



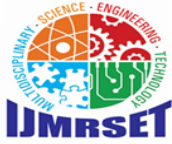
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An Empirical Study on Evaluating Earnings Quality and Financial Health through Multi Factor Trend Analysis of Profitability, Leverage and Operational Efficiency Metrics

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ABSTRACT: This study evaluates the financial performance and earnings quality of Adani Enterprises using Multi-Factor Trend Analysis and the Piotroski F-Score model for the period FY 2021 to FY 2025. The research is based on secondary data collected from the company's published annual reports and financial statements. Key financial indicators such as profitability, liquidity, leverage, operating cash flow, and asset growth were analyzed to assess overall financial health.

The results indicate consistent growth in total assets and shareholders' funds, reflecting expansion and investment activities. Profitability improved in certain years, supported by positive operating cash flows. However, fluctuations in debt levels and liquidity ratios suggest periods of financial strain. The Piotroski F-Score shows moderate financial strength, with variations across the study period. The study concludes that while the company demonstrates growth potential and improving earnings trends, effective management of leverage and liquidity is essential to ensure long-term financial stability and sustainability.

KEYWORDS: Profitability ,Leverage , Piotroski F-Score,

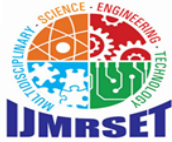
I. INTRODUCTION

The evaluation of earnings quality and financial condition has become an important area of study in financial analysis and corporate research. Earnings quality refers to how well reported income reflects a company's true financial performance and its sustainability over time (Dechow, Ge & Schrand, 2021). High-quality earnings tend to be stable, predictable, and supported by operating cash flows. In contrast, low-quality earnings may result from accounting manipulation or one-time adjustments. Recent corporate failures and financial scandals have underscored the need to assess the reliability of financial statements.

Investors, creditors, and other stakeholders depend on accounting information to make informed economic decisions (Penman, 2023). It is crucial to use strong analytical tools that go beyond traditional ratio analysis. Financial trend analysis is one such method that examines patterns in revenue, profitability, assets, liabilities, and cash flows over time. This approach helps identify consistent performance and potential warning signs.

To enhance the analysis, this study includes the Piotroski F-Score model, a well-known accounting evaluation tool. The Piotroski F-Score evaluates a firm's financial strength based on nine criteria related to profitability, leverage, liquidity, and operating efficiency (Piotroski, 2020). This model has been widely used in academic research and investment analysis to differentiate between strong and weak firms.

By combining multi-factor trend analysis with the Piotroski F-Score framework, this study aims to provide a thorough evaluation of earnings quality and financial stability. The combined approach improves the detection of financial risk and sustainability issues early on. Ultimately, the study contributes to better financial assessment practices and better decision-making for stakeholders.



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Furthermore, the concept of earnings persistence is closely linked to firm valuation. Persistent earnings are more likely to predict future cash flows and long-term performance (Dechow et al., 2021). Analysts increasingly emphasize cash flow-based measures to validate reported profits and reduce the risk of misinterpretation. According to (Penman, 2023), financial statement analysis should focus on identifying sustainable core earnings, not temporary accounting gains. The Piotroski F-Score model strengthens this evaluation by systematically screening firms based on objective accounting signals (Piotroski, 2020). Studies show that firms with higher F-Scores generally have stronger fundamentals and lower financial distress risk. Combining this structured scoring approach with longitudinal trend analysis improves the reliability of performance evaluation. The evaluation of earnings quality and financial health has become increasingly important in modern financial analysis and corporate decision-making. It is a specialized area of accounting that focuses on the examination and investigation of financial records to detect fraud, errors, and financial irregularities. It combines accounting knowledge, investigative techniques, and legal understanding to analyze financial information in a systematic and evidence-based manner. The primary objective is to uncover the truth behind financial transactions and present findings in a form suitable for legal and regulatory purposes, thereby promoting transparency, accountability, and trust in financial reporting Forensic.

Earnings quality refers to the extent to which reported profits accurately reflect a firm's true economic performance and its ability to generate sustainable future cash flows (Dechow, Ge, & Schrand, 2021). High-quality earnings are generally stable, persistent, and supported by strong operating cash flows, whereas low-quality earnings may arise from accounting adjustments or earnings management practices.

Investors and stakeholders rely heavily on financial statements to assess company performance and risk; therefore, advanced analytical approaches are required beyond traditional ratio analysis (Penman, 2023). Multi-factor trend analysis helps evaluate long-term patterns in profitability, leverage, liquidity, and operational efficiency, providing deeper insights into financial sustainability. In addition, the Piotroski F-Score model offers a structured framework to measure financial strength using accounting-based indicators (Piotroski, 2020).

By integrating trend analysis with the F-Score framework, financial analysts can better identify earnings sustainability, detect early warning signals of financial distress, and improve investment decision-making. This combined analytical approach enhances the reliability of financial evaluation and supports more transparent corporate reporting (Xu & Sim, 2023).

II. OBJECTIVE

- To evaluate the quality of earnings for the companies using the Dechow F-Score model.
- To analyze the connection between financial trends and the Dechow F-Score results.
- To identify early warning signs of low earnings quality and potential financial problems.
- To compare the companies based on trend analysis and Dechow F-Score outcomes.
- To provide useful insights on how both tools can work together for improved financial analysis and decision-making.

III. SCOPE OF THE STUDY

The study looks at the earnings quality and financial performance of selected companies. It uses the Piotroski F-Score model and multi-factor trend analysis. Key financial indicators like profitability, leverage, liquidity, and operational efficiency are analyzed to evaluate the overall financial strength. The research relies on quantitative secondary data from published financial statements, which ensures an objective analysis. It measures earnings quality through important ratios such as return on assets, operating cash flow, and asset turnover. Insights from (Dechow et al., 2021; Penman, 2023) support this measurement.

IV. STATEMENT OF THE PROBLEM

The issue discussed in this study is that reported financial performance does not always show a company's true financial health due to earnings management and accounting adjustments. Traditional ratio analysis often falls short in



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distinguishing real earnings from manipulated results, as noted by (Dechow et al., 2021). While the Piotroski F-Score model offers a clear method for assessing financial strength, it is seldom used alongside multi-year trend analysis. Therefore, combining scoring models with trend analysis provides more reliable financial insights (Penman, 2023).

V. RESEARCH METHODOLOGY

5.1 Data Source

The study relies on secondary data collected from published annual reports and audited financial statements of the selected company for the period FY 2021 to FY 2025. These financial statements offer reliable and standardized information to evaluate company performance and earnings quality (Palepu, Healy, & Bernard, 2020). Additional data came from official company disclosures and financial databases to ensure accuracy (Penman, 2023). The study adopts a quantitative research approach to evaluate earnings quality and financial health using secondary financial data. Data were collected from published annual reports and audited financial statements of the selected company for the period FY 2021 to FY 2025, ensuring reliability and consistency of information (Palepu, Healy, & Bernard, 2020).

Furthermore, all collected data were systematically organized, classified, and verified before analysis to ensure comparability across financial years. Financial variables such as profitability ratios, leverage indicators, liquidity measures, and efficiency ratios were derived directly from standardized financial statements. The structured data preparation process supports accurate application of ratio analysis, comparative analysis, and the Piotroski F-Score model.

Trend analysis was applied to examine changes in profitability, leverage, liquidity, and operational efficiency over multiple years. Ratio analysis and comparative analysis were used to assess financial performance and identify growth patterns (Penman, 2023). In addition, the Piotroski F-Score model was employed to evaluate earnings quality and financial strength based on accounting indicators (Piotroski, 2020). This combined analytical approach provides a comprehensive understanding of financial stability and earnings sustainability (Xu & Sim, 2023).

5.2 Tools Used

5.2.1 Trend Analysis was applied to examine changes in profitability, leverage, liquidity, and operational efficiency.

5.2.2 The Piotroski F-Score Model served as a structured tool to evaluate earnings quality and overall financial strength (Piotroski, 2020).

5.3 Techniques

The study employs several financial analysis techniques to evaluate earnings quality and financial health of the selected company. **Ratio analysis** is used as a primary technique to measure key financial indicators such as profitability, leverage, liquidity, and operational efficiency based on information obtained from financial statements. These ratios help in understanding the company's operational performance and financial stability (Penman, 2023). **Trend percentage analysis** is applied to examine changes in financial variables over multiple years. This technique helps identify growth patterns, consistency in performance, and possible warning signals related to declining financial conditions. By analyzing year-to-year movements in revenue, assets, liabilities, and earnings, the study evaluates whether the company's performance is sustainable over time.

In addition, **comparative analysis** is used to compare financial results across different financial years to assess improvements or fluctuations in performance. This allows a clearer understanding of operational progress and financial risk.

Further, the **Piotroski F-Score evaluation** is used as a structured analytical technique to assess earnings quality and overall financial strength through nine accounting-based indicators covering profitability, leverage, liquidity, and efficiency (Piotroski, 2020; Xu & Sim, 2023). The combination of these techniques provides a comprehensive assessment of financial performance and supports reliable evaluation of earnings sustainability.

5.4 Piotroski F-Score Model

The Piotroski F-Score model is a widely used financial evaluation framework developed to measure a firm's earnings quality and overall financial health using accounting-based information. The model evaluates companies through nine financial indicators grouped into three major categories: profitability, leverage and liquidity, and operating efficiency.



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Each indicator is assigned a score of either 0 or 1 based on improvement or deterioration in financial performance, resulting in a total score ranging from 0 to 9. A higher F-Score indicates stronger financial fundamentals, improved earnings sustainability, and lower risk of financial distress, while a lower score signals potential financial weakness (Piotroski, 2020).

Recent studies highlight that the F-Score model remains an effective tool for assessing firm performance because it relies on objective financial statement data rather than market-based assumptions. The model helps investors and analysts identify firms with strong operating cash flows, efficient asset utilization, and improving capital structure (Dechow, Ge, & Schrand, 2021). It is particularly useful in detecting improvements in earnings quality by comparing current financial performance with previous periods.

Furthermore, the Piotroski F-Score supports financial trend analysis by providing a structured scoring system that complements ratio analysis and longitudinal performance evaluation. Research indicates that firms with higher F-Scores generally demonstrate better profitability persistence and lower bankruptcy risk (Altman et al., 2021; Xu & Sim, 2023). Therefore, integrating the F-Score model with multi-year financial trend analysis enhances the reliability of financial assessment and enables stakeholders to make informed investment and credit decisions.

Table 1 using F Score

Financial Year	Profitability (4)	Leverage & Liquidity (3)	Efficiency (2)	Total FScore (out of 9)	Financial Strength
FY 2021	3	1	1	5/9	Average
FY 2022	3	0	0	3/9	Weak
FY2023	4	1	0	5/9	Average
FY 2024	4	1	0	5/9	Average
FY 2025	2	0	0	2/9	Weak

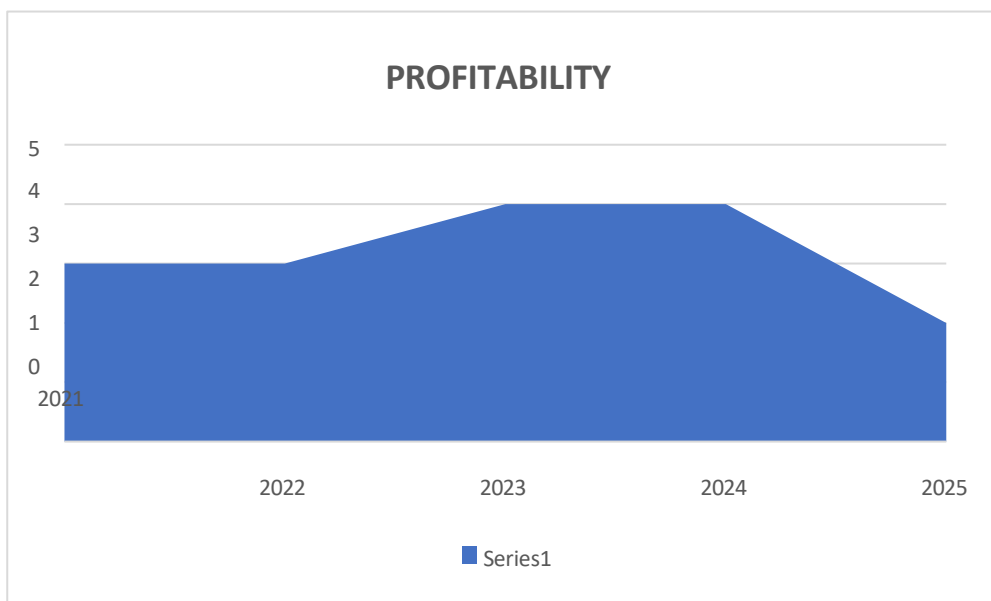
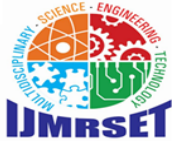
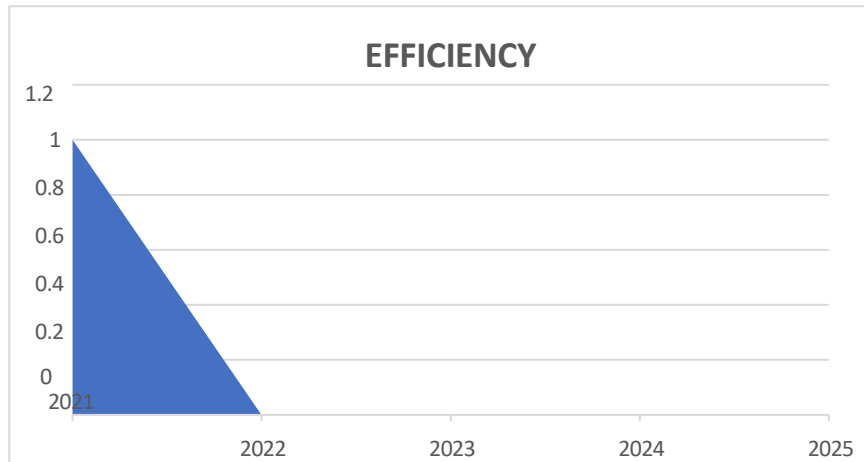


Chart 1. For Profitability Ratio



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5.5 Analysis and Interpretation

The financial performance of the company is analyzed using multi-factor trend analysis along with the Piotroski F-Score model to evaluate earnings quality and overall financial health. Trend analysis is applied to examine changes in profitability, leverage, liquidity, and operational efficiency over the study period. This approach helps identify patterns of growth, stability, or decline in financial performance and determines whether earnings are sustainable over time.

The Piotroski F-Score framework is used to interpret the company's financial strength through accounting-based indicators related to profitability improvement, capital structure management, and operational efficiency. A higher F-Score indicates stronger financial performance supported by positive operating cash flows and efficient resource utilization, whereas a lower score signals potential financial risk. By comparing yearly F-Score results with financial trends, the study evaluates whether improvements in reported earnings are supported by underlying financial fundamentals.

The combined analysis provides deeper insights beyond traditional ratio analysis by linking numerical financial trends with structured performance scoring. This integrated approach helps detect inconsistencies between accounting profits and actual financial performance, thereby improving the assessment of earnings sustainability and financial stability. Overall, the interpretation supports informed decision-making for investors and stakeholders by offering a comprehensive view of the company's true financial condition.

VI. FINDINGS

- Piotroski F-Score results suggest strong earnings quality supported by operating cash flows
- Overall financial stability improved but debt requires monitoring.
- The multi-year trend analysis indicates overall improvement in operational performance, showing gradual growth in revenue and asset utilization efficiency
- Operating cash flow trends generally support reported earnings, suggesting better earnings quality and reduced dependence on non-operating income
- Profitability ratios such as Return on Assets (ROA) and Net Profit Margin show moderate improvement during the study period, indicating effective utilization of company resources.
- Variations in leverage ratios highlight periods of increased financial risk, suggesting the need for careful debt management and capital structure planning.
- Liquidity indicators demonstrate the company's ability to meet short-term obligations, although fluctuations indicate the importance of maintaining adequate working capital.
- Efficiency ratios, including asset turnover, reveal gradual operational improvement but indicate scope for better resource optimization.



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- The Piotroski F-Score results reflect moderate financial strength across most years, confirming stable but not consistently strong earnings performance .
- Years with higher F-Scores correspond with improved profitability and cash flow performance, showing a positive relationship between accounting signals and financial health Trend analysis combined with F-Score evaluation helps identify early warning signs of financial weakness, particularly during periods of declining efficiency or rising liabilities.
- Overall, the company demonstrates improving financial stability, though consistent monitoring of operating expenses and leverage levels is necessary for long-term sustainability.

VII. SUGGESTIONS

- Maintain profitability through cost efficiency
- Manage debt effectively to reduce financial risk.
- Emphasize cash flow management for sustainable earnings
- Improve operational efficiency continuously.
- Apply trend analysis and F-Score regularly.

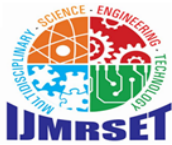
VIII. CONCLUSION

The study concludes that evaluating earnings quality and financial health requires a comprehensive analytical approach rather than relying only on traditional financial ratios. By integrating multi-factor trend analysis with the Piotroski F-Score model, the research provides a clearer understanding of a company's financial performance, earnings sustainability, and overall stability. Trend analysis helps identify long-term patterns in profitability, leverage, liquidity, and operational efficiency, while the F-Score framework systematically measures financial strength using objective accounting indicators (Penman, 2023).

The findings indicate that improvements in profitability and asset utilization contribute positively to earnings quality; however, fluctuations in leverage and operating expenses highlight the importance of effective financial management and risk control. The Piotroski F-Score results further support the evaluation by confirming the relationship between operating performance and financial stability (Piotroski, 2020). The combined analytical approach also helps detect early warning signals of financial weakness and ensures a more reliable interpretation of reported earnings. Overall, the study demonstrates that the integration of structured scoring models with longitudinal financial analysis enhances transparency and improves decision-making for investors, creditors, and other stakeholders. The framework contributes to better financial assessment practices by linking accounting performance with long-term sustainability and earnings persistence (Dechow, Ge, & Schrand, 2021; Xu & Sim, 2023).

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