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## A STUDY OF INTERNET FINANCIAL REPORTING (IFR) IN INDIAN BANKING SECTOR

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### ABSTRACT

The Internet offers a new medium for presentation of financial reports by companies. New applications, new users and faster connections have spurred the Internet to become an important medium for communication, information dissemination and commerce. The need for information disclosure stems from market failures caused by low disclosure of relevant information for users resulting in information asymmetry. The voluntary nature of information provided on the internet by the publicly listed companies has resulted in non-uniformity in their disclosures.

The objective of the present study is to test whether is any significant influence of market capitalization, debt-asset ratio, financial performance, profit level, and stock price on Internet Financial Reporting (IFR) Disclosure Index and the tests are conducted by measuring IFR index of as a dependent variable and the above five independent variables in 32 banking sample companies selected from BSE-500. The results indicated that IFR index of Indian banking sector was very strongly associated with market capitalization.

**Keywords:** IFR, Market Capitalization, Debt-Asset Ratio, Profit, Financial Performance, Stock Price, Banking Sector.

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### INTRODUCTION

Internet financial reporting (IFR) is a product of information technology that has played a significant role in Internet revolution. IFR is getting increased attention everywhere. The emergence of IFR has transformed the boundaries of traditional financial reporting into an ever expanding concept. Hence Sir Bryan Carsberg, the Secretary-General of IASC has stated that "Technology has altered irreversibly not only the physical medium of corporate financial reporting but also its traditional boundaries (Cited in Venter: 2002). It is almost likely that the printed annual reports will eventually disappear worldwide through a move to electronic medium of the Internet (Beattie and Pratt: 2003). The reasons why companies prefer to present their corporate information is their interest in presenting their results to potential investors (Bonson and Escobar: 2006). Basically, IFR is the preferred route due to reduction

in time delay between the preparation of financial reports and the receipt of information by the investors; and borderless creation of a single global financial market (Gorgan and Gorgan: 2008).

Hence a study of IFR from several perspectives is more relevant topic for research, especially in emerging and developing countries. In this process of abundance of research on IFR at the global level, a modest attempt was made to examine empirically the IFR phenomenon in the Indian banking sector focusing mainly on IFR disclosure, IFR determinants, and perceptions of users towards IFR usefulness. Based on the empirical study, the present chapter presents the empirical findings, testing of hypothesis, suggestions to improve IFR, and future course of research.

## REVIEW OF LITERATURE

India has the third highest number of Internet users in the world ([www.internetworldstats.com](http://www.internetworldstats.com)) and the number of users increased from 5 million users in 2000 to the present number of 462 million. That is a growth of 9142 per cent in 17 years in terms of Internet users. Mumbai Stock exchange has the highest number of listed companies in the world with 5,174 by the end of June 2017. Linking the fact that India boasts of a very robust software industry with no dearth of web professionals to create and maintain web sites to the statistics on Internet users and listed public companies; there is an optimism for the potential of tremendous activity in terms of financial reporting on the Internet. There is no guidance or standard on the audit of financial information on the Internet in India.

The voluntary nature of IFR has led several researchers to find the factors influencing both the contents and volume of IFR of a company. The literature on factors or determinants of IFR was found to be very vast. The present research focused on firm size, debt-asset ratio, financial performance, profit level and stock price as the major determinants of IFR.

Several studies in developed countries find a positive relationship between firm size and IFR level (Craven and Marston: 1999; Pirchegger and Wagenhofer: 1999); Gowthorpe and Amat: 1999; Marston: 2003; Oyelere et al: 2003; Marston and Polei: 2004; Kelton and Yang: 2008). Equally, several studies in developing countries also find a positive relationship between company size and IFR level (Hassan et al: 1999; Joshi and Al-Bastak: 2000; Xiao et al: 2004). From the viewpoint of international comparison or cross-country analysis, two studies by Allam (2006) and Bollena et al (2006) were found but the results of these studies were contradictory to each other.

A number of studies have examined the association between financial performance and the extent of IFR disclosure and the findings are very much conflicting (Street and Gray: 2002:54). It is important to note financial performance profitability is associated with financial performance. Most previous studies find no statistically significant relationship between voluntary disclosure and financial performance (Ettredge et al: 2002; Larran and Giner: 2002; Oyelere et al: 2003; Giner et al: 2003; Marston and Polei: 2004; Prencipe: 2004; Xiao et al: 2004), or a negative relationship (Trabelsi et al: 2008; Momany and Pillai: 2013; Dyczkowska: 2014). Simultaneously, many studies found a positive relationship

between company performance (profitability) and IFR disclosure (Haniffa and Cooke: 2002; Agyei-Mensah: 2012; Andrikopoulos et al: 2013).

## **OBJECTIVE OF THE STUDY**

In view of conflicting results evidenced with regard to IFR in relation independent variables consisting of market capitalization, financial performance, profit level, debt-asset ratio, and stock price, the present study aimed at examining the nature and extent of relationship between IFR and these five independent variables in Indian banking sector.

## **HYPOTHESES FOR THE STUDY**

In the background of the objectives of the study, the following hypotheses were identified:

*H<sub>1</sub>*: There is a significant relationship between market capitalization and IFR disclosure level.

*H<sub>2</sub>*: There is a significant relationship between financial performance and IFR disclosure level.

*H<sub>3</sub>*: There is a significant relationship between profit level and IFR disclosure level.

*H<sub>4</sub>*: There is a significant relationship between debt-asset ratio and IFR disclosure level.

*H<sub>5</sub>*: There is a significant relationship between stock price ratio and IFR disclosure level.

## **RESEARCH DESIGN**

While carrying out the research, second source of information was used. IFR disclosure index was the dependent variable that consisted of 118 items and independent variables were represented by market capitalization, financial performance, profit level, debt-asset ratio and stock price ratio. Based on stratified random sampling, 32 banking companies were selected from BSE-500 sample companies thus making the sample adequately representing the population. The data relating to independent and dependent variables were drawn from each of the sample companies numbering 32 for the year 2017.

## **DEFINING THE VARIABLES**

In the present study, IFR disclosure index was the dependent variable. IFR indexes were quantified on the basis of unweighted disclosure index by assigning '1' for an item being present in the website of each sample company and '0' for an item being absent in a company website. Independent variables included market capitalization, financial performance, profit level; stock price, and debt-asset ratio. Table 1 provides the operational definitions used in the present study. Market capitalization of each sample company was defined as average share price for 2017 multiplied outstanding shares in at the end of fiscal year, 2017. Financial performance was defined in terms reported profit or reported net loss

that existed at the end of fiscal year, 2017. Profit level was defined in terms of profit earning companies only thus leaving out loss incurring companies and the profit was for the end of fiscal year, 2017.

**Table 1**  
**Defining Selected IFR Determinants**

Variable	Definition	Base Year
Market Capitalization	Share Price X O/S Shares	Average share price for 2017 and outstanding at the end of fiscal year, 2017
Financial Performance	Reported Net Profit/ Net Loss	Reported net profit/net loss at the end of fiscal year, 2017
Profit	Reported Net Profit (2017)	Reported net profit at the end of fiscal year, 2017
Share Price	Share Price (2017)	Average price for 2017
Debt-Asset Ratio	Long Term Debt/Total Assets	Reported amounts at the end of fiscal year, 2017

Share price was defined as the average price for 2017 as in the case of market capitalization. Debt-asset ratio was long term debt divided by total assets for the fiscal year, 2017 and this denominator was the bottom-line amount on the asset side of balance sheet of each sample company.

## TESTING OF HYPOTHESES

A hypothesis is a supposition to be tested whether it is true or false. Generally, hypothesis testing consists of the identification of a null hypothesis ( $H_0$ ) and an alternative hypothesis ( $H_a$ ). "The purpose of hypothesis testing is to determine which of the two hypotheses is correct (Zikmund: 1984)." The most widely used method of hypothesis testing is done through inferential statistics, which employs the probability theory for deducing or inferring the properties of a population from the analysis of the properties of a data sample drawn from it. In essence, inferential statistics focuses on measuring precision and reliability of statistical results.

**Table 2**  
**Formulae for Testing of Hypotheses**

Test	Base	Formula
Independent z-test	Pooled Data	$z = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}}$
Paired t-test (Independent z-test)	Group Data	$t = \frac{\bar{x}_1 - \bar{x}_2}{\sigma(\bar{x}_1 - \bar{x}_2)}$
Paired t-test (Significance)	Group Data	$t = \frac{\sum d}{\sqrt{\frac{n(\sum d^2) - (\sum d)^2}{n-1}}}$

Where,

$\bar{x}$  = Sample mean

$\mu$  = population mean

$\sigma$  = standard deviation

$n$  = number of observations

$\bar{x}_1$  = Mean of group 1

$\bar{x}_2$  = Mean of group 2

$\Sigma d$

The present study tested the statistical significance of the hypotheses by applying independent z-tests for the pooled data and group data, and paired t-tests for group differences. Table 2 provides an overview of these tests along with the formulae being used to test the different hypotheses identified in the present study. Specifically, independent z-test was applied for the pooled data and group data assuming that the latter are independent. The paired t-test was applied to find the significant difference between two groups of data. In the background of the objectives of the study, the following hypotheses relating to Internet Financial Reporting (IFR) in Indian banking sector have been developed to conduct the present empirical study:

#### ANALYSIS AND INTERPRETATION OF DATA

Based on the above research design, the association between IFR disclosure and five variables influencing it was analyzed and interpreted. The results of the study have been presented under following

***H<sub>0I</sub>*: There is no significant relationship between market capitalization and IFR disclosure level.**

***H<sub>A1</sub>*: There is a significant relationship between market capitalization and IFR disclosure level.**

The present study adopted market capitalization as a proxy for firm size. Innumerable studies on the relationship between firm size and IFR disclosure level found the relationship to be highly positive. However a very few studies in developing countries found no relationship between firm size and IFR disclosure level. In the present study, the regression results established the R<sup>2</sup> at 22.51% between market capitalization as a proxy for firm size and IFR disclosure based on the data collated from the sample companies at the significance level 0.05.

**Table 5**  
**Testing of Hypothesis: Relationship between**  
**Market Capitalization and IFR Disclosure**

z-Test	$z = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{22.51 - 0}{\frac{41.81}{\sqrt{252}}} = z = 8.536$			
Test Statistic	Calculated Value	df	Table Value*	Sig.
	8.536	251	1.960	0.000

\*Level of Significance at 0.05

Table 5 presents inferential statistics relating to statistical significance of the relationship market capitalization and IFR disclosure level in the sample companies using independence z-test. The results indicated the z-score of 8.536 with 117 degrees of freedom at the significance level of 0.05. The z-score was higher than the table value at 8.536 and 1.960 and this statistical significance at 0.05. Hence the z-score of 8.536 regarding  $H_{03}$  that “There is no significant relationship between market capitalization and IFR disclosure level” fell in the critical region and not in the non-rejection region and hence z-score was in the critical region. Hence the  $H_{A1}$  that “There is a significant relationship between market capitalization and IFR disclosure level” stands

**ACCEPTED.**

**$H_{02}$ : There is no significant relationship between financial performance and IFR disclosure level.**

**$H_{A2}$ : There is a significant relationship between financial performance and IFR disclosure level.**

Financial performance refers to how a company performs in terms of earnings and such performance includes losses incurred. The proxies for measuring financial performance include profitability measured in terms of return on assets, return on capital, and also the amount of profit earned or losses incurred. While measuring financial performance, the traditional definition of profit earned or loss incurred by each sample company was adopted in the present study.

**Table 6**  
**Testing of Hypothesis: Relationship between**  
**Financial Performance and IFR Disclosure**

Independent z-Test	$z = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{13.22 - 0}{\frac{29.91}{\sqrt{252}}} = z = 7.017$			
Test Statistic	Calculated Value	df	Table Value*	Sig.
	7.017	251	1.960	0.000

\*Level of Significance at 0.05

Source: Table 4.25

Table 6 documents the inferential statistics on the relationship between financial performance and IFR disclosure. The  $R^2$  value relating to financial performance and IFR disclosure level stood at 13.22%. The z-score was found to be 7.017 with 251 degrees of freedom and this value was found to be higher than the Table value of 1.960 at significance level of 0.05 under two-tailed test and this indicated that  $H_{02}$  was not in the non-rejection region and  $H_{A2}$  was in the critical region. Hence the  $H_{02}$  that “There is no significant

relationship between financial performance and IFR” was rejected and  $H_{A2}$  that “There is a significant relationship between financial performance and IFR” stands

**ACCEPTED.**

**$H_{03}$ : There is no significant relationship between profit level and IFR disclosure level.**

**$H_{A3}$ : There is a significant relationship between profit level and IFR disclosure level.**

Out of 252 sample companies, the number of profit making companies stood at 200 representing 79.37% and the number of loss incurring companies stood at exactly 52 representing 20.63%. The regression results relating to the relationship between profit level and IFR disclosure level indicated the  $R^2$  of 17.55%.

**Table 7**  
**Testing of Hypothesis: Relationship between Profit and IFR Disclosure**

z-Test	$z = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{17.55 - 0}{\frac{27}{\sqrt{200}}} = z = 9.192$			
Test Statistic	Calculated Value	df	Table Value*	Sig.
	9.192	199	1.960	0.000

\*Level of Significance at 0.05

Table 7 presents inferential statistics with regard to the relationship between profit and IFR disclosure levels. The independent z-test between profit and IFR disclosure resulted in a z-score of 9.192. The test statistic resulted in the z-score being higher than the table value with respective values of 9.192 and 1.960 with 199 degrees of freedom under two-tailed test at the significance level of 0.05 and these indicated that  $H_{03}$  was not in the non-rejection region and  $H_{A3}$  was in the critical region. Hence the  $H_{03}$  that “There is no significant relationship between profit level and IFR disclosure level” is rejected and  $H_{A3}$  that “There is a significant relationship between profit level and IFR disclosure level stands

**ACCEPTED.**

**$H_{04}$ : There is no significant relationship between debt-asset ratio and IFR disclosure level.**

**$H_{A4}$ : There is a significant relationship between debt-asset ratio and IFR disclosure level.**

Several empirical studies found a positive relationship between debt-asset ratio and IFR disclosure level with almost equally several studies no relationship between the two variables. The present study found the  $R^2$  between debt-assets ratio and IFR disclosure with the value of 18.21.

**Table 8**  
**Testing of Hypothesis: Relationship between**  
**Debt-Asset Ratio and IFR Disclosure**

z-Test	$z = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{18.31 - 0}{\frac{43.57}{\sqrt{252}}} = z = 6.670$			
Test	Calculated Value	df	Table Value*	Sig.
Statistic	6.670	251	1.960	0.000

\*Level of Significance at 0.05

The inferential statistics relating to statistical significance of  $R^2$  denoting the relationship between the two variables has been presented in Table 8. The independent z-score was found to be 6.670 and the test statistic indicated that independent z-score (calculated value) was higher than the Table value with their respective values of 6.670 and 1.96 with 251 degrees of freedom under two-tailed test and the p-value was 0.000 at the significance level of 0.05 and these values indicated that  $H_{04}$  was not in the non-rejection region and  $H_{A4}$  was in the acceptance region of the normal distribution curve. Hence the  $H_{04}$  that “There is no significant relationship between debt-asset ratio and IFR disclosure level” is rejected and the  $H_{A4}$  that “There is a significant relationship between debt-asset ratio and IFR disclosure level” stands

**ACCEPTED**

**$H_{05}$ : There is no significant relationship between stock price and IFR disclosure level.**

**$H_{A5}$ : There is a significant relationship between stock price and IFR disclosure level.**

Several studies find a positive relationship between stock price and IFR disclosure level with only fewer studies finding no such relationship. The present study conducted the regression test on the relationship between stock price and IFR disclosure and found that  $R^2$  value moderate at 10.65%.

**Table 9**  
**Testing of Hypothesis: Relationship between**  
**Stock Price and IFR Disclosure**

z-Test	$z = \frac{\bar{x} - \mu}{\frac{\sigma}{\sqrt{n}}} = \frac{10.65 - 0}{\frac{54.1}{\sqrt{252}}} = z = 3.125$			
Test	Calculated Value	df	Table Value*	Sig.
Statistic	3.125	251	1.960	0.000

\*Level of Significance at 0.05

Table 9 reveals inferential statistics relating to stock price and IFR disclosure under independent z-test with the z-value or calculated value of 3.125 being greater than Table Value of 1.960 with 251 degrees of freedom under two-tailed test and the p-value 0.000 at the significance level of 0.05. All these values indicated that  $H_{05}$  was not in the non-rejection region or was not in the acceptance region of normal distribution. Hence the  $H_{05}$  that “There



is no significant relationship between stock price and IFR disclosure level” is rejected and the  $H_{A5}$  that “There is a significant relationship between stock price and IFR disclosure level” stands

**ACCEPTED.**

**$H_{06}$ : IFR disclosure level is not significantly different between service providing companies and manufacturing companies.**

**$H_{A6}$ : IFR disclosure level is significantly different between service providing companies and manufacturing companies.**

A few studies were found to have examined the relationship between service providing companies (SPCs) and manufacturing companies (MCs) with the finding that these two variables were positively related. However, the disclosure differences between SPCs and MCs were not evidenced in earlier empirical evidences. Hence the present study examined disclosure differences between SPCs and MCs. The disclosure indexes in SPCs and MCs were stood at 67.92 and 61.12 when all the 9 dimensions of IFR disclosure were considered with the standard deviation being lower in SPCs than in a higher standard deviation in MCs along with lower margin of error in SPCs and a marginally higher error in MC. As evidenced in Table10, the independent z-tests indicated the z-scores of 15.180 and 11.058 in SPCs and MCs respectively with these values being inferential statistics being higher than those of Table Values of 2.306 each respectively.

**Table 10**  
**Testing of Hypothesis: IFR Disclosure**  
**Difference between SPCs and MCs**

Descriptive Statistics					
	Mean	<i>n</i>	SD	SE of Mean	
SPCs	67.92	9	12.888	4.296	
MCs	61.12	9	16.580	5.527	
Independent z-Test					
Test Statistic	Calculated Value	df	Table Value*	Sig.	
SPCs	15.810	8	2.306	0.000	
MCs	11.058	8	2.306	0.000	
Paired t-Test					
Mean Difference	SD	SE of Mean	t	df	sig
6.80	11.831	3.944	1.724	8	0.123

\*Level of Significance at 0.05

These independent z-tests indicated statistical significance with 8 degrees of freedom with the p-values of 0.000 at the significance level of 0.05. Further, the inferential statistics relating to paired-t test indicated the mean difference of 6.80 between SPCs and MCs

resulting in the difference of standard deviation of 11.831 along with the standard error of mean of 3.944. All these values resulted in the t-value of just 1.724 with 8 degrees of freedom and the p-value stood at 0.123 at the significance level of 0.05. All these inferential statistics indicated that IFR disclosure indexes were significantly different independently based on z-test, but the paired t-test indicated that there was no statistically significant difference between IFR disclosures in SPCs and MCs at the significance level of 0.05. In view of t-value being very low at 1.724 with very low mean value difference, the  $H_{06}$  was not in the rejection region or was in the acceptance region and hence that  $H_{06}$  that “IFR disclosure level is not significantly different between service providing companies and manufacturing companies” is not rejected and hence the  $H_{A6}$  that “IFR disclosure level is significantly different between service providing companies and manufacturing companies stands

### REJECTED.

### CONCLUSION

To conclude, companies have been jubilant in adopting IFR with their website presence on a large scale. However, the website quality from the viewpoint of usefulness was very high as revealed in the low weighted disclosure index in the Indian banking sector. However, the most significant factor influencing IFR index was market capitalization and it was followed by debt-asset ratio, financial performance, profit level and to some extent stock price.

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