Evaluation of Financial Soundness of Dhaka Stock Exchange (DSE) Listed Textile Industry in Bangladesh

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Abstract: The present study is concentrated on evaluating the financial soundness of the Dhaka Stock Exchange (DSE) listed textile industry in Bangladesh. A total of 13 textile companies were selected randomly for the present study. The research primarily relies on information from secondary data sources covering the five years from 2016 to 2020. To evaluate the financial soundness of textile companies, the researchers employed ratio analysis, ANOVA, and MDA. The liquidity position in terms of the current ratio is moderately satisfactory. In the case of the NWC ratio, even found a negative ratio for a few companies. Profitability ratios were not so handsome during the study period; even loss was observed for some companies. ROA and ROI results also focused on inferior performance on average. Regarding ROCE, 6 out of 13 demonstrated alarming performance, whereas few companies showed average efficiency. Activity ratios also showed dissatisfactory findings during the study period. The solvency position of the companies is measured using the debt-equity and interest coverage ratios. Only five companies out of 13 show a satisfactory interest coverage ratio. On the other hand, most companies focus on a higher debt-equity ratio, indicating a high risk. An average satisfactory EPS was observed for 50% of the companies, whereas the other 50% showed poor EPS. Most companies retained their earnings to expand the organization and, as a result, viewed low DPS. For most cases, ANOVA identified significant differences for different ratios among the companies and years. From the average results of the Z score, it is observed that all selected companies are in a distressed or grey area regarding financial health. To increase financial soundness, textile companies should increase current assets or decrease current liabilities, handle long-term capital carefully, increase sales in cash or by creating good purchasers, increase NWC, increase EBIT by cutting operating costs and the cost of goods supplied etc. However, to reduce expenses, companies must ensure the smooth operation of the business.

Keywords: Textile, DSE, Ratio Analysis, MDA, Financial Soundness.

1.0 Introduction

The term 'Made in Bangladesh' is a sign of pride for workers, businesses, and consumers in the textile-clothing sector (Baumann-Pauly, Labowitz, and Banerjee, 2015, cited by Masum, 2016). Bangladesh is the second-largest clothing exporter in the world. Furthermore, it is the EU's second-biggest clothing supplier and the USA's third-biggest clothing supplier. Bangladesh's clothing exports grew by more than 60 per cent from fiscal year (FY) 12 to FY18. The textile industry is the largest labour-intensive manufacturing sector of the country, which employs about 5 million people, out of which about 80 per cent are female. On the other hand, the textile and apparel industries are the fastest-growing sectors of Bangladesh's economy (Bangladesh Economic Review, 2019). Bangladesh's textile and garment industries are also the country's largest foreign exchange earners, whereas the majority of the nation's exports (80%) are generated by this industry. Furthermore, the textile sector works as a backward and forward linkage industry at a time. So, vast numbers of people are directly and indirectly involved in this industry. How successfully a company uses resources from its main line of business is measured subjectively as financial soundness, generate revenues and reduce a firm's exposure to systematic liquidity risk by affecting firm valuation and cost-of-capital through their impact on different aspects of liquidity, especially when a financial crisis may arise. The financial soundness measurement of a firm is crucial for its managers, investors, business partners and financial analysts to make decisions for increasing the performance and efficient operation, to develop an activity or avoid bankruptcy, to make good and profitable investments, to choose solvent business partners and realize a hierarchy and comparative analysis of the firms acting in a particular sector or within an industry for a certain period (Hada, Misu and Avram, 2019). As one of the driving forces of Bangladesh's economy, the textile industry demands a sound financial position. So, the purpose of the study is to explore the status of the financial soundness of the textile industry in Bangladesh.

2.0 Statement of the Problem

The present study highlighted the research problem in investigating the financial soundness of the textile industry in Bangladesh. The history of textile goods production in Bangladesh dates back to prehistoric times until the Industrial Revolution in the 18th century. The Bangle contributes to textile production as a cottage industry (Islam et al., 2013). However, with the change of political regime in the sub-continent, global technological advancement, and Bangladesh's independence, the textile industry has emerged as the country's great source of export earnings. According to the Bangladesh Textile Mills Association (BTMA), the textile industry makes up over 13% of Bangladesh's Gross Domestic Product (GDP), and more than 86 per cent of the export earnings come from the export of textile and textile-related products (https://btmadhaka.com/,n.d.). The textile industry and its backward and forward linkage industries are the driving source of investment and employment, especially women's employment and social growth in Bangladesh. During FY21, the total export earnings of Bangladesh were USD38758.31 million, of which home textile export was USD1132.03 million (Export Promotion Bureau (EPB), 2021). However, the published annual report of the Dhaka Stock Exchange (DSE) listed textile companies showed that the profit after tax of several companies was negative in 2020. The aforesaid growing industry also suffers from the global recession, unfavourable trade policies, internal security concerns, the high cost of production due to increased energy costs, various safety issues, especially fire, etc. (Islam et al., 2013). The textile industry is the potential source of unskilled or semi-skilled employment and export earnings for Bangladesh. The industry should have sound financial strength and require time-to-time prudential policy support with the change in global trade policy. Considering the stated issues, investigation of the financial soundness of the textile

industry in Bangladesh is essential to ensure the industry's efficient operation, higher export earnings, and reduced unemployment and poverty. So, the present study attempted to explore the financial soundness of the textile industry in Bangladesh.

3.0 Objectives of the Study
The study's objectives are as follows.
  i.   to explore and compare the financial soundness of the selected textile industries of Bangladesh;
  ii.   to way out enhancing the financial strength and efficient operation of the textile industry in Bangladesh.

4.0 Literature Review
Studies in several countries empirically found that the textile industry has played an important role in the economy in generating employment opportunities, earning foreign currencies, and reducing poverty and inequality in the country (Bathrinath, et al., 2021). Examining the financial performance of the textile industry in Bangladesh, as investigated by Hoque (2017), uncovered an adverse impact on financial performance due to financial leverage tools such as the debt-to-equity and debt-to-assets ratios when measured in terms of return on assets and return on capital employed. Nithyal and Dharshini (2019) found significant differences in the financial performance of selected textile industries in India regarding growth rate, trend analysis, and efficiency position.

Fatema et al. (2018) analyzed the financial performance of selected textile companies in Bangladesh regarding profitability, liquidity, and solvency. The study found the volatility in the textile market and the prices of ingredients. The stated volatile market affects the profitability of the company, while the liquidity and solvency position of the textile firms were almost stable during the study period. Mitra and Adhikary (2017) examined the determinants of the financial performance of textile sector firms in Bangladesh and did not find any relationship among the size, capital expenditure, and sponsor shareholding with return on assets of the firms, where profit margin, asset turnover, and capital expenditure were found to the significant. Gupta (2017) studied the performance of selected textile companies in India from 2012 to 2016. The study aimed to assess and compare liquidity, solvency, profitability, and managerial efficiency among the chosen textile companies. Additionally, the research explored notable variations in return on capital employed, net profit margin, current ratio, debt to equity ratio, and fixed asset turnover ratio using the Analysis of Variance (ANOVA) technique. Applying the Cost-Volume-Profit (CVP) analysis technique, Ali and Huq (2016) evaluated the performance of 14 textile companies in Bangladesh from 2012 to 2013 and observed the increasing trend of operating profit with the marginal contribution. The study's findings also revealed that performance analysis indicators of CVP, like contribution margin, break-even sales, and margin of safety, were changed positively, whereas the degree of operation leverage and earnings per share changed negatively during the study period. Ahmad et al. (2015) studied the profitability determinants of textile firms in Pakistan using large, unbalanced panel data from 2006 to 2011. The study observed that the firm's profitability is positively influenced by sales and affected by the firm's financial leverage. Anand (2014) examined the financial position of selected textile companies in India. The research utilized the comparative method of financial ratio analysis to assess the financial robustness of textile firms, examining factors such as profitability, liquidity, solvency, and the effective utilization of resources. The study observed that the volatility in the textile market and raw material prices affect the profitability margins of the companies. However, the liquidity and solvency position is almost the same in all the selected textile companies. Ayyappan, et al. (2014) investigated the financial performance of the selected textile industry in India regarding various factors like marketplace, competitiveness, technology, environment protection, and strategic positioning. The study suggested that the management of the textile industry should try to adopt cost-reduction techniques to control the cost of goods sold and the company's operating expenses. Azarmi (2014) used panel data from 16 Turkish textile companies from 1992 to 2012 to

explore the industry's financial performance. The study found that the return on assets of the Turkish textile industry was affected by the changes in the size of the company and tax benefits. Following China, Indian textile firms have played a vital role in GDP growth, export earnings, foreign exchange reserves, employment and production (Marimuthu and Jessica, 2014). Applying the factor analysis techniques, Marimuthu and Jessica (2014) tried to identify the financial performance and risk factors of Indian textile firms. The study explored the fact that management outlook highly influences the performance of textile companies. The study focused on competition as the most important risk factor for textile companies in India. Bashir (2013) tried to determine the determinants of the textile firm's performance in Pakistan from 2005 to 2010 using a fixed effect regression model. The study identified that variables like a firm's size, growth, leverage, liquidity, risk, tax, tangibility, and non-debt tax shield are significant determinants of the profitability of the textile industry. Islam et al. (2013) investigated the growth challenges of the textile industry in Bangladesh. The study claimed that global recession, unfavorable trade policies, internal security concerns, high production costs due to increased energy costs, different safety issues, especially fire, etc., distress the growth of the textile industry. Rahman (2009) analyzed the financial performance of textile firms in Bangladesh by applying Multivariate Discriminate Analysis (MDA) from 2006 to 2008. The study observed that most textile firms' financial position and performance are not healthy because of insufficient profit-earning capacity and poor liquidity, which causes bankruptcy. The study also identified that factors like the absence of realistic goals, management inefficiency, increased cost of raw materials, labor, overhead, etc., and strict government regulation are leading causes of bankruptcy of textile firms in Bangladesh.

The reviewed literature in the study depicts the role of the textile industry in economic growth and development and the determinants and risk factors associated with the financial soundness of the textile industry both from national and international perspectives. The findings of the reviewed literature reveal that the textile industry in Bangladesh requires an intensive study to analyze the financial soundness of textile firms and their efficiency as competitors with peer countries' textile firms. herefore, the present research attempts to review the financial soundness of the textile industry in Bangladesh. Moreover, the present study's findings will add a policy prescription to operate the textile industry efficiently and effectively in Bangladesh.

5.0 Research Methodology

5.1 Hypotheses of the Study
Based on the research problem, the review of literature, and objectives, the following null hypotheses have been developed to facilitate the study.

$1\text{-}H_0$:   There are no significant differences in respect of ratios among selected companies and years.

$2\text{-}H_0$:   There are no significant differences in respect of z-scores among selected companies and years.

5.2 Sampling and Sample of the Study
In this research study, a simple random sampling technique has been applied. To analyze the financial soundness, 13 DSE-listed textile companies are considered as a sample. The study collected 5 years of data from 2016 to 2020 for the financial variables of the selected companies.

5.3 Processing, Analyzing and Interpreting of Data

Different relevant tools, such as ratios and MDA, have been used to analyze, process, and interpret data. The statistical software SPSS version 23.00 is used for data analysis. Two-way ANOVA is used to determine whether there are any significant differences among companies and years on different ratios and MDA.

5.3.1 Ratio Analysis

Table-1: Financial Soundness Indicators

Liquidity Ratio		
Current Ratio	=	Current Assets to Current Liabilities
Net Working Capital Ratio	=	Net Working Capital to Capital Employed
Profitability Ratio		
Gross Profit Ratio	=	Gross Profit to Sales
Net Profit Ratio	=	Profit after Tax to Sales
ROA	=	Profit after Tax to Total Assets
Return on Capital Employed	=	Profit after Tax to Capital Employed
Return on investment	=	Net Profit Margin × Investment Turnover
Activity Ratio		
Inventory Turnover Ratio	=	Cost of Goods Sold to Average Inventory
Assets Turnover Ratio	=	Sales to Total Assets
Solvency Ratio		
Debt Equity Ratio	=	Long Term Debt to Equity Capital
Interest Coverage Ratio	=	Earnings before Interest and Tax to Interest Expense
Valuation Ratio		
Earning per Shares	=	PAT to Number of Outstanding Shares
Dividend per Shares	=	Dividend paid to Number of Outstanding Shares
Payout Ratio	=	Dividend per Share to Earnings per Share

Source: Mohapatra, 2007

5.3.2 Multiple Discriminant Analysis (MDA)

Multiple discriminant analysis (MDA) is a multivariate technique used by Altman to predict corporate failure. Under this technique, a single discriminate score, called Z, is calculated for each year by using 5 financial ratio variables as follows:

$Z = 0.717X_1 + 0.847X_2 + 3.107X_3 + 0.420X_4 + 0.998X_5$ (Rim & Roy, 2014)

Here,

X_1 = Working capital/ Total assets
X_2 = Retain earnings/ Total assets
X_3 = EBIT/ Total assets
X_4 = Book value of equity/ Total liabilities
X_5 = Sales/ Total assets

6. Ratio Analysis

Ratio analysis is one of the most rife financial statement analysis tools. It facilitates computing and compares the results of different sizes of businesses.

6.1 Liquidity Ratio

The liquidity ratio identifies the organization's strength in meeting its day-to-day obligations. Short-term creditors, banks and financial institutions, bondholders, management bodies etc., are the key users of this ratio (Mohapatra, 2007, p. 151). Table number 2 shows the liquidity position of selected textile companies in Bangladesh.

Table-2: Liquidity Analysis

Companies		2016	2017	2018	2019	2020	Average
ALTML	a.	281.12	289.63	254.79	148.10	146.23	**223.97**
	b.	114.38	117.17	111.96	121.24	130.98	**119.15**
AIL	a.	136.72	79.74	53.15	87.79	37.98	**79.08**
	b.	27.56	-27.12	-113.77	-12.32	-175.25	**-60.18**
AYDL	a.	58.68	63.21	69.34	77.09	80.75	**69.81**
	b.	-45.19	-38.88	-30.35	-22.68	-19.38	**-31.30**
ASLML	a.	115.67	113.19	111.12	116.22	125.50	**116.34**
	b.	36.95	26.13	23.96	31.54	43.00	**32.32**
DGL	a.	79.99	97.60	111.56	118.25	150.87	**111.65**
	b.	-56.32	-3.60	20.41	32.20	38.38	**6.21**
ETL	a.	88.63	84.95	86.32	106.65	110.63	**95.44**
	b.	-8.76	-15.54	-15.97	6.48	10.11	**-4.73**
HRTML	a.	99.98	95.81	84.71	124.60	121.88	**105.40**
	b.	-0.05	-10.07	-40.92	20.65	22.82	**-1.51**
MSML	a.	149.41	147.12	127.73	120.84	125.57	**134.13**
	b.	28.51	30.74	23.28	20.80	25.65	**25.80**
RTML	a.	57.70	88.16	102.84	88.50	81.99	**83.84**
	b.	-65.99	-27.42	8.70	-44.43	-56.62	**-37.15**
SSML	a.	200.85	160.25	91.65	144.06	200.36	**159.43**
	b.	34.91	37.21	-8.82	32.91	44.58	**28.16**
STML	a.	157.40	141.66	133.70	148.19	139.70	**144.13**
	b.	32.23	29.76	31.28	16.72	17.27	**25.45**
STL	a.	184.04	151.45	269.38	258.38	5269.51	**1226.55**
	b.	48.10	38.55	79.20	88.00	148.75	**80.52**
SQTL	a.	296.08	204.46	147.55	117.12	103.86	**173.81**
	b.	47.06	37.04	24.63	13.29	4.04	**25.21**

Source: Authors' calculation on the basis of data from annual reports of selected companies during 2016-2020

Table 2 shows the results of liquidity analysis in terms of current and net working capital ratios. The current ratio highlighted the firm's ability to meet up short-term obligations. Short-term creditors always favour a higher current ratio. Again, higher liquidity indicates lower profitability because of holding more current assets in the business. Therefore 2:1 or 200 per cent is the ideal current ratio of any firm (Mohapatra, 2007, p.154). Table 2 (a) depicts the results of current ratios. A comparison of the average results shows that ALTML (223.97%) and SQTL (173.81%) are in a good position compared to others. The current ratio for STL was, on average, satisfactory from 2016 to 2019. But in 2020, STL reduced its current liabilities dramatically and being

for this; the ratio was 5269.51 per cent. So STL should invest its leisure current assets. Due to the high per centage of the current ratio of STL in 2020, the average value also shows a high ratio (1226.55%). The other seven companies demonstrate a lower average current ratio ranging from 69.81 per cent to 159.43 per cent. So, these companies should increase current assets or decrease current liabilities to obtain an ideal current ratio.

Net working capital (NWC) is the difference between an organization's current assets and current liabilities. NWC ratio indicates whether a firm can operate its business smoothly in the short term. Both excessive and inadequate working capital is risky for a firm since excessive working capital leads to un-remunerative use of scarce funds, and inadequate working capital management interrupts regular operation (Ahmed, Mahtab, Islam and Abdullah, 2017). ALTML shows the highest average ratio (119.15%), whereas AIL depicts the lowest average and negative (-60.18%) ratio. A negative NWC ratio indicates an organization's risky position, i.e. firms cannot pay their current obligations. Table no. 2 shows that out of 13 companies, 5 depict a negative NWC ratio, and another 5 companies represent a lower NWC ratio (below 30%). A higher NWC ratio of one organization to another indicates a more remarkable ability to meet its current obligations. So, the NWC ratio should be satisfactory for the company.

Table-3: ANOVA: Two-Factor without replication for liquidity

Ratio	Sources of variation	F	P-value	F-crit.
Current Assets to Current Liabilities	Year	1.20	0.31	1.96
	Company	0.96	0.44	2.57
Net Working Capital to Capital Employed	Year	10.84	0.00	1.96
	Company	0.36	0.84	2.57

Source: Calculated on the basis of Table-2

From table number 3, it is observed that the calculated value of F is lower than the table value of F for net premium to capital. Thus, no differences were observed among the years and companies regarding current assets to current liabilities under the review period. Significant differences among years were observed at 1% level of significance for net working capital to capital employed, but no differences situation were observed among companies under the review period regarding the same ratio.

6.2 Profitability Ratio

The profitability ratio judges the ability of the firm to generate profits that would be adequate to support its operations and also ensure a fair return on its investment (Mahapatra, 2007, p.151).

Table-4: Profitability Analysis

Companies		2016	2017	2018	2019	2020	Average
ALTML	a.	11.18	14.35	6.69	-28.23	-30.45	**-5.29**
	b.	6.90	10.91	0.37	-44.42	-22.06	**-9.66**
	c.	4.94	5.78	0.16	-4.75	-2.38	**0.75**
	d.	11.31	12.78	0.38	-20.06	-10.96	**-1.31**
	e.	4.94	5.78	0.16	-4.75	-2.38	**0.75**
AIL	a.	15.51	14.05	-62.62	-61.59	-63.20	**-31.57**
	b.	6.29	-9.90	-114.18	-162.55	-185.65	**-93.20**
	c.	2.04	-3.03	-12.01	-9.24	-8.12	**-6.07**
	d.	5.25	-8.33	-43.96	-30.37	-34.69	**-22.42**

	e.	2.04	-3.03	-12.01	-9.24	-8.12	**-6.07**
AYDL	a.	20.60	17.84	17.80	17.78	12.92	**17.39**
	b.	9.20	5.52	5.38	5.55	1.66	**5.46**
	c.	4.39	2.28	2.31	2.18	0.62	**2.36**
	d.	9.94	5.08	4.99	4.70	1.34	**5.21**
	e.	4.39	2.28	2.31	2.18	0.62	**2.36**
ASLML	a.	7.99	7.65	7.97	8.12	8.08	**7.96**
	b.	0.69	0.72	0.67	0.77	0.45	**0.66**
	c.	1.60	1.75	1.67	1.96	0.97	**1.59**
	d.	5.40	5.23	5.28	5.82	2.73	**4.89**
	e.	1.60	1.75	1.67	1.96	0.97	**1.59**
DGL	a.	14.36	16.47	14.78	10.00	10.61	**13.24**
	b.	6.36	9.17	5.23	2.53	0.72	**4.80**
	c.	10.57	14.42	7.45	3.97	1.07	**7.50**
	d.	42.06	37.23	22.31	11.84	2.15	**23.12**
	e.	10.57	14.42	7.45	3.97	1.07	**7.50**
ETL	a.	18.83	17.83	15.88	18.63	15.83	**17.40**
	b.	7.44	5.28	4.37	6.08	3.35	**5.30**
	c.	2.49	2.00	1.89	3.12	1.52	**2.20**
	d.	6.00	5.33	5.28	8.62	4.03	**5.85**
	e.	2.49	2.00	1.89	3.12	1.52	**2.20**
HRTML	a.	17.17	14.55	14.02	14.04	14.23	**14.80**
	b.	2.78	2.19	2.11	1.97	1.25	**2.06**
	c.	2.05	2.41	2.65	1.68	0.80	**1.92**
	d.	8.79	9.78	11.09	4.36	2.60	**7.32**
	e.	2.05	2.41	2.65	1.68	0.80	**1.92**
MSML	a.	20.48	17.37	17.21	16.63	14.35	**17.21**
	b.	4.16	1.82	2.46	0.66	-2.07	**1.41**
	c.	1.20	0.83	1.20	0.29	-0.88	**0.53**
	d.	2.28	1.68	2.56	0.66	-2.03	**1.03**
	e.	1.20	0.83	1.20	0.29	-0.88	**0.53**
RTML	a.	17.23	16.51	15.78	13.56	11.15	**14.85**
	b.	6.87	6.27	5.10	4.29	0.56	**4.62**
	c.	6.61	4.01	3.19	2.70	0.42	**3.39**
	d.	18.49	16.10	15.88	15.19	2.03	**13.54**
	e.	6.61	4.01	3.19	2.70	0.42	**3.39**
SSML	a.	14.69	17.50	16.71	23.98	-4.16	**13.74**
	b.	1.62	2.13	2.08	-2.65	-51.39	**-9.65**
	c.	0.55	0.89	0.79	-0.88	-8.65	**-1.46**
	d.	1.18	2.23	2.30	-2.82	-26.84	**-4.79**
	e.	0.55	0.89	0.79	-0.88	-8.65	**-1.46**
STML	a.	12.01	15.14	12.02	12.86	5.78	**11.56**
	b.	4.69	6.04	5.01	-3.37	-4.77	**1.52**
	c.	1.90	2.12	2.20	-1.50	-1.32	**0.68**

	d.	3.22	3.79	4.47	-2.23	-2.08	**1.43**
	e.	1.90	2.12	2.20	-1.50	-1.32	**0.68**
STL	a.	13.93	14.10	16.78	18.03	11.35	**14.84**
	b.	-1.47	-3.00	-1.89	3.45	-15.62	**-3.71**
	c.	-0.60	-1.48	-0.88	1.65	-5.94	**-1.45**
	d.	-1.26	-3.20	-1.99	3.92	-15.25	**-3.55**
	e.	-0.60	-1.48	-0.88	1.65	-5.94	**-1.45**
SQTL	a.	14.22	10.17	10.29	10.76	7.16	**10.52**
	b.	9.03	5.33	4.88	4.07	0.52	**4.77**
	c.	7.97	4.06	3.98	3.16	0.36	**3.90**
	d.	10.12	5.62	6.15	5.73	0.74	**5.67**
	e.	7.97	4.06	3.98	3.16	0.36	**3.90**

Source: Authors' calculation on the basis of data from annual reports of selected companies during 2016-2020

A high gross profit ratio generally means better management of the firm in terms of its lower cost of production if other things, such as inventory valuation and pricing, are fair (Mohapatra, 2007, p.158). There is no rule of thumb for the gross profit ratio, but the higher the ratio, the better the performance. Table-4 describes the gross profit ratio from 2016 to 2020 and their average. The highest average gross profit ratio is 17.40 per cent for ETL. A similar gross profit ratio was found for AYDL (17.39%) and MSML (17.21%), followed by RTML (14.85%), STL (14.84%), HRTML (14.80%), SSML (13.74%), DGL (13.24%), STML (11.56%), SQTL (10.52%), and ASLML (7.96%). AIL and ALTML show negative ratios that indicate these two companies face average losses. More specifically, ALTML faces losses from 2019 to 2020, and AIL faces losses from 2018 to 2020.

Net profit ratio (NPR), calculated as profit after tax to sales, is a measure of a firm's managerial ability to provide reasonable compensation to the owners for planting their capital at risk and also to withstand adverse economic conditions due to falling demand, reduced selling price and increased cost of production (Mohapatra, 2007, p.159). The company AYDL shows the highest NPR (5.46%), whereas AIL shows the lowest and negative NPR (-93.20%). The eight companies demonstrate positive average ratios out of thirteen, ranging from 0.66 per cent to 5.46 per cent. Due to inferior performance in 2019 and 2020, and sometimes in 2018, overall NPR scenarios are not satisfactory. So, companies should emphasize increasing profit through efficient business operations.

Return on total assets (ROA) would help the firm determine how efficient its management is in terms of asset productivity. However, there is no standard benchmark. Industry average or intra and inter-firm comparison would, therefore, be helpful for judging the firm's performance. Table 4 issue (c) shows the ROA picture of 13 selected companies. The highest ROA was observed for DGL at 14.42 per cent in 2017. The average ROA for DGL is 7.50 per cent. The highest negative ROA was -12.01 per cent for AIL in 2018. The average ROA for AIL is -6.07. All other companies were evidence for poor ratio ranging from -4.75 per cent to 4.94 per cent (ALTML), 0.62 per cent to 4.39 per cent (AYDL), 1.89 per cent to 2.49 per cent (ETL), 0.80 per cent to 2.65 per cent (HRTML), -0.88 per cent to 1.20 per cent (MSML), 0.42 per cent to 6.61 per cent (RTML), -8.65 per cent to 0.89 per cent (SSML), -1.50 per cent to 2.12 per cent (STML), -5.94 per cent to 1.65 per cent (STL) and 0.36 per cent to 7.97 per cent during the study period.

The higher the ROCE, the more efficient the firm's management is in using long-term capital (Mohapatra, 2007, p.162). Table 4 (d) shows the ROCE picture of selected 13 companies. DGL, RTML and AYDL show a

good view of ROCE, ranging from 2.15 per cent to 42.06 per cent, 2.03 per cent to 18.49 per cent, and 1.34 per cent to 9.94 per cent. All other companies were evidend for poor ratios ranging from -20.06 per cent to 12.78 per cent (ALTML), -43.96 per cent to 5.25 per cent (AIL), 1.89 per cent to 2.49 per cent (ETL), 0.80 per cent to 2.65 per cent (HRTML), -0.88 per cent to 1.20 per cent (MSML), 0.42 per cent to 6.61 per cent (RTML), -8.65 per cent to 0.89 per cent (SSML), -1.50 per cent to 2.12 per cent (STML), -5.94 per cent to 1.65 per cent (STL) and 0.36 per cent to 7.97 per cent during the study period. For most companies, ROCE gradually decreased. Out of 13 companies, the performance of 6 companies (ALTML, AIL, MSML, SSML, STML and STL) is very alarming and needs to be rethought regarding the ROCE of these companies. Firms' management should carefully use long-term capital with proper analysis to produce a profit.

ROI is calculated as per Du Pont, the pioneering work of the US-based Du Pont company. The average ROI are 0.75, -6.07, 2.36, 1.59, 7.50, 2.20, 1.92, 0.53, 3.39, -1.46, 0.68, -1.45 and 3.90 for ALTML, AIL, AYDL, ASLML, DGL, ETL, HRTML, MSML, RTML, SSML, STML, STL, and SQTL respectively. Among the selected companies, DGL depicts the highest ROI with a decreasing tendency from 2016 to 2020. On the other hand, AIL shows the lowest, even negative, average ROI of -6.07. The total number of 3 companies produces a negative ROI out of 13. As a whole, the ROI of the selected companies is not satisfactory. Du Pont analysis indicates that the performance of the firm can be improved by generating more profit margin per Tk. sales or by generating more sales per Tk. of investment or by both.

Table-5: ANOVA: Two-Factor without replication for profitability

Ratio	Sources of variation	F	P-value	F-crit.
Gross Profit to Sales	Year	5.62	0.00	1.96
	Company	2.95	0.03	2.57
Profit after Tax to Sales	Year	5.83	0.00	1.96
	Company	2.66	0.04	2.57
Profit after Tax to Total Assets	Year	8.84	0.00	1.96
	Company	9.42	0.00	2.57
Profit after Tax to Capital Employed	Year	9.16	0.00	1.96
	Company	7.73	0.00	2.57
Return on Investment (ROI)	Year	8.84	0.00	1.96
	Company	9.42	0.00	2.57

Source: Calculated on the basis of Table-4

The calculated F value exceeds the table F value for all ratios, as observed from table number 5. The p-values remain between 0.00 to 0.04. Thus, there is a significant difference among the years and companies regarding profitability ratios (Profit after Tax to Sale, Profit after Tax to Total Assets, Profit after Tax to Capital Employed and Return on Investment) under the review period.

6.3 Activity Ratio
Activity ratios measure how efficiently a company manages and utilizes its assets. It helps to evaluate a business's operating efficiency by analyzing fixed assets, inventories, and account receivables. It expresses a business's financial health and indicates the utilization of the balance sheet components.

Table-6: Activity Ratio Analysis

Companies		2016	2017	2018	2019	2020	Average
ALTML	a.	5.06	2.31	1.12	0.50	0.20	**1.84**
	b.	0.72	0.53	0.45	0.11	0.11	**0.38**
AIL	a.	1.06	1.12	0.91	0.71	1.10	**0.98**
	b.	0.32	0.31	0.11	0.06	0.04	**0.17**
AYDL	a.	3.68	2.93	2.96	2.20	1.03	**2.56**
	b.	0.48	0.41	0.43	0.39	0.37	**0.42**
ASLML	a.	16.07	15.15	17.06	12.32	12.95	**14.71**
	b.	2.32	2.42	2.48	2.55	2.15	**2.38**
DGL	a.	7.72	3.81	4.06	5.63	0.52	**4.35**
	b.	1.66	1.57	1.43	1.57	1.47	**1.54**
ETL	a.	2.22	2.08	2.24	2.14	3.27	**2.39**
	b.	0.33	0.38	0.43	0.51	0.45	**0.42**
HRTML	a.	3.21	4.35	4.84	4.05	1.95	**3.68**
	b.	0.74	1.10	1.26	0.85	0.64	**0.92**
MSML	a.	1.16	1.94	1.94	1.61	3.03	**1.94**
	b.	0.29	0.46	0.49	0.44	0.43	**0.42**
RTML	a.	5.18	2.82	2.01	2.41	3.57	**3.20**
	b.	0.96	0.64	0.63	0.63	0.75	**0.72**
SSML	a.	1.23	1.56	1.59	1.17	0.43	**1.19**
	b.	0.34	0.42	0.38	0.33	0.17	**0.33**
STML	a.	1.28	0.80	1.48	2.53	1.59	**1.54**
	b.	0.41	0.35	0.44	0.45	0.28	**0.38**
STL	a.	0.93	1.27	1.07	1.07	0.46	**0.96**
	b.	0.41	0.49	0.47	0.48	0.38	**0.45**
SQTL	a.	3.82	3.42	3.23	2.98	5.98	**3.89**
	b.	0.88	0.76	0.81	0.78	0.69	**0.79**

Source: Authors' calculation on the basis of data from annual reports of selected companies during 2016-2020

The inventory turnover ratio gauges how often, typically, a company sells its inventory within a given timeframe (Kieso, Weygandt, Warfield, 2017-18).It measures the liquidity of the inventory. The inventory turnover ratio is also known as the inventory turns and stock turnover ratios. A low inventory turnover means excessive investment in inventories. On the other hand, a frequent occurrence of a high ratio typically indicates that the company is experiencing a depletion of its stock.Table 6 shows the industry average inventory turnover ratio from 2016 to 2020. The above table shows that the highest average inventory turnover ratio is 14.71 times in ASLML, and the lowest average inventory turnover ratio is 0.96 times in STL. The average inventory turnover ratio for ALTML, AIL, AYDL, DGL, ETL, HRTML, MSML, RTML, SSML, STML, and SQTL are 1.84, 0.98, 2.56, 4.35, 2.39, 3.68, 1.94, 3.20, 1.19, 1.54 and 3.89 times respectively during the study period.

The total asset turnover ratio assesses a company's capacity to generate sales through the utilization of its assets (Kieso, Weygandt, Warfield, 2017-18). This indicates how much sales are generated for every Tk. of assets. A high total asset turnover ratio means the company generates a lot of sales. Table 6 shows the total asset turnover ratio picture of the 13 selected companies. The above table shows that the average total assets turnover ratio ranges from 0.17 times in AIL to 2.38 times in ASLML. The table reveals that the average total assets turnover ratio of ALTML (0.38 times), AYDL (0.42 times), DGL(1.54 times), ETL (0.42 times), HRTML(0.92 times), MSML(0.42 times), RTML(0.72 times), SSML(0.33 times), STML(0.38 times), STL (0.45 times) and SQTL (0.79) during the study period.

Table-7: ANOVA: Two-Factor without replication for activity ratios

Ratio	Sources of variation	F	P-value	F-crit.
Cost of Goods Sold to Average Inventory	Year	41.34	0.00	1.96
	Company	1.92	0.12	2.57
Sales to Total Assets	Year	117.70	0.00	1.96
	Company	3.31	0.02	2.57

Source: Calculated on the basis of Table-6

From the table-7, for inventory turnover ratio in terms of cost of goods sold to average inventory, there is significant differences among the companies under the study period ($F_{Cal.}$=41.34, $F_{Crit.}$=1.96 and p-value = 0.00). On the other hand, for the same ratio, the null hypothesis can be accepted ($F_{Cal.}$=1.92, $F_{Crit.=}$2.57 and p-value = 0.12). Thus, there are no significant differences among the years under the study period. Again, for inventory turnover ratio in terms of sales to total assets, the null hypothesis can be rejected for both cases, year and company ($F_{Cal.}$=117.70, $F_{Crit.}$=1.96 and p-value = 0.00 and $F_{Cal.}$=3.31, $F_{Crit.}$=2.57 and p-value = 0.02). Thus, there are significant differences among the years and companies under the study period regarding inventory turnover ratio.

6.4 Solvency Ratio

The solvency ratio is the ratio to assess the company's ability to pay off all its short and long-term liabilities, with a guarantee of assets owned by the company until the company is closed or liquidated (Fred Weston, quoted by Hertina, Pardede and Yesenia, 2021). Darsono and Ashari cited by Hertina, Pardede and Yesenia, 2021, assert that the solvency ratio is a measure used to evaluate the company's capacity to meet up its financial obligations in the event of liquidation.

Table-8: Solvency Ratio Analysis

Companies		2016	2017	2018	2019	2020	Average
ALTML	a.	61.33	55.55	55.43	66.52	73.81	**62.53**
	b.	0.00	0.00	20906.88	-5750.71	0.00	**3031.23**
AIL	a.	63.67	21.17	7.15	118.20	36.49	**49.33**
	b.	136.73	40.41	-128.43	-81.99	-58.33	**-18.32**
AYDL	a.	0.00	0.00	0.00	0.00	0.00	**0.00**
	b.	944.10	635.01	739.23	903.30	512.32	**746.79**
ASLML	a.	0.00	0.00	0.00	0.00	11.88	**2.38**
	b.	801.59	794.32	1221.82	172.41	152.56	**628.54**

DGL	a.	0.00	0.00	21.74	22.03	25.82	**13.92**
	b.	643.34	1167.83	398.35	198.12	132.92	**508.11**
ETL	a.	62.89	62.27	62.29	74.80	66.05	**65.66**
	b.	245.44	178.94	165.78	190.04	139.97	**184.03**
HRTML	a.	64.00	56.86	40.11	68.84	114.13	**68.79**
	b.	205.25	200.11	186.23	143.02	126.93	**172.31**
MSML	a.	30.44	32.79	25.17	23.22	26.25	**27.57**
	b.	122.27	132.14	143.77	114.16	90.69	**120.61**
RTML	a.	16.95	60.82	83.03	67.35	62.69	**58.17**
	b.	429.83	448.16	256.62	249.97	111.53	**299.22**
SSML	a.	66.18	70.79	70.85	131.25	147.26	**97.27**
	b.	126.71	129.78	122.22	90.58	-31.29	**87.60**
STML	a.	6.44	0.00	3.33	1.75	1.49	**2.60**
	b.	254.27	275.82	333.12	30.97	22.37	**183.31**
STL	a.	46.19	34.12	71.32	75.35	139.98	**73.39**
	b.	77.41	72.89	88.68	132.67	49.02	**84.14**
SQTL	a.	0.00	0.00	0.00	0.00	0.00	**0.00**
	b.	4489.44	1128.61	603.63	295.51	126.00	**1328.64**

Source: Authors' calculation on the basis of data from annual reports of selected companies during 2016-2020

Typically, a elevated debt-equity ratio indicates that a company has pursued an assertive approach in funding its expansion through borrowing.From table 8 it is seen that the debt-equity ratio in the case of ASLML is meagre, as its average is 2.38. A high debt-equity ratio is observed in the case of SSML, with an average of 97.27. The average ratio for ALTML, AIL, DGL, ETL, HRTML, MSML, RTML, STML, and STL are 62.53, 49.33, 13.92, 65.66, 68.79, 27.57, 58.17, 2.60 and 73.39 respectively during the study period. No debt-equity ratio was found for AYDL and SQTL. So, companies should emphasize proper debt-equity management through efficient business operations.

Interest Coverage Ratio indicates the company's ability to meet interest payments as they come due (Kieso, Weygandt, & Warfield, 2017-18). It is employed to assess the company's ability to meet interest payments on its existing debt.The above table shows that the highest average interest coverage ratio, 3031.23 in ALTML indicates the company has a higher ability to pay the interest from their opportunity income. The lowest average interest coverage ratio is -18.32 in AIL, which indicates that the company was not able to cover the fixed interest liability during the study period. The average interest coverage ratio for AYDL, ASLML, DGL, ETL, HRTML, MSML, RTML, SSML, STML, STL, and SQTL are 746.79, 628.54, 508.11, 184.03, 172.31, 120.61, 299.22, 87.60, 183.31, 84.14, and 1328.64 respectively during the study period.

Table-9: ANOVA: Two-Factor without replication for activity ratios

Ratio	Sources of variation	*F*	*P-value*	*F-crit.*
Long-Term Debt to Equity Capital	Year	13.21	0.00	1.96
	Company	3.74	0.01	2.57
EBIT to Interest Expense	Year	0.41	0.95	1.96
	Company	1.07	0.38	2.57

Source: Calculated on the basis of Table-8

From the table-9, for activity ratio in terms of long-term debt to equity capital, the null hypothesis may be rejected, and there are no significant differences among the years and companies under the study period ($F_{Cal.}$=13.21, $F_{Crit.}$=1.96 and p-value = 0.00 and $F_{Cal.}$=3.74, $F_{Crit.}$=2.57 and p-value = 0.01). Again, for activity ratio in terms of EBIT to interest expense, the null hypothesis can be accepted for both cases, years and companies ($F_{Cal.}$=0.41, $F_{Crit.}$=1.96 and p-value = 0.95 and $F_{Cal.}$=1.07, $F_{Crit.}$=2.57 and p-value = 0.38). Thus, no differences were observed among years and companies for activity ratio, and the results are insignificant.

6.5 Valuation Ratio

The valuation ratios are calculated in order to judge the profitability of and rewards on shareholders' investments. The following table shows EPS, DPS and payout ratio.

Table-10: Valuation Ratio

Results a & b in Tk. and c in per centage

Companies		2016	2017	2018	2019	2020	Average
ALTML	a.	1.39	1.74	0.43	-1.88	-0.93	**0.15**
	b.	1.50	1.50	1.00	0.00	0.00	**0.80**
	c.	107.91	86.21	232.56	0.00	0.00	**85.34**
AIL	a.	0.38	-2.13	-7.97	-6.45	-5.47	**-4.33**
	b.	0.00	0.00	0.00	0.00	0.00	**0.00**
	c.	0.00	0.00	0.00	0.00	0.00	**0.00**
AYDL	a.	1.12	0.56	0.55	0.52	0.14	**0.58**
	b.	1.00	1.00	1.00	0.50	0.20	**0.74**
	c.	89.29	178.57	181.82	96.15	142.86	**137.74**
ASLML	a.	2.79	2.76	2.91	2.93	1.48	**2.57**
	b.	2.20	2.00	2.00	2.00	1.50	**1.94**
	c.	78.85	72.46	68.73	68.26	101.35	**77.93**
DGL	a.	6.46	5.70	4.63	2.32	0.43	**3.91**
	b.	3.00	1.50	1.00	1.00	0.30	**1.36**
	c.	46.44	26.32	21.60	43.10	69.77	**41.44**
ETL	a.	3.32	2.05	2.01	3.31	1.63	**2.46**
	b.	1.50	1.20	1.20	1.50	0.50	**1.18**
	c.	45.18	58.54	59.70	45.32	30.67	**47.88**
HRTML	a.	1.25	1.43	1.70	1.84	1.11	**1.47**
	b.	1.00	1.00	1.00	1.00	1.00	**1.00**
	c.	80.00	69.93	58.82	54.35	90.09	**70.64**
MSML	a.	0.44	0.33	0.49	0.12	-0.37	**0.20**
	b.	0.00	0.50	0.50	0.20	0.20	**0.28**
	c.	0.00	151.52	102.04	166.67	-54.05	**73.23**
RTML	a.	8.92	5.75	6.50	5.76	0.75	**5.54**
	b.	4.00	3.00	3.00	3.00	1.10	**2.82**
	c.	44.84	52.17	46.15	52.08	146.67	**68.38**
SSML	a.	0.26	0.38	0.42	-0.49	-5.69	**-1.02**
	b.	0.30	0.30	0.30	0.30	0.00	**0.24**

	c.	115.38	78.95	71.43	-61.22	0.00	**40.91**
STML	a.	0.89	1.02	1.21	-0.97	-0.86	**0.26**
	b.	1.00	1.20	1.50	1.00	0.00	**0.94**
	c.	112.36	117.65	123.97	-103.09	0.00	**50.18**
STL	a.	-0.38	-0.93	-0.57	1.11	3.72	**0.59**
	b.	0.00	0.00	0.00	3.00	0.00	**0.60**
	c.	0.00	0.00	0.00	270.27	0.00	**54.05**
SQTL	a.	4.14	2.19	2.43	2.18	0.27	**2.24**
	b.	3.50	2.50	2.50	2.00	1.00	**2.30**
	c.	84.54	114.16	102.88	91.74	370.37	**152.74**

Source: Authors' calculation on the basis of data from annual reports of selected companies during 2016-2020

One of the most important financial metrics for investors and financial analysts is earnings per share, which shows how much money the company made for each common share during a given period. The above table shows that the highest average earning per share (EPS) 5.54 in RTML indicates the company's good profitability. The lowest average earning per share (EPS) was 4.33 in AIL among the thirteen companies during the study period. The average earnings per share for ALTML, AYDL, ASLML, DGL, ETL, HRTML, MSML, SSML, STML, STL, and SQTL are 0.15, 0.58, 2.57, 3.91, 2.46, 1.47, 0.20,   -1.02, 0.26, 0.59 and 2.24 respectively during the study period. So, companies should emphasize EPS through efficient business operations.

Dividend per share (DPS) is the whole amount of dividend declared against each normal share outstanding. Investors who expect stable income for their investment use this ratio to determine how much money the firm distributes to their shareholders. Table-10 shows that RTML (2.82) and SQTL (2.30) show the highest DPS compared to other companies. SSML (0.24) is the lowest DPS among the thirteen companies. The average DPS for ALTML, AIL, AYDL, ASLML, DGL, ETL, HRTML, MSML, STML and STL are 0.80, 0.00, 0.74, 1.94, 1.36, 1.18, 1.00, 0.28, 0.94 and 0.60 respectively during the study period. Dividend per share significantly correlates with earnings per share, so companies should emphasize EPS through efficient business operation.

Dividend payout is the cash a company sends to its shareholders as dividends. The profits can either be distributed to shareholders or investors, or the company may choose to retain a portion for future use. Thus, robust dividend payouts suggest that businesses make actual profits instead of cooking books. Generally speaking, dividend payout ratios are low because companies with solid growth prospects re-invest a significant portion of their earnings. A comparison of the average results shows that SQTL (152.74%) and AYDL (137.74%) have low growth potential as they distribute a large portion of the profits to the shareholders. The average payout ratio for ALTML, AIL, DGL, ETL, HRTML, MSML, RTML, SSML, STML, and STL are 85.34%, 0.00%, 77.93%, 41.44%, 47.88%, 70.64%, 73.23%, 68.38%, 40.91%, 50.18% and 54.05% respectively during the study period, it indicates that companies are generating real earnings or re-invest a large part of their profits.

Table-11: ANOVA: Two-Factor without replication for valuation ratios

Ratio	Sources of variation	*F*	*P-value*	*F-crit.*
PAT to No. of outstanding shares	Year	11.22	0.00	1.96
	Company	4.92	0.00	2.57
Dividend paid to No. of	Year	9.88	0.00	1.96

outstanding shares	Company	5.39	0.00	2.57
DPS to EPS	Year	1.47	0.17	1.96
	Company	0.28	0.89	2.57

Source: Calculated on the basis of Table-10

From the table-11, for the valuation ratio in terms of PAT to no. of outstanding shares and dividend paid to no. of outstanding shares, the null hypothesis may be rejected. Significant differences are observed among the years and companies under the study period for both cases. ($F_{Cal.}$=11.22, $F_{Crit.}$=1.96 and p-value = 0.00, $F_{Cal.}$=4.92, $F_{Crit.}$=2.57 and p-value = 0.00; and $F_{Cal.}$=9.88, $F_{Crit.}$=1.96 and p-value = 0.00, $F_{Cal.}$=5.39, $F_{Crit.}$=2.57 and p-value = 0.00). On the other hand, for the solvency ratio in terms of DPS to EPS, the null hypothesis can be accepted for both cases, years and companies ($F_{Cal.}$=1.47, $F_{Crit.}$=1.96 and p-value = 0.17 and $F_{Cal.}$=0.8, $F_{Crit.}$=2.57 and p-value = 0.89). Thus, no differences in valuation ratio were observed among years and companies, and the results are insignificant.

7. Multiple Discriminant Analysis (MDA)

MDA is a multivariate technique that provides a pleasant result in predicting corporate failure. Under this technique, a single discriminate score, the Z score, is calculated each year. The following table summarises the Z-scores of selected companies during the study period. The standard Z score is (i) <1.23 distress condition, (ii) 1.23<Z<2.90 grey area, and (iii) 2.90>healthy condition. (Rim and Roy, 2014, p.12)

Table-12: Summary of Z Scores of Selected Companies

Company	2016	2017	2018	2019	2020	Aver.	Max.	Min.
ALTML	1.64	1.53	1.22	0.27	0.33	**1.00**	1.64	0.27
AIL	0.76	0.52	-0.33	-0.01	-0.37	**0.11**	0.76	-0.37
AYDL	0.87	0.75	0.81	0.79	0.70	**0.78**	0.87	0.70
ASLML	2.69	2.82	2.88	3.14	2.71	**2.85**	3.14	2.69
DGL	2.09	2.30	2.07	2.15	2.34	**2.19**	2.34	2.07
ETL	0.82	0.81	0.86	1.10	1.00	**0.92**	1.10	0.81
HRTML	1.04	1.48	1.64	1.45	1.09	**1.34**	1.64	1.04
MSML	1.22	1.38	1.33	1.18	1.13	**1.25**	1.38	1.13
RTML	1.49	1.04	1.03	0.92	1.01	**1.10**	1.49	0.92
SSML	0.88	0.97	0.74	0.76	0.32	**0.73**	0.97	0.32
STML	1.37	1.23	1.15	1.44	1.12	**1.26**	1.44	1.12
STL	0.99	1.07	1.18	1.27	1.05	**1.11**	1.27	0.99
SQTL	3.51	2.67	2.27	1.87	1.49	**2.36**	3.51	1.49
Aver.	**1.49**	**1.43**	**1.30**	**1.26**	**1.07**	**1.31**	**1.49**	**1.07**
Max.	3.51	2.82	2.88	3.14	2.71	**2.85**	**3.51**	2.71
Min.	0.76	0.52	-0.33	-0.01	-0.37	**0.11**	0.76	**-0.37**

Source: Authors' calculations on the basis of data from annual reports of selected companies during 2016-2020

From the above table, 6 companies depict the average Z score in the grey area, whereas the other 7 companies are in distress condition. It is observed that ASLML is in the top position (Z score 2.85) and AIL is in a low

position (Z score 0.11) among the selected companies. The average Z score for the other 11 companies is 1.00 for ALTML, 0.78 for AYDL, 2.19 for DGL, 0.92 for ETL, 1.34 for HRTML, 1.25 for MSML, 1.10 for RTML, 0.73 for SSML, 1.26 for STML, 1.11 for STL, and 2.36 for SQTL. The grand average of the Z-score of the 13 selected companies is 1.31. But compared to standards, financial position and operational performance are not satisfactory. So, each company should emphasize increasing the Z score, which should be more than 2.90.

Table-13: ANOVA: Two-Factor without Replication for Z-scores

ANOVA						
Source of Variation	*SS*	*Df*	*MS*	*F*	*P-value*	*F-crit.*
Company	33.18	12.00	2.76	26.66	0.00	1.96
Year	1.39	4.00	0.35	3.34	0.02	2.57
Error	4.98	48.00	0.10			
Total	39.54	64.00				

Source: Calculated on the basis of Table No. 12

Table-13 indicates that the computed F values (26.6 and 3.34) exceed the tabulated F value (1.96) for degrees of freedom (12, 48 and 4, 48) at significance levels of 1 and 5 percent, respectively.So the null hypotheses can be rejected. Thus, significant differences regarding the Z-score among the companies and years under the study period exist.

8. Conclusion

Textile has been a driving force of Bangladesh's economic prosperity since the nation's birth. In Bangladesh, the textile industry plays an essential role in contributing to economic growth, employment, exchange reserves, exports, total production, etc. This paper analyses the financial performance of 13 selected textile companies in Bangladesh from 2016 to 2020. Therefore, the results have to be evaluated within some limitations. Other than ratio, ANOVA and MDA, different methods need to be conducted to achieve more general outcomes. The analysis has revealed that most of the company's performance was poor. However, the following are some suggestions to enhance the financial soundness of Bangladesh's textile industries.

i. Companies should try to increase current assets or decrease current liabilities to obtain an ideal current ratio so that they will be able to meet short-term debt obligations.

ii. Management of the selected companies should use long-term capital carefully with proper analysis to produce a profit.

iii. The enhancement of Return on Assets (ROA) and Return on Capital Employed (ROCE) is imperative for management, as these metrics play a pivotal role in evaluating financial performance.

iv. To increase EPS, proper policy should be taken to uplift PAT. If PAT is sufficient enough, then the increment of DPS or payout ratio is a matter of discretionary decision of higher authority.

vi. To improve the Z-score, companies should emphasize increasing working capital, retained earnings, EBIT and sales in terms of total assets.

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