

Data-Driven Decision Making and Strategic Management in Contemporary Firms

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Received: 23.04.2026

Accepted: 15.07.2026

Publishing: 29.09.2026

Abstract

Data-driven decision making has become an important component of contemporary strategic management. Organizations increasingly collect information from customers, employees, operations, financial systems, digital platforms, and external markets. Advances in analytics and artificial intelligence have expanded organizations' capacity to process these data. However, the availability of data does not automatically produce better strategic decisions. Data quality, analytical capability, managerial interpretation, organizational culture, and strategic alignment determine how effectively information is converted into organizational action. This conceptual paper examines the relationship between data-driven decision making and strategic management. Drawing upon the Resource-Based View and dynamic capabilities perspective, the paper proposes that data-driven decision making can strengthen organizational sensing, analytical decision-making, and strategic adaptability. The paper also identifies data literacy, analytical capability, leadership support, and governance as important conditions. The study concludes that organizations should develop both technological infrastructure and managerial capabilities to derive strategic value from data.

Keywords: data-driven decision making, strategic management, business analytics, dynamic capabilities, data literacy, organizational performance

1. Introduction

Organizations increasingly operate in environments characterized by large volumes of information.

Customers interact through digital channels, organizations collect operational data, and external sources provide information about markets and competitors.

The availability of data creates opportunities for organizations to improve strategic decision making.

However, more information does not necessarily produce better decisions.

Managers must determine which information is relevant, evaluate its quality, interpret analytical results, and connect evidence with strategic objectives.

2. Data-Driven Decision Making

Data-driven decision making involves using empirical information systematically to support organizational decisions.

It can complement managerial experience and intuition.

For example, organizations may use customer data to identify changing preferences or operational data to identify process inefficiencies.

However, data should not automatically override managerial knowledge.

Quantitative information represents selected measurements of reality and may exclude important qualitative factors.

3. Strategic Management

Strategic management involves decisions concerning organizational direction, resource allocation, competitive positioning, and long-term objectives.

Data analytics can contribute to strategy by improving organizational understanding of customers, markets, resources, and operations.

The strategic value of analytics therefore depends on whether analytical insights influence meaningful decisions.

4. Theoretical Framework

The Resource-Based View suggests that valuable organizational resources and capabilities can contribute to competitive advantage.

Data itself may not be a sustainable competitive resource because competitors can also collect information.

However, organizations may develop distinctive capabilities to collect, analyze, interpret, and act upon data.

The dynamic-capabilities perspective is therefore particularly relevant.

Data capabilities may contribute to:

- sensing changes;
- seizing opportunities;
- adapting organizational resources.

5. Data Quality

Poor data quality can undermine decision making.

Problems may include incomplete information, inconsistent definitions, outdated records, and measurement errors.

Organizations should therefore establish data-governance systems.

Data quality should be considered a management responsibility rather than solely an IT responsibility.

6. Data Literacy

Managers need sufficient data literacy to interpret analytical information.

Data literacy includes understanding basic statistical concepts, recognizing limitations, asking appropriate questions, and distinguishing correlation from causation.

Without data literacy, managers may misinterpret dashboards or analytical outputs.

7. Organizational Culture

Culture influences whether managers use data in decision making.

Organizations may formally invest in analytics while managers continue relying primarily on established habits.

A data-oriented culture does not require eliminating managerial judgment. Instead, it encourages managers to use evidence systematically while recognizing uncertainty.

8. Leadership

Senior leaders influence whether analytics becomes integrated into organizational strategy.

Leadership can establish expectations concerning evidence-based decision making and provide resources for analytical capabilities.

Leaders should also avoid creating pressure for data to support predetermined decisions.

9. Proposed Propositions

Proposition 1: Data quality is positively associated with the effectiveness of data-driven decision making.

Proposition 2: Managerial data literacy strengthens the relationship between analytics capability and decision quality.

Proposition 3: Data-driven decision making strengthens organizational sensing capability.

Proposition 4: Organizational analytical capability is positively associated with strategic adaptability.

Proposition 5: Leadership support strengthens the strategic value of data analytics.

Proposition 6: Data governance reduces risks associated with poor-quality or inappropriate data use.

10. Managerial Implications

Organizations should invest in data infrastructure while simultaneously developing human capabilities.

Training should focus not only on software use but also on analytical reasoning.

Managers should ask:

- Is the data reliable?
- What does the analysis actually demonstrate?
- What information is missing?
- Are alternative explanations possible?
- How does the finding relate to organizational strategy?

These questions can reduce inappropriate reliance on analytics.

11. Proposed Methodology

Future research could examine organizations with different levels of analytical maturity. Researchers could survey managers concerning data infrastructure, data literacy, analytical capability, leadership support, and strategic adaptability.

Objective organizational indicators could be incorporated where available.

Qualitative case studies could examine how analytical insights are translated into strategic decisions.

Longitudinal research would be useful because analytical capability develops over time.

12. Limitations

This paper is conceptual and does not report original empirical findings.

The relationship between data use and organizational performance may also depend on industry characteristics and environmental uncertainty.

Future studies should therefore investigate different organizational contexts.

13. Conclusion

Data-driven decision making has become increasingly important in strategic management.

However, data alone does not create strategic value.

Organizations require reliable data, analytical capabilities, data-literate managers, supportive leadership, appropriate governance, and organizational cultures that encourage evidence-based decision making.

The central managerial implication is that organizations should treat analytics as an organizational capability rather than simply a technological investment.

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