

A Study on Big Data Analytics in Financial Decision Making with Reference to Selected IT Companies in India

1. **SHAIK ZUBERALI** (24UJ1E00P2) Student of 2nd Year MBA,
Malla Reddy Engineering College and Management Sciences, Medchal, Hyderabad – 501 401.
 2. **T NIHARIKA REDDY**, Assistant Professor, Dept of MBA in
Malla Reddy Engineering College and Management Sciences, Medchal, Hyderabad – 501 401.
-



<https://doi.org/10.55041/ijst.v2i8.080>

Cite this Article: ZUBERALI, S. (2026). A Study on Big Data Analytics in Financial Decision Making with Reference to Selected IT Companies in India. International Journal of Science, Strategic Management and Technology, 02(9), 1-9. <https://doi.org/10.55041/ijst.v2i8.080>

License:  This article is published under the Creative Commons Attribution 4.0 International License (CC BY 4.0), permitting use, distribution, and reproduction in any medium, provided the original author(s) and source are properly credited.

ABSTRACT

Big Data Analytics has now become important technology for improving financial decision-making in Indian IT companies. It enables organizations to process large volumes of structured and unstructured data and generate insights for budgeting, forecasting, investment analysis, risk management, cost optimization, and strategic planning. This study examines the use of Big Data Analytics in selected IT companies and evaluates its influence on financial planning, investment decisions, organizational performance, and risk management. It also identifies implementation challenges, including data privacy, cybersecurity, high costs, integration difficulties, and skill gaps. The study uses primary data and presents practical recommendations for strengthening data-driven financial decision-making.

Keywords: Big Data Analytics, Financial Decision-Making, Indian IT Companies, Financial Planning, Risk Management

1. INTRODUCTION

The rapid growth of information technology has transformed the manner in which organizations collect information, evaluate business conditions, and make financial decisions. Modern enterprises generate large volumes of data through transactions, customer interactions, digital platforms, mobile applications, cloud systems, social media, and Internet of Things devices. Managing this information effectively has become both an opportunity and a challenge. Big Data Analytics provides organizations with methods for processing complex datasets and converting them into useful insights for informed decision-making. Big Data represents large volumes of structured, semi-structured, and unstructured information that conventional systems may not process efficiently. Its major characteristics are commonly described through Volume, Velocity, Variety, Veracity, and Value. Big Data Analytics involves collecting, organizing, processing, and analyzing such information through statistical techniques, predictive analytics, artificial intelligence, machine learning, cloud computing, and business intelligence tools. Financial decision-making includes investment planning, capital budgeting, working capital management, cost control, profitability analysis, risk assessment, forecasting, resource allocation, and business expansion. Reliable financial decisions directly influence profitability, shareholder value, organizational growth, and long-term sustainability. Big Data Analytics supports these decisions by providing real-time information, predictive insights, and broader business knowledge. Indian IT companies are increasingly using analytics to estimate revenues, forecast expenses and cash flows, identify investment opportunities, evaluate financial

performance, assess risks, optimize operational costs, and improve resource utilization. Financial forecasting is particularly important because predictive models can examine historical financial information, market trends, customer demand, economic indicators, and operational performance to support budgeting and planning. Analytics can also strengthen investment analysis by examining market conditions, industry performance, consumer preferences, competitor strategies, and economic indicators. However, successful implementation is not free from challenges. Data quality, privacy, cybersecurity, integration complexity, implementation costs, shortage of skilled professionals, and regulatory requirements can restrict effective adoption. Therefore, organizations need strong governance, technical capability, employee training, and appropriate security practices. The present study examines Big Data Analytics in financial decision-making with reference to selected IT companies in India, focusing on adoption, financial applications, organizational benefits, implementation difficulties, and measures for strengthening data-driven financial management. Through these dimensions, organizations can improve the speed, accuracy, and consistency of financial decisions. The source report specifically discusses the five Vs of Big Data, financial forecasting, investment decisions, risk management, cost optimization, working capital management, AI, machine learning, cloud computing, and data visualization.

2. REVIEW OF LITERATURE

The literature reviewed in the source study indicates that Big Data Analytics is increasingly important in financial management and decision-making. Sharma and Verma (2019) reported improvements in financial reporting, budgeting, forecasting, and managerial decisions. Kumar (2020) associated advanced analytics with better forecasting accuracy, cost reduction, and resource allocation. Patel and Reddy (2020) found that predictive analytics supports investment analysis and reduces uncertainty. Singh (2021) highlighted the role of analytics in identifying financial threats and supporting warning systems. Nair and Joseph (2022) reported improvements in forecasting, budgeting, profitability analysis, and strategic planning through analytics and artificial intelligence. Agarwal and Mehta (2022) emphasized cloud analytics for faster processing, accessibility, lower infrastructure costs, and collaboration. Rao and Desai (2023) linked advanced analytics with financial planning, customer insights, operational efficiency, and business performance. Joshi and Kapoor (2023) identified privacy, cybersecurity, skill shortages, integration, and implementation costs as challenges. Prakash and Iyer (2024) associated analytics with financial efficiency, profitability, resource utilization, and investment decisions. Mishra and Gupta (2025) emphasized artificial intelligence, machine learning, automation, cloud computing, predictive analytics, and real-time business intelligence. Overall, the reviewed studies support the importance of data-driven financial decision-making while highlighting implementation challenges. The literature provides a useful foundation for this study.

3. OBJECTIVES OF THE STUDY

1. **To study** the use of Big Data Analytics in financial decision-making among selected Indian IT companies.
2. **To investigate** how Big Data Analytics is used in financial management procedures.
3. **To examine** the influence of Big Data Analytics on financial planning, investment decisions, and organizational performance.
4. **To determine** the benefits and difficulties of applying Big Data Analytics in selected IT companies.
5. **To identify** suitable solutions for strengthening Big Data Analytics and improving financial decision-making in the Indian IT industry.

4. RESEARCH METHODOLOGY

A descriptive research design was adopted to study Big Data Analytics in financial decision-making. Primary data were collected through a structured questionnaire from 100 respondents using convenience sampling. Secondary data were obtained from journals, books, industry reports, official websites, and reliable sources. Percentage analysis was used and

interpreted systematically. The methodology follows the source report's descriptive design, questionnaire, convenience sampling, 100 respondents, and primary and secondary data approach.

4.1 STATISTICAL TOOL

Percentage Analysis

Percentage analysis is selected as the appropriate statistical tool because the study primarily examines respondents' awareness, applications, perceived advantages, financial performance effects, investment decision support, and implementation challenges.

The report itself specifies **analysis of percentages, tabular display, bar diagrams, and pie charts** as its data-analysis tools.

5. DATA ANALYSIS AND INTERPRETATION

Table 5.1: Principal Financial Use of Big Data Analytics

Financial Application	Respondents	Percentage
Financial Forecasting	34	34%
Budgeting	24	24%
Fraud Detection	18	18%
Investment Analysis	14	14%
Others	10	10%
Total	100	100%

Analysis: Financial forecasting received the highest response, with **34 respondents (34%)**, followed by budgeting with 24 respondents (24%).

Interpretation: The result indicates that respondents consider **financial forecasting the principal financial application of Big Data Analytics**. This reflects the importance of using historical financial information, market trends, customer demand, economic indicators, and operational information to estimate future revenues, expenses, profitability, and cash flows.

Table 5.2: Big Data Analytics Enhances Financial Performance

Response	Respondents	Percentage
Strongly Agree	22	22%
Agree	45	45%
Neutral	17	17%
Disagree	10	10%
Strongly Disagree	6	6%
Total	100	100%

Analysis: A total of **67%** of respondents either strongly agree or agree that Big Data Analytics enhances financial performance.

Interpretation: The finding demonstrates a predominantly positive perception of Big Data Analytics. Respondents associate analytics with improved financial performance, supporting better financial accuracy, operational efficiency, profitability, and decision-making.

Table 5.3: Major Challenge in Implementing Big Data Analytics

Major Challenge	Respondents	Percentage
Data Privacy	31	31%
High Cost	24	24%
Skill Gap	20	20%
Integration	15	15%
Others	10	10%
Total	100	100%

Analysis: **Data privacy** is the leading implementation challenge, reported by 31 respondents (31%), followed by high implementation cost at 24%.

Interpretation: The result shows that privacy and security concerns are major barriers to effective Big Data Analytics adoption. Organizations must therefore strengthen data governance, cybersecurity, privacy controls, employee skills, and technological infrastructure. The source report similarly identifies data privacy, cybersecurity, high costs, integration, and skill shortages as major implementation problems.

6. RESULTS

1. Big Data Analytics is increasingly used for financial decision-making in selected Indian IT companies.
2. **Financial forecasting** is the leading reported financial application, with **34%** of respondents.
3. Budgeting is the second major financial application, accounting for **24%** of responses.
4. Fraud detection and investment analysis are also important applications of Big Data Analytics.
5. **67%** of respondents agree or strongly agree that Big Data Analytics enhances financial performance.
6. Big Data Analytics supports improved financial planning and forecasting.
7. Analytics assists organizations in evaluating investment opportunities and allocating financial resources.
8. Big Data Analytics supports risk identification and financial risk management.
9. **Data privacy**, at 31%, is the major implementation challenge identified by respondents.
10. High implementation cost and skill gaps are additional important barriers.
11. Effective data governance, cybersecurity, employee training, and technology investment are necessary for successful implementation.
12. Overall, Big Data Analytics has become an important component of modern financial management and data-driven decision-making.

7. SUGGESTIONS

1. **Strengthen data privacy frameworks** to protect financial and organizational information from unauthorized access.
2. **Improve cybersecurity measures** through continuous monitoring, encryption, secure data-management practices, and appropriate controls.
3. **Invest in employee training** covering Big Data Analytics, predictive modelling, financial analytics, data visualization, and information security.
4. **Develop strong data governance frameworks** to improve data quality, consistency, reliability, and accessibility.
5. **Increase investment in cloud-based technologies** to improve scalability, processing speed, accessibility, and collaboration.
6. **Expand the use of artificial intelligence and machine learning** for financial forecasting, risk assessment, anomaly detection, and decision support.
7. **Improve integration of different data sources** to create comprehensive and reliable financial information.
8. **Encourage cooperation between finance and technology departments** for better use of analytical information.
9. **Use real-time analytical dashboards** for monitoring financial performance, cash flows, risks, and important financial indicators.
10. **Promote data-driven decision-making at management levels** to improve financial performance, operational efficiency, competitiveness, and sustainable growth.

8. CONCLUSION

Big Data Analytics has become an important component of financial decision-making in selected Indian IT companies. The study shows that organizations can use large and complex datasets to strengthen financial forecasting, budgeting, investment analysis, risk management, cost optimization, profitability evaluation, and strategic planning. The analysis indicates that financial forecasting is the most prominent financial application identified by respondents, while a majority also perceive Big Data Analytics as beneficial for improving financial performance. Analytics enables organizations to process information more rapidly, identify patterns, evaluate opportunities, assess risks, allocate resources effectively, and support evidence-based financial decisions. However, the benefits of analytics are accompanied by challenges such as data privacy, cybersecurity, high implementation costs, skill shortages, and integration difficulties. These challenges require continuous technological investment, employee development, strong data governance, and effective security practices. Organizations should also encourage collaboration between finance and technology teams so that analytical capabilities are effectively connected with financial requirements. Overall, the study establishes that Big Data Analytics can contribute significantly to financial accuracy, decision-making speed, operational efficiency, profitability, and competitive advantage. Its continued development through artificial intelligence, machine learning, cloud computing, predictive analytics, automation, and real-time business intelligence is likely to further strengthen financial management in the Indian IT industry.

9. REFERENCES

1. Agarwal, A., & Mehta, [Initial unavailable]. (2022). *Impact of cloud-based Big Data Analytics on financial decision-making*.
2. Joshi, [Initial unavailable]., & Kapoor, [Initial unavailable]. (2023). *Challenges in implementing Big Data Analytics*.
3. Kumar, [Initial unavailable]. (2020). *Role of Big Data Analytics in financial planning*.
4. Mishra, [Initial unavailable]., & Gupta, [Initial unavailable]. (2025). *Future scope of Big Data Analytics in financial management*.
5. Nair, [Initial unavailable]., & Joseph, [Initial unavailable]. (2022). *Big Data Analytics and artificial intelligence in financial management*.
6. Patel, [Initial unavailable]., & Reddy, [Initial unavailable]. (2020). *Application of predictive analytics in investment decision-making*.
7. Prakash, [Initial unavailable]., & Iyer, [Initial unavailable]. (2024). *Impact of Big Data Analytics on organizational financial performance*.
8. Rao, [Initial unavailable]., & Desai, [Initial unavailable]. (2023). *Application of Big Data Analytics in Indian IT firms*.
9. Sharma, [Initial unavailable]., & Verma, [Initial unavailable]. (2019). *Use of Big Data Analytics in commercial enterprises*.
10. Singh, [Initial unavailable]. (2021). *Value of Big Data Analytics in risk management*.