



Exploring the Role of AI-Driven Business Analytics in Strategic Decision-Making in the IT Sector

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Abstract

AI is steadily changing the way IT companies interpret data and make long-term decisions. This study explores how AI-based business analytics supports strategic decision-making in the IT sector. Using an exploratory and descriptive approach, inputs were gathered from 36 IT professionals through a Google Form, with stratified sampling used to include a mix of roles. The responses suggest that AI tools enhance decision accuracy, improve forecasting, and make planning more efficient, although many organizations still face challenges related to implementation and workforce readiness. The findings also indicate that the level of AI adoption strongly influences the quality and speed of strategic decisions. Overall, the study offers practical insights into how IT firms can better align AI analytics with data-driven strategic practices.

Keywords: Artificial Intelligence, Business Analytics, Strategic Decision-Making, IT Sector, Data-Driven Strategy, AI Adoption.

1. Introduction

AI has quickly become a key part of how modern organisations deal with complexity, uncertainty, and long-term planning. As data grows in scale and speed, traditional analytics tools often fall short, pushing companies to rely on AI-driven business analytics for deeper and faster insights. This shift is especially visible in the IT sector, where decisions depend heavily on large and rapidly changing datasets. Strategic decision-making involves evaluating long-term options that influence a firm's direction and performance. The process is naturally difficult because decisions are high-stakes, ambiguous, and shaped by many moving parts. Managers also deal with delayed feedback and limited cognitive bandwidth, making it harder to interpret complex information effectively. AI supports this process by analysing massive datasets, identifying patterns, and offering insights that help organisations act with greater confidence. When integrated with business intelligence systems, AI can provide real-time interpretations and forecasts that improve planning accuracy. As AI and machine learning technologies

continue to advance, their role in strategic decision-making becomes even more significant, especially for IT organisations that depend on fast, reliable, and data-driven insights.

2. Literature Review

Recent studies have increasingly highlighted the transformative impact of artificial intelligence (AI)-based predictive analytics on business decision-making, particularly in the Indian IT and service sectors. AI adoption has been shown to enhance demand forecasting, customer segmentation, and supply-chain planning, leading to measurable gains in operational efficiency and faster decision cycles [1]. In the technology service domain, the integration of machine learning with business intelligence systems has been reported to improve strategic planning accuracy and resource allocation, thereby enhancing customer delivery metrics [2]. Similarly, the application of AI-driven analytics among small and medium-sized IT firms has helped identify new service opportunities, predict client churn, and optimize pricing strategies, contributing to greater



market competitiveness despite challenges related to implementation cost and cybersecurity [3]. An AI-driven predictive analytics model combining supervised and unsupervised algorithms demonstrated improved forecasting and opportunity mapping, resulting in higher customer acquisition and operational performance, though ethical concerns regarding data privacy remain [4]. Reviews of AI-enabled business analytics emphasized automation in real-time monitoring, reduction in manual work, and improved decision-making efficiency, with success largely dependent on data quality and skilled human resources [5]. The “Analytics Onion” framework underscored the integration of analytics, human judgment, and ethical considerations, asserting that AI supports responsible decision-making when accompanied by proper governance mechanisms [6]. Further research confirmed that large language models (LLMs) could enhance strategic reasoning, generate near-expert-level strategies and facilitating scenario analyses for IT firms [7]. AI-based predictive intelligence has been identified as a strategic enabler that assists firms in anticipating trends, reducing uncertainty, and continuously refining business strategies [8]. Comparisons between AI-driven and traditional analytics approaches revealed substantial improvements in domains such as sales forecasting, fraud detection, diagnostics, and maintenance, suggesting that IT firms can leverage AI for proactive risk identification [9]. A comprehensive review of over eighty studies linking AI with strategic management tools found that AI significantly accelerates decision-making processes and boosts innovation but also exposes governance and ethical vulnerabilities [10]. Similarly, AI and data science applications in business intelligence have demonstrated superior results through graph analytics, particularly in fraud detection and forecasting for IT strategy [11]. Real-time AI analytics were found to enhance agility and anomaly detection capabilities, enabling organizations to make faster, data-driven decisions [12]. Hybrid AI models combining transformers and reinforcement learning achieved high predictive accuracy in estimating market share, profit, and customer satisfaction, offering strategic insights for

IT resource planning [13]. Systematic reviews of predictive AI models reaffirmed that machine learning and deep learning significantly improve forecasting accuracy and risk mitigation while emphasizing the need for explainable and transparent AI systems [14]. Furthermore, automated machine learning (AutoML) tools have been observed to perform comparably to expert-tuned models, accelerating the development process and making AI adoption more feasible for IT teams experimenting with strategic models [15].

3. Objectives

- To study how AI-based analytics impact strategic decisions in the IT sector.
- To find out which AI tools and methods IT firms use for planning and forecasting.
- To identify the benefits and challenges of using AI analytics in strategy making.
- To examine how the level of AI adoption affects strategic decision quality in IT firms.

4. Research Methodology

The study adopts an exploratory and descriptive research design to understand how AI-driven business analytics influences strategic decision-making in the IT sector. It employs a qualitative and descriptive approach, focusing on open and factual responses from professionals rather than numerical ratings, to gain deeper insights into how AI tools support planning and strategic work. Primary data were collected through a Google Form containing open-ended questions about the AI tools used, the nature of strategic decisions, and the benefits and challenges of AI adoption. The sample consists of fewer than 36 participants selected through stratified sampling to ensure representation from data analysts, IT managers, and strategy planners, offering perspectives from multiple organizational levels. The collected responses were analyzed using descriptive summaries and thematic analysis to identify recurring themes such as AI usage levels, improvements in decision-making, and implementation challenges. Data was organized using Microsoft Excel for classification and analysis. Ethical considerations were strictly followed, with participants being informed about the study’s purpose, participating voluntarily, and remaining completely anonymous.

5. Data Analysis and Interpretation

The study shows that most respondents (19.4%) are Software Developers, followed by HR Managers (13.9%). Roles such as Data Engineer, Software Tester, and Junior Business Analyst each account for 5.6% of participants. This indicates that most respondents belong to technical and managerial positions, with a diverse mix across various professional roles. Figure 1 reveals that most respondents are employed at TCS (33.3%) and Wipro (30.6%). A smaller proportion of work at Tech Mahindra (11.1%), while companies like Cognizant, Google, IBM, and AWS have minimal representation. This suggests that most respondents are from leading Indian IT service companies.

Kindly specify the name of the organization where you are currently employed.
36 responses

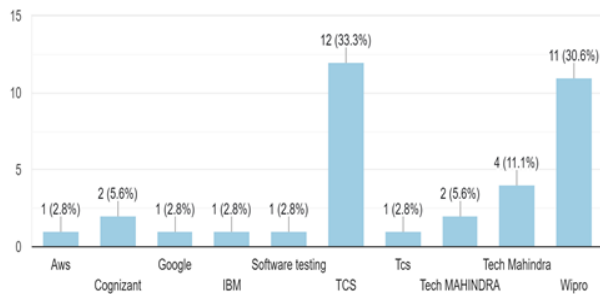
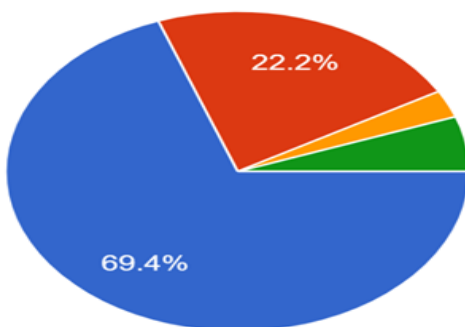


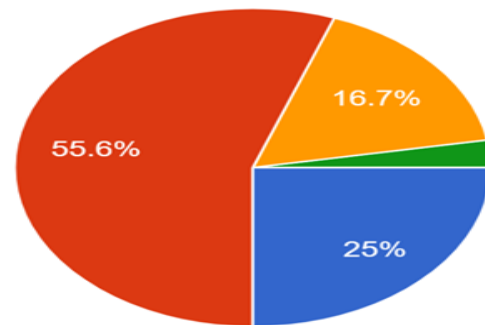
Figure 1 Current Organization of Employment

Figure 2 shows that a majority of respondents (69.4%) believe AI-based analytics has improved the accuracy and speed of decisions. About 22.2% state it has helped identify new business opportunities. Only a small percentage feel it reduced human bias or had minimal impact, indicating AI is largely seen as a valuable tool for enhancing strategic decision-making efficiency.



- Microsoft Power BI / Tableau with AI insights
- Google Cloud AI / IBM Watson
- Python-based machine learning models
- In-house developed AI systems

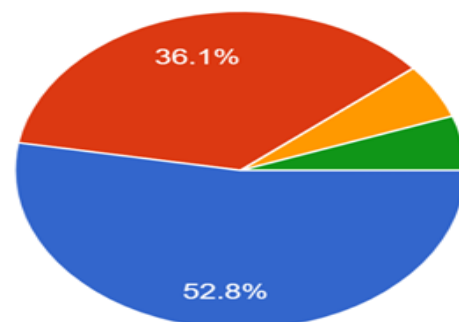
Figure 2 Impact of AI-Based Analytics on Strategic Decision-Making



- Market forecasting and trend analysis
- Resource allocation and budgeting
- Customer relationship and experience management
- Product innovation and development

Figure 3 Areas of Strategic Planning Where AI Analytics Is Most Utilized

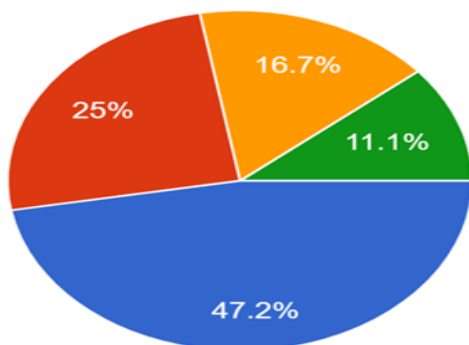
Figure 3 indicates that AI analytics is primarily used for resource allocation and budgeting (55.6%) in organizations. About 25% use it for market forecasting and trend analysis, while 16.7% apply it in customer relationship management. Only a small share focuses on product innovation, showing AI's dominant role in optimizing financial and strategic resource planning.



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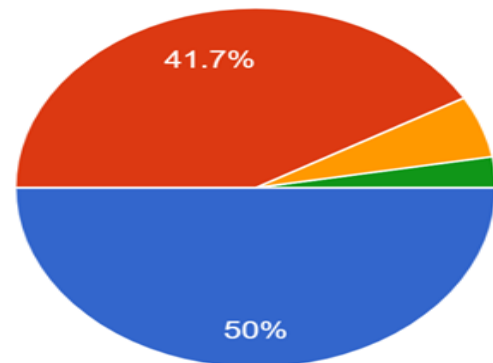
Figure 4 Commonly Used AI-Based Tools or Platforms for Analytics

Figure 4 reveals that most organizations (52.8%) use Microsoft Power BI or Tableau with AI insights for analytics. About 36.1% rely on Google Cloud AI or IBM Watson, while fewer use Python-based models or in-house AI systems. This shows a strong preference for established commercial AI analytics platforms that offer user-friendly and integrated business intelligence features. Figure 5 shows that predictive analytics (47.2%) is the most widely used method, helping organizations forecast future trends. Prescriptive analytics follows with 25%, supporting decision-making through recommendations. Descriptive and diagnostic analytics are less used, indicating that most firms focus on anticipating future outcomes rather than analyzing past causes.



- Predictive analytics (forecasting future trends)
- Prescriptive analytics (recommendation-based models)
- Descriptive analytics (data visualization and summary)
- Diagnostic analytics (understanding causes of outcomes)

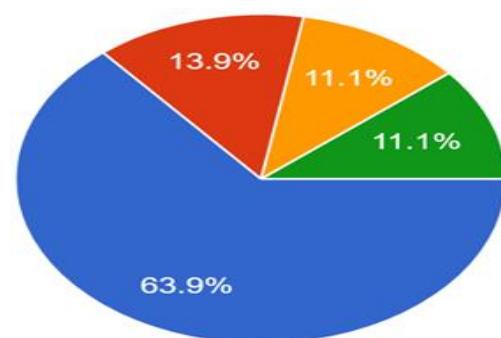
Figure 5 Analytical Methods Mostly Applied in Organizations



- Faster and more accurate decision-making
- Reduced operational cost and errors
- Better understanding of customer needs
- Improved innovation and product design

Figure 6 Major Benefits Gained from Adopting AI Analytics

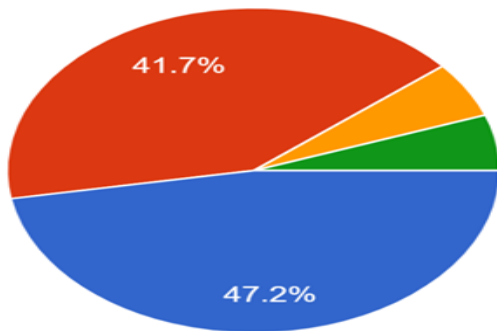
Figure 6 indicates that half of the respondents (50%) reported faster and more accurate decision-making as the key benefit of AI analytics. Around 41.7% experienced reduced operational costs and errors. Only a few organizations highlighted improved customer understanding or innovation, showing that efficiency and precision are the primary outcomes of AI adoption. Figure 7 shows that the major challenge faced by organizations (63.9%) is the lack of skilled professionals to operate AI tools effectively. High implementation and maintenance costs account for 13.9%, while data privacy, ethics, and integration issues each make up 11.1%. This highlights that skill shortages remain the biggest barrier to successful AI adoption.



- Lack of skilled professionals to handle AI tools
- High implementation and maintenance cost
- Data privacy and ethical concerns
- Integration issues with existing systems

Figure 7 Challenges Faced While Using AI-Based Analytics for Strategic Decisions

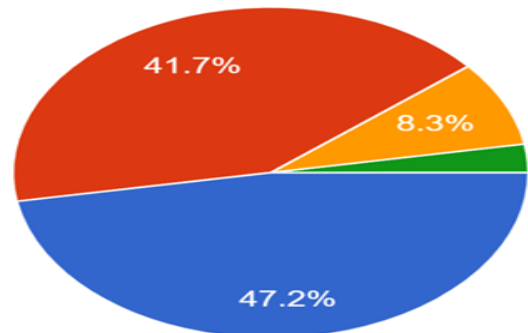
Figure 8 shows that 47.2% of respondents' companies ensure data privacy through strong internal data governance policies, while 41.7% rely on third-party audits and security testing. A small proportion (5.6%) use role-based access control, and few have no formal framework. This suggests most organizations prioritize structured policies and external audits for ethical AI usage.



- Strong internal data governance policies
- Third-party audits and security testing
- Limited access and role-based permissions
- No formal framework implemented yet

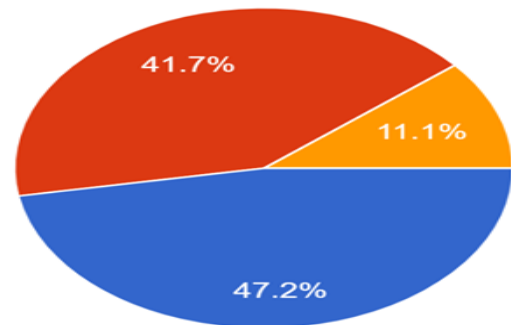
Figure 8 Measures to Ensure Data Privacy and Ethical Use of AI Analytics

Figure 9 indicates that 47.2% of organizations have a high level of AI adoption, with AI deeply integrated into strategic processes. Around 41.7% have a moderate level, using AI in selected decision areas. Only a small portion (8.3%) are at the pilot stage, while very few have not implemented AI yet. This highlights strong overall adoption of AI technologies across firms.



- High – AI is deeply integrated into all strategic processes
- Moderate – Used in selected decision areas
- Low – Only basic or pilot use of AI tools
- None – Not yet implemented AI systems

Figure 9 Level of AI Adoption in Organizations



- Significantly improved decision accuracy and outcomes
- Moderately improved decision-making efficiency
- Little improvement observed
- No noticeable change

Figure 10 Impact of AI Adoption on Decision Quality

Figure 10 shows that 47.2% of respondents believe AI adoption has significantly improved decision accuracy and outcomes, while 41.7% observed moderate improvements in decision-making efficiency. Only 11.1% reported little improvement, and none noticed no change. This suggests that AI adoption has had a largely positive effect on enhancing organizational decision quality. Figure 11 reveals that 52.8% of respondents believe AI-driven analytics will become a core part of all IT decisions,

while 33.3% think it will support but not replace human judgment. Around 11.1% foresee ethical or technical challenges ahead. This indicates strong optimism toward AI's growing role in shaping future strategic decisions.

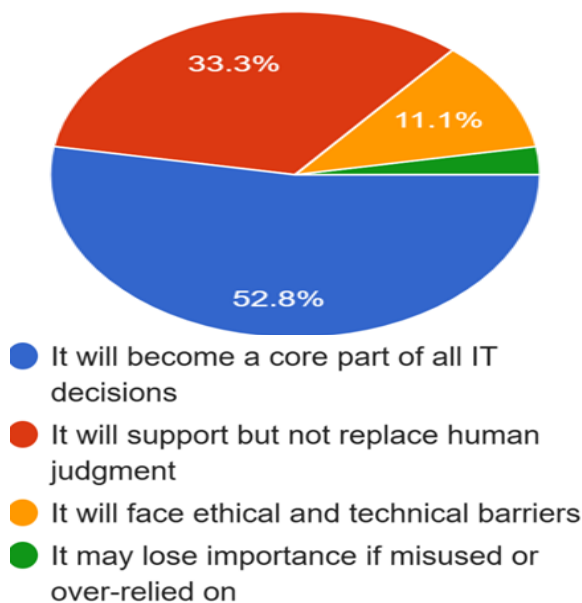


Figure 11 Future of AI-Driven Analytics in Strategic Decision-Making

6. Findings and Discussion

The study revealed that most respondents were Software Developers (19.4%) and HR Managers (13.9%), mainly from large IT firms such as TCS (33.3%) and Wipro (30.6%). This ensured a balanced representation of technical and managerial perspectives. Most participants (69.4%) agreed that AI-driven analytics has significantly improved the accuracy and speed of strategic decision-making, supporting previous findings that AI enables faster and more precise insights. AI tools were primarily used for resource allocation and budgeting (55.6%) and market forecasting (25%), highlighting their importance in financial and operational planning. Among analytical tools, Power BI and Tableau (52.8%) were most popular, followed by Google Cloud AI and IBM Watson (36.1%). Predictive analytics dominated (47.2%), indicating that firms increasingly rely on AI for anticipating future trends. The main benefits identified were faster and more accurate decisions (50%) and reduced operational

costs (41.7%). However, lack of skilled professionals (63.9%) and high implementation costs (13.9%) were cited as major barriers, reflecting the ongoing challenge of bridging the AI skill gap. Ethical aspects were also notable, with 47.2% of organizations having internal governance policies and 41.7% conducting third-party audits, though data transparency and privacy remain areas for improvement. Nearly half of the firms (47.2%) reported deep integration of AI in strategic processes, while 41.7% used it selectively. Most respondents observed marked improvements in decision quality and efficiency. Furthermore, 52.8% believe AI will become a core element of decision-making in the future, while 33.3% view it as a support system complementing human judgment. Overall, the findings confirm that AI-driven business analytics enhances strategic decision-making in IT organizations by improving speed, accuracy, and foresight. However, sustainable impact depends on continuous skill development, ethical governance, and balanced human-AI collaboration.

7. Scope for Future Research

- Future research can extend this study by exploring AI-driven decision-making across other sectors such as healthcare, finance, and manufacturing to compare adoption patterns.
- Larger sample sizes and mixed-method approaches combining qualitative and quantitative techniques could yield more generalizable results.
- Studies could also focus on the long-term impact of AI on organizational performance, employee adaptability, and ethical implications.
- Additionally, examining emerging technologies like generative AI, machine learning automation, and AI governance frameworks would provide deeper insights into how businesses can sustainably leverage AI for strategic advantage.

Conclusion

The study concludes that AI-driven business analytics has become an integral part of strategic decision-making in the IT sector. The findings indicate that AI enhances the accuracy, speed, and



quality of decisions, particularly in areas like resource allocation, budgeting, and forecasting. Widely adopted tools such as Power BI, Tableau, and IBM Watson help organizations transform raw data into actionable insights. However, challenges such as limited technical expertise and high implementation costs continue to restrict broader adoption. Overall, the research highlights that successful integration of AI depends not only on technology but also on skilled professionals, strong data governance, and a balanced collaboration between human intelligence and AI systems.

References

- [1]. Achumie, G. O., Oyegbade, I. K., Ngochindo Igwe, A., Ofodile, O. C., & Azubuiké, C. (2022). AI-driven predictive analytics model for strategic business development and market growth in competitive industries. *International Journal of Social Science Exceptional Research*, 1(1), 13–25.
- [2]. Badmus, O., Rajput, S. A., Arogundade, J. B., & Williams, M. (2024). AI-driven business analytics and decision making. *World Journal of Advanced Research and Reviews*, 24(1), 616–633.
- [3]. Charles, V., Emrouznejad, A., & Kunz, W. H. (2025). Advancements in artificial intelligence-based prescriptive and cognitive analytics for business performance. *Journal of Business Research*, 200, 115576. <https://doi.org/10.1016/j.jbusres.2024.115576>.
- [4]. Csaszar, F. A., Ketkar, F., & Kim, K. (2024). Artificial intelligence and strategic decision-making: Evidence from the field. *Strategic Science*, 10(1), 1–24.
- [5]. Gupta, N., Adawadkar, M., Asim, I., Verma, S., & Dubey, B. (2025). Predictive insights: Leveraging artificial intelligence for strategic business decision-making. *Advances in Consumer Research*, 2(5), 98–105.
- [6]. Islam, A., Olmoh, M., & Alo, U. (2025). Empowering strategic decision-making through AI-driven business analytics. *Paradise: Journal of Advanced Research*, 1(1), 1–7.
- [7]. Jafari, M., Shahbazi, A., Kawsar, M., Mousavi Davoudi, S. P., & Janani, S. (2025). The role of artificial intelligence in strategic planning and competitive advantage. *International Journal of Advanced Business Studies*, 4(4), 1–19.
- [8]. Michael, C. I., Ipede, O. J., Adejumo, A. D., Adenekan, I. O., Adebayo, D., Ojo, A. S., & Ayodele, P. A. (2024). Data-driven decision making in IT: Leveraging AI and data science for business intelligence. *World Journal of Advanced Research and Reviews*, 23(1), 472–480.
- [9]. Parmar, A. (2025). AI-driven data analytics for real-time decision-making. *International Journal of Progressive Research in Engineering Management Science*, 5(4), 1–6.
- [10]. Pu, Y., Li, H., Hou, W., & Pan, X. (2025). Strategic management decisions and corporate competitiveness based on artificial intelligence. *Scientific Reports*, 15, 17942.
- [11]. Rozony, F. Z., & Vudugula, S. (2023). Integrating artificial intelligence in strategic business decision-making: A systematic review of predictive models. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.5255980>
- [12]. Schmitt, M. (2023). Automated machine learning: AI-driven decision making in business analytics. *Intelligent Systems with Applications*, 18(1), 200188.
- [13]. Singh, D. P., & Singh, T. (2024). Leveraging AI for digital transformation in Canada's IT sector. *International Journal of Engineering Applied Science and Management*, 5(12).
- [14]. Cao, Y. (2025). Using AI and big data analytics to support entrepreneurial decisions in the digital economy. *Scientific Reports*, 15, Article 36933. <https://doi.org/10.1038/s41598-025-20871-4>
- [15]. Alaskar, H. (2025). Integrated AI and business analytics for sustaining data-driven and technological innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 11(3), 85–99. <https://doi.org/10.3390/joitmc11030085>.