal, and the United States (Unhale, Sanap & Bilal, 2020). Two hundred and thirteen countries and territories worldwide have been infected by the C-19 up to July 2020 (“Countries where COVID-19”, 2020). Bangladesh has become one of the top 20 countries with the highest number of positive Covid-19 cases worldwide (“Coronavirus: Bangladesh in top...”, 2020). The NBER working paper series worked on the impact of C-19 on small businesses found that 43% of businesses are temporarily closed, whereas some businesses still survived by reducing their employees by 40%. Some businesses are working on getting funds from large organizations, NGOs, etc. (Bartik, Bertrand, Cullen, Luca & Stanton (2020). The health crisis of corona virus turned to an economic crisis within a few days with the shutdown of financial markets, corporate offices, and businesses. Social distancing stimulates general consumers to large investors to pause their all-economic needs until the situation comes to normal. The first three to four months in 2020, the lockdown days were increasing, international traveling was restricted (Ozili & Arun, 2020). Export and import activities came to a halt. Corona virus shocked the Malaysian economy, as well, as China had a huge market in there. A study on the Malaysian economy revealed that consumers disagreed with purchasing anything imported from China (Hasanat, Hoque, Shikha, Anwar, Hamid & Tat, 2020). International Labor Organization (ILO) concluded the economic effect drawn by the pandemic has a ‘triple shock’ to the young people by destroying jobs, disrupting education and training, and creating obstacles to seek or move between jobs (Mahmood, 2020). Bangladesh, like Malaysia, the country’s e-commerce traders, also faced shipment interruption under the prolonged C-19 impact as china was the only exporter of the products were primarily sourced from China. Fashion, IT services, cosmetics, and sellers of other imported products lost their clientele. On the other hand, e-commerce sites selling daily essentials and health products, such as masks and sanitizers, had a peak in their sales (Hossain, 2020). No doubt, online businesses faced huge losses due to the pandemic, but the actual figure of the loss was not accurately measured & easily available. Because of the

increase in job loss in March and April, online retailers are preparing for a sales drop. Retailers predict online sales would fall 36%. Consumers are more likely to purchase more products like food, healthcare products, household, and pet supplies — that is to say, all essential goods. Apparel sales dropped radically, compelling a bigger number of discounts by clothing retailers. In April, 73% out of 124 online apparel retailers were offering sales on their websites, out of those retailers, 53% were offering a median of 40% in discounts. (Mejia, 2020).

In Bangladesh, academic research on the impact of Covid-19 on business and economy, as well, are not still remarkable. E-commerce, specifically, online business, is a very small part of our economy, though, many people earn their bread and butter through this from the last few years. And the business gets deep concerns both from sellers and consumers. Newspapers and other sources of secondary information have written a few about the impact of Covid-19 on online business’ performance. Academic research regarding Covid-19 impact on online business performance is inadequate. Again, measuring online business performance using a balanced scorecard model is also insufficient, especially in the South-Asian context.

The aim of the study is to shed light on the impact of C-19 on the online business area of Bangladesh, during the two months’ (March-April) lockdown period. The impact is measured using the balanced scorecard model convening four (4) dimensions: the effect on finance, the effect on customers, the effect on internal process, and the effect on organizational growth & development. Considering the variables the framework of the study is given below (Figure 1):



**Diagram 1**

## II. VARIABLES DISCUSSED

The variables are discussed below:

### a. INDEPENDENT VARIABLE

#### COVID-19

According to the World Health Organization (Coronavirus, 2020), Corona is an infectious disease caused by a newly discovered coronavirus, in short Covid-19 or C-19. One can be infected by breathing in the virus if he/she is within proximity of someone who has COVID-19, or by touching a contaminated surface and then your eyes, nose, or mouth.

### b. DEPENDENT VARIABLE

#### MEASURING ORGANIZATIONAL PERFORMANCE

Generally, performance is the organizational ability to attain its goals by using its resources in an effective and efficient manner (Abu-Jarad, Yusof, & Nikbin, 2010; Daft, 2000; Ricardo, 2001). Effectively means attaining the expected result, whereas, efficiently means performing with the least waste of time and effort. The term ‘performance’ was sometimes confused with ‘productivity’. Productivity was a ratio depicting the volume of work completed in a given amount of time. The performance was a broader indicator that could include productivity as well as quality, consistency, and other factors. In result-oriented evaluation, productivity measures were typically considered (Ricardo, 2001). The concept of organizational performance (OP) is too often restricted to its financial facet, like ROI, sales, profit per share (Morin, 1989; Robinson, 1982; Galbraith & Schendel, 1983), etc. But in a later study (1995), Morin added that stakeholders’ and employees’ interest, which is also called ‘relevancy’ (cited in Peterson, Gijbsbers & Wilks, 2003) should also be considered besides financial performance within an organizational performance. Some authors use organizational performance (OP) and organizational effectiveness (OE) interchangeably (Morin & Audebrand, 2014). According to them, there are

four components of OE: sustainability of the organization, the worth of the performance, process efficiency, and legitimacy of the organization, emphasizing that no single components can create organization successful, and also added sustainable position can be reached after satisfying last three components. Hubbard (2009) summarizes a balanced scorecard for sustainable organizational performance, including financial process, internal process, customers/markets, learning and development, social performance, and environmental performance. There are various methods to measure organizational performance.

Various models were developed in various ages considering lack of previously developed models. In this study, the seven familiar organization performance models are discussed:

**1) PROCESS ORIENTED MANAGEMENT OR BUSINESS PROCESS MANAGEMENT (BPM)**

Business process management is a repetitive process to boost the result or the complete process. Here the process is the chain of all events undertaking to complete a goal. The organization and, therefore, the customers are added value (Loay & Shafagatova, 2016). In line with Dumas et al. (2013), in a process, there are not only events, but rather activities and decisions also exist there. Efficiency and effectiveness also are parts of the business process (Sullivan, 2001). The business process never finishes. Instead, it improves again and again. If not, an imperfect, disorderly, disorganized business process ends up with more errors, wastage of time and money, blame game, misuse, or no use of data, dispirited employees. Academic research also suggests a link between the business process and its performance with organizational performance (Melville et al. 2004). Kueng (2000) indicated that organizational performance is the center of all business processes. According to him (Kueng, 2000), business process performance is often measured from 5 perspectives: (1) financial (2) customer (3) employee (4) societal and (5) innovation.

**2) EUROPEAN FOUNDATION FOR QUALITY MANAGEMENT (EFQM)**

EFQM is a thought that emerged from total quality management, by W. Edwards Deming. Industrialization brought the USA economy and market with rapid production. But all products are not of excellent quality and competitive. The USA economy needed a national award that might create a sense of quality, productivity, and competitiveness within producers (Olve & Wetter, 1999). To make them more concerned about their outcome, in 1988, with the European Commission's authorization, 'the European foundation for quality management (EFQM)' was founded by 14 major European companies. About 30000 organizations across Europe use this model (*CISION PR Newswire (2012)*). The model consists of three components: a) eight core values or critical management principles that drive sustainable success, b) nine criteria: five for enablers- 1. Leadership, 2. People, 3. Strategy, 4. Partnership and Resources, and Processes, 3. Products, and Services, and 4 for Results: people, customer, society, and business results; c) RADAR logic that is also called continuous improvement cycle. (Striteska & Spickova, 2012). The EFQM Excellence Award is an annually given award to acknowledge organizations that have achieved a formidable level of sustainable excellence supported assessment against the EFQM Excellence Model.

**3) KEY PERFORMANCE INDICATOR (KPI)**

Key performance indicator (KPI) is the second most used model for measuring organizational performance. From the literature, many public and private organizations, especially, construction sector, airport, hotels, social media, supply chain, human resources, capital market, hospitality, energy sector, metropolis, and many more use KPI to measure organizational performance. A Key Performance Indicator is a measurable value that demonstrates how effectively an organization is achieving key business objectives. Organizations use KPIs at multiple levels to gauge their success at reaching targets. High-level KPIs may target the overall business performance, while low-level KPIs may target processes in departments like sales, marketing, HR, support, and so on. Macmillan's definition of KPI: a way of measuring the effectiveness of an organization and its progress towards achieving its goals. ("What is KPI..." n.d). Formulating KPI consists of 5 steps: establishing a transparent and quantifiable objective, delineation the actionable success standard, data collection, building 5-8 KPI formulas, and last presenting your KPIs. The success of KPI depends upon an honest understanding of what is vital for an organization. The realm of importance is not the same in-service organization and a manufacturing organization. Again, KPI assigned for sales differ from KPI assigned for project execution. KPI earmarked for sales are new customer acquisition, customer demographics, turnover, profitability, etc. On the opposite hand, KPI for project execution may cost variance, schedule variance, delivery date, return on investment, project delivery time, etc.

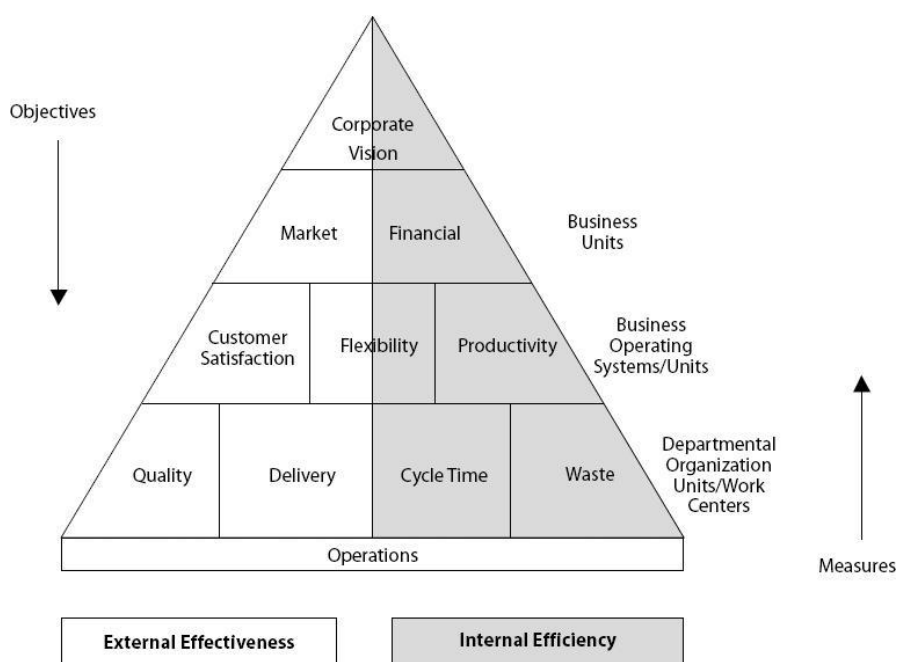
**4) PERFORMANCE MEASUREMENT MATRIX (PMI)**

The PMI was first offered by Keegan et al. 1989. To evaluate organizational performance, the model integrates various dimensions of performance, like, internal-external, financial and non-financial; more precisely, finance, management, human resources, sales, etc. (Neely, Adams & Crowe, 2001). The organization's strategic goal is

identified first to measure performance, and then it is translated into organizational objectives. Departments work together to achieve the corporate goal. The company's internal and external perspectives and strengths and weaknesses are considered in developing a business goal. PMI is also called Result and determinants of results (Andersen et al., 2001). However, literary evidence on measuring organizational performance using PMI is not adequate.

**5) STRATEGIC MEASUREMENT AND REPORTING TECHNIQUE (SMART) PERFORMANCE PYRAMID**

Lynch and Cross introduced it in 1991. The pyramid (Figure 2) shows multiple layers of performance management which flows from corporate vision to departmental activities through business units and business operating systems. The first layer is corporate vision indicating corporate mission and vision, which means the company's long-term goal or why it stands for? The second layer of the pyramid model is business units consists of company growth and market position, indicating long-term goals and financial situation consists of cash flow and profitability, indicating short-term goals. The third level is business operating systems containing customer satisfaction, flexibility, and productivity. The last level, which is the fourth level, is the departmental unit comprising of quality, delivery, cycle time, and waste. The model also reflects the need for external effectiveness, which is customer satisfaction and internal efficiency, which is customer satisfaction and internal efficiency (Kurien, & Qureshi, 2011).



**Diagram 2**

**6) PERFORMANCE PRISM**

Neely and Adam (2000) introduced the Performance Prism (Figure 3) as the second-generation performance management framework. The previously discussed model, SMART was concerned with corporate vision. On the other hand, the model, prism, involves with a) stakeholders satisfaction, need and want and b) innovation according to stakeholders' requirements ("The performance prism", n.d; Najmi, Etebari, & Emami (2012). Performance Prism surrounded with the five facets of a prism such as stakeholder's satisfaction, stakeholder's strategies, processes, capabilities, and stakeholder contribution (Wu, 2009).

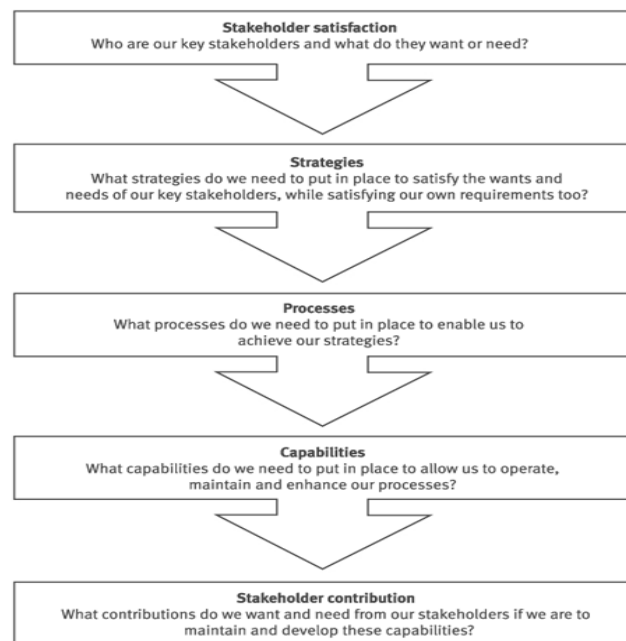


Diagram 3

The first facet is 'shareholder's satisfaction'. Every organization has five types of shareholders, investors, customers, employees, suppliers, and joint venture partners and regulators. The investors need a timely return on investment, dividends or interest, and transparency in the documents. Second, in the 'strategies' facet, the stakeholders want to know how to formulate and implement appropriate strategies with the help of communication within the organization. Third, in the 'process' facet, an appropriate process for implementation of the strategy is described. Fourth, the 'capability' facet deals with the people, practices, technologies, and infrastructure required to permit the process to achieve strategies. Fifth facet is 'stakeholder's contribution'. The facet said, to maintain and develop the capabilities organizations need support from the stakeholders. Like the willingness of investors to invest more money or to take more risks. Employees need to give more time and effort to the organization. From the regulators, organizations demand efficient working relationship and lack of bureaucracy.

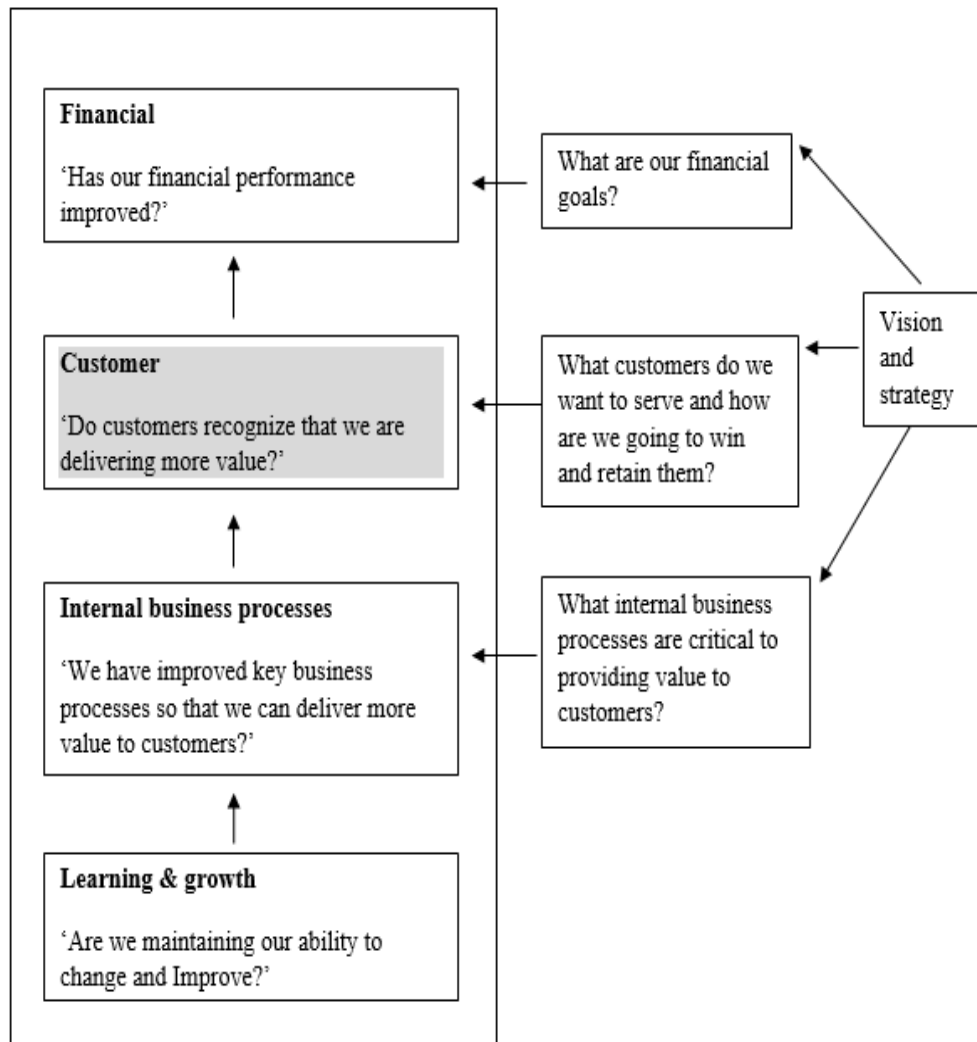
#### 7) **BALANCE SCORECARD**

To measure organizational performance; scholars developed various methods in the past; like BSC (Kaplan; Norton, 1992), the performance pyramid (Lynch; Cross, 1991) and the Performance Prism (Neely and Adam (2000).

Among them, BSC has become the most widely used method for measuring organizational performance due to its ease of use (Prieto & Carvalho, 2009). The concept of 'Balanced Scorecard' was first introduced in the journal 'Harvard Business Review' (January-February 1992) by Robert S. Kaplan and David P. Norton.

The model (Figure 4) can make balances between external (financial and customers) and internal measures (internal process and learning and growth perspective) (Chintengo, Mkandawire & Hanif, 2017) and balances between results measures (financial) and driver measures (internal process and innovation and learning) (Wongrassamee, Gardner & Simmons, 2003). BSC measures organizational performance from financial (financial perspective) and non-financial perspectives (customer, internal perspective, and learning & growth perspective).

Kaplan & Norton (1992) described the innovation of a balanced scorecard as follows: 'The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. However, these financial measures are inadequate for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation.'



**Diagram 4**

According to Sunhilde CuC (2009), a balanced scorecard was developed based on various previously established models: activity-based management, management by objectives, total quality management, strategic management, behavioral theory of economics, delegation of authority, decentralization of decision making, etc. BSC integrated all the benefits of these theories within it and focused on all aspects of the organization.

Velnampy & Balasundaram (2007), with the help of previous literature (Kaplan & Norton, 1996 & 2001), made a summary of the balanced scorecard perspective and called them 'leading versus lagging indicators,' 'objective versus subjective measures,' current versus future needs.' Financial perspective includes revenue growth, return on investment or return on assets, market share, and earning per share. The customer perspective measures the importance of timeliness, quality, performance, cost, and service of the business to them. The internal business process deals with domestic activities and processes that the organization uses to meet its customers' expectations. And learning and growth perspective deals with organizational ability to adapt and innovate for the future, proactive or reactive nature of new product development, workforce training and development and process improvement.



The following Table 1 shows a brief comparison between the models.

<b>Na tur e</b>	A continuous process towards organizational goal unless or until effectiveness and efficiency is achieved.	A performance model, focusing on quality award for excellence.	Combinations of various indicators developed for the areas connected with production.	An integration of financial-non-financial and internal-external dimensions of organization to evaluate organizational performance.	A pyramid shape appraisal method where company's long-term goal is broken down into departmental objectives.	Stakeholder's interest lies in the core of business performance.	Business performance is evaluated from financial, customer, internal process, and growth & development dimensions.
<b>St ag es for su cce ss</b>	The process never ends, improves again and again.	Three components make the work done.	5-steps helps the organization to understand and develop the best KPI for them.	Company strategic goal is broken down into company objectives.	Corporate vision is translated to departmental unit objectives through company growth, market position and financial situation.	The five facets such as stakeholder satisfaction, stakeholder's strategies, processes, capabilities, and stakeholder contribution make the desired performance achieved.	Each dimension have separate goal and their goal achievement led to desired organizational performance.
<b>Lit er at ur e</b>	Literature is not adequate, showing organizational performance and BPM relationship.	Literature is inadequate, showing EFQM and organizational performance relationship.	Adequate number of literatures showing performance and KPI relationship.	Inadequate literature.	Inadequate literature.	Limited number of literatures.	A large number of literatures revealing relationship with BSC and various business performance.
	<b>BPM</b>	<b>EFQM</b>	<b>KPI</b>	<b>PMI</b>	<b>SMART</b>	<b>Performance prism</b>	<b>BSC</b>

**Figure 1:** A brief comparison of the models

The literature on BCS from 2010 to 2020 presents a lot of discussion on the performance measuring using BSC on various firms, like, commercial banks, microfinance banks, hotels, higher education institutions, Islamic education institutions, hospitality industry, travel agencies, e-commerce and many more. Besides, the overall effectiveness of BSC in different banks (Ombuna, Omido, Garashi, Odera & Okaka, 2013; Wu, 2012; Atarere & Oroka, 2012; Hamdy, 2018), some scholars (Ahmad, Bahamman & Ibrahim, 2015) focused on BSC only for non-financial performance measurement of banks. The performance of healthcare services was also measured by Suprpto, Wahab, & Wibowo (2009), Meena, & Thakkar, (2014), Zhijun, Zengbiao & Zhang (2014), Broccardo (2015), El-Jardali, Saleh, Ataya & Jamal (2011) of different countries. The performance measure of higher education is also measured using a balanced scorecard by Brown, (2012); Ondogo, Achieng, & Juma (2016). Performance measurements of hotels, restaurants, café were studied by Tarigan & Widjaja (2012); Eldeeb & Halim (2011). However, research on performance measurement, especially with BSC's help, is very scanty on online business.

A large number of studies were undertaken online shopping intentions of customers that can be considered the performance measurement tools for online shopping success. Kim, Galliers, Shin, Ryoo & Kim, 2012; HY Ha, 2004; Lin & Sun, 2009) focused on customer loyalty, website design, trust, product quality, and price as the success factors of online business.

#### LIST OF HYPOTHESES

Based on the literature review following hypothesis were developed:

*Hypothesis 1:*

H<sub>0</sub>: Effect of C-19 on the financial or economic dimension of online business has no impact on its performance.

H<sub>1</sub>: Effect of C-19 on financial or economic dimension of online business has an impact on its performance.

Hypothesis 2:

H<sub>0</sub>: Effect of C-19 on customer dimension of online business has no impact on its performance.

H<sub>1</sub>: Effect of C-19 on customer dimension of online business has an impact on its performance.

Hypothesis 3:

H<sub>0</sub>: Effect of C-19 on internal process dimension of online business has no impact on its performance.

H<sub>1</sub>: Effect of C-19 on internal process dimension of online business has an impact on its performance.

Hypothesis 4:

H<sub>0</sub>: Effect of C-19 on growth and development dimension of online business has no impact on its performance.

H<sub>1</sub>: Effect of C-19 on growth and development dimension of online business has an impact on its performance.

### III. METHODOLOGY

As an explorative method, the study investigated such a problem which is a new experience for the whole world and Bangladesh as well. Exploratory research, although, most of the time undertaken qualitatively, but it is not exceptional using quantitative measures for the study based on qualitative data gathered previously (Stabbins, 2001, pp.14-15). Both primary and secondary data were used for the research. As a source of primary data, online structured interview was undertaken using Google form. Journal articles, blog articles, newspaper were used as secondary data.

Online interview was conducted using Google form. It will take 1 month to complete the interview. In the questionnaire there will be 2 parts: general information and specific information. General information will include respondents' details, year of experience and type of business. Both parts contained close-ended questions. For close-ended questions 5-point Likert scale was used to collect answers anchored by '1- strongly agree' to '5-strongly disagree' for its wide acceptability and ease (Sandiford & AP, 2003, p.4). Specific information contained statements regarding four dimensions: financial impact, customer impact, impact on internal process and impact on organizational growth & development. Each section included 4 to 5 statements regarding the situation. For data analysis SPSS 17 was used.

100 online business owners were selected from various online businesses areas categorized into bookstore, clothing & ornaments, cosmetics, grocery items, and household decoration. Convenient sampling was used for sample selection with the condition of having not less than 2 years' online business experience.

Reliability and validity tests are two important parts for any study. Reliability means whether findings are trustworthy and replicable (Briggs et al., 2012). According to Hair et al. (2007), reliability measures the consistency of the variables with what it is intended to measure. To achieve reliability measures, Cronbach's Alpha test was applied. The alpha level of whole six items reached to 0.844 that indicates high reliability (Hinton, Brownlow, McMurray & Coxens, 2004). The alpha value of six items is shown in table 2. On the other hand, content validity of these self-developed statements against scorecard dimensions was achieved as the variables were developed with the help of Balanced Scorecard Model, developed by Kaplan & Norton (1992). Note: 0.90 and above shows excellent reliability; .70 to .90 shows high reliability, .50 to .70 shows moderate reliability and .50 and below shows low reliability (Hinton, Brownlow, McMurray & Coxens, 2004).

Types of items	Cronbach's Alpha	Number of items	Reliability states
The whole items including performance and scorecard dimensions	.844	6	High
Economic dimension	.773	5	High
Process dimension	.621	4	Moderate
Customer dimension	.773	4	High
Growth dimension	.856	4	High
Performance	.923	2	Excellent

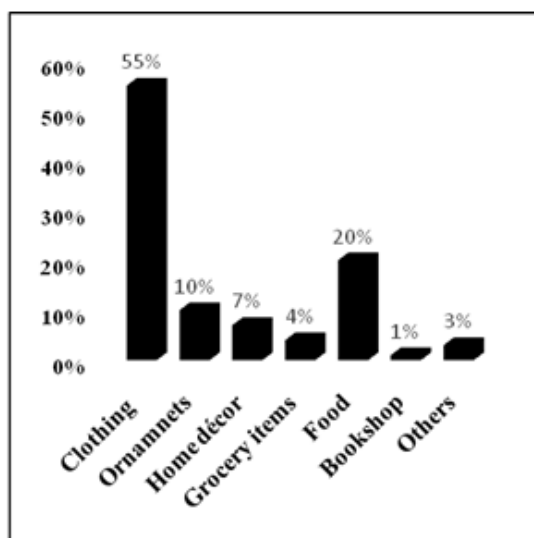
Figure 2: Cronbach's Alpha table

### IV. FINDINGS

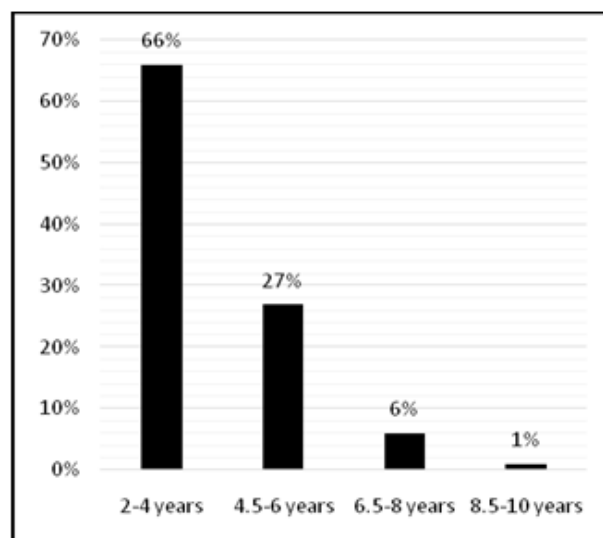
It is already mentioned that from different areas 100 online business owners were selected for interview from the whole country. The largest part of online business is clothing (55%). In the country, business owners think that it is a risk-free investment and reliable suppliers are easily found in clothing area. The next important position is occupied by food business or home-made food business (20%). Young citizens of the country, dual



carrier couple are the prime consumers in this area. Teenagers are fond of ornaments and this business carried third place (10%). Home décor (7%), grocery items (4%) and bookshops (1%) are also gaining interests in the zone of online business of Bangladesh. The demographic categories of the respondents and the years of experiences with the business are shown in Figure 5 (a) and 1(b) respectively.



**Figure 3(a):** Online business category



**Figure 3(b):** Duration of the business

a. **CORRELATIONS BETWEEN DEPENDENT & INDEPENDENT VARIABLES**

The following Table 3 presents correlations between the variables. From the table, it is observed that there are significant positive relationships between the independent variables. Specifically, economic dimension has significant positive relation having .000 significant level in all cases with customer dimension (correlation .546), with process dimension (correlation .439), process dimension (correlation .439) and with growth dimension (correlation .494). on the other hand, the dependent variable, business performance has positive relation having .000 significant level in the cases of economic dimension (.449), customer dimension (.506) and growth dimension (.470), the independent variables. But business performance has insignificant positive relationship (correlation .231 with .021 level of sig.) with process dimension.

	1 Economic dimension (2-tailed)	2 Customer dimension (2- tailed)	3 Process dimension (2- tailed)	4 Growth dimension (2- tailed)	5 Business performance (2-tailed)
1 Economic dimension (2-tailed)	<b>1</b>				
2 Customer dimension (2- tailed)	<b>.546** .000</b>	<b>1</b>			
3 Process dimension (2- tailed)	<b>.439** .000</b>	<b>.498** .000</b>	<b>1</b>		
4 Growth dimension (2- tailed)	<b>.494** .000</b>	<b>.630** .000</b>	<b>.482** .000</b>	<b>1</b>	
5 Business performance (2-tailed)	<b>.449** .000</b>	<b>.506** .000</b>	<b>.231* .021</b>	<b>.470** .000</b>	<b>1</b>

\*\* Correlation is significant at the 0.01 level (2-tailed).

Note: economic dimension, customer dimension, process dimension and growth dimension are independent variables. Business performance is dependent variable.

**Figure 4:** Pearson correlations between dependent and independent variables

	Unstandardized coefficients		t	Sig.	R	R <sup>2</sup>	Adjusted R <sup>2</sup>
	B	Std. error					
<b>Constant</b>	.871	.424	2.057	.042	<b>.577</b>	<b>.333</b>	<b>.305</b>
<b>Financial dimension</b>	.261	.120	2.181	.032			
<b>Customer dimension</b>	.356	.139	2.551	.012			
<b>Process dimension</b>	-.148	.116	-1.276	.205			
<b>Growth dimension</b>	.223	.109	2.037	.044			

**Figure 5:** Model summary of independent variables

Based on the unstandardized coefficients (Table 4) the following regression model can be developed:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Here,

Y = organizational performance

α = constant

β = beta

X<sub>1</sub> = financial dimension

X<sub>2</sub> = customer dimension

X<sub>3</sub> = process dimension

X<sub>4</sub> = growth dimension

ε = system error

Fitted regression line using Table 3 is:

$$Y = .871 + .261X_1 + .356X_2 + .223X_4$$

The alternative and null hypotheses are formulated as follows:

$$H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$$

H<sub>1</sub> = not all β coefficients are equal to 0

**b. HYPOTHESIS TESTING**

*Hypothesis 1:*

H<sub>0</sub>: Effect of C-19 on the financial or economic dimension of online business has no impact on its performance.

H<sub>1</sub>: Effect of C-19 on the financial or economic dimension of online business has an impact on its performance.

Sig or p-value:  $\beta = .261$  with sig. level .032.

Decision: financial activities results from C-19 have a significant positive relationship with organizational performance. So, null is rejected.

*Hypothesis 2:*

H<sub>0</sub>: Effect of C-19 on customer dimension of online business has no impact on its performance.

H<sub>1</sub>: Effect of C-19 on customer dimension of online business has an impact on its performance.

Sig or p-value:  $\beta = .356$  with sig. level .012.

Decision: customer activities results from C-19 has a significant positive relationship with organizational performance. So, null is rejected.

*Hypothesis 3:*

H<sub>0</sub>: Effect of C-19 on internal process dimension of online business has no impact on its performance.

H<sub>1</sub>: Effect of C-19 on internal process dimension of online business has an impact on its performance.

Sig or p-value:  $\beta = -.148$  with sig. level .205.

Decision: process dimension results from C-19 have an insignificant negative impact on organizational performance. So, null is rejected.

*Hypothesis 4:*

H<sub>0</sub>: Effect of C-19 on growth and development dimension of online business has no impact on its performance.

H<sub>1</sub>: Effect of C-19 on growth and development dimension of online business has an impact on its performance.

Sig or p-value:  $\beta = .223$  with sig. level .044.

Decision: growth dimension results from C-19 have a significant positive impact on organizational performance. So, null is rejected.

The R column represents multiple correlation coefficients, considered the predictor of relationship between dependent and independent variable. In this study, value of  $R = 0.577$ , means a moderate predictor of dependent variable, here organizational performance. As generally, a value of  $r$  greater as 0.7 is considered a strong correlation. Anything between 0.5 and 0.7 is a moderate correlation, and anything less than 0.4 is considered a weak or no correlation (Clark, 2018).  $R^2$ , also called coefficient of determination, determines the independent variable explains only 3% variability of the dependent variables considering a weak or low effect size (Moore, Notz & Flinger, 2013). The adjusted  $R^2 < R^2$  reports that the new terms or variables cannot improve the model fit by a sufficient amount.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.344	4	12.836	11.857	.000 <sup>b</sup>
	Residual	102.846	95	1.083		
	Total	154.190	99			

a. Dependent Variable: whole performance

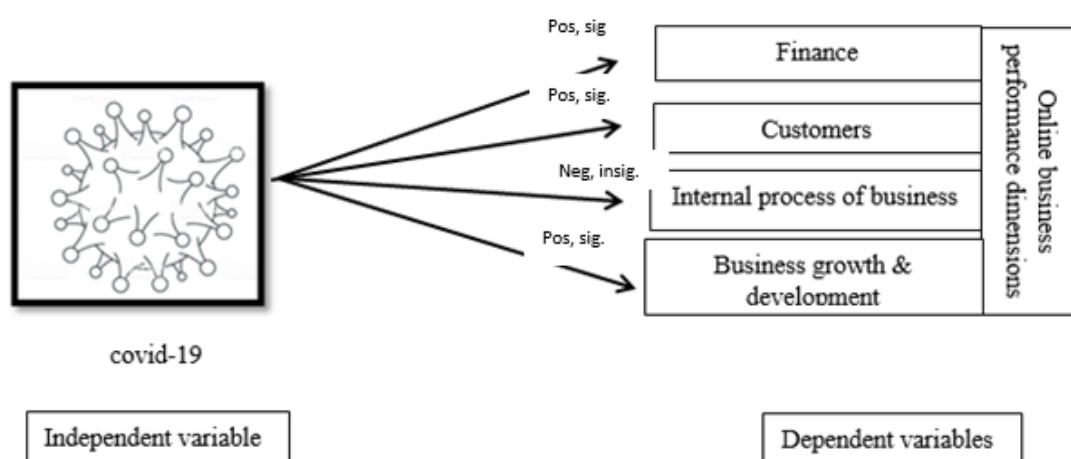
b. Predictors: (Constant), total growth dimension, total process dimension, total eco dimension, total customer dimension

**Figure 6:** Statistical significance through ANOVA

The ANOVA table (Table 5) indicates that the model is statistically significant.

In brief, the financial dimension, the customer dimension, and the growth & development dimension of online business in Bangladesh have a significant positive relation with online business performance. The more significantly these activities or aspects are implemented, the more upsurge on online business performance will be experienced and vice versa. Due to long-lasting C-19, activities of these business dimensions were dropped, resulting in deteriorating online business performance. Specially, the internal process of online business showed an insignificant negative impact on online business performance. With the improvement of the internal process activities, the business performance will be reduced and vice versa. However, this relation proved insignificant. Most of the studies under this subject matter undertaken between 2010 to 2020 were literature review based (Broccardo, 2015; Zhijun, Zengbiao & Zhang, 2014), or qualitative discussion on its application in organizations (Atarere & Oroka, 2012; Brown, 2012; El-Jardali, Saleh, Hamdy, 2018; Suprpto, Wahab & Wibowo, 2009; Tarigan & Widjaja, 2012) and case study-based (Hinton & Barnes, 2009; Meena & Thakkar, 2014).). Some researchers developed a new model based on BSC and KPI for appraising organizational performance (Eldeeb & Halim, 2011; Wu, 2012). Again, new dimensions were added with the existing four dimensions of BSC by some researchers to evaluate organizational performance. Very few studies were found seeking a relationship between BSC dimensions and organizational performance. The internal process, the

innovation and learning and the customer service (Chimtengo, Mkandawire & Hanif, 2017; Ombuna, Omido, Garashi, Odera & Okaka, 2013; Ondogo, Achieng & Juma, 2016) were some the dimensions which had a strong correlation and impact on organizational performance, according to some study findings. In this study, only the internal process gave insignificant relation or effect on organizational performance, which is the opposite of the study done by Chimtengo, Mkandawire & Hanif (2017). In the same study, all dimensions except the internal process and the innovation and learning gave poor relationship with organizational performance compare to this study. Ombuna, Omido, Garashi, Odera & Okaka (2013) posited a strong impact of customer dimension on organizational performance that matched this study very well. The result of formulation and implementation of BSC model is not the same for all organizations even, the dimensional impact of BSC on organizational performance is not also the same. Organization culture, BSC implementation, nature of regular monitoring on the progress of dimensional activities, and evaluation method and period are some of the reasons for which results of BSC may vary (Ombuna, Omido, Garashi, Odera & Okaka, 2013). In this study, organizational process proved an insignificant negative relation with the online business internal process. Though promotional activities were continuing, because of C-19 contamination, online business financial and non-financial dimensions could not reach up to the mark. Consumer's purchasing intention is damaged. The proved model is:



**Diagram 5**

## V. IMPLICATION & FUTURE SCOPE OF RESEARCH

The study findings have a good number of implications for future researchers, policymakers, and practitioners. The study findings will help future researchers in many ways: first, researchers can use KPI or other independent factors for measuring online business performance. Second, triangulation between various organization performances measuring matrix can also be an extension of the study done by future researchers. Third one is working with a single dimension of BSC on online business. Finally, a comparative analysis of pre and post C-19 impact on online business performance can also be a subject matter of research. Generally, there is no governing body to monitor online business performance. The business owners measure its performance based on sales, its image, getting new customers, and retention of the existing customers.

The study findings give a clear picture of Bangladesh's online business from financial, customer, internal process, and development perspective during the lockdown period. The business practitioners can also use this model at any time of their fiscal year to evaluate their business and take corrective actions, if necessary. The study findings are also useful for policymakers. As, this part of the business generates a good number of revenue, policy-makers may develop asset of policies to evaluate its performance with the help of a previously approved model.

## VI. CONCLUSIONS

The study aimed to explore the impact of C-19 on finance, customers, internal process, and growth and development of online business in Bangladesh. Research found that C-19 profoundly influenced the finance dimension, the customer dimension, and the growth and development dimension of online business. In contrast, C-19 poorly influenced the internal business process dimension and created a negative connection with organizational performance. The study findings were different from the previous studies because of three reasons: first, from a methodological context. Various studies were found measuring organizational performance using a balanced scorecard matrix on hospitals, educational institutions, hospitality industry and so on. But

studies on e-commerce or online business performance are insufficient. Second, from country context - the findings were drawn from the Bangladeshi background; studying another country context may give different results. The last, situational context: the result presented in the study is based upon the impact of C-19. The same effect may not be constant in other conditions.

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## Appendix A

### THE EFFECT OF COVID-19 FIRST WAVE ON ONLINE BUSINESS PERFORMANCE USING BALANCED SCORECARD: BANGLADESH PERSPECTIVE

#### Questionnaire

To identify the impact of COVID-19 (first wave), we are undertaking this survey. As an online business owner you are selected for the study. This study will take maximum 7 minutes to complete. Your cooperation is appreciated.

#### **Part-1 (General information)**

1. Name of business:
2. Please mark the category of your business:
  - a) Clothing & jewelry
  - b) Home décor
  - c) Grocery item
  - d) Food
  - e) Book shop
  - f) Others
3. Please mark the duration of your business:
  - a) 2-4 yrs.
  - b) 4.5-6 yrs.
  - c) 6.5-8 yrs.
  - d) 8.5-10 yrs.
4. Do you feel the lockdown (March-May) has damaged your business?
  - a) Yes
  - b) No
5. If your answer is 'yes', please give a mark the amount of approximate loss:
  - a) Less than 10k
  - b) 10k-30k
  - c) 30k-50k
  - d) 50k-70k
  - e) 70k-90k
  - f) Above 90k

**Part-2 (Specific information)**

To measure the impact of Covid-19 on online business, the tentative impacts are divided into 4 sections and each section there are 4 statements. Please rank the statements from 5 to 1. Here, 5= strongly disagree, 4=disagree, 3=neutral, 2=agree and 1=strongly agree.

<b>6. Financial impact</b>					
F1. Sales was reduced	SD	D	N	A	SA
F2. New investment was not made	SD	D	N	A	SA
F3. Business cost was increased	SD	D	N	A	SA
F4. Cost was greater than revenue	SD	D	N	A	SA
<b>7. Impact on consumers</b>					
C1. Purchasing power was reduced	SD	D	N	A	SA
C2. Purchasing intention was reduced	SD	D	N	A	SA
C3. Delivery cost was increased	SD	D	N	A	SA
C4. Delivery time became lengthy	SD	D	N	A	SA
C5. No new customers were reached	SD	D	N	A	SA
<b>8. Impact on internal process</b>					
P1. Promotional activities were running	SD	D	N	A	SA
P2. Promotional activities could not increase sales	SD	D	N	A	SA
P3. Sales discount, or other lucrative offers were provided to attract customers	SD	D	N	A	SA
P4. New shipments of products were not received	SD	D	N	A	SA
<b>9. Growth &amp; development</b>					
G1. Productivity of employees was reduced	SD	D	N	A	SA
G2. Salary and facilities of the employees were reduced	SD	D	N	A	SA
G3. New products or services were not brought	SD	D	N	A	SA
G4. Training and development program for employees were not undertaken	SD	D	N	A	SA

**THE EFFECT OF COVID-19 FIRST WAVE ON ONLINE BUSINESS PERFORMANCE USING BALANCED SCORECARD: BANGLADESH PERSPECTIVE**

Questionnaire

To identify the impact of COVID-19 (first wave), we are undertaking this survey. As an online business owner you are selected for the study. This study will take maximum 7 minutes to complete. Your cooperation is appreciated.

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  - Grocery item
  - Food
  - Book shop
  - Others
- Please mark the duration of your business:
  - 2-4 yrs.
  - 4.5-6 yrs.
  - 6.5-8 yrs.
  - 8.5-10 yrs.
- Do you feel the lockdown (March-May) has damaged your business?
  - Yes
  - No
- If your answer is 'yes', please give a mark the amount of approximate loss:
  - Less than 10k
  - 10k-30k
  - 30k-50k
  - 50k-70k

- e) 70k-90k  
f) Above 90k

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<b>7. Impact on consumers</b>					
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C3. Delivery cost was increased	SD	D	N	A	SA
C4. Delivery time became lengthy	SD	D	N	A	SA
C5. No new customers were reached	SD	D	N	A	SA
<b>8. Impact on internal process</b>					
P1. Promotional activities were running	SD	D	N	A	SA
P2. Promotional activities could not increase sales	SD	D	N	A	SA
P3. Sales discount, or other lucrative offers were provided to attract customers	SD	D	N	A	SA
P4. New shipments of products were not received	SD	D	N	A	SA
<b>9. Growth &amp; development</b>					
G1. Productivity of employees was reduced	SD	D	N	A	SA
G2. Salary and facilities of the employees were reduced	SD	D	N	A	SA
G3. New products or services were not brought	SD	D	N	A	SA
G4. Training and development program for employees were not undertaken	SD	D	N	A	SA