International Research Journal of Multidisciplinary Scope (IRJMS), 2025; 6(3):1622-1633

Original Article | ISSN (O): 2582-631X DOI: 10.47857/irjms.2025.v06i03.04671

Segment Reporting Practices and Influencing Factors: Insights from Indian Listed Companies

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Abstract

This study examines disclosure practices of segment reporting in India during the regime of Ind AS 108. Further, it also investigated the association between segment disclosures and firm-specific attributes (Firm Size, Profitability, Liquidity ratio, Board Size and Board Independence). The sample comprises the top 100 BSE-listed companies from 2017-2022 for six years. A disclosure Index has been constructed based on the mandatory requirements of Ind-AS 108. Further, the study uses a multiple regression model to investigate the association with firm-specific attributes. The result suggests a slight increase in segment disclosures following the implementation of IFRS 8 (Ind-AS108). Given the legal requirement, complete compliance is yet to be achieved in India. The results prove the existence of managerial discretion. Regarding association with firm-specific characteristics, firm size, and liquidity positively and significantly affect Segment disclosures in India. Corporate governance variables and return on assets have insignificant associations with the segment disclosures index. The study offers new evidence on segment reporting in India. The study contributes to extant segment reporting literature by providing a comprehensive view of segment reporting practice and determinants following Ind-AS108 in India. The results also provide insights for policymakers and regulators to shape segment reporting practices in the Indian scenario.

Keywords: Extent of Disclosures, Ind-AS 108, Indian Companies, Management Approach, Segment Reporting.

Introduction

Corporate financial reporting is a widely acknowledged concept in today's dynamic environment. The primary goal of financial reporting is to give all the necessary information regarding the company's current and future performance to potential and prospective stakeholders (1). Financial reports provide quality information, leading to more efficient allocation of resources in the economy. With globalisation and the increase in multinational businesses, organisations have become more complicated, resulting in the remarkable growth of diversified enterprises (2). This diversification worldwide has increased the need for segment reporting (3). As the business grows and diversifies, a single consolidated statement cannot meet all the needs of various users, mainly investors and creditors. Therefore, segment reporting works to bridge this gap and reduce information asymmetry. Segment reporting is a highly debated issue due to reporting sensitive information to competitors and stakeholders (1), but it also offers various benefits. Segment Reporting is essential for the investment analysis process (4), enhances security valuation (5), improves corporate financial reporting, and influences earnings forecast (4, 6), and as a result influences investors and other users in making an informed decision. There has been a lot of effort to develop and update financial reporting standards relevant to segment disclosures since standard-setters across the world recognised the importance of segment information for financial analysts and users (3, 4). One of the most significant efforts in this direction is the implementation of IFRS 8 "Operating Segments" by the International Accounting Standard Board (IASB). IFRS 8 works on the "Management Approach" and became effective on 1 January 2009. It laid the foundation for recognising, measuring, and disclosing segment information. IASB believes the adoption of the "Management Approach" is going to boost the amount of relevant segment data by lowering the cost of creation, promoting consistency in the segment data included in financial statements and management reports, and enabling users to view firms "through

(Received 27th March 2025; Accepted 28th June 2025; Published 30th July 2025)

the eyes of management" (7-9). Segment reporting has recently captured much attention due to convergence with IFRS in developing countries. For India, the fastest-growing economy in the world, it is important to examine the behaviour of segment reporting. Two decades ago, there were no formal regulations governing segment information for Indian businesses. However, the Institute of Chartered Accountants of India (ICAI) released AS 17 for segment reporting in 2001. This Accounting standard continued to assist in 2016, when it was replaced by Ind AS 108, which required several adjustments, including obligatory disclosures for organisations with a single reportable section. Ind AS 108 was effective from 1st April 2015 voluntarily and from 1st April 2016 mandatorily. Ind AS 108 is based on the 'Management Approach' where segment reporting is based on those entity components monitored by the chief operation decision maker (CODM) while making strategic decisions. Segment disclosures were not subject to CODM review under AS 17 (2). Previous research has also examined the behaviour of segment reporting after implementing IFRS 8 and investigated its association with various firm attributes (3, 10-13). For instance, the disclosure practices of Jordanian companies were analysed under IFRS, and it was documented that segment disclosures have increased following the implementation of IFRS 8 (14). Similarly, an analysis of the disclosure practice of BRIC nations reported that the standard of reporting was consistent with IFRS (1).

Regarding the association with firm attributes, the association of firm characteristics with voluntary segment disclosures in Nigerian and Italian companies was investigated, respectively (15, 16). The extent of segment disclosures and their association with firm attributes among Malaysian listed companies (3). The factors that influence segment reporting quality and suggest a novel instrument for assessing it (17). To the best of the authors' knowledge, relatively few studies have been conducted to examine the factors that influence segment reporting in India following the adoption of IFRS 8 (Ind-AS 108). Therefore, this study contributes to existing research on segment disclosures, particularly in India, where such studies are very limited. The study contributes to extending segment reporting literature by providing a comprehensive view of segment reporting practice and determinants following Ind-AS108 in India. Segment Disclosures Index has been framed considering the mandatory requirement of Ind-AS 108. The findings indicate a 12% increase in the operating segments and a 4% increase in geographical segments under Ind-AS 108. As far as the identification of CODM is concerned, from 2017-2022, little change is seen in disclosing the person who serves as CODM. The result finds the existence of managerial discretion. The study's empirical results show that segment disclosures are positively and significantly correlated with firm size and liquidity. However, the study finds an insignificant association between corporate governance attributes (board size and board independence) and profitability. The results also provide insights for policymakers and regulators to shape segment reporting practices in the Indian scenario. The next sections of this paper are as follows: Section 2 discusses the creation of the theoretical framework and hypotheses. Research methodology, sample selection, variable specification, and model development are covered in Section 3. Section 4 deals with analysis and findings. The conclusion and implications have been discussed in the final section.

Theoretical Framework

Previous studies have used proprietary costs and agency theories to examine the drivers/determinants of segment reporting. In proprietary cost theory, also known as discretionary disclosure theory (18-21), companies get motivated to voluntarily release pertinent information to the market without costs associated with disclosure to lower information asymmetry and the cost of capital (16). Further, it is also well-established that disclosures reveal important information that may harm companies' competitive position (17). Addressing segment reporting often employs the concept of proprietary expenses to justify the company's segment reporting practices (20). He demonstrates that when a company has proprietary costs and withholds information, the market is left wondering if it is holding onto the information because it is "bad news" or simply because it is not good enough to justify the expense of releasing it. As a result, the market responds less negatively than it would if such costs were not present. Therefore, the corporation is incentivised to

conceal the information if the expenses exceed the market-expected discount. Disclosure of segment information is limited due to the cost of competitive disadvantage (22). Companies hide segment information to protect profit in less competitive markets, which supports the manager's assertions about the segment disclosure's cost (23). Similarly, companies reportedly limit segment information (voluntary) to reduce proprietary costs (16). Furthermore, the study suggested that proprietary costs affect younger, legally identifiable identities and companies that do not have correspondence between segments. The comparability of financial statements has improved due to the introduction of IFRS, but segment disclosure has had an inconsistent trend (17). Moving to Agency theory that explains the relationship between principal and agents. In this context, segment disclosure was considered a discretionary disclosure (24). They concluded that if unresolved agency issues exist, managers would have to bear the agency expenses associated with segment reporting. They demonstrated management's reluctance to disclose the parts with comparatively modest, unusual earnings to evade attention from shareholders.

Development of Hypothesis

Size and Segment Disclosures: Numerous studies on segment disclosures have shown extensive empirical evidence supporting that the firm's size is a significant factor in describing the difference in the quantity of segment information stated in the company's annual reports. As per proprietary cost theory, the disclosure level depends on the company's costs. Firms tend to restrict disclosures when they incur proprietary costs, that is, when information declarations negatively impact the company's ability to compete (25). Further, large companies are likely to disclose more segmental data than smaller ones. This can be because the cost of generating segment information is lower for large corporations due to sufficient expertise and resources to generate such information. Furthermore, small companies are more reluctant to hide information due to the fear of competitive disadvantage than large entities. It was documented that firm size positively relates to segmental disclosure (16). This demonstrates that larger businesses have lower proprietary costs and employ segment disclosure to offset their higher agency expenses. Similarly, size and segment disclosure had a positive relationship (17). They concluded that large companies are more incentivised to disclose higher-quality segment reporting. In contrast, a negative association between the size and extent of segment disclosures was observed, which could be due to the high use of management discretion after implementing IFRS 8 (8). Most of the previous research has shown a positive relationship between firm size and the extent of segmental disclosures (3, 10, 15-17, 25, 26).

Therefore, based on the above arguments, the following hypothesis is formulated.

H1: Firm size has a positive association with segmental disclosure.

Liquidity and Segment Disclosures: Companies with more liquidity often reveal more information than those with lower liquidity (27). Despite this argument, it was revealed that low liquidity might lead companies to increase their disclosure to allay investor concerns and let them know that management is aware of the issues (28). There is no significant relation between liquidity and companies' disclosure levels (12, 29), but another study revealed a negative relationship (28). Prior findings regarding the connection between liquidity and disclosure level are contradictory.

Based on the above argument, the following hypothesis is formulated.

H2: Liquidity has no association with segmental disclosures.

Profitability and Segment Disclosures: The relationship between profitability and segment disclosures is ambiguous. More section information is often disclosed by profitable businesses than by smaller ones, which can be attributed to the fact that their cost (proprietary cost) of disclosing information decreases; thus, they stand at a point where they can disseminate more information. Profitability is an indicator of investment. More profitable companies voluntarily provide more segment-specific information to foster a favourable perception in the marketplace and reassure investors about their capacity to optimise the company's and its shareholders' value (15). In contrast, managers prefer to hold on to information when the company is not profitable to prevent share devaluation and collapse. A positive association between profitability and segment disclosures was found (12, 30, 31). Some studies

contend that there exists a negative relationship between the two (15, 25). In contrast, some traced no significant relation between (3, 10, 16, 17). So, empirical studies provide mixed evidence on the association between profitability and segment disclosures.

Thus, the following hypothesis is formulated based on the above argument.

H3: Profitability has no association with segment disclosures.

Board Size and Segment Disclosures: Board size is a crucial characteristic of corporate governance. It is often seen that a large board size is ineffective due to limited ability to express ideas, finally leading to slow decision-making. In contrast, greater knowledge is added by a larger board and skilful members, which enhances management oversight and control (32). Regarding segment reporting, a positive relationship between board size and the extent of segment disclosures was documented (33). It showed that as the number of board members increases, the level of information gets higher. This is because more members mean more stakeholder engagement, which requires higher information and transparency. In contrast, an insignificant relationship between segment disclosures and board size was observed (2, 15).

Based on the above argument, the following hypothesis is formulated.

H4: Board size has no association with segment disclosures.

Board Independent Directors and Segmental Disclosures: Board independence is another important corporate governance variable. Independent directors are believed to have superior knowledge and expertise (32) and can weigh the interests of several parties (2). A larger percentage of independent directors on the corporate board contribute to improved disclosure quality and the elimination of agency issues. Previous empirical studies show mixed evidence of this relation. A positive relation between segment disclosures and board independence in Spain was documented (34). At the same time, no empirical evidence on the association between independent directors and segment disclosures was found (15). Based on the above arguments, the following hypothesis is developed.

H5: Board Independent directors have no association with segmental disclosure.

Methodology

Selection of Sample

The sample comprised the top 100 companies included in the S&P BSE. The primary justification for selecting just the best BSE firms is that these businesses are required to voluntarily reveal more specialised information in their annual reports, and it is extremely uncommon for small businesses to operate in many business segments. Further, previous research also found that firm size has a significant impact on segment disclosures (10, 15, 31, 35, 36).

Table 1 highlights the selection of the final sample. Out of 100 companies, 18 companies were excluded as these belong to banking and insurance firms and are subject to different regulatory frameworks such as the "Banking Regulation Act, 1959" and the "IRDA Act, 1999". Further, eight more companies were excluded due to insufficient data. For the purpose of empirical investigation, the final sample does not include single-sample companies, so 22 more companies were excluded, as these were single-segment companies (16). Two more companies were excluded due to different financial years, leaving the final sample with 50 companies, i.e., 300 observations. The study covered the period of six years, i.e., from 2017 to 2022, as Ind-As 108 becomes applicable from the year ended 31st March 2017. The data was gathered by looking through the listed firms' annual reports and the "Centre for Monitoring Indian Economy's (CMIE)" Prowess database, which the researchers frequently utilise for scholarly and analytical purposes (13, 37).

Table 1: Sample Selection

Companies Listed on BSE as Part of the BSE 100 Index as of January 14, 2022	**100**
Less: Banking and Insurance Companies	18
Less: Excluded due to insufficiency of data	8
Less: Single-segment companies	22
Less: Excluded due to a different financial year	2
Final Sample	50

Construction of Segment Disclosure Index (SDI)

Previous studies have shown that items to be included as a part of the checklist vary from one study to another, depending on the objective to be achieved. Disclosure checklist items might be based on the Company Act, the Stock exchange regulations of the country under study, and IFRS. For instance, a disclosure index was developed using IAS 14 R and IFRS 8 to investigate the impact of IFRS 8 on Jordanian-listed companies (14). Further, a checklist was prepared using the 40 items listed in Brazil's Pronouncement CPC 22 document (10). The guidelines of IFRS 8 "Operating Segments" or equivalent standards of countries were used for developing the disclosure checklist (2). So, in the case of this study, a disclosure index has been framed using guidelines of the Ministry of Corporate Affairs (MCA) on Ind-AS 108 "Operating Segments" (converged standard of IFRS 8).

Based on the above guidelines, an unweighted disclosure index approach is used. This approach treats all the items equally essential and avoids subjectivity in analysis (2, 8, 14). The items are scored using a dichotomous approach. It is classified as 1 if the segment's related elements are disclosed and 0 otherwise. The individual scores of each company are added and then divided by the total number of items to get each company's segment disclosure index or SDI.

The major limitation of this method is that one item may be relevant for one company and irrelevant for another. For instance, the company may have external revenue but not inter-segment revenue/sales. Thus, in such cases, inter-segment sales and the basis of inter-segment pricing would be irrelevant for such companies. Similar is the case with "profit from associates and joint ventures". Consequently, the failure to disclose irrelevant things would be recognised as NA, while the failure to disclose relevant information would receive a score of 0 (2, 14, 27).

Companies' annual reports have been reviewed twice to improve the index's reliability. Further, to examine inter-rater reliability, the consistency of the two evaluators was compared. For this, a pilot study of 15 Annual Reports for the years 2017–2019 was undertaken. Based on this pilot study, the context of reports was categorised by two different raters according to the index. The researchers were from the accounting and finance stream, currently working on index construction and usage in the Indian domain. Finally, Cohen's kappa statistic was used to calculate the probability of their agreement. The Cohen's kappa statistics resulted in 0.81, which is significant. The value of $K > 0.80$ is considered very good or excellent and would give a reliable result.

Dependent and Independent Variables

Different variables used in the study are depicted in Table 2. These variables have been used in the majority of previous studies and are considered to have an impact on segment disclosures.

Table 2: Description of Variables

Variables	Description of Variables	Calculation	Source	References
		Dependent Variable		
SDI	Segment Disclosures Index	Actual Score / Total Score	Annual Reports of the Company	(38)
		Independent Variables		
Firm_Size	Sales	Natural log of sales	CMIE	(8, 16, 39, 40, 41)
LIQ	Liquidity Ratio	Current assets / Current liabilities	CMIE	(29, 42)
PROF	Profitability	Return on Assets	CMIE	(3, 15, 17, 41)
BSIZE	Board Size	Total number of directors on the board	CMIE	(10, 33, 43)
BIND	Board Independent Directors	The proportion of Independent Directors on the Board	CMIE	(10, 32)

Model Specification

The current study has used panel regression to examine how firm-specific factors affect segment disclosures. Panel regression is the statistical technique that analyses data with both cross-sectional and time series components. It includes pooled ordinary least squares, fixed effect, and random effect models. The choice between fixed and random effect models is made using the Hausman test (32).

The base model used in the study is as follows:

SDI_{it}= ß$_0$ + ß$_1$Firm_size$_{it}$ + ß$_2$LIQ$_{it}$ + ß$_3$PROF$_{it}$ + ß$_4$BSIZE$_{it}$ + ß$_5$BIND$_{it}$+ Ɛ$_{it}$ [1]

Where SDI is the segment disclosures index, ß0 is a constant, ß1–ß5 are the various explanatory variables, and subscripts "i" and "t" denote companies and periods, respectively.

Results and Discussion

Table 3 consists of insights regarding the presence of the segment report in the company's annual reports of 50 companies, 31 (62%) presented their reports in standalone and consolidated financial statements, showing a comprehensive approach of companies toward segment disclosures. On the other hand, only 19 (38%) companies disclosed their segment information in consolidated financial statements. The reason for this could be regulatory requirements.

Table 3: Presence of Segment Reports in Annual Reports of Companies

Presence of Report	N	%
Consolidated Financial Statements only	19	38
Standalone as well as consolidated financial statements	31	62

Table 4: Descriptive Statistics of Number of Operating Segments Disclosed

Panel A: Number of Operating Segments Disclosed under Ind-AS 108						
	2017	2018	2019	2020	2021	2022
Mean	3.20	3.26	3.24	3.22	3.18	3.20
Std dev.	1.673	1.718	1.715	1.724	1.670	1.673
Median	3	3	3	3	3	3
Min.	1	1	1	1	1	1
Max	8	8	9	9	9	9
Panel B: Variation in the Number of Operating Segments Disclosed under Ind AS 108						
Increased			6 (12%)			
Decreased			5 (10%)			
No Change			39 (78%)			
Panel C: Increment in the Number of Operating Segments Disclosed under Ind AS 108						
+ 1 Segment			5 (10%)			
+2 segments			1 (2%)			

Table 4 Panel reports the descriptive statistics of the number of operating segments disclosed under Ind AS 108. In 2018, the highest average number of segment reports was recorded at 3.26, while the lowest was 3.18 in 2021. The standard deviation is the same for 2017 and 2022, with 1.673, with some variability between the years. With a median of 3, half of the organisations have operational segments greater than three and a half and less than three. The maximum and minimum number of segments recorded is nine and one, respectively. Panel B illustrates how some operating segments reported under Ind-AS 108 changed between 2017 and 2022. Out of 50 companies, 6 (12%) have increased the number of operating segments, while 5 (10%) have decreased their operating segments. The results showed that most Indian companies did not change the number of operating segments during the study period. Finally, regarding the increase in the number of operating segments, Panel C reports that 5 companies have added only one segment, while 1 company added only 2 segments after the adoption of Ind-AS 108.

Table 5: Descriptive Statistics of Number of Geographical Segments Disclosed

Panel A: Number of Geographical Segments Disclosed under Ind AS 108						
	2017	2018	2019	2020	2021	2022
Mean	2.74	2.78	2.68	2.82	2.84	2.84
Std dev.	1.339	1.404	1.462	1.621	1.641	1.641
Median	2	2	2	2	2	2
Min.	1	1	1	1	1	1
Max	6	7	9	10	10	10
Panel B: Variation in the Number of Geographical Segments Disclosed under Ind AS 108						
Increased			2 (4%)			
Decreased			0			
No Change			48 (96%)			
Panel C: Increment in the Number of Geographical Segments Disclosed under Ind AS 108						
+ 1 Segment			1 (2%)			
+ 4 segments			1 (2%)			

Table 5 consists of descriptive statistics of the number of Geographical Segments Disclosed. IFRS 8 or Ind-AS 108 requires companies to report their geographical segments. The mean number of geographic segments ranges from 2.68 to 2.84 from 2017-2022. The standard deviation ranges from 1.33 in 2017 to 1.64 in 2022. The minimum and maximum number of segments reported is 1 and 10, respectively, with a median of 2. Panel B reports the change in the number of geographical segments. Most companies have not changed the number of geographic segments after the adoption of Ind-AS 108. Panel C talks about the increase in the number of geographical segments. Only two companies show an increase in geographical segments by adding 1 and 4 segments, respectively. Overall results show that the performance of Indian companies in reporting geographical segments is low.

Table 6: CODM Identification

CODM	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Not Mentioned	25 (50%)	22(44%)	22(44%)	22(44%)	22(44%)	22(44%)
EC	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)
CEO & MD	5 (10%)	5(10%)	5(10%)	5 (10%)	5 (10%)	5 (10%)
MC	1 (2%)	1 (2%)	1(2%)	1(2%)	1(2%)	1(2%)
Chairman	-	1(2%)	1(2%)	2(4%)	2(4%)	2(4%)
CM & MD	1(2%)	2(4%)	2(4%)	2(4%)	1(2%)	1(2%)
EMC	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)
CMC	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)
MD	3(6%)	4(8%)	4(8%)	4(8%)	4(8%)	4(8%)
BOD	4(8%)	4(8%)	4(8%)	4(8%)	4(8%)	4(8%)
CFD	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)
ED	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)
CEO	4(8%)	4(8%)	4(8%)	3(6%)	4(8%)	4(8%)
MGT Group	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)
CEO/CFO	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)	1(2%)

Table 6 describes the identification of the chief operating decision-maker (CODM) from 2017-2022. The table shows that 50% of companies in 2017 and 44% during 2018-2022 haven't disclosed information about CODM. The results state that Indian companies are reluctant to disclose information about CODM. Such high non-disclosure is because disclosing information about CODM is not mandatory. However, companies can voluntarily disclose this fact. As voluntary disclosures, most Indian companies have disclosed the CEO and MD as CODM, followed by the Board of Directors (BOD), Managing Directors (MD), and the CEO.

Table 7: Narratives Disclosures

Companies with Narratives	MD&A only	Other Locations	More than one location
27	22	3	2
(54 %)	(44 %)	(6 %)	(4 %)

Table 7 highlights the narratives' disclosures of segment information. Generally, segment information is given in notes to account for sections of financial statements (consolidated and standalone). For analysis, narratives mean the element or portion of annual reports that are not part of financial statements (2). Generally, these narratives come prior to financial statements in the annual report. Of 50 companies, 54%, i.e., 27, have shown their narratives on segment information. Most of these companies, i.e., 44 %, have placed their narratives in the MD&A (Management Discussion and Analysis) section. The inclusion of segment performance in the MD&A section helps management better explain different segment performances to various stakeholders from management perspectives. A few companies (6%) have discussed segment information at other locations. Other locations include statutory reports and board of directors' reports. Only two companies (4%) have provided their narratives in multiple locations. Providing segment information in more than one location indicates a comprehensive and integrated view of companies in disclosing segment information so that it reaches many audiences with different interests.

Table 8: Descriptive Statistics of the Variables

	Mean	Std. Deviation	Minimum	Maximum
SDI	59.591	13.175	25.490	84.906
Firmsize	10.367	1.373	6.789	13.578
LIQ	1.618	0.900	0.340	5.390
PROF	9.498	7.421	-6.320	34.100
BSIZE	11.433	2.840	6.000	22.000
BIND	0.508	0.112	0.100	0.833

Table 8 describes the variables used in the study. The mean SDI is 59.91, ranging from 25.490 to 84.906, indicating a significant difference among disclosure practices, and a standard deviation of 13.175, indicating a moderate variability in the segment disclosure level across the companies. The average firm size is 10.367, with a standard deviation of 1.373 and a range from 6.789 to 13.578. The average liquidity is 1.618 (std. deviation 0.900) with a range from 0.340 to 5.390, indicating wide dispersion where some companies have high liquidity compared to others.

The mean board size is 11.433, ranging from 6 to 22, and a standard deviation of 2.840, indicating a diverse governance structure. The average independent directors are 0.508 (50%) with a variability of 0.112. The range is 10 to 83 %, indicating a difference in how the companies structure their board.

Table 9: Correlation Matrix with VIF

	SDI	Firm_Size	LIQ	PROF	BSIZE	BIND	VIF
SDI	1						
Firm_Size	.304**	1					1.210
LIQ	-.395**	-.375**	1				1.825
PROF	-.311**	-.241**	.617**	1			1.651
BSIZE	.358**	.208**	-.156*	0.004	1		1.102
BIND	-.277*	-.122*	.166**	.112	.009	1	1.082

Table 9 highlights the correlation matrix that reflects a significant relation of SDI with various independent variables. SDI has a positive and significant correlation with firm size (.304) and board size (.358). The positive relation with firm size highlights that companies tend to reveal more segment disclosures. In contrast, the positive relation with board size depicts that an increase in

large boards is associated with increased segment disclosures. SDI has a significant but negative relation with liquidity (-.395), profitability (-.311), and board independence (-.277), indicating that as these increase, companies tend to disclose less information. Correlation among the independent variables is also noteworthy. Firm size is negatively correlated with liquidity, profitability, and board independence, while board size is positively correlated. Liquidity is positively correlated with profitability (.617) and board independence (.166) and negatively associated with board size (-.156). Overall, the highest correlation is .617, which is within the limit, i.e., less than 0.8.

Multicollinearity has been checked using VIF (Variance Inflation Factor). VIF quantifies multicollinearity in multiple regression models. A VIF value below 1 suggests no correlation, while a VIF greater than 5 signifies a strong correlation. VIF values up to 5 are considered acceptable. Here, all the independent variables have centred VIF between 1 and 2, indicating low correlation; thus, the case of multicollinearity does not exist, and further models can be applied appropriately.

Regression Analysis

To begin with, regression analysis, firstly, Panel OLS was applied to examine the relationship between SDI and different independent variables. This straightforward model presumes identical underlying features for all entities in the dataset, neglecting any potential unobserved entity-specific effects. In other words, it assumes error terms are uncorrelated over different cross-sectional units, i.e., no cross-sectional dependence exists. Thus, a cross-sectional dependence test is conducted to check if the individual units exhibit heterogeneity. The popularly used cross-sectional dependence test, the Pesaran CD test, is used to do so.

Cross-sectional Dependence

This test checked the presence of cross-sectional dependence in the model. Dependence indicates the presence of certain unseen influences that affect each unit differently or similarly. The null hypothesis of this test is "there is no cross-sectional dependence". In other words, the residuals are not correlated across companies.

Table 10: Pesaran CD Test

Test	Statistic	Prob.	Null Hypothesis: No Cross-sectional dependence
Pesaran CD	24.468	0.000	Rejection of Null Hypothesis

Table 10 represents the results of the Pesaran CD test. The test statistic is 24.468 with a p-value of 0.000, less than 0.05. Thus, the null hypothesis is not accepted, confirming the presence of cross-sectional dependence. Therefore, a fixed and random effect model will address this issue.

Table 11: Results of Regression Models

	Panel OLS		Random Effect		Fixed Effect	
Variables	**Coeff.**	**Prob.**	**Coeff.**	**Prob.**	**Coeff.**	**Prob.**
C	42.937	0.0000**	43.850	0.0000**	45.727	0.000**
Firm_Size	1.084	0.0374**	1.667	0.0005**	1.466	0.0048**
LIQ	-2.854	0.0036**	1.253	0.0018**	1.493	0.0003**
PROF	-0.266	0.0184**	-0.144	0.0163**	-0.110	0.0765
BSIZE	1.478	0.0000**	-0.142	0.2077	-0.216	0.0601
BIND	-0.089	0.0708	-0.011	0.5961	-0.004	0.8279
R-Squared	0.288		0.078		0.872	
F stat (Prob.)	0.000		0.000		0.000	

Note: ** statistically significant at 5 %

The results of the regression analysis are shown in Table 11. The fixed and random effect model is applied to check which model provides the check on unobserved heterogeneity. In a panel data set, a fixed effect model helps account for time-invariant unobserved individual characteristics that may influence the relationship between the independent and dependent variables. When heterogeneity is constant and not connected with independent factors over time, random effect models effectively account for unobserved heterogeneity. The results of both tests are

specified in the table. Further, the Hausman test is applied to judge which model is better among the fixed and random effect models. The results of the Hausman test reported chi-square statistics of 22.31 with a p-value of 0.000, which is less than a 5 % significance level. Thus, the null hypothesis "Random effect model is better than Fixed effect model" is not accepted. In other words, the fixed effect model is appropriate for the study to explain the relationship among variables.

In the fixed effect model, the R-squared value is 0.872 with F-stat {159.54 (p-value 0.000)} that ensures the model's fitness. The R-Square value, i.e, 87%, mentions that independent variables explain 87% of the variance in SDI. The significant variables found among firm characteristics are firm size and liquidity. Firm size is positively related and statistically significant with Coeff. 1.466 and p-value 0.0048 at a 5% significance level, suggesting that large firms provide more comprehensive segment disclosures. These results are consistent with the previous studies (17, 26). Large firms have an extra incentive to decrease monitoring costs and have a lower competitive cost disadvantage than small firms. So, these may have a position to provide more information. Further, Liquidity is also positively related and statistically significant, with 0.0003 p-values at a 5 % significance level. This can be attributed to the fact that firms with high liquidity can bear the high cost of disclosing information due to their financial resources. Profitability, as measured by return on total assets, board size and board independence, is negatively correlated and insignificant with p-values of 0.0765, 0.0601, and 0.8279, respectively (10).

The Durbin-Watson statistics are widely used to check the presence of autocorrelation. The value is 2.033, close to 2, suggesting no first-order autocorrelation exists. In other words, error terms are not correlated; thus, the assumption of no autocorrelation is met. Regarding normality, the central limit theorem states that for samples larger than 30 observations, the distribution of their averages is approximately normal. Here, normality can be assumed with a sample size of 300 observations for each variable.

Conclusion

High-quality financial reports lead to the minimization of information asymmetry between information providers and their users. During the last few decades, various regulators and standard setters worldwide have emphasised improving the quantity and quality of corporate disclosures. Similarly, the quality of segment disclosure has been considered in developing segment-reporting-related accounting standards and their practice. In India, ICAI and other regulators have made the desired efforts to improve the segment reporting disclosures. This study investigated the relationship between firm-specific characteristics and segment disclosures. In this connection, it is noteworthy that the IFRS converged standards favorably stimulated the degree of disclosure compliance with regard to segment reporting. Nevertheless, given the legal requirement for disclosure, not all businesses have yet attained the point of complete compliance at which disclosure is required.

The researcher developed SDI based on the mandatory requirements of IND-AS 108. As per the study, the quality and quantity of segment information depend on the firm size and liquidity. Interestingly, corporate governance variables do not seem to have an impact on segment reporting. The study reveals that the company withholds segment information due to managerial discretion. The findings also have implications for policymakers and practitioners to check the information given by the companies in their reports. The authority should encourage the company to take up a management approach to segment disclosures. Appropriate enforcement mechanisms should be created and enforced to protect various users' interests. It is imperative that all companies disclose their current state of compliance with the relevant rules. The study shows dispersion in showcasing segments related information among the companies. As per the reviewer's recommendation, the conclusion has been updated with the following: This calls for a uniform structure or format for giving segment information so that comparability can be enhanced. Further, for enhancing audit oversight, an audit checklist based on Ind AS 108 compliance may be framed. Companies from the IT sector, such as TCS and Infosys, provide detailed segment information beyond mandatory requirements. Further examination of data reveals that Indian mid-cap companies' geographic segment reporting is severely limited, as they mostly only offer

"within India" and "outside India" information. It is necessary to take a more thorough and nuanced approach to geographical segmentation since this aggregated method obscures individual area performance, risks, and development prospects both locally and globally, which prevents stakeholders from having a full picture. In addition, the company that provides minimum segment disclosure just to fulfil compliance requirements can be flagged by regulators and urged to give more information that may help investors and other interested parties. Consequently, this will improve the level of comparability between various domestic and foreign financial reports and raise the likelihood of being listed internationally. Gaining a worldwide competitive edge and enhancing the trustworthiness of international investors would also benefit from it. This study is confined only to India and has limited explanatory variables. Further research can be extended by comparing the Segment disclosure practices of developed and developing countries over a longer time span. Further, other explanatory variables like listing status, Foreign ownership or institutional shareholding can be used.

Abbreviations

BSE: Bombay Stock Exchange, CODM: Chief Operation Decision Maker, IASB: International Accounting Standard Board, IFRS: International Financial Reporting Standards, Ind-AS: Indian Accounting Standard.

Acknowledgment

None.

Author Contributions

All authors have accepted and are equally responsible for the entire content of this manuscript and have approved its submission.

Conflict of Interest

The authors declared no potential conflicts of interest concerning this article's research, authorship, and/or publication.

Ethics Approval

Not applicable.

Funding

The authors received no financial support for this article's research, authorship, and/or publication.

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