

## Detecting Financial Statement Manipulation in Selected Indian Telecom Companies Using Beneish M-Score Model

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**ABSTRACT :** The Indian telecom sector, with 1.17 billion users and the second-largest market globally, is experiencing exponential growth due to factors like affordable prices, accessibility, and government initiatives. The introduction of 5G technology has accelerated this growth, with projections of 920 million mobile users by 2025 and an economic boost of \$450 billion between 2023 and 2040. Financial statement manipulation poses a significant challenge in the realm of corporate finance, potentially misleading investors and stakeholders. This study delves into the intricate domain of financial statement analysis, focusing on five Indian telecom companies, a sector pivotal to the nation's economic growth with a period of five years from 2018 to 2022. Employing the renowned Beneish M-Score Model, this research endeavors to detect instances of financial statement manipulation within the chosen telecom entities. This paper also explores a quantitative analysis using the Beneish M-score model was used to investigate earnings manipulation within Indian telecom firms. The study highlights the complexities of financial statement fraud in the telecom sector and the need for vigilance for sustainable growth and investor confidence.

**KEYWORDS:** *Financial Statement Manipulation, Beneish M-Score Model, Indian Telecom Companies, Financial Fraud Detection, Earnings Manipulation, Not Earnings Manipulation.*

### I. INTRODUCTION

The Indian telecom companies have 1.17 billion users (wireless + wireline subscribers) as of September 2022, India's telecom sector is the second largest in the world. India has a teledensity of 84.86% overall, with a rural market that is mainly unexplored with a teledensity of 58.01% and an urban market that has a teledensity of 134.62%. A total of 839.18 million people (narrowband + broadband users) had internet access by the end of January 2023, with 44.25% of those people living in rural areas. Additionally, the average monthly data usage per wireless data subscriber has climbed by 22,605%, from 61.66 MB in March 2014 to 16.40 GB in June 2022. Affordable prices, increased accessibility, the introduction of Mobile Number Portability (MNP), expanding 3G and 4G coverage, changing subscriber consumption patterns, government initiatives to increase India's domestic telecom manufacturing capacity, and a supportive regulatory environment have all contributed to the industry's exponential growth over the past few years.

The Government has authorized the sale of IMT/5G spectrum for the nationwide deployment of 5G services in order to speed up digital connection even more. By the end of July 2022, this auction had been successfully completed and brought in \$18.77 billion. With 6.43% of all FDI inflows, the telecom sector ranks third in terms of the amount of FDI received. It supports 2.2 million jobs directly and 1.8 million jobs indirectly. The amount of FDI in the telecom sector between 2014 and 2021 increased by 150%, from \$8.32 billion to \$20.72 billion. In Telecom, 100% Foreign Direct Investment (FDI) is currently permitted. Infrastructure, Equipment, Mobile Virtual Network Operators (MNVO), White Space Spectrum, 5G, Telephone service providers, and Broadband are the subsectors that make up the telecommunications sector. By 2025, India is predicted to have 920 million unique mobile customers, including 88 million 5G connections, making it the second-largest smartphone market in the world. This is according to the GSMA. It is predicted that 5G technology will boost the Indian economy by \$450 billion between 2023 and 2040.

In nearly the past ten years, India has added nearly 500 million additional smartphone users. By 2026, there will be 850 million smartphone users or around 55% of the population. In order to actualize a new variety of options, business models, and employment potential, the Government of India wants to establish 100 labs for creating

applications using 5G services in engineering universities under the Union Budget 2023. By December 2022, the DoT hopes to have installed 30 lakh km of fiber optic cable, 55% of mobile towers have been built, and all villages have 100 percent internet connectivity. From 61 million in March 2014 to 816 million in September 2022, broadband connections increased by 1238%. By December 2024, DoT hopes to have 70% of towers fiberized, average internet speeds of 50 Mbps, and a rollout of 50 lakh km of fiber optic cable across all of India.

According to the Network Readiness Index 2022, India moved up six positions to take up position 61.

- India ranks second in both "International Internet bandwidth" and "Mobile broadband internet traffic within the country."
- Internet connections increased by 232%, from 25.15 crore in March 2014 to 83.69 crore in June 2022.
- From 6.1 crore in March 2014 to 81.62 crore in September 2022, the number of broadband connections increased by 1238%.
- Average revenue realization per subscriber for every gigabyte of cellular data decreased from Rs. 268.97 in December 2014 to Rs. 10.29 in June 2022, a decrease of more than 96.17%.
- From 61.66 MB in March 2014, the average monthly data consumption per wireless data subscriber climbed by 266 times to 16.40 GB in June 2022.
- India ranks third in both "Domestic market size" and "Annual investment in telecommunication services".

By the end of January 2023, 5G services had been deployed throughout all licensed service regions in 238 cities. India moves up 10 ranks in the global rankings for average mobile speeds, from 79th in December to 69th in January 2023. From 93.30 crore in March 2014 to 117.02 crore in October 2022, there were 25.42% more telephone lines overall. In October 2022, there were 114.4 crore mobile connections. Urban telephone connections increased by 17.06% from 55.52 crores in March 2014 to 64.99 crores in October 2022, while rural telephone connections increased by 37.69%, almost twice as much as urban connections, from 37.78 crores in March 2014 to 52.02 crores in October 2022. In March 2014, the rural tele-density was 44%; by October 2022, it had increased to 57.91%.

The total number of telecom customers is shown below in the tables, Pie-Chart and graphs.

**Table-1 : Highlights of Telecom Subscription Data as on 30th June 2023**

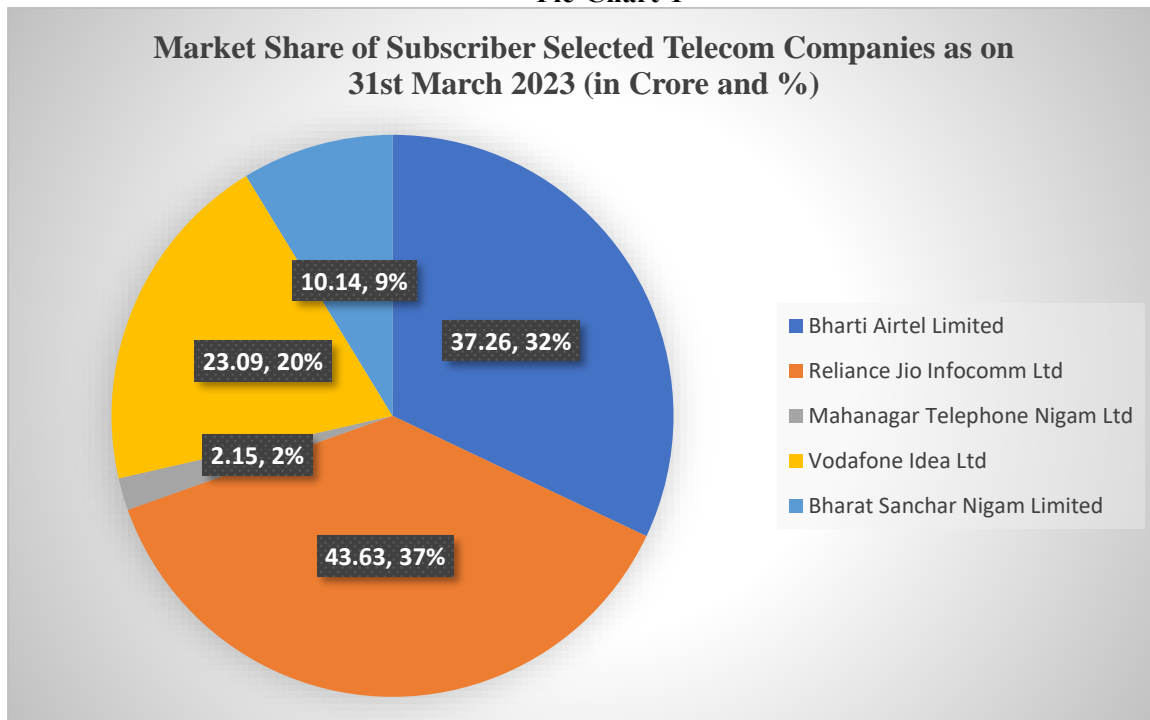
| Particulars                           | Wireless | Wireline | Total<br>(Wireless + Wireline) |
|---------------------------------------|----------|----------|--------------------------------|
| Broadband Subscribers (Million)       | 826.37   | 35.10    | 861.47                         |
| Urban Telephone Subscribers (Million) | 626.07   | 27.63    | 653.70                         |
| Net Addition in June 2023 (Million)   | -0.19    | 0.46     | 0.27                           |
| Monthly Growth Rate                   | -0.03%   | 1.68%    | 0.04%                          |
| Rural Telephone Subscribers (Million) | 517.51   | 2.68     | 520.19                         |
| Net Addition in June, 2023 (Million)  | 0.56     | 0.49     | 1.05                           |
| Monthly Growth Rate                   | 0.11%    | 22.53%   | 0.20%                          |
| Total Telephone Subscribers (Million) | 1143.58  | 30.31    | 1173.89                        |
| Net Addition in June, 2023 (Million)  | 0.37     | 0.95     | 1.32                           |
| Monthly Growth Rate                   | 0.03%    | 3.23%    | 0.11%                          |
| Overall Tele-density (%)              | 82.25%   | 2.18%    | 84.43%                         |
| Urban Tele-density (%)                | 127.56%  | 5.63%    | 133.19%                        |
| Rural Tele-density (%)                | 57.53%   | 0.30%    | 57.83%                         |
| Share of Urban Subscribers            | 54.75%   | 91.16%   | 55.69%                         |
| Share of Rural Subscribers            | 45.25%   | 8.84%    | 44.31%                         |

Sources: TRAI

The table-1 provides insights into the dynamics of broadband and telephone adoption, growth rates, and the distribution of subscribers between urban and rural areas.

The wireless segment has a tele-density larger number of subscribers compared to the wireline segment in both urban and rural areas. Urban areas have higher tele-density than rural areas, with the wireless segment contributing significantly to this difference. The monthly growth rate of wireless broadband subscribers is negative, indicating a slight decline. In contrast, the wireline broadband segment is growing at a healthy rate. The rural wireline segment has an exceptionally high monthly growth rate, which might be due to infrastructural improvements in rural connectivity. The total number of telephone subscribers is dominated by the wireless segment. Urban areas have a larger share of subscribers in both wireless and wireline categories.

Pie-Chart-1



Sources:- [https://en.wikipedia.org/wiki/List\\_of\\_telecom\\_companies\\_in\\_India](https://en.wikipedia.org/wiki/List_of_telecom_companies_in_India)

Pie-Chart-1 describes that Bharti Airtel Limited has 37.26 crores (372.6 million) Customers with 32% of the Market Share. Reliance Jio Infocomm Ltd has 43.63 crore (436.3 million) Customers with 37% of the Market Share. Mahanagar Telephone Nigam Ltd has 2.15 crore (21.5 million) Customers with 2% of the Market Share. Vodafone Idea Ltd has 23.09 crore (230.9 million) Customers with 20% of the Market Share. Bharat Sanchar Nigam Limited (BSNL) has 10.14 crore (101.4 million) Customers with 9% of the Market Share. It has been identified that Reliance Jio Infocomm Ltd has the largest customer base, with 43.63 crore customers, constituting 37% of the market share. It holds the highest market share among the listed companies. Bharti Airtel Limited follows closely with 37.26 crore customers and a market share of 32%. It's one of the major players in the market. Vodafone Idea Ltd has a customer base of 23.09 crore and holds 20% of the market share. It's another significant player, although slightly smaller than Airtel and Jio in terms of both customers and market share. Bharat Sanchar Nigam Limited (BSNL) has 10.14 crore customers and a market share of 9%, making it a notable player but with a smaller presence compared to the top three. Mahanagar Telephone Nigam Ltd has the smallest customer base of 2.15 crore, contributing to a mere 2% of the market share. It appears to be a relatively smaller player in the market. In short, Reliance Jio and Bharti Airtel are the dominant players with the largest customer bases and higher market shares. Vodafone Idea and BSNL hold significant positions as well, while Mahanagar Telephone Nigam Ltd seems to have a relatively smaller market presence.

This quantitative study looked at whether earnings manipulation occurs at a selected Indian telecom firm and whether there is a connection between profit manipulation and failures at a selected Indian telecom company. The M-Score model's validity as the best instrument for predicting the demise of selected Indian Telecom firms was ultimately validated.

H1. Published financial statements of selected Indian Telecom companies are not manipulated prior to their failure

H2. There is no relationship between earnings manipulation and the failure of selected Indian Telecom companies

H3. The M-score model is statistically insignificant in optimal predicting selected Indian Telecom companies' failure.

The paper used the Beneish M-score model to assess the proposed hypotheses (H1, H, and H3). The M-score approach is useful for identifying financial statement manipulation in corporate entities. The Z-score model, for example, focuses on broad corporate financial hardship in contrast to other multivariate analyses like the M-score, which enables researchers to use particular factors to investigate the link between financial statement abnormalities and a firm's demise. The M-score model has been attributed to helping users identify potential fraud situations based on the financial statements of businesses as an integrated method. This is made feasible by the model's ability to analyze multiple aspects of a company's performance at once. highlighted the fact that

organizations with a high likelihood of earnings manipulation are more likely to report low returns in the future compared to those with a low exposure to profit manipulations.

Additionally, a lot of academics and practitioners have praised the Beneish M-score model for helping institutional investors and regulators quickly spot possible corporate financial statement manipulation. The outcomes of the M-score model, according to a new study, are a good guide for averting pricey litigation and reputational harm to many stakeholders, including auditors and financial analysts. In addition to the reasons already indicated, the research adds to the body of knowledge regarding the fraud triangle.

## II. REVIEW OF LITERATURE

Maximizing total returns on investment is the main goal of every profit-driven organization. Corporate managers work to reassure investors that their assets are secure and safe for this and other reasons. As a result, businesses typically use a variety of tactics—both moral and occasionally immoral—to accomplish their objectives. This study concentrated on one of these immoral techniques, specifically financial statement manipulations, which frequently result in investors receiving returns that are zero or negative.

The study looks at external pressure, industry characteristics, and rationalization as contributing causes of financial statement fraud. It constructs a hypothesis about the impact of these variables using the Beneish m-score. Future research might benefit from understanding how pressure, opportunities, and justification all affect misleading financial statements, according to the findings (Harpan, D., & Kuntadi, C. 2023). The study looks into how corporate profitability manipulation affects Ghana's microfinance institutions. The researchers discovered a connection between earnings manipulation and business failures using data from the Bank of Ghana. It was discovered that the Beneish M-scores model is useful for seeing early warning indications of corporate earnings management and averting bad outcomes. The conclusions, however, are based on data from the microfinance sector, and future studies should take qualitative inquiry and data from many industries into consideration (Adoboe-Mensah, et al. 2023). This study looks at how external pressure, financial targets, and financial stability affect the prevalence of fabricated financial statements in 30 property and real estate firms that were listed on the Indonesia Stock Exchange between 2015 and 2017. The findings demonstrate that falsified financial statements are favorably impacted by both financial targets and financial soundness. Pressure from without has no beneficial effects (Djatnicka, E. W., et al. 2023). The study looks at the connection between returns and the Beneish-M score, an index used to judge how well a corporation has manipulated its profitability. The findings demonstrate that the market penalizes fiscal manipulation because Indian enterprises with an M-score above -1.78 report worse returns in the following year. According to the research, investors should steer clear of businesses that use the Beneish M-score (Jain, G., & Bose, A. 2023). In order to identify financial fraud and business failure in US-listed companies, the study contrasted the f-score and the Beneish M-model. Results showed that the M-score was superior in spotting anomalies in financial statements (Hou, B., et al. 2023, June). With a focus on the influence of pressure, opportunity, and rationalization on misleading financial statements, the study examined manufacturing companies listed on the Indonesia Stock Exchange from 2018 to 2020. Logistic regression analysis was used with 23 companies and 69 respondents. The findings indicated that, in contrast to other characteristics, financial stability, and inefficient monitoring have a major impact on financial statement fraud (Rahmani, H. F., & Oktalita, L. 2023). The fraud hexagon theory's effects on fraudulent financial reporting in 49 Indonesian consumer goods companies are investigated in this study. The study discovered that external pressure and auditor changes had a favorable impact on false reporting, whereas financial targets had a negative impact, based on prior findings and small studies. Stability, weak oversight, director turnover, haughtiness, and political ties, however, have no bearing on false reporting (Ginting, D. B., & Daljono, D. 2023). The study looks for characteristics that lead to earnings management in 284 Indonesian manufacturing organizations using a fraud triangle and a modified Beneish M-score. The findings indicate a negative correlation between asset growth, receivables to sales, auditor changes, and debt ratio, although the return on assets has no bearing. The modified Beneish M-score model is being used for the first time in this study to identify earnings management (Narsa, N. P. D. R. H., et al. 2023). Using the Beneish M-Score Model, the study investigates the connection between earnings manipulation and share price across publicly traded companies in Malaysia. With the help of the FTSE Bursa Malaysia Top 100 Index, it examined data from 65 PLCs. The findings suggested that other factors may affect share price since there was only a weakly negative link and statistically negligible relationship between earning manipulation and share price. The study is essential for stakeholders looking for the highest profits, investment stability, and ownership rights protection (Boni, L., Kamaluddin, A., & Kusumaningias, R. 2023). This study uses a sample of 16 organizations with 10 years of observation to investigate financial manipulation in State-Owned Enterprises (SOEs). According to the findings, 62 corporations are not manipulators and 98 companies are. The Beneish M-Score model uses 8 variables to identify manipulation. Financial statement manipulation is impacted by GMI and TATA. By improving sales and accounts receivable data, which show inefficiencies, SOEs increase permanent income. Additionally, they show a positive improvement in the ratio of assets to liabilities and cash (Husein, H., et al. 2023).

III. RESEARCH METHODOLOGY

This paper uses a quantitative research technique to inquiry based on the Beneish M-score model research used to accomplish the goal. The Beneish M model makes use of various financial parameters or ratios of a certain selected Indian telecom company to assess the likelihood that reported earnings were manipulated or not. The methodology adopted in this work is similar to that of other researchers in that it permits the investigation of the sample variables over a representative interval without affecting those variables. The data sources and the logic behind using the Beneish M-score model research are covered in this section.

3.1 Data and its Sources

This paper totally depends on secondary data which are collected from financial reports of selected Indian telecom companies' official websites through Capitaline for a period of five years which are from 2018 to 2022. This data was first gathered as primary data on the Indian stock exchange and The Telecom Regulatory Authority of India (TRAI) where selected Indian telecom companies were listed then the researcher collected from their websites through Capitaline. Indian Stock Exchange also called the Stock Exchange Board of India (SEBI) has listed all companies that are registered and operated in India and The Telecom Regulatory Authority of India (TRAI) controls and regulates all telecom companies that are operated in India. The SEBI and TRAI's research division is well known for its capacity to gather, examine, and disseminate reliable data, as a result, it looks to be the most reliable source of information for this research. Almost 8500 telecom companies running their business in India and the researcher has selected the top five Indian telecom companies. All data was collected by the researcher through eight financial ratios.

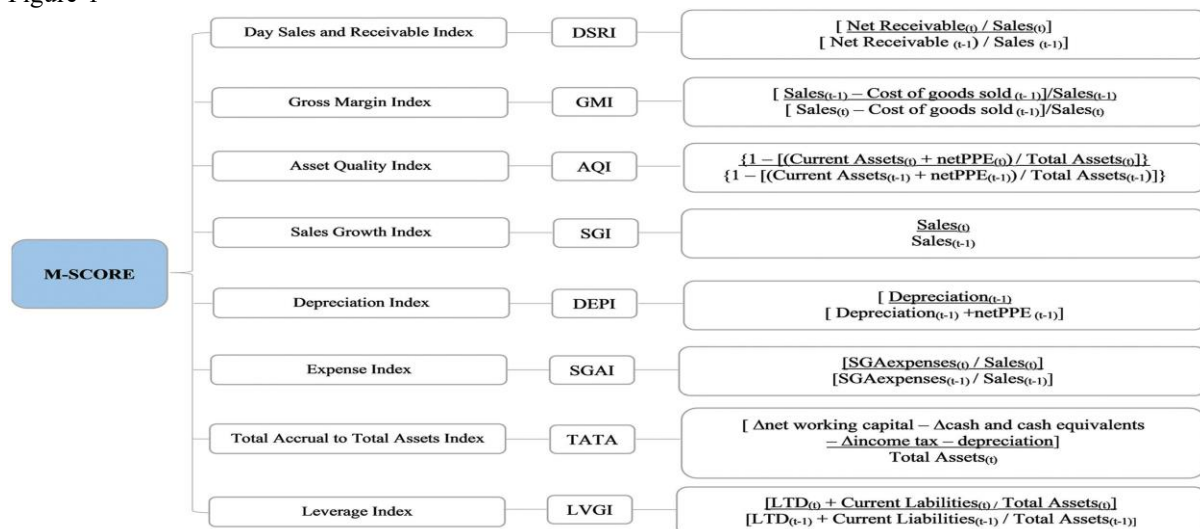
3.2 Independent Variables and Empirical Model

In this section, the independent variables describe how to use variables to calculate the M-score and determine the Beneish M-score Model. The researcher has used three important sources for selecting endogenous variables. First, the researcher has focused on and identified key signals which are relied on by previous researchers. Second, there is a common perception about the poor performance of a company in the future that there is mostly a possibility is manipulating their financial statements or corporate financial earnings. Third, the researcher has focused on almost all possible financial reports like Balance sheets, profit and loss accounts, and cash flow statements that are required for calculating ratios or variables. After these, the researcher has chosen eight explanatory variables, Days' sales in a receivable index (DSRI), Gross margin index (GMI), Asset quality index (AQI), Sales growth index (SGI), Depreciation index (DEPI), Sales and general and administrative expenses index (SGAI), Leverage index (LVGI), and Total accruals to total assets (TATA). These variables are normally used as fair explanatory variables by Beneish 1999 for predicting corporate earnings manipulations. These variables are useful for current research.

There are summarized endogenous variables or ratios for the mathematical formula in Figure no-3. Each selected Indian telecom company that was a part of the final sample had an average score that was calculated, separately weighted, and assessed for manipulation of corporate earnings. Beneish (1999) has recommended that the researchers use data from financial statements to calculate the M-score to detect possible manipulation of selected Indian telecom companies' earnings because the researchers have 76% accuracy in detecting companies' financial earnings manipulation by the M-score formula. As a result, the method provides a solid tool for this research. Consequently, the formula for the tried-and-true and widely accepted Beneish M-score model utilized for this paper is as follows.

$$M = -4.84 + 0.920*DSRI + 0.528*GMI + 0.404*AQI + 0.892*SGI + 0.115*DEPI - 0.172*SGAI + 4.679*TATA - 0.327*LVGI$$

Figure-1



Sources: - Beneish et al. (2013) and Adoboe-Mensah et al. (2023)



Where,

M = The following is a succinct explanation of the overall index and the endogenous variables:

### 3.2.1 DSRI

Days' Sales in Receivables Index, A sharp rise in the number of days for accounts receivable could indicate hastened revenue recognition to boost profitability. This financial ratio determines whether or not variations in sales are according to variations in receivables. This is calculated by dividing a firm's days' sales in receivables in the current year (represented by t) by days' net receivables in the previous year (t-1). The consistency between a company's accounts receivable and the associated sales can be assessed using the DSRI. Corporate non-manipulators have a DSRI mean value of 1.031, while earnings manipulators have a DSRI mean value of 1.465, according to K. M. B. (2016), MacCarthy (2017), and Nyakarimi (2022). An increase in the index indicates that more sales are being made on credit as opposed to cash, which means the business is having trouble collecting its debts. This shows that a significant increase in DSRI indicates a high likelihood of management inflating revenue.

### 3.2.2 GMI

Gross Margin Index, in this ratio, a deteriorating gross margin sends a negative signal about a firm's prospects and creates an incentive to inflate profits. Beneish 1999, Nyakarimi, 2022, and Repousis, 2016 Utilizing this index, one can determine whether the gross margin—defined as sales less cost of goods sold—has decreased. It is determined by dividing the current year's gross profit margin (t) by the previous year's gross profit margin (t-1). GMI greater than 1 indicates a decline in the entity's gross profit. A score of 1.193 and higher indicates a significant likelihood that the company's gross profit is being manipulated, while a score of 1.041 or lower indicates that the gross profit of the current accounting period is not being manipulated (Harrington 2005).

### 3.2.3 AQI

The AQI is the proportion of a company's total assets to all non-current assets (excluding plant, property, and equipment and comparisons with the ratio of a firm's asset quality in the current year (t) to its asset quality in the prior year (t-1). (Beneish, 1999; 2012; Repousis, 2016). This index's increase indicates a decline in asset quality. According to Beneish (1999), an AQI > 1 indicates a propensity to capitalize intangibles or expenses or to delay costs.

### 3.2.4 SGI

Sales Growth Index is a high-growth company that may commit financial fraud due to financial pressure and capital needs and may face increased incentives to manipulate earnings during slowdowns due to large stock price losses. The growth in sales between financial periods is the subject of this index. It has to do with the proportion of a company's current-year sales (t) to its sales from the prior year (t-1). SGI's median score of 1.134 indicates no earnings manipulation, while 1.607 indicates possible manipulation (Beneish, 1999; 2012; Repousis, 2016; Nyakarimi, 2022).

### 3.2.5 DEPI

Depreciation is when a company may have increased the projected useful life of assets or implemented a new, income-increasing approach if its rate of depreciation is declining relative to net fixed assets. This measurement represents the ratio of a company's depreciation rate from the prior year (t-1) to the current year's rate (t). If a score of DEPI > 1, it means, there is a deliberately lowering depreciation rate of companies' assets (Beneish 1999 and Harrington 2005).

### 3.2.6 SGAI

Sales, General, and Administrative Expenses A company can feel pressured to inflate earnings if analysts perceive a disproportionate rise in SG&A relative to sales as a warning indication about the company's future prospects. It is a ratio of a company's sales, general, and administrative costs for the current accounting year (t) to the value for the prior year (t-1) (Beneish, 1999; and Repousis, 2016). According to Beneish (1999), it noted that a sales growth that is excessively greater than 1.001 from one year to the next in the current year is a sign of poor future prospects.

### 3.2.7 TATA

Total Accruals to Total Assets, Total accruals, calculated as working capital change less depreciation, indicate managers' discretionary accounting choices to alter earnings, with higher levels indicating higher profit manipulation. According to (Beneish, 1999, and Adu-Gyamfi, 2020), The entire accruals of a company are expressed as a proportion of its total assets using this ratio. It is computed by subtracting the income from continuing activities for the same year (t) from the cash flows from operations for the firm in the current year (t). The total assets of the company for the year under consideration are then divided by the net result. If there is an average score of 0.018, it means non-financial manipulation; if an average score of 1.031 or more, it means deliberately changing the data (Repousis, 2016).

### 3.2.8 LVGI

Leverage Index where Total debt divided by total assets measures leverage. An incentive to manipulate profits in order to meet debt covenants is created by an increase in leverage. LVGI is the ratio of the current accounting period's (t) and the prior period's (t-1) total debt to total asset ratios. Rising leverage is indicated by a firm's LVGI > 1 (Beneish, 1999, Nwoye et al., 2012, and Repousis, 2016). So, it is a threat to investors for their future return

on Investment that if  $LEVI > 1$ , it means a company's leverage position has increased (Beneish, 1999, and Harrington, 2005).

**Table-2 : Description of M-score outcome factors**

| M-Score     | Results  |
|-------------|--|
| $M > -1.78$ | The higher possibility of earnings manipulation (Earnings Manipulation)    |
| $M < -1.78$ | The lower possibility of earnings manipulation (Not Earnings Manipulation) |

Source: Beneish et al. (2013)

### 3.3 Estimation and Specification of Model

Table 2 shows the measurement criteria and the results of the variable for the M-score. Where, if the M-score value is  $M > -1.78$  then it means there is a higher possibility of earning manipulation by corporate or company management, and if the M-score value is  $M < -1.72$  then it means there is a lower possibility of earning manipulation by corporate or company management (Beneish et al. 2013).

Figure 1 highlights the individual factors that, taken together, can have an impact on a business's ability to continue operating. According to Beneish et al., companies that use aggressive and dishonest accounting concepts, procedures, and standards eventually fail. In order to boost business earnings, corporate managers are urged to use practical strategies.

## IV. DESCRIBE THE RESULT AND FINDINGS

In this section researcher has focused on the analysis of the selected Indian telecom company. The Beneish M-score is a mathematical model used to detect earnings manipulation in the financial statements of selected Indian telecom companies. The score is calculated based on various financial ratios and other accounting metrics. A lower M-score suggests a lower likelihood of earnings manipulation, while a higher M-score indicates a higher likelihood of manipulation.

**Table-3 : Beneish M-score of Selected Indian Telecom Companies**

| Name of the Companies         | 2018    | 2019    | 2020    | 2021    | 2022    |
|-------------------------------|---------|---------|---------|---------|---------|
| Bharti Airtel Limited         | -1.0979 | -1.6471 | -1.7133 | -0.9226 | -1.2147 |
| Reliance Jio Infocomm Ltd     | -1.2024 | -1.6594 | -1.6228 | -0.5396 | -0.8706 |
| Mahanagar Telephone Nigam Ltd | -1.3966 | -1.6226 | -1.7468 | -1.3247 | -0.6497 |
| Vodafone Idea Ltd             | -1.3125 | -1.1128 | -1.8118 | -0.8265 | -0.8437 |
| Bharat Sanchar Nigam Ltd      | -1.7132 | -1.2681 | -1.4649 | -1.1825 | -0.8025 |

**Table-3(a)**

### Describe Earnings Manipulation or Not Earnings Manipulation of the Selected Indian Telecom Companies

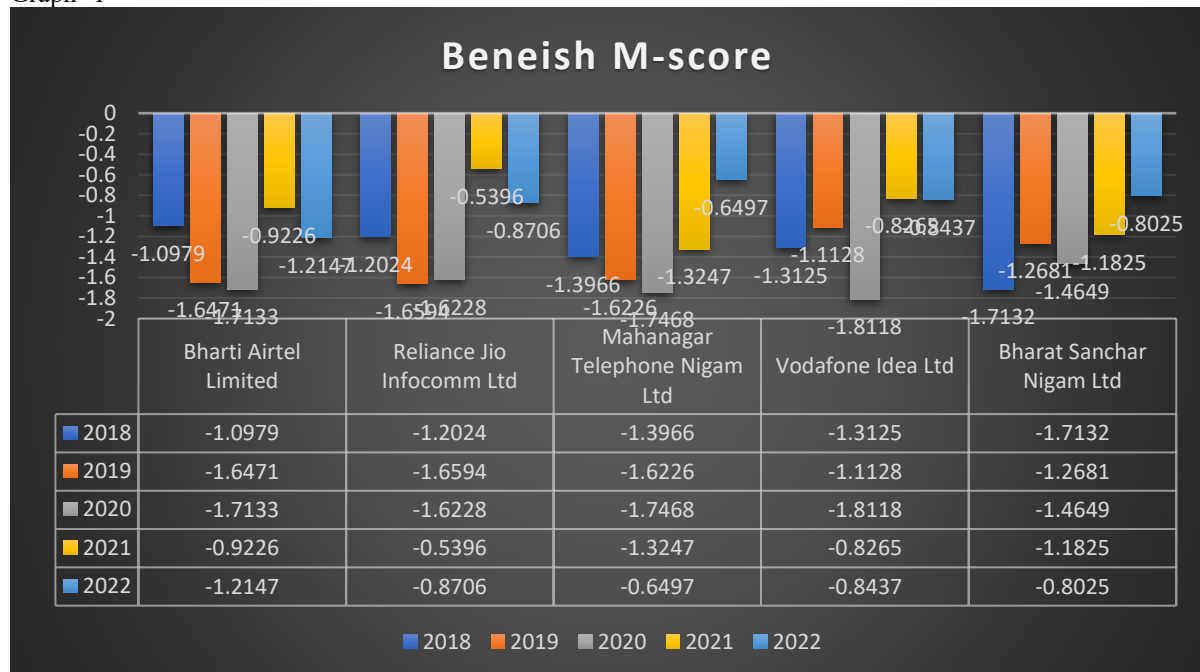
| Name of the Companies          | 2018                      | 2019                      | 2020                      | 2021                      | 2022                      |
|--------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Bharti Airtel Limited.         | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation |
| Reliance Jio Infocomm Ltd.     | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation |
| Mahanagar Telephone Nigam Ltd. | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation |
| Vodafone Idea Ltd.             | Not Earnings Manipulation | Not Earnings Manipulation | Earnings Manipulation     | Not Earnings Manipulation | Not Earnings Manipulation |
| Bharat Sanchar Nigam Ltd.      | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation | Not Earnings Manipulation |

Looking at the provided data for the years 2018 to 2022, here's an interpretation of the Beneish M-scores for the selected companies. Table 3 describes mathematical data, and Table 3(a) describes their position according to the calculated

Table 3 describes the M-scores for Bharti Airtel Limited have fluctuated over the years, ranging from -1.0979 in 2018 to -1.7147 in 2022. These scores generally indicate a relatively low likelihood of earnings manipulation, with some fluctuations. Reliance Jio Infocomm Ltd also shows fluctuating M-scores, ranging from -1.2024 in 2018 to -0.8706 in 2022. These scores suggest a relatively low likelihood of earnings manipulation, with a slight decrease in 2022. Mahanagar Telephone Nigam Ltd's M-scores have been consistently low, indicating a lower likelihood of earnings manipulation. The scores range from -1.3966 in 2018 to -0.6497 in 2022. Vodafone Idea Ltd's M-scores have varied, with a low of -1.8118 in 2020 and a slight increase to -0.8437 in 2022. These scores suggest a generally low likelihood of earnings manipulation, although there was a spike in 2020. Bharat Sanchar Nigam Ltd started with an M-score of -1.7132 in 2018, indicating a low likelihood of earnings manipulation. The scores improved slightly in the following years, reaching -0.8025 in 2022. So, the above data also describe that all selected companies generally exhibit low M-scores, indicating a lower likelihood of earnings manipulation during the specified period. Fluctuations in M-scores for some companies suggest possible changes in their financial reporting practices or underlying financial health. It's important to note that while M-scores provide insights, they are not definitive proof of manipulation and should be considered alongside other financial analyses and due diligence processes.

Table 3(a) describes the M-scores for Bharti Airtel Limited indicating "Not Earnings Manipulation" for all years, suggesting a low likelihood of earnings manipulation. Reliance Jio Infocomm Ltd, the company also shows "Not Earnings Manipulation" for all years, indicating a low likelihood of earnings manipulation. Mahanagar Telephone Nigam Ltd similar to the other companies, Mahanagar Telephone Nigam Ltd has "Not Earnings Manipulation" for all years, suggesting a low likelihood of earnings manipulation. Vodafone Idea Ltd, this company had an instance of "Earnings Manipulation" in the year 2020. However, in the other years, it shows "Not Earnings Manipulation", indicating a generally low likelihood of manipulation except for 2020. Bharat Sanchar Nigam Ltd, the M-scores for this company also indicate "Not Earnings Manipulation" for all years, suggesting a low likelihood of earnings manipulation. based on the Beneish M-scores and their interpretations, these selected Indian companies generally show a low likelihood of earnings manipulation in the specified years, except for Vodafone Idea Ltd in the year 2020.

Graph- 1



Graph 1 also describes the data of the selected Indian telecom companies that where the chances of either corporate earnings manipulation or not corporate earnings manipulation in the respective years. Here only one Indian telecom company namely Voda Idea Ltd is the possibility for earnings manipulation in 2020 and the rest of the year, all Indian telecom companies have indicated that there is no possibility of corporate earnings manipulation in the respected ears.



## V. CONCLUSION

The Indian telecom sector has experienced remarkable growth and development over the years, making it one of the largest and most dynamic industries globally. The sector has seen significant advancements in technology, infrastructure, and market penetration, with a substantial increase in the number of subscribers, internet users, and broadband connections. The government's initiatives, supportive regulatory environment, and the introduction of 5G technology have played pivotal roles in shaping the industry's landscape. The Beneish M-score model analysis presented in this study provides valuable insights into the financial practices of selected Indian telecom companies. The results indicate that, for the most part, these companies have maintained a low likelihood of earnings manipulation, as suggested by consistently low M-scores. The fluctuations observed in some years emphasize the need for continuous vigilance and comprehensive financial analysis to understand the underlying factors influencing these variations. It is essential to recognize the importance of such analyses, especially in a sector as crucial as telecom, where financial stability and transparency are vital for sustainable growth. The findings of this study contribute to the ongoing discourse on corporate financial practices and serve as a valuable resource for investors, regulators, and industry stakeholders. As the Indian telecom sector continues to evolve and expand, it is imperative for companies to uphold ethical financial standards, ensuring transparency and trust among their stakeholders. Continued research and analysis, along with robust regulatory oversight, will play a significant role in shaping the future trajectory of this dynamic industry.

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