



ROLE OF DATA ANALYTICS IN BUSINESS DECISION MAKING

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Abstract

Data analytics has become an essential tool for organizations to make informed and strategic decisions in the modern business environment. Businesses generate vast amounts of data through transactions, customer interactions, and digital platforms. Analyzing this data helps organizations identify trends, improve efficiency, reduce risks, and gain competitive advantage. The present study examines the role of data analytics in improving business decision-making processes using descriptive research design and basic statistical tools. Primary data were collected from 100 respondents working in business organizations through a structured questionnaire. Percentage analysis, mean analysis, and correlation were employed to interpret the data and derive managerial implications. The findings reveal that data analytics significantly enhances decision accuracy, improves operational efficiency, and supports strategic planning across functional areas. The study concludes that organizations adopting analytics-driven approaches can make faster and more reliable decisions compared to those relying on traditional experience-based methods.

Keywords: Data Analytics, Business Intelligence, Decision Making, Big Data, Business Strategy.

1. Introduction

In today's digital era, organizations operate in a highly competitive and data-driven environment where large volumes of data are generated from customers, suppliers, operations, and digital platforms. However, raw data alone does not provide value unless it is systematically processed and analyzed to generate meaningful insights for managers. Data analytics refers to the process of examining data sets with the help of statistical, computational, and visualization techniques to draw conclusions about the information they contain. Organizations increasingly use data analytics to identify patterns, predict trends, and support strategic as well as operational decisions, thereby improving efficiency, reducing costs, and enhancing customer satisfaction.

For example, retail organizations analyze purchase histories to forecast demand, while financial institutions employ analytics models to detect fraud and assess credit risk. Consequently, decision-making processes are gradually shifting from intuition-based approaches to evidence-based and analytics-driven approaches, leading to substantial investments in analytics tools and technologies.

2. Review of Literature

Davenport and Harris (2017) stated that organizations competing on analytics and incorporating data into core decision processes consistently outperform competitors because their decisions are based on real-time, fact-based information.

McAfee and Brynjolfsson (2018) found that companies adopting data-driven decision-making practices experience higher productivity and profitability relative to their peers.

Chen et al. (2019) highlighted that big data analytics and business intelligence significantly improve operational efficiency and help managers make better strategic decisions.

Wamba et al. (2020) concluded that big data analytics capabilities enhance business performance by providing deeper insights into customer behavior and market trends.

Laudon and Laudon (2021) emphasized that management information systems, including analytics applications, play a crucial role in supporting decision making at operational, managerial, and strategic levels.

The above studies collectively suggest that data analytics plays a vital role in improving the quality of decisions and overall organizational performance, thereby justifying the present empirical investigation.

3. Objectives of the Study

1. To understand the importance of data analytics in business decision making.
2. To analyze the impact of data analytics on organizational performance.
3. To identify how businesses use data analytics for strategic decisions.
4. To evaluate the effectiveness of data analytics tools in business operations.

4. Research Methodology

The present study adopts a descriptive research design to examine the role of data analytics in business decision making. Both primary and secondary data sources were used for the study. Primary data were collected through a structured questionnaire administered to employees working in different business organizations. A sample of 100 respondents was selected using convenience sampling due to accessibility and time constraints. Secondary data were collected from journals, books, and credible online sources related to data analytics and business intelligence. The collected data were analyzed using percentage analysis, mean score analysis, and correlation analysis to draw meaningful conclusions.

5. Data Analysis and Interpretation

Table 1: Awareness of Data Analytics in Organizations

Awareness Level	Number of Respondents	Percentage
Highly Aware	40	40%
Moderately Aware	35	35%
Slightly Aware	15	15%
Not Aware	10	10%
Total	100	100%

Source: Compile from primary data.

It is observed that 40 percent of the respondents are highly aware and 35 percent are moderately aware of data analytics in their organizations, indicating a growing adoption and familiarity with analytics tools among employees.

Table 2: Purpose of Using Data Analytics in Business

Purpose	Respondents	Percentage
Customer Analysis	30	30%
Sales Forecasting	25	25%
Operational Efficiency	20	20%
Risk Management	15	15%
Strategic Planning	10	10%
Total	100	100%

Source: Compile from primary data.

The table reveals that data analytics is predominantly used for customer analysis (30 percent) and sales forecasting (25 percent), followed by operational efficiency and risk management, highlighting its strong application in marketing and sales functions.

Table 3: Impact of Data Analytics on Decision Making

Impact Level	Respondents	Percentage
Very High	38	38%
High	32	32%
Moderate	20	20%
Low	10	10%
Total	100	100%

Source: Compile from primary data.

It is evident that 70 percent of the respondents perceive the impact of data analytics on business decision making as high or very high, confirming that analytics significantly contributes to decision quality.

Table 4: Mean Score Analysis of Benefits of Data Analytics

Benefit	Mean Score
Improved Decision Accuracy	4.3
Better Customer Insights	4.1
Cost Reduction	3.9
Risk Management	3.8
Competitive Advantage	4.2

Source: Compile from primary data.

The mean score analysis indicates that improved decision accuracy (mean score 4.3) and competitive advantage (mean score 4.2) are the most significant benefits perceived by respondents, followed by better customer insights and cost reduction.

Table 5: Correlation between Data Analytics Usage and Decision Effectiveness

Variables	Correlation Value
Data Analytics Usage & Decision Effectiveness	0.72

Source: Compile from primary data.

The correlation value of 0.72 shows a strong positive relationship between data analytics usage and effective business decisions, implying that higher adoption of analytics is associated with better decision outcomes.

6. Findings

1. A majority of the surveyed organizations are aware of and are using data analytics tools in their business processes.
2. Data analytics is mainly used for customer analysis and sales forecasting, followed by improvements in operational efficiency and risk management.
3. Respondents strongly believe that the use of analytics improves decision accuracy and provides deeper customer insights.
4. A strong positive relationship exists between data analytics usage and effective decision making, as indicated by the correlation value of 0.72.
5. Organizations that adopt data analytics gain strategic advantages and improve operational efficiency compared to those that rely primarily on traditional decision-making methods.

7. Suggestions

1. Businesses should invest in advanced analytics tools and technologies that are aligned with their strategic objectives.
2. Employees at various levels should receive regular training in data analytics skills to effectively interpret and use analytical insights.
3. Organizations should integrate analytics into all stages of strategic planning and performance management.
4. Data governance, security, and privacy measures must be strengthened to protect sensitive information and build stakeholder trust.
5. Top management should promote a data-driven culture that encourages the use of analytics in routine and strategic decisions.

8. Conclusion

Data analytics has emerged as an indispensable tool for modern businesses seeking to enhance their decision-making capabilities in a complex and dynamic environment. The empirical results of the present study confirm that data analytics significantly improves decision-making quality, operational efficiency, and overall organizational performance. Organizations that adopt analytics-driven strategies are better equipped to respond quickly to market changes, understand customer needs, and maintain competitive advantage. Therefore, companies should continue investing in analytics technologies and prioritizing the development of analytical capabilities among employees to sustain long-term growth and competitiveness.

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