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### RESEARCH ARTICLE

#### MEASURING EARNINGS QUALITY: EMPIRICAL EVIDENCE FROM LISTED TEXTILE COMPANIES OF BANGLADESH

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#### Abstract

Though earnings quality is extensively used to comment on the financial performance of a firm, there is no universally accepted approaches to measure it. Academic research on earnings quality employed different approaches to assessing the extent of earnings management. This study employed the four-dimensional approaches suggested by Penman (2001), Barton and Simko (2002), Leuz et al. (2003) and Desai et al. (2006). Using a sample of 35 companies for 12 years, this study aims to assess whether there is any consistency among the four measures of earnings quality of listed textile companies in Bangladesh and if no consistency is found the earnings quality is questionable and needs future investigations. The result showed that there are 32 (about 92%) companies with questionable measures of earnings quality and the remaining 3 (almost 8%) companies with high earnings quality. It implies that the measures of earnings quality are inconsistent for the majority of the companies over the year. So, one company cannot be labeled as high or low quality based on a single approach. Moreover, the correlation analysis also shows inconsistency among the four approaches. Therefore, this research sheds light on the inconsistency among measures of earnings quality and signals stakeholders of the companies to use more than one measure while making decisions as one approach cannot complement other approaches.

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#### Introduction:-

Earnings quality has become an emerging issue of interest to stakeholders and market participants. Quality of earnings indicates due diligence of the financial reporting process. The users of financial statements might be better able to evaluate the quality of companies' earnings if they had a better idea of what earnings attributes are considered favorable and what are considered unfavorable. Earnings quality can be defined as the degree to which reported earnings reflect the company's true earnings or future earnings. Earnings are often highlighted by net income, revenues, and Pro-forma earnings. However, net income does not show the actual financial performance of a business. If a company reports large net income along with negative operating cash flow, then it may not be financially as sound as it looks. Thus, accrual income alone is not an effective measure of the financial performance of a firm. Stakeholders should be aware of the fact that companies who are providing a transparent financial report, behaving ethically and performing social responsibilities are not always providing a true picture of the firm's earnings.

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According to agency theory, managers have opportunistic behaviors (Jensen & Meckling 1976). They often manipulate earnings for their self-interest. The existence of earnings manipulation indicates that the quality of earnings has remarkably deteriorated. So, it is very much justifiable to determine the quality of earnings of a company. Earlier theoretical papers extensively addressed how managers manipulate earnings and how earnings quality can be measured using different approaches. But no single approach has been mentioned to measure earnings so that a company can be termed as having high or low earnings quality. Since several approaches are used for measuring earnings quality, our research question is to what extent the different measures of earnings quality for sample companies are consistent. Here, consistency indicates one company will have high quality under the four different approaches implying that the company is disclosing actual financial images. On the other hand, if a company shows high quality according to one approach and low quality according to another, the earnings quality is said to be inconsistent. Inconsistency will be labeled questionable earnings as stakeholders cannot reach into a conclusion about the real financial performance.

As the growing capital market of Bangladesh is characterized by fragile investor protection and regulation, this research gives an empirical study using four useful approaches suggested by Penman (2001), Barton and Simko (2002), Leuz et al. (2003) and Desai et al. (2006). The purpose of this research is to assess the consistency among the measures of earnings quality of listed textile companies in Bangladesh. The study also analyzes the correlation among the measurement approaches to find whether the measures are associated with each other for concluding the quality of earnings of a firm.

This study has particularly focused on the textile sector as it is the lifeline of the Bangladesh economy. The textile industry is making a vital contribution to hasten its growth and upholding the nation with the prestigious tag "Made in Bangladesh". This industry made up about 80 percent of the country's \$28.14 billion in annual exports in 2016-17 and 12.36 percent share of GDP (Hossain et al. 2017). The inception of the RMG industry started in the late '70s and since then it continued playing significant progress creating large employment opportunities mostly for the poor women of the country (Hossain, Kabir & Latif 2019). Although the Ready-Made Garments (RMG) industry faced several challenges a few years back like the tragic Rana Plaza collapse in 2013, it was not the end of the journey of the RMG industry rather all stakeholders have become more concerned and working hand in hand to ensure a sustainable garments industry. As the textile industry is contributing to the national income of Bangladesh by exporting garments, financial reporting needs to be transparent so that buyers could rely on that. Trading Companies should ensure the quality of their earnings for their major investors and market participants to make a reliable investment decision.

The motivation of this study is the lack of empirical work on measuring earnings quality in emerging economies. This study is completely new in Bangladesh and particularly in the textile industry. No research has been done so far by employing the four-dimensional approach together to measure the earnings quality of the individual company. Therefore, the findings of this research are useful for market participants. It contributes to the literature by signaling users that one measure alone cannot provide a general assessment of high or low earnings quality of a company.

The rest of the paper is structured as follows. Section two articulates literature review and hypothesis development. Section three discusses the model development. Finally, section four shows samples and statistical results followed by the conclusion of the study.

### **Literature Review and Hypothesis Development**

Prior research has defined earnings quality as the degree to which reported earnings can reflect future earnings (Penman & Zhang 2002, and Srinidhi et al. 2011). Menicucci E. (2020) defined earnings quality as contextual as different users of financial statements view it differently. According to the author, the notion earnings quality itself is meaningless as it can vary with the decision model. It is only informative if it can reflect the firm's financial performance. Many studies have materialized to assess the measures of earnings quality using several different approaches. Menicucci E. (2020) explained that earnings quality is a multidimensional concept and therefore, selection of suitable earnings quality measures depends on a research question, data, and model.

ElMoatasem Abdelghany (2005) found that measures of earnings quality are inconstant using a three-dimensional approach. The author suggested that investors should take into account all different measures of earnings quality before deciding on measures that are independent of each other. Similarly, Houque & Fatema Islam (2011) calculated the earnings quality of New Zealand firms using two approaches, concluded that to make better decision stakeholders should apply more than one indicator of earnings quality. It would be difficult for stakeholders to

assess a company if a company has low quality in one technique and high quality in another; they might require further analysis to measure the quality of earnings. The authors did not examine the correlation between the approaches.

Ball & Brown (1968) disclosed that the assessment of earnings quality cannot be ignored because there is a large association between earnings and returns. Ewart and Wagenhofer (2010) described a theory about how earnings quality metrics behave upon some factors and proved that these factors jointly determine earnings quality. Furthermore, research by Demerjian et al. (2013) explored the link between the ability of manager and earnings quality. They discovered that high earnings quality is positively linked to the managerial ability measured by restatements, accrual quality, persistence, and error in the provisions of the bad debt. Therefore, their study showed uniformity among all measures taken into account for earnings quality. Zhou (2008) also inspects the relationship between stock price variability and different measures of earnings quality. The author used value relevance, conservatism, timeliness, accrual quality, persistence, smoothness, and predictability. The result was mixed, there was a positive relation between stock price and accrual quality and immaterial relation between conservatism and stock price variability. Mitra (2016) finds that a firm with less return volatility has high earnings quality by using two proxies for firm-specific return volatility to examine its relationship with earnings quality.

Earlier studies in Bangladesh was done on the effect of the auditor on accruals quality. Kabir et al (2011) explored the relationship between Big 4 affiliated auditors and accruals quality in Bangladesh. They found Big 4 affiliation has no effect on accruals quality in Bangladesh. Muttakin et al (2017) examined the regulating role of audit quality, taking industry specialization and the size of the auditor as two proxies. They found that higher audit quality reduces the level of discretionary accruals which can enhance group-affiliated firms' earnings quality in Bangladesh. Kojima, Adhikary&Mitra (2017) investigated that earnings quality is affected by the role played by the main bank. Their finding suggests that equity holding in japan firms can reduce agency problems and enhance the earnings quality of the firm.

As a whole, no studies have mentioned a uniform approach to measure earnings quality. Different approaches show a different assessment of earnings quality. Two studies conducted by ElMoatasemAbdelghany (2005) and Houqe&Fatema Islam (2011) identified that the measures of earnings quality are inconsistent but failed to show whether there was any association among the different measures. No studies have employed four-dimensional measures at a time to measure the quality of earnings. Assessment of earnings quality of the textile sector of Bangladesh is unexplored till now. Therefore, the purpose of this study is to assess whether there is any consistency among earnings quality approaches in textile companies in Bangladesh to conclude the high or low quality of earnings of each company. This study further shows a correlation among the four measures. The findings of the study will help the stakeholders of these companies to make relevant decisions and will minimize the gap of existing literature. To draw inferences from data the following hypothesis has been developed:

**H0:** the four approaches of earnings quality are not consistent

**H1:** the four approaches of earnings quality are consistent.

### **Model Development**

Though earnings quality is considered as the firm's performance assessment tool, there is hardly any general approach to measure the earnings quality. Previous literature used different indicators such as value relevance, persistence, predictability, accrual quality, and earnings surprise to measure a firm's earnings quality. ElMoatasemAbdelghany (2005) utilized three basic approaches and Houqe&Fatema Islam (2011) used two approaches as indicators of earnings quality. This study used four-dimensional approaches to measuring earnings quality.

The first approach is provided by Penman (2001), which is the widely used earnings quality measuring approach, focusing on the ratio of cash flow from operation and net income. The lower the ratio, the higher the quality of that firm will be.

The second approach is earnings surprise which is suggested by Barton and Simko (2002). This approach is calculated by the ratio of beginning net operating income to total sales of the period. It is based on the notion that if the opening net operating income amount is larger compared to revenue, firms are less likely to show a predetermined earnings surprise. A lower ratio indicates higher earnings quality of the firm.

The third approach is earnings variability which is focused on the notion that the manager usually smooth earnings as they think investor prefers smoothly augmented income. Leuz et al. (2003) measured earnings variability by the ratio of the standard deviation of operating income to the standard deviation of cash from operations. Lower ratio indicates more income smoothing, thus the low earnings quality. The idea is that the absence of variability is associated with higher earnings quality.

The fourth approach is accrual quality mentioned by Desai et al. (2006), which is focusing on the idea that large accruals mean earnings are manipulated by managers to attract investors. It indicates that firms with fewer accruals have high earnings quality. It is calculated by the ratio of accruals to the average assets of the firm. Accruals are derived from the difference between net income and cash flow from operation. Smaller ratios indicate high earnings quality.

The model utilized the four approaches together to measure earnings quality. If a company is showing low earnings quality under the four approaches, it confirms that managers have manipulated earnings. However, if the company shows high earnings quality, it confirms that the information presented in the financial statement reflect real performance. If an inconsistency is found among the four measures in a company, earning quality becomes questionable which requires more researches. Table 1 presents the Four-dimensional model.

Penman (2001) approach	Barton and Simko (2002) approach	Leuz et al. (2003) approach	Desai et al. (2006) approach
Earnings quality is calculated by the ratio of cash flow from operation divided by the net income. Lower ratio indicates high earnings quality (Abdelghany, 2005).	The earning surprise is used as an indicator of earnings quality which is calculated from net operating assets divided by revenue. Lower ratio means high earnings quality (Abdelghany, 2005).	Variability is used as an earnings quality technique. It is derived from the ratio between the standard deviation of operating income and standard deviation of cash flow from operation. Lower ratio means low earnings quality (Abdelghany, 2005).	Accrual quality is also used as an earnings quality measure. It is the ratio of accruals to average total assets. Lower ratio means high earnings quality.

**Table 1:-** Four-dimension model of earnings quality.

### Sample and statistical results

Out of 56 textile companies listed in the Dhaka Stock Exchange, 35 companies were selected using convenient sampling which covers two-thirds of the populations. Data were collected from the annual report of the selected companies for the period 2007 to 2018. Textile companies in Bangladesh are emerging. The majority of the firm were established after 2005 and therefore, archived reports are rarely found. Remaining Companies are excluded from this study due to difficulty in attaining the required information. Table 2 presents the mean values and the standard deviation of 6 variables used in the model to perform calculations.

Industry	No. of companies	Variable name	Mean	Std. dev.
Textile	35	Total Asset	3724.897	4568.726
		Net Operating Asset	2483.37	2743.974
		Revenue/Sales	2194.784	2955.089
		Operating Income	287.7375	400.1117
		Net Income	170.4744	296.5055
		Cash Flow from Operation	148.2263	311.8679

**Table 2:-** Descriptive analysis.

The research design is planned mainly based on assessing the quality of earnings of each selected textile companies based on four different measures. The analysis is aimed at assessing consistency among the four approaches for each company to label the quality of earnings as low or high.

In addition to that, I investigated association among the four measures of earnings quality using Pearson correlation. If the four measures are positively correlated, it will confirm the existence of consistency among the measures. Consistency implies that the four measures are dependent and interrelated. In this case, an investor can look for a single measure to decide on the quality of earnings as low or high of the particular firm. On the other hand, if the four measures are independent and not correlated, the quality of earnings is labeled as questionable. In this case, an investor will need more investigation among all the measures of earnings quality before reaching into any conclusion.

Table 3 represents the results of the study for the listed textile companies. Using the penman (2001) approach a company is labeled as high if the value is less than 3.0 and low if the value is greater than 3.0 (high < 3 < low). Under Barton and Simko's (2002) approach quality is labeled based on the criteria high < 2 < low. If the range of the value falls under 1.0, the quality of earnings will become low and greater than 1 indicates high quality under Leuz et al. (2003) approach. According to Desai et al. (2006) approach measurement criteria is high < 1 < low. As shown in Table 3, there is no consistency among the four measures of the quality of earnings for all the sample companies except R.N. Spinning, Safko and Tallu Spinning. R.N. Spinning, Safko and Tallu Spinning respectively show high earnings quality under the four approaches which signifies that these company's financial statements are reflecting true economic performance. Remaining 32 companies have either one or two low qualities of earnings under four approaches, indicates that the quality of earnings is inconsistent and questionable, so further investigation is required before making decisions. As different approaches are not consistent and show different patterns of earnings quality, therefore the quality of the measures cannot be assessed based on one single approach.

Company Symbol	Penman (2001) approach		Barton and Simko (2002) approach		Leuz et al. (2003) approach		Desai et al. (2006) approach		Overall Earnings Quality
	Measure	earnings quality	Measure	earnings quality	Measure	earnings quality	Measure	earnings quality	
Al-Haj Textile	4.45	Low	1.20	High	0.42	Low	-0.08	High	Questionable
Alltex	-96.07	High	0.34	High	0.36	Low	-0.05	High	Questionable
Anlimayarn	2.71	High	2.35	Low	0.36	Low	-0.06	High	Questionable
Apex Spinning	4.29	Low	0.21	High	0.07	Low	-0.13	High	Questionable
Argon Denims	-0.66	High	0.82	High	0.08	Low	0.07	High	Questionable
Delta Spinners	0.97	High	2.85	Low	0.43	Low	0.00	High	Questionable
Envoy Textile	1.56	High	1.56	High	0.53	Low	-0.02	High	Questionable
Familytex (Bd)	0.30	High	1.21	High	.08	Low	0.12	High	Questionable
Generation	4.22	Low	1.99	High	1.68	High	0.04	High	Questionable
H.R.Textile Mills Limited	2.72	High	0.34	High	0.31	Low	-0.06	High	Questionable
Mithun Knitting	1.08	High	0.67	High	0.33	Low	0.00	High	Questionable
Paramount Textile Limited	0.62	High	2.00	High	0.06	Low	0.02	High	Questionable
Prime Textile	2.46	High	1.88	High	0.16	Low	-0.02	High	Questionable
R.N. Spinning	0.43	High	0.30	High	1.20	High	0.06	High	High
Rahim Textile	10.67	Low	1.30	High	0.67	Low	-0.11	High	Questionable
Safko	-1.79	High	1.86	High	1.52	High	-0.01	High	High
TalluSpinning	-0.33	High	1.26	High	1.48	High	0.04	High	High

The Dacca Dyeing	1.93	High	2.78	Low	0.30	Low	-0.02	High	Questionable
Zahintex	-2.04	High	1.33	High	0.14	Low	0.08	High	Questionable
Maksonspinn	-0.35	High	1.68	High	0.22	Low	0.02	High	Questionable
Malekspinn	1.47	High	1.05	High	0.75	Low	-0.01	High	Questionable
Metrosppinn	0.64	High	2.11	Low	0.76	Low	0.00	High	Questionable
Saihamtex	1.47	High	0.73	High	0.17	Low	-0.02	High	Questionable
Squaretex	3.29	Low	0.88	High	0.07	Low	-0.12	High	Questionable
Mldyeing	-0.49	High	0.57	High	0.63	Low	0.05	High	Questionable
Simtex	0.48	High	2.58	Low	1.07	High	0.05	High	Questionable
Shashadnim	1.50	High	4.10	Low	0.65	Low	-0.01	High	Questionable
Stylecraft	0.72	High	3.46	Low	1.72	High	0.00	High	Questionable
Zaheenspin	1.31	High	3.36	Low	0.52	Low	-0.01	High	Questionable
Tosrifa	-1.08	High	1.39	High	0.65	Low	-0.07	High	Questionable
Hwawelltex	2.91	High	2.22	Low	0.69	Low	-0.03	High	Questionable
Dssl	0.86	High	0.28	High	0.66	Low	0.01	High	Questionable
Dshgarme	1.06	High	1.64	High	0.67	Low	0.00	High	Questionable
Hfl	0.92	High	1.00	High	0.81	Low	0.01	High	Questionable
Regenttex	1.44	High	2.40	Low	0.74	Low	-0.02	High	Questionable

**Table 3:-** Empirical study results- Company-wise.

Table 4 represents correlation results among four measures of earnings quality. It is observable that the p-value is insignificant as it is greater than .05 among the four measures, therefore I cannot reject our null hypothesis. So, it can be concluded that the four measures of earnings quality are not consistent and it is questionable. The study provides a useful insight to the investor that they should use more than one measure of earnings quality to make decisions. Overall, the general assessment of individual company's earnings quality based on four approaches completely match with the findings of correlation analysis.

**Table 4:-** Correlation analysis.

		Penman Approach	Barton Approach	Leuz at el. Approach	Desai at el. Approach
Penman Approach	Correlation	1			
	Sig. (2-tailed)				
Barton Approach	Correlation	0.21	1		
	Sig. (2-tailed)	0.22			
Leuz at el. Approach	Correlation	0.07	0.15	1	
	Sig. (2-tailed)	0.67	0.40		
Desai at el. Approach	Correlation	0.04	0.08	0.42	1
	Sig. (2-tailed)	0.82	0.66	0.07	

Correlation is significant at the 0.05 level (2-tailed)

### Conclusion:-

The purpose of this study is to explore whether there is any consistency among the measures of earning quality. This study found that the four-dimensional measures of earnings quality are not consistent which confirms the existence of earnings management by the textile companies. ElMoatasemAbdelghany (2005) and Houqe&Fatema Islam (2011) also revealed inconsistency among the measures of earnings quality. Thus, the findings of this study go with prior research. The findings of this study are rich in a sense as this sort of study is new to the Bangladeshi capital market which may influence the decision of investors. The study examined correlation among four approaches and found an inconsistency. Primarily the RMG sector has been selected and analyzed as it is contributing largely to the national economy of our country. The results of this study have practical and useful implications for stakeholders. Generally, as one measure of earnings quality cannot complement other measures, stakeholders should use more

than one measure in making a decision. The findings recommend that the users of financial information before making any decision must watch out different earnings quality measures as single measures cannot provide a real picture of the firm's performance. The paper didn't consider all other measures of earnings quality and other industries hence, our findings cannot be generalized. Further studies can be carried out exploring the consistency among measures of earnings quality using the other industry.

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