



## The Tendency of Earnings Manipulation Among Textile Firms of Bangladesh During COVID-19 Pandemic

Md. Nazmul Islam FCMA

Associate Professor

Department of Accounting & Information Systems

Jagannath University, Dhaka-1100, Bangladesh

Email: nazmul8108@gmail.com

Sayma Fatema

Department of Accounting & Information Systems

Jagannath University, Dhaka-1100, Bangladesh

### Abstract

The COVID-19 pandemic has impacted nearly every industry in a country, particularly export-oriented industries. Firms may manipulate earnings to suit market expectations under the economic crisis caused by the COVID-19 pandemic. We investigate the tendency of earnings manipulation in Bangladesh's textile sector in 2020, the year in which Bangladesh, like many other nations around the world, faces an economic slowdown due to the COVID-19 pandemic. Using the well-known Beneish Model (1999), we identify the likely and non-likely manipulators firms. Thirty-seven publicly-listed textile firms are selected, and all necessary data are collected from the 2019 and 2020 annual reports. The study shows that 46% of firms are likely to manipulate earnings during the COVID-19 pandemic. We further present the status of the independent auditor's change, audit opinion, and board independence of both likely and non-likely manipulator firms in 2020. Our study provides insights for investors, auditors, and regulators.

**Keywords:** Earnings Manipulation; COVID-19; Textile Industry; Beneish Model; Bangladesh.

### 1.0 Introduction

Coronavirus disease 2019 (COVID-19) is a contagious disease first identified in Wuhan, China, in December 2019 (Page, Hinshaw, and McKay, 2021). The disease has since spread worldwide, leading to an ongoing pandemic (Zimmer, 2021). The COVID-19 lockdowns and other safeguards implemented in early 2020 threw the world economy into crisis after a year of a global economic downturn that saw stagnation in economic growth and consumer activity (Kaplan, Frias, and McFall-Johnsen, 2020; Elliott, 2019; Cox, 2019). The COVID-19 pandemic has gravely affected almost every country in the world, leading to the economic downturn. Every advanced economy has slid into recession within seven months (Zumbrun, 2020; World Economic Outlook, 2020). The International Monetary Fund (IMF) estimates that the global economy shrunk by 4.4% in 2020. The organization

describes the decline as the worst since the Great Depression of the 1930s (BBC News, 2021). The first known case of COVID-19 in Bangladesh was recorded on March 8, 2020. Since, the number of COVID-19 cases and deaths has increased, making Bangladesh one of the most affected countries. The pandemic has negatively affected the socio-economic condition of Bangladesh, like many other countries in the world. Due to the COVID-19 pandemic, global structural supply shocks result from the changes in aggregate demand, the slowdown of the global economy, the closure of manufacturing stores, and the halt of production (McKibbin and Fernando, 2020). The pandemic has had similar effects on the textile and fashion supply chains. China is an important source of textile inputs for Bangladesh. China is known as the heart of 'Factory Asia,' Italy represents 'Factory Europe,' and the United States symbolizes 'Factory North America' when it comes to textiles (Baldwin and Mauro, 2020). As a result, when the disruptions began in China, their impact spread throughout the global market (Atkeson, 2020). Approximately 95% of the man-made fiber yarn used in Bangladesh's final products in the textile industry is imported from China. Bangladesh also does not produce viscose, synthetic outerwear materials, or specialized garment fabrics. All of these are imported from China (Fibre2Fashion, 2021). Furthermore, coal is used to provide the electricity required to keep modern garment sewing machines working. Fibre2Fashion (2021) reports that Bangladesh's annual coal requirement of around 80 lakh<sup>1</sup> tonnes is entirely met by imports. International coal prices have risen by 70% over the last year as a result of the global economic recovery following COVID. The impact of the COVID-19 pandemic on garment consumption has had a substantial impact on global apparel and fashion exports (Wazir, 2020). The impact of the pandemic on clothing consumption and imports will influence Asia's top-tier apparel and RMG exporting countries, such as Bangladesh, China, Vietnam, and India, as well as their GDP and employment (Techpacker, 2017)

Bangladesh is a leading textile exporter in the world, with a turnover of USD 38.73 billion (Fibre2Fashion, 2021). Bangladesh's economy is primarily reliant on the textile sector and migrant worker remittances (Ramachandran, 2020). The textile industry

<sup>1</sup> 1 lakh = 100,000

contributes a lot to the development of Bangladesh. Textile and garment exports are the main sources of foreign exchange earnings. Since 2005, Bangladesh had experienced annual GDP growth of over 6%, except for 2020, when the economy slowed due to the COVID-19 outbreak. Much of Bangladesh's economic growth continues to be driven by exports from the \$31.5 billion ready-made garment (RMG) industry (International Trade Administration, 2021).

Global crisis often poses challenges for accounting and audit. Recent years have seen high amounts of fraud, financial statement manipulations, and unethical behavior in the global economic systems. The breakout of the coronavirus pandemic (COVID-19) in early 2020 disrupted international financial markets in unprecedented ways, increasing the possibility of financial fraud (Karpoff, 2021). For example, in April 2020, fraud rates in the United Kingdom across all financial products increased by 33% over the previous year (Experian, 2020). The COVID-19 pandemic has expedited digital transformation and increased digital processes, shedding new light on fraud activities (Zhu, Ao, Qin, Chang, Liu, He and Li, 2021). A transition to digital financial transactions is one of the many business consequences of the COVID-19 pandemic. Beanworks (2021) reports that digital fraud attempts are increased by 25.07 percent in the first quarter of 2021. TransUnion (2021) reports that globally, the percentage of suspected digital financial services fraud is risen by 149%, and in the U.S., that percentage goes up by 109%. It also shows that the threat of fraud has grown so widespread that the Royal United Services Institute announced in January 2021 that fraud should be considered a national security issue in the United Kingdom, where it costs the country up to £190 billion per year to combat. Financial statement fraud is a violation of Generally Accepted Accounting Principles (GAAP) for favorably representing the company's financial performance. An economic crisis may encourage a firm to manipulate its financial information to meet the expectation of the investors. This, however, may not always be the case. For example, using a large sample of over 14,000 observations across 15 years, Chintrakarn et al. (2017) show that firms managed earnings less aggressively during the crisis. Their results are also consistent with the notion that, during the crisis, earnings management is not sufficient to reverse the poor

earnings picture because firms perform lower than expected. As a result, managers are less motivated to manage earnings. In the context of Bangladesh, very little research is done on earnings manipulation. Using Beneish M-Score, Sakib (2019) finds that textile firms are manipulating earnings. However, the sample size of his study consists of thirteen firms which represent only 22% of the textile industry. Moreover, there is a gap in the literature on earnings manipulation during a pandemic.

This study is important because, to our better understanding, very little or no research is done on earnings manipulation during pandemic using Bangladeshi sample. We selected the textile industry because it is one of the leading export-oriented industries in Bangladesh and is heavily affected by the COVID-19 pandemic. The study is important for investors because they may be cognizant before investing during an economic downturn. As financial records are the major source of information on a company's financial stability, economic activity, and financial health, misleading financial reporting due to earnings manipulation hurts all stakeholders. The findings of this study also provide insight into the tendency of earnings manipulation of industry, for which policymakers should ensure that the firms are subjected to a stricter monitoring program, thereby reducing the likelihood of manipulation. This study fills a gap in the literature on earnings manipulation during an economic downturn posed by the COVID-19 pandemic in developing countries like Bangladesh. It also assists stakeholders in identifying likely and non-likely manipulator firms, making smarter decisions, and establishing policies to limit the likelihood of manipulation.

The rest of the paper proceeds as follows. The following section does a literature review, and the methods are discussed in detail in the third section. The fourth section presents the main results of the study. The fifth section reports the additional analysis, and the sixth presents the discussion and conclusion of the paper.

## 2.0 Literature Review

People have witnessed high-profile corporate accounting scandals and multibillion-dollar frauds during the last two decades (Halilbegovic et al.,

2020). Association of Certified Fraud Examiners (ACFE) (2016) defines financial statement fraud as a scheme in which an employee knowingly produces a major misstatement or omission in an organization's financial statements. ACFE (2014) suggests that the occurrence of fraud has increased considerably over the recent years and is likely to continue to increase in the future. The crime related to accounting fraud or creative accounting is increasing day by day. We can mention the name of Fred Stern & Company, McKesson & Robbins, Inc., WorldCom, Tyco, Helmsley Enterprise, Enron, etc. Management takes advantage of gaps or ambiguities in accounting standards to provide a skewed picture of financial performance, known as creative accounting (Shah, 1998). ACFE (2014) shows that financial statement fraud is the most significant disadvantage of fraud by 73 percent, corruption by 18 percent, and asset misappropriation by 9 percent. Financial statement fraud can be grouped into two parts: net income understatement and net income overstatement. Net income understatement involves inflated expenses and liabilities, understated revenues, timing difference, improper disclosures, and asset valuation, while net income overstatement includes hidden liabilities and expenses, improper disclosures, and asset valuation, as well as timing differences (ACFE, 2016).

It is usually common that firms are likely to manipulate their earnings during financial distress. For instance, Kallunki and Martikainen (1999) look into Finnish bankrupt firms and estimate that earnings are managed upwards in the three years leading up to bankruptcy. They conclude that income-increasing earnings management is a significant predictor of financial failure. Financially distressed firms are also likely to face huge pressure from market competition, resorting to earnings management to exhibit a positive view to the stakeholders. To compete effectively, managers are forced to manipulate earnings, minimize financial pressures and capital costs, or drop product pricing (Valaskova, Androniceanu, Zvarikova, and Olah, 2021). Furthermore, Lakshmana & Yang (2015) find that firms with low market competitiveness are more likely to use earnings management. Firms having a past good earnings trend are more likely to manipulate profits to continue a growing trend in consecutive gains (Myers et al., 2007). Financial distress is a condition

in which a company or individual cannot generate sufficient revenues or income, making it unable to meet or pay its financial obligations (Hayes, 2020). The reasons may be significant fixed expenses, a high share of illiquid assets, or revenue that is vulnerable to the economic slowdown. Individuals may experience financial hardship due to bad budgeting, overspending, a heavy debt burden, a lawsuit, or the loss of work. Ozili (2021) shows how accounting procedures or tactics like fair value accounting, big bath earnings management, loss avoidance, and income smoothing strategies can help businesses mitigate the impact of a pandemic on their profits.

According to Beneish (1999), earnings manipulation occurs when a firm's management violates GAAP to reflect a better financial performance for the company by deflating expenses or inflating revenues. The use of accounting methods to generate financial statements that depict a company's economic activities and financial status in an excessively good light is referred to as earnings management (Tuovila, 2020). Earnings management can take a different number of forms. Firms use a variety of exceptional cases for earnings management, such as holding earnings for future years, large baths, special charges, acquired in-process R&D, changing accounting systems, altering projections, and so on (Mulford and Comiskey, 2002). Dechow, Sloan, and Sweeney (1996) show that the Securities Exchange Commission's firm-years show managed earnings based on notions developed in the academic literature. These firms, for example, use more income-increasing accounting processes and have greater total accruals and estimated discretionary accruals. Managers can obtain reporting flexibility by using imprecise standards and/or unstructured transactions, such as earnings overstatements and understatements (Nelson, 2002). Enomoto, Kimura, and Yamaguchi (2015) look at the discrepancies between accrual-based and real earnings management in thirty eight countries and their link to investor protection and claim that accrual-based earnings management is when earnings are managed by changing the accrual process, while real earning management is when earnings are managed by departing from routine operational operations. Their findings show that accrual-based earnings management is well-protected by robust investor protection, and the presence of analysts as investor protection is effective in monitoring real earning management.

Various models can be used to identify earnings management practices. The accrual accounting models, initiated by Healy (1985) and extended by DeAngelo (1988) and Jones (1991), are among the various methods for identifying earnings manipulation. However, the Beneish model (1999), which uses probit and logit models, detects manipulation using a variety of factors in addition to accruals (Kara et al., 2015). The Beneish model evaluates financial health indicators such as days' sales in receivables, sales margins, and asset quality, providing a more comprehensive perspective of earnings quality (Pustynnick, 2009). Two main studies examining the development of a model to detect earnings manipulation in financial statements are carried out by Beneish (1997) and Beneish (1999) (Mohamad Kamal, Md Salleh, and Ahmad, 2016). Beneish (1997) develops a model that can discriminate between firms engaging in earnings manipulation in violation of US GAAP and firms engaging in earnings management with high discretionary accruals. Furthermore, the model estimates that potential earnings manipulators are four to five times more likely to violate accounting rules than firms using aggressive accruals (high discretionary accrual) for earnings management. Beneish (1999) later developed a model to distinguish likely manipulators from non-likely manipulators by using financial statements variables, as identified in Beneish (1997) (Mohamad Kamal et al., 2016). Auditors, investors, creditors, and other related parties can make decisions by using the Beneish M-score model whether the company manipulates its earnings.

Analysts, regulators, researchers, and other financial professionals have long been interested in the extent to which earnings are manipulated (Beneish, 1999). The Beneish model is a quantitative forensic indexing tool for determining whether a company's earnings have been manipulated. Kenton (2020) mentions that the model is used as a tool to uncover financial fraud. Beneish (1999) estimates a model for detecting earnings manipulation using sample manipulators and industry-matched firms from 1982 to 1988 and evaluates the model's performance on a holdout sample in the period 1989-1992. The use of the Beneish M-score in the identification of earnings manipulation has been studied extensively in a variety of geographical areas around the world (Beneish, Lee,

and Nichols, 2013). Tarjo & Herawati (2015) mention that the Beneish M-score model can be used to detect financial fraud. The use of the M-score model is important in the discovery of earnings management (Talab et al., 2017). In many ways, it is similar to the Altman Z-score, but it is focused on detecting earnings manipulation rather than bankruptcy (Nwoye et al., 2013).

In the context of Bangladesh, Ahmed and Naima (2016) collected data from 102 publicly traded and non-financial firms for the period of 2010 to 2013. They analyzed the data using the Beneish model (1999) to determine the M-Scores of these firms. They find that the proportion of likely manipulator firms declines over the years. Parvin (2020) uses 2017 data from 105 listed manufacturing firms in Bangladesh and, using Beneish M-score, finds that except for the cement, paper & printing, and jute industries, the percentage of non-manipulator enterprises is higher than the percentage of manipulator firms. In the context of Bangladesh, the Beneish model is also used to examine earnings manipulation for other industries – the cement industry (Ahmed and Azim 2015), food and allied industry (Khan and Akter 2017), pharmaceutical industry (Mollah and Sakib 2020). Other than Beneish Model, very few researchers use the modified Jones model (1999) to investigate the earnings management practices in Bangladesh (Biswas 2018; Razzaque, Rahman, and Salat, 2006). Bhuiyan (2015) uses both cross-sectional Real Earnings Management (REM) models (Dechow et al. 1998; Roychowdhury 2006) and the modified Jones model (1991) to see whether the managers of Bangladeshi firms engage in earnings manipulation in the forms of REM and Accrual-based Earnings Management (AEM). However, the study of the tendency of earnings manipulation during an economic crisis posed by the COVID-19 pandemic is absent or inadequate in the extant literature.

## 3.0 Methods

### 3.1 Research Design

We use the eight-variables model of Beneish (1999) to calculate the M-Score for identifying the likely and non-likely manipulators from the selected firms. Data for calculating M-Score are collected from the income statement, balance sheet, cash flow statement, and from the notes to the financial statements. For this

study, we use the widely used standard of -2.22 score (Beneish, 1999) for classifying the firms into two groups i.e., likely manipulators and non-likely manipulators in a given year. If the M-Score is less than -2.22, the company is unlikely to be a manipulator. An M-Score of more than -2.22 indicates that the company is most likely a manipulator (Beneish, 1999). The model is given as follows:

$$M = -4.84 + 0.92 * DSRI + 0.528 * GMI + 0.404 * AQI + 0.892 * SGI + 0.115 * DEPI - 0.172 * SGAI + 4.679 * TATA - 0.327 * LVGI$$

Where,

DSRI = Days Sales in Receivables Index, the ratio of receivables to sales in the year of observation (t) to the previous year (t-1).

GMI = Gross Margin Index, measured as the ratio of gross profit in the previous year (t-1) to gross profit in the year of observation (t).

AQI = Asset Quality Index, measured as the ratio of non-current assets to total assets in the year of observation (t) to the previous year (t-1).

SGI = Sales Growth Index, the ratio of sales in the year of observation (t) to sales in the previous year (t-1).

DEPI = Depreciation Index (DEPI), measured as the ratio of the previous year's depreciation rate (t-1) to the rate of shrinkage in the observation year (t).

SGAI = Sales, General & Administrative Expenses Index, measured as the ratio of SGA expenses in year t relative to year t-1.

LEVI = Leverage Index, measured as the ratio of total debt to total assets in the year of observation (t) to the previous year (t-1).

TATA = Total Accruals to Total Assets, calculated by income before extraordinary items minus operating cash flows against total assets.

### 3.2 Sample Size

This study is conducted based on the textile industry of Bangladesh. This industry consists of firms that are engaged in the production of clothes and ready-made garments. There are 56 listed textiles firms on Dhaka Stock Exchange. Out of them, 37 firms are taken as a sample, and others are excluded due to the unavailability of data.

### 3.3 Data Collection

All the required data are collected from secondary sources. We collect all the necessary information for calculating Beneish M-Score from the annual reports of the selected firms. We collected data from the annual reports of the selected firms for the years 2019 and 2020.

### 3.4 Data Analysis

All the necessary information is collected in an Excel Sheet and perform the necessary calculation with the help of various tools of Microsoft Excel. We calculate the eight variables and the M-score of each company for the year of 2020. In an additional analysis, we also present the status of the independent auditor's change, independent audit opinion, and the board independence of the likely and non-likely manipulator firms.

## 4.0 Results

### 4.1 Descriptive Statistics of M-score Variables

Table I presents the descriptive statistics of M-score variables. The study finds that the maximum and minimum DSRI of likely manipulator firms are 74.060 and 0.814 respectively. The likely manipulator firms have an average DSRI of 5.639 and a standard deviation of 17.634. At the same time, the non-likely manipulator firms have a maximum of 3.289, minimum 0.571, mean 1.186, and standard deviation of 0.567. A large increase in the DSRI is an indication of revenue inflation. The result shows that the maximum GMI obtained by likely manipulator firms is 2.216 and by the non-likely manipulator firms is 2.583. On the other hand, the minimum GMI obtained by likely manipulator firms is -0.312 and by non-likely manipulators firms is -5.759. The GMI of more than 1 is an indication that the Gross Profit of the firms is decreasing. AQI values for likely manipulator firms have the maximum value of 10.126, the minimum value 0.000, the mean value 1.882, and the standard deviation 2.232. AQI values for non-likely manipulator firms have the maximum value of 1.864, the minimum value 0.000, the mean value 0.715, and the standard deviation 0.494. The increase in AQI indicates the involvement in cost deferral to inflate profits. SGI values for likely manipulator firms have the maximum value 0.999, the minimum value 0.025, the mean value 0.769, and the standard deviation 0.236. The maximum, minimum, mean and the standard deviation of SGI values for non-likely manipulator firms are 0.995, 0.605, 0.839, 0.839 respectively. The high sales growth is an indication of earnings manipulation as their financial position and capital needs put pressure on managers to achieve earnings targets. The mean DEPI values for likely manipulator and non-likely manipulator are 1.052 and 1.065 respectively. It indicates the inflation in the useful life of assets and the increasing income. A disproportionate increase in SG&A relative to sales is a negative signal about a firm's prospects. The average SG&A for likely manipulators and non-likely manipulators are 2.399 and 1.899 respectively. The mean LEVI for likely manipulator firms are 1.039. The value of LEVI greater than 1 indicates an increase in debt. TATA values for likely manipulator firms had the maximum value of 0.101, and the mean value 0.021. Whereas for non-likely these are 0.154 and -0.007 respectively. A higher level of accruals is, therefore, associated with a higher likelihood of profit manipulation.

The maximum and average M-score of likely manipulator firms are 58.929 and 1.915 respectively. M-score values for non-likely manipulator firms have the maximum value of -2.283, the minimum value -5.656, the mean value -3.060. The firms having greater than -2.22 value of M-score are said to be probable manipulators.

**Table-I: Descriptive Statistics of M-score Variables**

Variable	Maximum		Minimum		Mean		Std. Deviation	
	LM	NLM	LM	NLM	LM	NLM	LM	NLM
DSRI	74.060	3.289	0.814	0.571	5.639	1.186	17.634	0.567
GMI	2.216	2.583	-0.312	-5.759	1.241	0.461	0.622	1.944
AQI	10.126	1.864	0.000	0.000	1.882	0.715	2.232	0.494
SGI	0.999	0.995	0.025	0.605	0.769	0.839	0.236	0.107
DEPI	2.052	2.086	0.666	0.806	1.052	1.065	0.342	0.254
SGAI	22.836	14.922	0.919	0.883	2.399	1.899	5.269	3.077
LEVI	1.159	2.193	0.842	0.629	1.039	1.080	0.082	0.303
TATA	0.101	0.154	-0.133	-0.220	0.021	-0.007	0.055	0.078
M-Score	58.929	-2.283	-2.206	-5.656	1.915	-3.060	14.716	0.985

LM= Likely Manipulator; NLM= Non-likely Manipulator

Source: Authors' calculation

## 4.2 The tendency of Earnings Manipulation

Table 2 presents the number of likely manipulator firms and the number of non-likely manipulator firms in the textile industry in 2020. We find that 17 of 37 firms are likely manipulators and 20 of 37 firms are non-likely manipulators. The percentage of likely manipulators and non-likely manipulators are 46% and 54% respectively. Though the percentage of likely manipulator firms is lower than the non-manipulator firms, the situation is still concerning for the industry as a whole.

**Table-2: Summary of Beneish M-score of textile firms**

	2020
Number of likely manipulator firm (m-score>-2.22)	17 46%
Number of non-likely manipulator firm (m-score<-2.22)	20 54%
Total	37 100%

Source: Authors' calculation

## 5.0 Additional Analysis

### 5.1 Independent Auditor's Change

Table 3 shows that 22 (59%) firms change their independent auditor in the year 2019-2020 and the other 15 (41%) firms do not. At the same time, of 22 firms which change their independent auditor, 10 firms are likely manipulators and 12 are non-likely manipulators. This means 59% likely manipulator firms and 60% non-likely manipulator firms changed their independent auditor during the year. On the other hand, of 15 firms who did not change their independent auditor 7 firms are likely manipulators and 8 firms are non-likely manipulators. The result shows 41% likely manipulators and 40% non-likely manipulator firms do not change their independent auditor during the year.

From the findings, we can say that there has no direct relationship between independent auditor change and earnings manipulation tendency. The changes are quite random.

**Table-3: Summary of Auditor Change of Textile Firms**

Auditor Change?	No. of Firms	%	No. of likely Manipulator Firms	%	No. of non-likely Manipulator Firms	%
Yes	22	59%	10	59%	12	60%
No	15	41%	7	41%	8	40%
Total	37	100%	17	100%	20	100%

Source: Authors' calculation

### 5.2 Independent Audit Opinion

Table 4 presents a summary of audit opinion between the two groups: likely manipulator firms and non-likely manipulator firms. The study finds that 21 firms out of 37 have been given unqualified audit opinions by the independent auditors, and the rest are given either qualified opinions or unqualified opinions with explanatory paragraphs. That is 56.76% of firms have been given unqualified opinions and 43.24% have been given qualified opinions. We also see that of 21 firms that have unqualified audit opinions 10 firms are from the likely manipulators group and 11 firms are from the non-likely manipulator groups. It is quite questionable that of 17 likely manipulator firms, 10 have been given unqualified opinions by the independent auditor. Proportionately 58.82% of firms in the likely manipulator group have been given unqualified opinions and the rest 41.18% firms have been given other (qualified or unqualified with explanatory paragraphs) type of opinions. At the same time, 55% of firms of the non-likely manipulator have been given unqualified audit opinions and the other 45% of firms have been given other types of opinions.

**Table-4: Summary of Audit Opinion**

Audit Opinion	No. of Firms	%	No. of likely Manipulator Firms	%	No. of non-likely Manipulator Firms	%
Unqualified	21	56.76%	10	58.82%	11	55.00%
Others	16	43.24%	7	41.18%	9	45.00%
Total	37	100%	17	100.00%	20	100%

Source: Authors' calculation

### 5.3 Board Independence

It can be expected that the existence of an independent director may reduce the risk or probability of earnings manipulation by ensuring effective corporate governance. Table 5 shows the summary of the proportion of independent board members between two groups: the likely manipulator group and the non-likely manipulator group. The study shows that

the maximum proportion of independent board members is 0.38 for likely manipulator firms and 0.75 for non-likely manipulator firms. At the same time, the minimum is 0.11 for likely manipulator firms and 0.17 for non-likely manipulator firms. The average is 0.24 for likely manipulator firms and 0.28 for non-likely manipulator firms. The relation is quite random though the maximum proportion of independent board members is achieved by non-likely manipulator firms is 0.78. This is because only one firm achieved this high rate. The second highest rate is 0.60 which is also achieved by a non-likely manipulator firm. All other rates, despite likely manipulators or non-likely manipulators, are similar or in a centered position. Thus, the average rate is 0.24 for likely manipulator firms and 0.28 for non-likely manipulator firms.

**Table-6: Summary of Board Independence**

	<b>The proportion of Independent Board Member of Likely Manipulator Firms</b>	<b>The proportion of Independent Board Member of Non-likely Manipulator Firms</b>
Maximum	0.38	0.75
Minimum	0.11	0.17
Average	0.24	0.28


Source: Authors' calculation

## 6.0 Discussion and Conclusion

As the business expands day-by-day, the concern about earnings manipulation becomes the burning issue for investors, lenders, and the government. The study aims at identifying the probable earnings manipulation of the textile industry in Bangladesh during the COVID-19 pandemic. The study reveals that 46% of firms are probably engaged in earnings manipulation. Though the rate is lower than the non-manipulator firms, the situation is still concerning. The study also investigates the status of auditor's change, audit opinion, and board independence of the likely and non-likely manipulator firms during the COVID-19 pandemic. The study finds evidence that the auditor change has no direct impact on earnings manipulation, but the role of independent audit opinion is still questionable. At the same time, the rate of board independence is not significantly changing between the manipulator group and the non-manipulator group.

This study fills a gap in the literature on earnings manipulation during an economic downturn posed by the COVID-19 pandemic in developing countries

like Bangladesh. Very few studies on the detection of earnings manipulation are carried out in pandemic settings, such as the COVID-19 pandemic. The textile industry in Bangladesh is heavily dependent on export and is greatly affected by the pandemic. Therefore, this study attempts to examine the tendency of earnings manipulation of firms gravely affected by the pandemic. The extant literature has limited studies in this area. It also assists stakeholders in identifying likely and non-likely manipulator firms, making smarter decisions, and establishing policies to limit the likelihood of manipulation. The study also contributes to the external auditors as a prescreening procedure to get an insight into the tendency of earnings manipulation of the textile industry during a pandemic year.

The study is not beyond the limitations. Although the strategy has limitations, some researchers have used the financial ratio technique, data mining, and the Beneish M-score model to detect financial fraud, we suggest future research by using different models of detecting earnings manipulation to see whether the results derived from the alternative models are consistent or not. Future researchers can examine the incentives behind the earnings manipulation during a pandemic such as the COVID-19 pandemic. 

## References

- Ahmed, H., and Azim, M. (2015). Earnings management behavior: A study on the cement industry of Bangladesh. *International Journal of Management, Accounting and Economics*, 2(4), 265-276.
- Ahmed, T. and Naima, J. (2016). Detection and analysis of probable earnings manipulation by firms in a developing country. *Asian Journal of Business and Accounting*, 9 (1), 59-82.
- Arman, M., and Sharmin, S. (2019). Likelihood of a Company's Manipulation of Its Financial Statement: An Empirical Analysis Using Beneish M-Score Model. *International Conference on Management and Information Systems*, Bangkok, Thailand, 117-125.
- Association of Certified Fraud Examiners (2014). *Global Fraud Study: Report to the Nations on Occupational Fraud and Abuse* [Online]. <https://acfe.com/rtnn/docs/2014-report-to-nations.pdf>.
- Association of Certified Fraud Examiners (2016). *Global Fraud Study: Report to the Nations on Occupational Fraud and Abuse* [Online]. <https://www.acfe.com/rtnn2016/docs/2016-report-to-the-nations.pdf>
- Atkeson, A. (2020). What Will Be the Economic Impact of COVID-19 in the US? Rough Estimates of Disease Scenarios. National Bureau of Economic Research, Working Paper 26867, available at <http://www.nber.org/papers/w26867.pdf> (accessed March 2, 2022).
- Baldwin, R. and Mauro, B. W. di (2020). *Economics in the Time of*



- COVID-19, CEPR Press, London.
- Beanworks (2021). The Most Shocking Cases of Accounting Fraud in 2021 and How To Protect Your Business. Available at <https://www.beanworks.com/blog/the-most-shocking-cases-of-accounting-fraud-in-2021-and-how-to-protect-your-business/> (accessed March 2, 2022).
- Beneish, M. D. (1997). Detecting GAAP violation: Implications for assessing earnings management among firms with extreme financial performance. *Journal of accounting and public policy*, 16(3), 271-309.
- Beneish, M. D. (1999). The Detection of Earnings Manipulation. *Financial Analysts Journal*, 55(5), 24–36. <https://doi.org/10.2469/faj.v55.n5.2296>
- Beneish, M. D., Lee, C. M., and Nichols, D. C. (2013). Earnings Manipulation and Expected Returns. *Financial Analysts Journal*, 69(2), 57–82. <https://doi.org/10.2469/faj.v69.n2.1>.
- Bhuiyan, M. H. U. (2015). Earnings management to exceed earnings threshold: Evidence from Bangladesh. *Journal of Business Studies*, XXXVI (3), 1-22.
- Bishop, T. J., and Wells, J. T. (2003). Breaking Tradition in the Auditing Profession. *Fraud Magazine* [Online]. <https://www.fraud-magazine.com/article.aspx?id=4294967866>.
- Biswas, P. (2018). A Study on the Investigation of Earnings Manipulation in the Form of Accruals Earnings Management (AEM): Evidence from Bangladeshi Firms. *International Journal of Management, Accounting and Economics*, 5(11), 829–848.
- Chintrakarn, P., Jiraporn, P., and Kim, Y. S. (2018). Did firms manage earnings more aggressively during the financial crisis? *International Review of Finance*, 18(3), 477-494. <https://doi:10.1111/irfi.12135>.
- Cox, J. (2019). The worst of the global economic slowdown may be in the past, Goldman says.' *CNBC* [Online]. <https://www.cnbc.com/2019/11/21/goldman-the-worst-of-the-global-economic-slowdown-may-be-in-the-past.html> (Accessed 23 December 2021).
- DeAngelo, L. (1988). Discussion of Evidence of Earnings Management from the Provision for Bad Debts.' *Journal of Accounting Research*, 26, 32–40. <https://doi.org/10.2307/2491177>.
- Dechow, P. M., Kothari, S. P., and Watts, R. L. (1998). The relation between earnings and cash flows.' *Journal of Accounting and Economics*, 25(2), 133-168. <https://www.sciencedirect.com/science/article/pii/S0165410198000202>.
- Dechow, P., Sloan, R., and Sweeney, A. (1996). Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC.' *Contemporary Accounting Research*, 13(2), 37-47. <http://dx.doi.org/10.1111/j.1911-3846.1996.tb00490.x>.
- Elliott, L. (2019). Nations must unite to halt global economic slowdown, says new IMF head. *The Guardian* [Online]. <https://www.theguardian.com/business/2019/oct/08/nations-must-unite-halt-global-economic-slowdown-new-imf-head-kristalina-georgieva> (Accessed 28 December 2021).
- Enomoto, M., Kimura, F., and Yamaguchi, T. (2015). Accrual-based and real earnings management: An international comparison for investor protection. *Journal of Contemporary Accounting & Economics*, 11(3), 183-198. <https://doi.org/10.1016/j.jcae.2015.07.001>.
- Experian (2020). Fraud rate rises 33% during Covid-19 lockdown. Available at <https://www.experianplc.com/media/latest-news/2020/fraud-rate-rises-33-during-covid-19-lockdown/> (accessed March 2, 2022).
- Fibre2Fashion (2019). Top 10 exporting countries of textile and apparel industry' [Online] <http://www.fibre2fashion.com/industry-article/8471/top-10-exporting-countries-of-textile-and-apparel-industry> (Accessed 21 December 2021).
- Fibre2Fashion (2021). Will Bangladesh apparel exports run out of steam in Oct-Dec '21? Available at [https://www.fibre2fashion.com/news/apparel-news/will-bangladesh-apparel-exports-run-out-of-steam-in-oct-dec-21--276780\\_newsdetails.htm#:~:text=Around%2095%20per%20cent%20of,imports%20all%20these%20from%20China](https://www.fibre2fashion.com/news/apparel-news/will-bangladesh-apparel-exports-run-out-of-steam-in-oct-dec-21--276780_newsdetails.htm#:~:text=Around%2095%20per%20cent%20of,imports%20all%20these%20from%20China) (Accessed on March 2, 2022).
- Halilbegovic, S., Čelebić, N., Cero, E., Buljubasic, E., and Mekic, A. (2020). Application of Beneish M-score Model on Small and Medium Enterprises in Federation of Bosnia and Herzegovina.' *Eastern Journal of European Studies*, 11(1), 146-1163.
- Hayes, A. (2021) 'What You Need to Know About Financial Distress.' *Investopedia* [Online] [https://www.investopedia.com/terms/ff/financial\\_distress.asp](https://www.investopedia.com/terms/ff/financial_distress.asp) (Accessed 25 December 2021).
- Healy, P.M. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics*, 7 (1-3), 85-107.
- Herawati, N. (2015). Application of Beneish M-Score models and data mining to detect financial fraud. *Procedia-Social and Behavioral Sciences*, 211, 924-930.
- International Trade Administration. (2019). Bangladesh - market overview' [Online] <https://www.trade.gov/country-commercial-guides/bangladesh-market-overview> (Accessed 28 December 2021).
- Islam, M. M., Khan, A. M., and Islam, M. M. (2013). Textile Industries in Bangladesh and Challenges of Growth. *Research Journal of Engineering Sciences*, 2(2), 31-37.
- Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29(2), 193-228. <https://doi.org/10.2307/2491047>.
- Kalunki, J.-P. and Martikainen, T. (1999), 'Financial failure and managers'accounting responses: Finnish evidence,' *Journal of Multinational Financial Management* 9, 15–26.
- Kaplan, J., Frias, L. and McFall-Johnsen, M. (2020). A third of the global population is on coronavirus lockdown – here's our constantly updated list of countries and restrictions. *Business Insider Australia*. [Online]. <https://www.businessinsider.com.au/countries-on-lockdown-coronavirus-italy-2020-3> (Accessed 28 December 2021).
- Karpoff, J.M. (2020). The future of financial fraud. *Journal of Corporate Finance*, 66, 101694.
- Kara, E., Ugurlu, M., & Korpi, M. (2015). Using Beneish model in identifying accounting manipulation: an empirical study in BIST manufacturing industry sector. *Journal of Accounting, Finance and Auditing Studies*, 1(1), 21-39.
- Kenton, W. (2021). Defining the Beneish Model', *Investopedia* [Online] <https://www.investopedia.com/terms/b/beneishmodel.asp#:~:text=Key%20Takeaways-,The%20Beneish%20model%20is%20a%20mathematical%20model%20that%20uses%20financial,the%20earnings%20have%20been%20manipulated> (Accessed 27 December 2021).
- Khan, A. R., and Akter, M. (2017). An Analysis of Earnings Management: Evidence from Food and Allied Industry of Bangladesh. *International Journal of Accounting and Financial Reporting*, 7(2), 59-372. <https://doi.org/10.5296/ijaf.v7i2.12205>.
- Kyriakou, M. I. (2020). Earnings Manipulation and Financial Distress in the

- Eurozone and the Role of Auditor Size during the Current Recession. *Journal of East-West Business*, 26 (4), 391-409. <https://doi.org/10.1080/10669868.2020.1848963>.
- Laksmana, I., & Yang, Y. (2015). Product market competition and corporate investment decisions. *Review of Accounting and Finance*, 14 (2), 128–148. <https://doi.org/10.1108/RAF-11-2013-0123>.
- McKibbin, W., & Fernando, R. (2021). The global macroeconomic impacts of COVID-19: Seven scenarios. *Asian Economic Papers*, 20(2), 1-30.
- Mohamad Kamal, M. E., Md Salleh, M. F., and Ahmad, A. (2016). Detecting Financial Statement Fraud by Malaysian Public Listed Firms: The Reliability of the Beneish M-Score Model. *Journal Pengurusan*, 46, 23-32. <https://doi.org/10.17576/pengurusan-2016-46-03>.
- Mollah, M. D., and Sakib, I. A. (2020). Detection of Financial Statement Frauds Using Beneish Model: Empirical Evidence from Listed Pharmaceutical Firms in Bangladesh. *International Journal of Management, Accounting and Economics*, 7(9), 506-521.
- Mulford, C. W., and Comiskey, E. E. (2002). The Financial Numbers Game Detecting Creative Accounting Practices. JOHN WILEY & SONS, INC.
- Myers, J. N., Myers, L. A., and Skinner, D. J. (2007). Earnings momentum and earnings management. *Journal of Accounting, Auditing & Finance*, 22(2), 249-284. <https://journals.sagepub.com/doi/abs/10.1177/0148558X0702200211>.
- Nelson, M. E. (2002). Evidence from Auditors about Managers' and Auditors' Earnings Management Decisions. *The Accounting Review*, 77(s-1), 175-202. <https://www.jstor.org/stable/3203332>.
- Nwoye, D. U., Okoye, E. I., and Oraka, A. O. (2013). Beneish Model as Effective Complement to the Application of SAS No. 99 in the Conduct of Audit in Nigeria. *Management and Administrative Sciences Review*, 2(6), 640-655.
- Ozili, P. K. (2021). Accounting and Financial Reporting during a Pandemic. SSRN (online). <https://ssrn.com/abstract=3613459> or <http://dx.doi.org/10.2139/ssrn.3613459> (Accessed 28 December 2021).
- Page, J., Hinshaw, D., and McKay, B. (2021). In Hunt for Covid-19 Origin, Patient Zero Points to Second Wuhan Market – The man with the first confirmed infection of the new coronavirus told the WHO team that his parents had shopped there. *The Wall Street Journal* (online). <https://www.wsj.com/articles/in-hunt-for-covid-19-origin-patient-zero-points-to-second-wuhan-market-11614335404> (Accessed 20 December 2021).
- Parvin, R. (2020). Earnings Management Practice in Bangladesh. *International Journal of Business and Management Future*, 4(1), 27-32. <https://doi.org/10.46281/ijbmf.v4i1.492>.
- Pustynick, I. (2009). Combined Algorithm for Detection of Manipulation in Financial Statements', [Online]. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1422693](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1422693) (Accessed 15 December 2021).
- Ramachandran, S. (2020). The COVID-19 Catastrophe in Bangladesh. *The Diplomat* [Online] <https://thediplomat.com/2020/04/the-covid-19-catastrophe-in-bangladesh/> (Accessed 22 December 2021).
- Razzaque, R. M., Rahman, M. Z., and Salat, A. (2006). Earnings management: An analysis on textile sector of Bangladesh. *The Cost and Management*, 34(5), 5-13.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335-370. <https://doi.org/10.1016/j.jacceco.2006.01.002>.
- Sakib, I. A. (2019). Detection of Earnings Manipulation Practices in Bangladesh. *International Journal of Management, Accounting and Economics*, 6(8), 16-631.
- Shah, A.K. (1998). Exploring the Influences and Constraints on Creative Accounting in The United Kingdom. *European Accounting Review*, 7(1), 83-104. <https://doi.org/10.1080/096381898336592>.
- Talab, H., Hammood, H., and Ali, S. I. (2017). Role of Beneish M-score Model in Detecting of Earnings Management Practices: Empirical Study in Listed Banks of Iraqi Stock Exchange. *International Journal of Applied Business and Economic Research*, 15(23), 124-135.
- Tarjo and Herawati, N. (2015). Application of Beneish M-Score Models and Data Mining to Detect Financial Fraud. *Procedia - Social and Behavioral Sciences*, 211, 924-930. <https://doi.org/10.1016/j.sbspro.2015.11.122>.
- Techpacker (2017). Top 4 Asian Countries for Garment Manufacturing. available at <https://techpacker.com/blog/manufacturing/top-4asian-countries-for-garment-manufacturing/> (accessed March 2, 2022).
- TransUnion (2021). Suspected Financial Services Digital Fraud Attempts Rise Nearly 150% Worldwide As Prevalence of Digital Transactions Increase. Available at <https://newsroom.transunion.com/suspected-financial-services-digital-fraud-attempts-rise-nearly-150-worldwide-as-prevalence-of-digital-transactions-increase/> (accessed March 2, 2022).
- Tuovila, A. (2020). Earnings Management Definition. Investopedia [Online] <https://www.investopedia.com/terms/e/earnings-management.asp> (Accessed 15 November 2021).
- Valaskova, K., Androniceanu, A-M., Zvarikova, K., & Olah, J. (2021). Bonds Between Earnings Management and Corporate Financial Stability in the Context of the Competitive Ability of Enterprises. *Journal of Competitiveness*, 13(4), 167–184. <https://doi.org/10.7441/joc.2021.04.10>.
- Wazir (2020). Impact of COVID-19 Scenario on European and the US Apparel Market The Big Fall: EU and the US Apparel Consumption to Reduce by US\$ 300 bn'. Available at <https://wazir.in/pdf/Wazir%20Report%20-%20The%20Big%20Fall%20%20Impact%20of%20COVID-19%20on%20EU%20and%20US%20Apparel%20Market.pdf> (accessed March 2, 2022).
- Zhu, X., Ao, X., Qin, Z., Chang, Y., Liu, Y., He, Q., & Li, J. (2021). Intelligent financial fraud detection practices in post-pandemic era. *The Innovation*, 2(4), 100176.
- Zimmer, C. (2021). The Secret Life of a Coronavirus – An oily, 100-nanometer-wide bubble of genes has killed more than two million people and reshaped the world. Scientists don't quite know what to make of it. *The New York Times*. <https://www.nytimes.com/2021/02/26/opinion/sunday/coronavirus-alive-dead.html> (Accessed 28 December 2021).
- Zumbrun, J. (2020). Coronavirus Slump Is Worst Since Great Depression. Will It Be as Painful? *The Wall Street Journal* [Online]. <https://www.wsj.com/articles/coronavirus-slump-is-worst-since-great-depression-will-it-be-as-painful-11589115601> (Accessed 28 December 2021).