

Intelligent Data Analytics for Evidence-Based Innovation Decisions

Kezang Sherab

Assistant Professor; Paro College of Education, Royal University, Bhutan,

Abstract

The increasing complexity of modern business and organizational environments has created a strong requirement for intelligent systems capable of supporting accurate, timely, and evidence-based innovation decisions. Traditional decision-making approaches often depend on limited information, historical experience, and manual analysis processes, which may become insufficient when organizations operate within rapidly changing technological and competitive landscapes. Intelligent data analytics has emerged as a strategic capability that enables organizations to transform large volumes of structured and unstructured data into meaningful insights for innovation planning, evaluation, and implementation. This research examines Intelligent Data Analytics for Evidence-Based Innovation Decisions by analysing how advanced analytical technologies support organizations in identifying opportunities, predicting market trends, evaluating innovation performance, and improving strategic decision-making. The study adopts a conceptual research approach based on theoretical perspectives related to data analytics, artificial intelligence, innovation management, knowledge discovery, and organizational intelligence.

The analysis highlights that intelligent analytics frameworks integrate artificial intelligence, machine learning, predictive modelling, and data visualization techniques to enhance innovation decision processes. These technologies enable organizations to identify hidden patterns, evaluate emerging opportunities, optimize resource allocation, and develop more effective innovation strategies. The study identifies important challenges associated with intelligent data analytics, including data quality issues, analytical complexity, privacy concerns, algorithmic bias, technological dependency, and the requirement for skilled analytical professionals. Successful implementation requires strong data governance, analytical capabilities, ethical practices, and alignment between technology and organizational objectives. The research concludes that intelligent data analytics provides a powerful foundation for evidence-based innovation decisions. By combining computational intelligence with human expertise, organizations can develop more adaptive, informed, and sustainable innovation strategies capable of responding to future uncertainties.

Keywords: Intelligent Data Analytics, Evidence-Based Decisions, Innovation Management, Artificial Intelligence, Predictive Analytics, Data-Driven Strategy, Organizational Intelligence.

1. Introduction

The rapid expansion of digital technologies has fundamentally transformed the way organizations generate, manage, and utilize information for strategic decision-making. In contemporary innovation

environments, organizations are required to respond quickly to changing customer expectations, technological disruptions, competitive pressures, and emerging market opportunities. Traditional decision-making approaches based primarily on managerial experience and historical information may not provide sufficient support for navigating highly dynamic environments. As a result, intelligent data analytics has emerged as an important capability for improving the quality, speed, and reliability of innovation-related decisions.

Innovation decisions involve multiple uncertainties, including technology selection, market acceptance, investment priorities, resource allocation, and long-term strategic positioning. Organizations frequently generate large volumes of data through customer interactions, operational activities, digital platforms, research activities, and market monitoring systems. However, the availability of data alone does not guarantee effective decision-making. Organizations require advanced analytical capabilities to convert complex information into actionable knowledge that supports innovation planning and implementation.

Intelligent data analytics combines artificial intelligence, machine learning, statistical analysis, automation, and knowledge discovery techniques to identify meaningful relationships within large datasets. These capabilities allow organizations to move from reactive decision-making toward proactive and predictive approaches. Instead of relying only on past performance indicators, organizations can analyse patterns, forecast potential outcomes, and identify emerging innovation opportunities through evidence-based insights. Evidence-based innovation decisions represent a shift from assumption-driven strategies toward analytical decision processes supported by reliable information. By using intelligent analytics, organizations can evaluate innovation opportunities more systematically, reduce uncertainty, and improve the alignment between innovation initiatives and strategic objectives. Data-driven insights enable decision-makers to understand customer behaviour, identify technological trends, assess operational performance, and measure innovation outcomes.

Artificial intelligence has further expanded the potential of intelligent analytics by enabling automated pattern recognition, predictive modelling, and complex data interpretation. Machine learning algorithms can analyse diverse information sources and support organizations in discovering relationships that may not be easily identified through conventional analytical approaches. These capabilities are particularly valuable in environments where innovation decisions require rapid evaluation of complex and continuously changing information. However, the adoption of intelligent data analytics also introduces several challenges. Organizations must address issues related to data accuracy, privacy protection, algorithmic transparency, analytical skills, and ethical decision-making. Poor-quality data or inappropriate interpretation of analytical results can negatively influence strategic decisions and reduce trust in data-driven approaches.

Effective intelligent analytics requires a balance between technological capability and human expertise. While analytical systems provide valuable insights, human decision-makers remain responsible for interpreting results, considering contextual factors, and ensuring that innovation decisions align with organizational values and societal expectations. This research examines Intelligent Data Analytics for Evidence-Based Innovation Decisions. The study analyses conceptual foundations, analytical frameworks, technological applications, implementation challenges, and future opportunities for developing intelligent innovation decision ecosystems.

2. Review of Literature

2.1 Evolution of Data Analytics in Innovation Management

Data analytics has gradually evolved from traditional statistical approaches toward advanced intelligent systems capable of processing complex and large-scale information. Early analytical methods primarily focused on historical reporting and performance evaluation, whereas modern analytics emphasizes prediction, optimization, and strategic intelligence.

Research indicates that organizations increasingly rely on analytical capabilities to improve innovation planning and decision-making. Data-driven approaches allow organizations to identify opportunities, understand market changes, and evaluate innovation performance more effectively. The integration of artificial intelligence and machine learning has further strengthened analytics capabilities by enabling automated knowledge discovery and predictive decision support.

2.2 Artificial Intelligence and Predictive Innovation Decisions

Artificial intelligence has become an important component of innovation management by supporting advanced analysis, forecasting, and strategic planning. AI-based systems can process diverse datasets and identify patterns that support innovation-related decisions.

Predictive analytics enables organizations to estimate future trends, evaluate potential risks, and optimize innovation investments. These capabilities improve decision confidence and reduce uncertainty in complex environments. However, effective AI adoption requires appropriate governance mechanisms, quality data, and human interpretation to ensure reliable outcomes.

2.3 Evidence-Based Decision Frameworks and Organizational Intelligence

Evidence-based decision-making emphasizes the use of reliable information and analytical insights rather than assumptions or incomplete observations. Intelligent analytics frameworks strengthen organizational intelligence by connecting data resources with strategic objectives.

Organizations can use analytical insights to improve innovation processes, allocate resources effectively, and measure the impact of innovation initiatives. Future innovation management increasingly depends on developing intelligent decision ecosystems where data, technology, and human expertise work together.

3. Objectives of the Study

The primary objective of this study is to examine intelligent data analytics frameworks and analyse their role in improving evidence-based innovation decisions within modern organizational environments. The study focuses on understanding how advanced analytical technologies transform raw organizational data into meaningful knowledge that supports innovation planning, strategic evaluation, and informed decision-making. The research further aims to explore the relationship between artificial intelligence-based analytics, organizational intelligence, and innovation performance. It considers intelligent data analytics as a strategic capability that enables organizations to identify opportunities, manage uncertainty, optimize resources, and develop sustainable innovation strategies.

The specific objectives of the study are:

- To analyse the conceptual foundations and major components of intelligent data analytics frameworks for innovation decision-making.

- To examine the role of artificial intelligence, machine learning, predictive analytics, and knowledge discovery techniques in supporting evidence-based innovation strategies.
- To explore how organizations utilize analytical insights for opportunity identification, innovation evaluation, and strategic resource allocation.
- To identify technological, organizational, ethical, and data-related challenges associated with intelligent analytics adoption.
- To evaluate future directions for developing intelligent decision-support ecosystems that integrate analytical intelligence with human expertise.

4. Research Methodology

4.1 Research Design and Conceptual Approach

This study adopts a conceptual research design based on qualitative analysis of existing academic literature, theoretical models, and scholarly discussions related to intelligent analytics, artificial intelligence, innovation management, organizational decision-making, and data-driven transformation. The conceptual approach is appropriate because the study aims to examine the strategic importance and operational mechanisms of intelligent data analytics rather than evaluate a specific organizational analytics implementation. The research focuses on understanding how analytical intelligence can improve innovation decisions by connecting technological capabilities with managerial processes.

The study integrates perspectives from information systems research, innovation management theory, artificial intelligence studies, knowledge management, and strategic decision-making frameworks. Intelligent data analytics is conceptualized as an integrated capability where data resources, analytical technologies, organizational knowledge, and managerial judgement interact to support innovation outcomes. The research examines innovation decision-making as a continuous process involving opportunity identification, information collection, analytical evaluation, strategic selection, implementation planning, and performance assessment. Within this process, intelligent analytics functions as a support mechanism that improves the availability and quality of evidence used for decision-making.

The study does not include primary surveys, experimental validation, or statistical testing. Instead, it synthesizes existing theoretical knowledge to identify important analytical components, practical applications, challenges, and future opportunities associated with intelligent data analytics-based innovation decisions. The methodology recognizes that analytical systems cannot independently determine innovation strategies. Human interpretation, organizational experience, ethical judgement, and contextual understanding remain essential for transforming analytical insights into meaningful strategic actions.

4.2 Data Sources and Analytical Framework

The study utilizes secondary academic sources including peer-reviewed research publications, artificial intelligence studies, innovation management literature, business analytics research, knowledge discovery frameworks, and digital transformation studies. A thematic analysis approach was applied to identify major dimensions associated with intelligent data analytics and evidence-based innovation decisions. These dimensions include data management, predictive intelligence, analytical decision support, innovation evaluation, organizational learning, and responsible analytics governance.

The analytical framework considers intelligent data analytics as a multi-layered system consisting of data resources, analytical technologies, decision processes, human expertise, and innovation outcomes.

The framework emphasizes that successful analytics adoption depends not only on technological infrastructure but also on organizational readiness, data quality, analytical skills, and strategic alignment. Organizations must develop integrated analytical environments where data can be transformed into knowledge and knowledge can be converted into innovation actions.

4.3 Conceptual Framework of Intelligent Data Analytics for Innovation Decisions

The proposed framework explains that evidence-based innovation decisions emerge through interconnected stages involving data collection, intelligent analysis, knowledge interpretation, strategic evaluation, and innovation implementation.

The framework demonstrates how analytical intelligence supports organizations in reducing uncertainty and improving innovation effectiveness.

Table 1: Components of Intelligent Data Analytics Innovation Decision Framework

Analytical Component	Supporting Technology	Contribution to Innovation Decisions
Data Collection and Integration	Digital platforms, databases, IoT systems	Improved information availability
Data Processing and Analysis	Machine learning and AI algorithms	Pattern identification and insight generation
Predictive Intelligence	Forecasting models and analytics tools	Future opportunity evaluation
Decision Support	Intelligent recommendation systems	Improved strategic choices
Innovation Evaluation	Performance analytics frameworks	Measurement of innovation outcomes

5. Analysis

5.1 Intelligent Analytics as a Foundation for Evidence-Based Innovation Management

Innovation decisions frequently involve uncertainty because organizations must evaluate new technologies, market opportunities, customer expectations, and competitive conditions. Traditional decision-making approaches may depend heavily on managerial intuition and historical experience, which can become insufficient in rapidly changing environments. The analysis indicates that intelligent data analytics provides organizations with a stronger foundation for innovation management by enabling systematic evaluation of information from multiple sources. Through advanced analytical techniques, organizations can identify patterns, understand market behaviour, and recognize emerging opportunities before making strategic commitments.

Intelligent analytics transforms large volumes of structured and unstructured data into meaningful insights. Customer feedback, operational records, market information, research outputs, and

digital interactions can be analysed together to develop a more comprehensive understanding of innovation possibilities. Artificial intelligence-based analytics supports innovation teams by identifying relationships that may not be immediately visible through conventional analysis. Machine learning models can examine historical patterns and generate predictions that assist organizations in evaluating possible outcomes of innovation strategies.

Evidence-based innovation decisions also improve resource allocation. Organizations can analyse innovation performance, compare strategic alternatives, and prioritize initiatives with higher potential value. This reduces unnecessary investment risks and improves alignment between innovation activities and organizational objectives. However, analytical insights should not be interpreted as automatic decisions. Innovation involves creativity, uncertainty, and strategic judgement. Data provides evidence, but human decision-makers must evaluate whether analytical recommendations are appropriate within specific organizational and market contexts. Therefore, intelligent analytics should function as a decision-enhancement capability that combines computational intelligence with managerial expertise.

5.2 Predictive Analytics and Innovation Opportunity Identification

Predictive analytics has become an important capability for organizations seeking to identify future innovation opportunities and anticipate market changes. Unlike traditional analytical approaches that primarily examine historical information, predictive analytics uses advanced algorithms to estimate possible future scenarios.

The analysis demonstrates that predictive models support innovation decisions by identifying emerging trends, customer preferences, technology developments, and potential risks. Organizations can use these insights to design proactive innovation strategies rather than responding only after changes occur.

Table 2: Applications of Intelligent Analytics in Innovation Decision Processes

Innovation Activity	Intelligent Analytics Application	Strategic Benefit
Market Analysis	Customer behaviour analytics	Better opportunity identification
Product Innovation	Predictive modelling	Improved design decisions
Technology Planning	Trend analysis	Future technology readiness
Investment Decisions	Risk analytics	Reduced uncertainty
Performance Evaluation	Innovation metrics analysis	Improved strategic control

Predictive analytics also supports scenario planning by allowing organizations to evaluate different possible outcomes before implementing innovation initiatives. This capability is particularly valuable in uncertain environments where decisions involve significant investment and long-term consequences.

Artificial intelligence enhances predictive capabilities by continuously learning from new information. Adaptive analytical systems can improve forecasting accuracy as additional data become available. Nevertheless, predictive analytics has limitations.

Future outcomes are influenced by unexpected events, changing consumer behaviour, and external factors that may not be fully represented in available data. Organizations must therefore combine predictive insights with strategic thinking, expert judgement, and continuous environmental monitoring.

5.3 Data-Driven Innovation Performance Evaluation

Evaluating innovation performance is essential for understanding whether innovation initiatives generate meaningful organizational value. Traditional evaluation approaches often focus on limited indicators such as financial returns, product launches, or research outputs. Intelligent data analytics enables organizations to develop more comprehensive evaluation systems by analysing multiple dimensions of innovation performance. These may include customer response, operational improvement, market impact, knowledge creation, and strategic alignment.

The analysis suggests that data-driven evaluation improves organizational learning by identifying successful innovation practices and areas requiring improvement. Organizations can use analytical insights to refine innovation processes and strengthen future decision-making. Real-time analytics further enhances performance monitoring by providing continuous information about innovation progress. Instead of evaluating innovation only after completion, organizations can monitor activities throughout the innovation lifecycle.

However, effective evaluation requires appropriate metrics and reliable data sources. Poorly selected indicators may create misleading conclusions and negatively influence strategic decisions. Intelligent analytics therefore provides significant value when combined with well-designed evaluation frameworks and clear innovation objectives.

6. Challenges

6.1 Data Quality, Integration, and Analytical Reliability Challenges

The effectiveness of intelligent data analytics depends significantly on the quality, accuracy, and completeness of available data. Organizations often collect information from multiple sources, including internal systems, customer platforms, digital applications, and external market databases. Inconsistent formats, incomplete information, outdated records, and duplicate data can reduce analytical reliability and negatively affect innovation decisions.

Data integration also creates technical challenges because organizations may operate fragmented systems that limit information sharing and analytical efficiency. Developing strong data governance practices, standardized data structures, and quality monitoring mechanisms is essential for improving analytical reliability.

6.2 Algorithmic Bias and Ethical Decision-Making Concerns

Artificial intelligence-based analytics systems may produce biased outcomes when training data contain historical limitations or unequal representations. Algorithmic bias can influence innovation decisions by creating inaccurate predictions, unfair evaluations, or incomplete understanding of market opportunities.

Organizations must implement transparent analytical processes, regularly evaluate AI models, and maintain human oversight. Ethical analytics practices are necessary to ensure that data-driven innovation decisions remain responsible, fair, and aligned with organizational values.

6.3 Organizational Capability and Technology Adoption Barriers

Successful intelligent analytics adoption requires skilled professionals who understand both analytical technologies and innovation management principles. Many organizations face challenges related to limited expertise, resistance to technological change, and insufficient analytical culture.

Technology implementation without organizational readiness may result in underutilized systems and limited innovation benefits. Continuous learning, leadership support, and strategic investment in analytical capabilities are essential for effective adoption.

7. Discussion

7.1 Intelligent Data Analytics as a Strategic Capability for Innovation Decision-Making

The findings of this study indicate that intelligent data analytics has become an important strategic capability for organizations seeking to improve innovation decision-making in complex and uncertain environments. Traditional innovation management approaches often depend on experience, intuition, and limited information sources, which may not provide sufficient support when organizations face rapidly changing markets, technological disruptions, and evolving customer expectations. Intelligent analytics introduces a more systematic approach by enabling organizations to collect, process, and interpret diverse information resources for strategic innovation planning. The discussion highlights that evidence-based innovation decisions require more than access to large amounts of data. Organizations must develop the capability to transform data into meaningful knowledge through appropriate analytical frameworks.

Artificial intelligence, machine learning, and predictive analytics provide valuable mechanisms for identifying patterns, forecasting future possibilities, and supporting innovation evaluation. These capabilities allow decision-makers to move from assumption-based approaches toward more informed and analytical strategies. Intelligent data analytics also improves organizational responsiveness by enabling faster recognition of emerging opportunities and potential risks. In competitive environments, organizations that can interpret market signals, customer behaviour patterns, and technological developments effectively are better positioned to develop relevant innovations. Analytics-supported decision-making helps organizations allocate resources more efficiently and prioritize innovation initiatives with stronger strategic alignment.

However, the discussion emphasizes that analytics should not be considered a substitute for human creativity and strategic judgement. Innovation involves exploration, experimentation, and uncertainty, which cannot be fully captured through historical data analysis. Human expertise remains essential for interpreting analytical findings, understanding contextual factors, and making decisions that consider broader organizational objectives. The most effective innovation ecosystems will therefore combine intelligent analytical capabilities with human knowledge and experience. Artificial intelligence provides computational strength, while human decision-makers provide creativity, ethical reasoning, and strategic vision. Intelligent data analytics should consequently be understood as an organizational capability that strengthens innovation processes rather than an automated decision replacement.

mechanism. Its value emerges when technology and human intelligence operate together to create more adaptive and evidence-based innovation strategies.

7.2 Data-Driven Knowledge Discovery and Organizational Learning

The integration of intelligent analytics into innovation processes has transformed the way organizations discover, manage, and utilize knowledge. Modern organizations generate extensive information through research activities, customer interactions, operational systems, and digital platforms. Without appropriate analytical capabilities, valuable knowledge within these information resources may remain hidden. The discussion demonstrates that intelligent data analytics supports knowledge discovery by identifying relationships, trends, and patterns that may not be easily recognized through conventional analytical approaches. Machine learning algorithms and advanced analytical models enable organizations to explore complex datasets and generate insights that support innovation development. Data-driven knowledge discovery contributes to organizational learning by allowing institutions to understand previous innovation outcomes, identify successful practices, and improve future decision-making. Analytics enables continuous learning cycles where innovation strategies can be evaluated, adjusted, and refined based on evidence.

The use of intelligent analytics also strengthens collaboration among different organizational units. Shared analytical platforms can improve communication between research teams, managers, marketing departments, and operational groups by providing common information resources for decision-making. Nevertheless, effective knowledge discovery requires careful management of analytical processes. Organizations must ensure that data interpretation remains accurate, transparent, and aligned with strategic objectives. Excessive reliance on automated insights without contextual evaluation may lead to inappropriate conclusions.

The discussion further highlights the importance of developing analytical cultures within organizations. Technology adoption alone cannot generate innovation intelligence unless employees understand how to interpret data and integrate analytical insights into their professional practices. Future innovation-oriented organizations will increasingly depend on intelligent knowledge ecosystems where data, analytics, and human expertise interact continuously to support strategic learning and improvement.

7.3 Future Directions for Intelligent Innovation Decision Ecosystems

Future innovation decision ecosystems are expected to become increasingly intelligent, adaptive, and interconnected as organizations continue to integrate advanced analytical technologies. Emerging developments in artificial intelligence, autonomous analytics, real-time data processing, and advanced visualization systems are likely to further enhance innovation planning capabilities. One important future direction involves the development of self-learning analytical systems capable of continuously improving through new information. Such systems may support organizations by identifying changing market conditions, evaluating innovation opportunities, and recommending strategic alternatives.

Another significant development area is the integration of intelligent analytics with digital innovation platforms. Connected ecosystems involving customers, researchers, partners, and organizations can generate diverse knowledge resources that improve innovation outcomes. Future analytical frameworks must also focus on responsible and ethical data utilization. As organizations

increasingly depend on AI-supported decisions, transparency, accountability, and privacy protection will become essential requirements. Organizations will need stronger governance mechanisms to ensure that analytical systems are developed and used responsibly. This includes establishing clear data policies, evaluating algorithmic performance, and maintaining human oversight.

The future of intelligent innovation decisions will depend on creating balanced ecosystems where advanced analytics enhances human capabilities rather than limiting creativity or strategic independence. By integrating intelligent technologies with organizational knowledge and responsible governance, organizations can develop more resilient and sustainable innovation strategies.

8. Conclusion

Intelligent Data Analytics for Evidence-Based Innovation Decisions represents a significant advancement in modern innovation management practices. This study highlights that intelligent analytical frameworks enable organizations to transform complex information resources into valuable insights that support strategic planning, opportunity identification, and innovation evaluation. The analysis demonstrates that artificial intelligence, machine learning, predictive analytics, and knowledge discovery techniques provide powerful capabilities for improving innovation decision processes.

These technologies help organizations reduce uncertainty, optimize resources, identify emerging trends, and develop more informed innovation strategies. Despite these advantages, intelligent analytics adoption involves important challenges related to data quality, algorithmic bias, ethical concerns, technological complexity, and organizational capability. Effective implementation requires strong data governance, skilled professionals, transparent analytical processes, and continuous evaluation.

The future of innovation decision-making will depend on creating intelligent ecosystems where analytical technologies and human expertise complement each other. Data provides evidence, but human judgement remains essential for interpreting insights, understanding context, and making responsible strategic decisions.

Intelligent data analytics should therefore be considered a strategic capability that strengthens organizational innovation rather than replacing human decision-making. Through responsible integration of advanced analytics, organizations can develop more adaptive, evidence-based, and sustainable approaches to innovation management.

References

1. Chen, H., Chiang, R. H. L., & Storey, V. C. (2012). Business intelligence and analytics: From big data to big impact. *MIS Quarterly*, 36(4), 1165–1188.
2. Davenport, T. H. (2006). Competing on analytics. *Harvard Business Review*, 84(1), 98–107.
3. Davenport, T. H., & Harris, J. G. (2007). *Competing on analytics: The new science of winning*. Harvard Business School Press.
4. Dhar, V. (2013). Data science and prediction. *Communications of the ACM*, 56(12), 64–73.
5. Provost, F., & Fawcett, T. (2013). Data science and its relationship to big data and data-driven decision making. *Big Data*, 1(1), 51–59.
6. LaValle, S., Lesser, E., Shockley, R., Hopkins, M. S., & Kruschwitz, N. (2011). Big data, analytics and the path from insights to value. *MIT Sloan Management Review*, 52(2), 21–32.

7. Akter, S., Wamba, S. F., Gunasekaran, A., Dubey, R., & Childe, S. J. (2016). How to improve firm performance using big data analytics capability and business strategy alignment? *International Journal of Production Economics*, 182, 113–131. <https://doi.org/10.1016/j.ijpe.2016.08.018> □
8. Wedel, M., & Kannan, P. K. (2016). Marketing analytics for data-rich environments. *Journal of Marketing*, 80(6), 97–121. <https://doi.org/10.1509/jm.15.0413> □
9. Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J.-F., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 70, 356–365. <https://doi.org/10.1016/j.jbusres.2016.08.009> □
10. Seddon, P. B., Constantinidis, D., Tamm, T., & Dod, H. (2017). How does business analytics contribute to business value? *Information Systems Journal*, 27(3), 237–269. <https://doi.org/10.1111/isj.12101> □
11. Vidgen, R., Shaw, S., & Grant, D. B. (2017). Management challenges in creating value from business analytics. *European Journal of Operational Research*, 261(2), 626–639. <https://doi.org/10.1016/j.ejor.2017.02.023> □
12. Günther, W. A., Mehrizi, M. H. R., Huysman, M., & Feldberg, F. (2017). Debating big data: A literature review on realizing value from big data. *The Journal of Strategic Information Systems*, 26(3), 191–209.
13. Grover, V., Chiang, R. H. L., Liang, T.-P., & Zhang, D. (2018). Creating strategic business value from big data analytics: A research framework. *Journal of Management Information Systems*, 35(2), 388–423. <https://doi.org/10.1080/07421222.2018.1451951> □
14. Mikalef, P., Boura, M., Lekakos, G., & Krogstie, J. (2019). Big data analytics and firm performance: Findings from a mixed-method approach. *Journal of Business Research*, 98, 261–276. <https://doi.org/10.1016/j.jbusres.2019.01.044> □
15. Mikalef, P., Pappas, I. O., Krogstie, J., & Pavlou, P. A. (2020). Big data and business analytics: A research agenda for realizing business value. *Information & Management*, 57(1), 103237. <https://doi.org/10.1016/j.im.2019.103237> □
16. Mikalef, P., Krogstie, J., Pappas, I. O., & Pavlou, P. A. (2020). Exploring the relationship between big data analytics capability and competitive performance: The mediating roles of dynamic and operational capabilities. *Information & Management*, 57(2), 103169. <https://doi.org/10.1016/j.im.2019.05.004> □
17. Duan, Y., Cao, G., & Edwards, J. S. (2021). Understanding the impact of business analytics on innovation. *European Journal of Operational Research*, 281(3), 673–686. <https://doi.org/10.1016/j.ejor.2018.06.021>.
18. Chatterjee, S., Chaudhuri, R., Gupta, S., Sivarajah, U., & Bag, S. (2023). Assessing the impact of big data analytics on decision-making processes, forecasting, and performance of a firm. *Technological Forecasting and Social Change*, 196, 122824. <https://doi.org/10.1016/j.techfore.2023.122824> □
19. Liao, S., Hu, Q., & Wei, J. (2023). How to leverage big data analytic capabilities for innovation ambidexterity: A mediated moderation model. *Sustainability*, 15(5), 3948. <https://doi.org/10.3390/su15053948> □
20. Joergensen, P. N., & Zaggl, M. (2024). The role of data science and data analytics for innovation: A literature review. *Journal of Business Analytics*, 7(4), 207–223.