

Segment Reporting Practices of Select Manufacturing Companies in India

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Abstract: Segment reporting describes the disclosure of data regarding a company's operations in several industries, its foreign operations and export sales, and its key clients. The study's goals are to examine the segment reporting disclosure practices of sample Indian manufacturing companies as well as the factors that affect the segment reporting disclosure index. The study hypothesises that the Segment Reporting Disclosure Index (SRDI) is normally distributed for all of the chosen organizations and that there is a notable difference between SRDI before and after the implementation of Ind AS for particular manufacturing companies i.e. Hindustan Unilever Limited, ITC Ltd., Mahindra & Mahindra, Reliance Industries, and Larsen & Toubro for a time frame of 8 years, from 2014–15 to 2021–2022. The study is purely based on secondary data. The OLS model, fixed effect model, random effect model, and Hausman test are the statistical methods employed. STATA and SPSS package have been used to do statistical analysis. For the chosen manufacturing enterprises in India, it was found that there was a substantial difference in SRDI before and after the adoption of Ind-AS. According to the Hausman test, the random effect model should be chosen for this study as it is the best-fit model.

Keywords: Segment Reporting, SRDI, ROCE, Sales, MCAP, Panel Regression

JEL Codes: M41, C58, O40, H20

1. INTRODUCTION

Corporate financial reporting entails communication of accounting information through financial statements of a corporate enterprise to various groups concerned with the performance of the enterprise. The requirements and practices of financial disclosures change from time to time, and keep pace with the dynamic business environment (Roy & Das, 2019). A firm reporting by segments leaves more information in the hands of stakeholders and helps to improve the quality of decisions undertaken by them (Hyderabad & Kalyanshetti, 2011). Beginning in early 1991, India's economy also began to open up. Since then, changes have been made in a

number of economic areas as well as corporate governance and accounting education. The users and regulators of financial statements have issued a clear call to action to the accountants, telling them to “wake up and face the challenge” as a result of these changes. New accounting standards on topics like segment reporting, leases, borrowing costs, related party disclosures, consolidated reporting, asset impairment, etc. were published in India as a response from accountants to this situation. The majority of businesses today deal in several products, and they are not geographically constrained in where they conduct business. As a result, unless and until it is examined in conjunction with distinct segment information, a single consolidated statement loses much of its importance to shareholders, lenders, even employees, and the government. One of the biggest and most significant advancements in the world of financial reporting is currently recognized as segment reporting. Segment reporting is the practice of disclosing specifics about a company’s activities across various industries, its international operations and export sales, and its principal clients. Users of financial statements such as analysts claim that segment information is essential in assessing and predicting firm performance (Knutson, 1993).

2. REVIEW OF LITERATURE

Balakrishnan, *et al.* (1990) examined “The Predictive Ability of Geographic Segment Disclosures”. The study utilizes data from a sample of companies in the United States, and employs statistical techniques to analyze the relationship between geographic segment disclosures and subsequent financial performance. Botosan and Stanford (2005) analyzed managers’ motivation to withhold segment disclosure and the effect of SFAS No.131 on analysts’ information environment. The objective of the study was to examine managers’ motives to withhold information. It was found that the adoption of SFAS No.131 resulted in a finer partitioning of firms’ operating activities, a reduction in analyst forecast errors, and improved monitoring. Katselas *et al.* (2011) examined about ED 8 operating segments and international firm lobbying. The association between international companies’ lobbying activities and their adherence to the operating segment accounting standard ED 8 (now known as IFRS 8) was investigated by the authors. IASB’s ED 8 standard, often known as the International Financial Reporting Standard 8, offers direction on segment reporting for publicly traded corporations. Kang and Gray (2013) discussed Segment Reporting Practices in Australia: Has IFRS 8 Made a Difference. This study sought to determine how segment reporting procedures in Australia would change as a result of the International Financial Reporting Standard (IFRS) 8. It mandates that businesses provide financial and illustrative data about their reportable segments, or operating segments that satisfy specific requirements, such as earning a sizable amount of revenue and having discrete financial information readily available. Kumar and Sridharan (2014) conducted study that aimed to analyze Segment Reporting: The Disclosure Practice of Indian Listed Companies among Select Industries. The study used a sample of 125 companies

listed on the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) in four industries: automobile, cement, pharmaceuticals, and software. The study revealed that the majority of the sample companies complied with the mandatory disclosure requirements of the Indian Accounting Standard (Ind AS) 108 on segment reporting. Farias and Rodriguez (2014) conducted a study titled *Segment Disclosures under IFRS 8's Management Approach: Has Segment Reporting Improved?* According to the management method mandated by IFRS 8, businesses must provide financial data on their operating segments based on how management manages and oversees the business, as opposed to just on the company's legal structure. Leung and Verriest (2015) discussed *The Impact of IFRS 8 on Geographical Segment Information*. The study looked at how IFRS 8 implementation affected the accuracy, applicability, and comparability of geographical segment information given by businesses. Zimnicki, T. (2016) analysed responsibility accounting inspiration for segment reporting. The researcher concluded that with the development of the company it is necessary to implement management system based on decentralization. Schroder and Yim (2017) discussed *Industry Effects in Firm and Segment Profitability Forecasting*. The research focuses on the influence of industry on companies' and industry-specific segments' profitability predictions. It was concluded that include industry effects in profitability forecasting models can result in more precise and trustworthy projections, which can be helpful for investors, financial analysts, and decision-makers in a variety of businesses. Roy and Das (2019) examined *Segment Reporting Practices in India: A Case Study of TCS* examined the segmental reporting practices of TCS and found that TCS is improving from year to year in their segment reporting. TCS was following the accounting standard for the purpose of segment reporting in its financial statement reporting, and the company has significantly used the segment reporting information for taking their various investment judgments. Song (2020) discussed *The Informational Value of Segment Data Disaggregated by Underlying Industry: Evidence from the Textual Features of Business Descriptions*. The study illustrates how segment data can offer insights into the underpinning industry dynamics, competitive environment, and firm-specific strategies by studying the textual elements of business descriptions, such as keywords, phrases, and tone. Basha, *et al.* (2021) analyzed *Segment Reporting with Reference to Selected Software Companies*. The purpose of the study was to analyze segment reporting of selected software companies namely INFOSYS, WIPRO, HCL, MINDTREE, and CYIENT with respect to operating segment and geographical segment, using descriptive statistics method. It was found that "FSI of segment of Infosys is the highest average revenue, the lowest risk, the most consistency & the greatest growth rate during the study period. Saleh, Abound and Eliwa (2021) investigated whether segment reporting quality had an impact on the cost of capital after the adoption of IFRS 8, and found no significance association between segment reporting quality and the cost of equity capital after the adoption of IFRS 8.

The genesis of concept, formulation of hypothesis, selection of various instrument for analysis and reaching significant conclusions were all aided by review of previous literatures on segment reporting practices. This paper is a novel attempt in this regard. The quantity of research on segment reporting, particularly with regard to manufacturing companies, is quite low in India. Manufacturing industries are like the backbone of the economy. Government of India is trying to promote “Make in India” and many other initiatives to make India’s flourish more, with the development of the manufacturing sector. In the present study, an attempt has been made to fill this gap by conducting research on segment reporting practices of select manufacturing companies: Hindustan Unilever Limited, ITC Ltd., Mahindra & Mahindra, Reliance Industry, and Larsen and Toubro.

3. OBJECTIVES OF THE STUDY

The objectives of the study are:

1. To examine the Segment Reporting Disclosure Practices of select Manufacturing Companies in India.
2. To examine the factors influencing the Segment Reporting Disclosure Index.

4. HYPOTHESES OF THE STUDY

H_1 : Segment Reporting Disclosure Index (SRDI) for all the select companies is normally distributed.

H_2 : There is significant difference in SRDI, pre and post implementation of Ind AS, on select Manufacturing companies in India.

5. RESEARCH METHODOLOGY

A sample of 5 manufacturing companies have been selected for the study-Hindustan Unilever Limited, ITC Ltd, Mahindra & Mahindra, Reliance Industry, and Larsen and Toubro. Manufacturing industries are critical to a country’s overall, and especially its economic development. The expansion of a country’s manufacturing industries is used to gauge its economic strength. Further, for the purpose of analysis annual reports have also been examined for a period of 8 years ranging from 2014–15 to 2021–2022. The researcher does a study on segment reporting, and in order to do so, the researcher needs all of the financial and segment data that is provided in the company’s annual report. Statistical tools including the OLS model, fixed effect model, random effect model, and Hausman test were employed by the researcher. The statistical analysis was done using STATA and SPSS packages.

6. DATA ANALYSIS & INTERPRETATION

H_1 : Segment Reporting Disclosure Index (SRDI) for all the selected companies is normally distributed.

Normality Test

For Normality test i.e. to determine whether the SRDI of selected companies, i.e. HUL, ITC Ltd, Mahindra and Mahindra, Reliance Industry and Larsen and Toubro is normally distributed or not, researcher has used Shapiro – Wilk Test.

Table 1: Tests of Normality for the Selected Companies

Particulars	Shapiro- Wilk Test		
	Statistic	df	Sig.
HUL	0.804	8	0.032
ITC Ltd.	0.748	8	0.008
Mahindra and Mahindra	0.641	8	0.00
Reliance Industry	0.883	8	0.002
Larsen &Toubro	0.566	8	0.00

Source: Data compiled from SPSS

On using the Shapiro-Wilk test for normality (table 1) it is found that all the companies have the significance value less than 0.05 (confidence level 95%), therefore the null hypothesis has been rejected, i.e. SRDI of selected companies is non-normally distributed.

H_2 : There is significant difference in SRDI, pre and post implementation of Ind AS, on selected manufacturing companies in India.

Pre and Post Analysis of Selected Companies on the Basis of SRDI

For analysing the impact of implementation of Ind-AS on disclosure of selected Manufacturing companies, researcher has used Wilcoxon (paired) Signed Rank test as there is non-normally distribution of data, and then it is concluded whether the impact is significant or not.

Table 2: Wilcoxon Signed Ranks Test

		Ranks		
		N	Mean Rank	Sum of Ranks
posttest – pretest	Negative Ranks	8 ^a	4.50	36.00
	Positive Ranks	0 ^b	.00	.00
	Ties	2 ^c		
	Total	10		

a. posttest < pretest

b. posttest > pretest

c. posttest = pretest

Source: Data compiled from SPSS

Table 3: Test Statistics

<i>Test</i>	<i>Satt</i>
Z	posttest –pretest -2.588 ^b
Asymp. Sig. (2-tailed)	.010

Source: Data compiled from SPSS

For testing H_2 , Wilcoxon (Paired) Signed Rank test has been used, as there is non normal distribution of SRDI for all the companies. From the table 3 it can be seen that p value (0.01) is less than 0.05 for all the companies (HUL, ITC Ltd., Mahindra and Mahindra, Reliance Industry & Larsen & Toubro). Therefore the null hypothesis has been rejected i.e. there is significant difference in SRDI, before and after implementation of Ind-AS, for the selected Manufacturing companies in India.

Analysis of Factors Influencing the Segment Reporting Disclosure Practices

In this study, researcher has SRDI as dependent variable where as ROCE, MCAP, SALES, DIVIDEND YIELD, AGE & LIQ have been considered as independent variables.

OLS Analysis: OLS Regression Model

$$SRDI = \alpha + \beta_1 ROCE + \beta_2 MCAP + \beta_3 SALES + \beta_4 \text{Dividend Yield} + \beta_5 AGE + \beta_6 LIQ + \varepsilon$$

Table 4: OLS Analysis

<i>Source</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>
Model	2285.08097	6	380.8468
Residual	4114.91903	33	124.6945
Total	6400	39	1 64.1026

Source: Compiled from Stata 15

Table 5: OLS Analysis

<i>Number of observations</i>	<i>40</i>
F(6, 33)	3.05
Prob>F	0.0173
R-squared	0.357
Adj R-squared	0.2401
Root MSE	11.167

Source: Compiled from Stata 15

Table 6: OLS Analysis

<i>SRDI</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>T</i>	<i>P>t</i>	<i>95% Conf.</i>	
ROCE	11.16803	7.902839	1.41	0.167	-4.91042	27.24648
MCAP	-6.28E-06	5.23E-06	-1.2	0.239	-1.7E-05	4.37E-06
SAL	0.0000976	0.00009	1.08	0.286	-8.6E-05	0.000281
DY	-5.071057	9.039464	-0.56	0.579	-23.462	13.31987
AGE	-0.2501712	0.5027124	-0.5	0.622	-1.27295	0.772605
LIQ	3.254412	5.502951	0.59	0.558	-7.94143	14.45025
_cons	81.17631	27.87796	2.91	0.006	24.45817	137.8944

Source: Compiled from Stata 15

The results of OLS Regression analysis exhibit that the p-value (0.0173) is less than the level of significance i.e.0.05. Thus the panel variable: Companycode (strongly balanced). The R Squared value (0.357) exhibits that ROCE, MCAP, SALES, DIVIDEND YIELD, AGE, LIQ explains 35.7% variance in the SRDI. The gap between R square and Adjusted R Square value is less, which is a sign of good model specification.

Fixed Effect Model and Random Effect Model

Table 7: OLS Analysis-Fixed Effect Regression

<i>SRDI</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t P>t</i>	<i>[95% Conf. Interval]</i>	
ROCE	-1.162156	8.521218	-0.14 0.892	-18.59	16.26569
MCAP	-2.3706	7.30E-06	-0.32 0.748	-0.0000173	1.26E-05
SALES	0.0003738	0.000193	1.94 0.063	-0.000021	0.000769
DividendYield	-1.443059	8.533104	-0.17 0.867	-18.89522	16.0091
AGE	-3.455117	1.311777	-2.63 0.013	-6.138003	-0.77223
LIQ	0.9411081	5.184956	0.18 0.857	-9.663317	11.54553
_cons	321.217	90.67759	3.54 0.001	135.7605	506.6735
R-sq:	Within .40 Between .41				
Corr(u_i, xb)	-0.9888	Number of groups 5 F(1,31) 3.26 Prob>F 0.0142			

Source: Compiled from Stata 15

Under fixed effect model, the F statistic is 3.26 and prob>F=0.0142 which is less than the level of significance i.e. 0.05. It means that all the coefficient of the model are not equal to 0. It means that the model is good and nicely fitted. Therefore, the model as per OLS Analysis-Fixed effect Regression

$$SRDI = C + \beta_1 ROCE + \beta_2 MCAP + \beta_3 SALES + \beta_4 \text{Dividend Yield} + \beta_5 AGE + \beta_6 LIQ + \tilde{\varepsilon}_{it}$$

$$SRDI = 321.217 - 1.162156 ROCE - 2.3706 MCAP + 0.0003738 SALES - 1.443059 DIVIDEND YIELD - 3.455117 AGE + 0.9411081 LIQ + \tilde{\varepsilon}_{it}$$

Random Effect Model

Table 8: OLS Analysis-Random Effect Regression

<i>SRDI</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>z P>z</i>	<i>[95% Conf. Interval]</i>
ROCE	11.16803	7.902839	1.41 0.158	-4.321249 26.65731
MCAP	-6.28E-06	5.23E-06	-1.20 0.230	-0.0000165 3.98E-06
SALES	0.0000976	0.00009	1.08 0.278	-0.0000789 0.000274
DividendYield	-5.071057	9.039464	-0.56 0.575	-22.78808 12.64597
AGE	-0.2501712	0.5027124	-0.50 0.619	-1.235469 0.735127
LIQ	3.254412	5.502951	0.59 0.554	-7.531174 14.04
_cons	81.17631	27.87796	2.91 0.004	26.53651 135.8161
sigma_u	0		Number of	40
sigma_e	9.2707887		obs	
rho	0.			
R-sq:			Number of	5
Within	0.2063		groups	
Between	0.6713			
overall	0.3570			
Corr(u_i, x)	0 (assumed)		Wald chi2(1)	18.33
			Prob>chi2	0.0055

Under Random effect regression model the prob>chi2=0.0055 which is less than the level of significance i.e. 0.05. It means that all the coefficient of the model is not equal to 0. It means that the model is good and nicely fitted. Therefore, the model as per OLS Analysis-Random effect Regression

Source: Compiled

$$SRDI = C + \beta_1 ROCE + \beta_2 MCAP + \beta_3 SALES + \beta_4 \text{Dividend Yield} + \beta_5 AGE + \beta_6 LIQ + z'iy + \tilde{\varepsilon}_{it}$$

$$SRDI = 81.17631 + 11.16803ROCE - 6.28 MCAP + 0.0000976 SALES - 5.071057 \text{Dividend Yield} - 0.2501712 AGE + 3.254412 LIQ + z'iy + \tilde{\varepsilon}_{it}$$

Hausman Test

The Hausman Test is used to differentiate between fixed effect model and random effect model in panel data.

H_{01} : The preferred model is random effect

H_1 : The preferred model is fixed effect

Table 9: Hausman Fixed

Variables	Coefficients			
	(b) Fixed	(B) Random	(b-B) Difference	$\sqrt{\text{diag}(V_b - V_B)}$ S.E.
ROCE	-1.162156	11.16803	-12.33019	3.186896
MCAP		-0.0000865	3.91E-06	5.09E-06
SALES	.0003738	.0000976	0.0002762	0.0001707
DividendYi-d		-6.514116	3.627998	.
AGE		-3.7052882	-3.204946	1.211627
LIQ	.9411081	3.254412	-2.313304	.
Chi2(4)			6.95	
Prob>chi2			0.1383	

Source: Compiled from Stata 15

From the above table it can be seen that Prob>chi2=0.1383 which is greater than 0.05 hence we failed to reject null hypothesis i.e the model has random effect. And so as per Hausman test, Random Effect Model should be preferred for this study as it is the best fit model.

7. FINDINGS

The OLS regression analysis findings show that the p-value (0.0173) is lower than the level of significance, which is 0.05. Hence the panel variable, Company code (strongly balanced). The R squared value (0.357) shows that the factors ROCE, MCAP, SALES, DIVIDEND YIELD, AGE, and LIQ account for 35.7% of the variance in the SRDI. A good model specification is indicated by a smaller difference between the R square and adjusted R square values. The F statistic for the fixed effect model is 3.26 and the prob>F value is 0.0142, which is less than the threshold for significance, which is 0.05. It implies that none of the model's coefficients are equal to 0. It indicates that the model is good and well-fitted. The prob>chi2 value under the random effect regression model is 0.0055, which is less than the 0.05 level of significance. It implies that none of the model's coefficients are equal to 0. It indicates that the model is good and well-fitted. As can be observed, Prob>chi2 = 0.1383 is greater than 0.05; hence, we failed to reject the null hypothesis i.e. the model has a random effect. Therefore, based on the Hausman test, the random effect model should be chosen for this investigation because it is the best-fit model. The hypothesis, according to which the SRDI of the chosen companies is not normally distributed, has been rejected when the Shapiro-Wilk test for normality (table 4.8) reveals that all the companies have a significant value less than 0.05 (confidence level 95%). Because SRDI is not evenly distributed throughout all of the organizations, the Wilcoxon (paired) signed rank test was utilized to evaluate H_2 . The p-value (0.01) for all the companies

(HUL, ITC Ltd., Mahindra & Mahindra, Reliance Industry, and Larsen& Toubro) is less than 0.05. Since there is a substantial variation in SRDI for the chosen manufacturing companies in India before and after the adoption of Ind-AS, the null hypothesis has been rejected.

8. CONCLUSION

From the perspective of stakeholders, segment reporting is a worthwhile exercise. They would have access to highly valuable disaggregated data that aids in resolving numerous complex problems in evaluating corporate performance. The segment information would show the profitable and non-profitable sectors of business activity, the proportionate contribution of each segment to overall growth and development, the strengths and weaknesses of the company, etc. Analyzing segment performance is essential to the company's effective operation. In this study, the operating profit-based performance of company segments is examined. The Hindustan Unilever Limited, ITC Ltd., Mahindra & Mahindra, Reliance Industry, and Larsen and Toubro Companies are adhering to the accounting standard for the purpose of segment reporting in their financial statement, and the companies are significantly using the segment reporting information for their various investment judgments.

9. MANAGERIAL IMPLICATIONS

The goal is to analyze the segment reporting of Hindustan Unilever Limited, ITC Ltd., Mahindra & Mahindra, Reliance Industry, and Larsen and Toubro in order to offer investors and other stakeholder's information that will aid in making sound business and economic decisions. To make wise investment selections, users should have a greater understanding of the financial status of the firms. In terms of their stewardship duties, it also helps in evaluating the management. In order to maximize resource usage and create shareholder value within the bounds of the law and social norms, management is responsible for its shareholders and other fund users. The results of this study aid public limited corporations in improving their reporting procedures and the performance of those procedures. Additionally, it aids in making economic decisions and raising awareness among stakeholders. Understanding segment reporting procedures is crucial since current stakeholder demands for increased transparency in business operations in the corporate world.

10. SCOPE FOR FUTURE RESEARCH

Based on segment reporting from selected manufacturing companies, the current analysis A future study may have a broader focus than what has been described below:

Research can be done to determine whether segment disclosures have an impact on a company's cost of capital. A cross-country comparison of segment reporting practices can be performed by using businesses from the same industry. Comparative research can be conducted to show the similarities and differences between the segment reporting practices of the various

public limited corporations. To determine how the stock market will react to the publication of segment information, a study on the impact of segment information on the stock market can be conducted.

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