Editorial: Advancing research on digital technology in business

Technological advancements play a critical role in business, as they transform organizational operations and consumer behavior, reshaping key business practices and creating new market opportunities. Digital and information technologies contribute to enhanced decision-making, operational efficiency, business model innovation and sustained competitive advantage. Technologies, such as the internet and computer networks, facilitate interactive communication and personalization, enabling companies to collaborate with and learn from customers, thereby delivering services tailored to their evolving needs (Hoffman *et al.*, 2022; Rust and Espinoza, 2006). By collecting and storing customer data, including purchase patterns, timing, location and frequency, enterprises can analyze consumer behavior, enabling the provision of individualized products and services (Rust and Espinoza, 2006). Today, data analytics and business intelligence tools transform vast quantities of data into actionable insights about market trends and customers (Sun *et al.*, 2018). Analysis of spending patterns and transactional data yields a sophisticated understanding of customer preferences and financial behaviors, enabling more effective product recommendations and marketing strategies (Theodorakopoulos and Theodoropoulou, 2024), thereby accelerating the development of new products and services.

Digital transformation continues to strengthen firms' competitiveness by automating repetitive tasks, thereby enhancing operational efficiency (Shahid Iqbal *et al.*, 2018). Moreover, companies have been increasingly incorporating artificial intelligence (AI) applications into their business model. Startups can leverage AI to develop innovative business models aligned with environmental sustainability principles (Jorzik *et al.*, 2024).

Contemporary research at the intersection of business and digital technology encompasses several key areas. First, AI has emerged as a central focus, with studies examining its role in organizational decision-making, addressing ethical challenges posed by algorithmic bias and exploring new frameworks for effective human–AI collaboration (Enholm *et al.*, 2021). Second, big data analytics research investigates critical issues of data governance and the cultural transformation necessary for organizations to become genuinely data-driven (Aseeri and Kang, 2022). Third, digital transformation represents a significant research domain (Kraus *et al.*, 2022; Nguyen *et al.*, 2024), with scholars examining implementation strategies, the pivotal role of leadership and approaches to managing organizational resistance during technological change (Martínez-Falcó *et al.*, 2025; Porfírio *et al.*, 2021). Fourth, as organizations become increasingly dependent on digital infrastructure, cybersecurity research examines emerging threat patterns and quantifies the economic consequences of security breaches (Corallo *et al.*, 2020). Finally, emerging technologies such as blockchain continue to attract scholarly attention, particularly regarding their capacity to enhance transparency and establish trust in applications ranging from supply chain management to financial services (Frizzo-Barker *et al.*, 2020).

While current literature provides a robust understanding of the application of digital technology and its influence on business performance, several avenues present opportunities to advance the field. First, there is a pressing need to develop ethical AI frameworks that address the risk of bias, discrimination and privacy violations (Enholm *et al.*, 2021). Second, investigating the convergence of technologies offers a promising direction for understanding their synergistic effects on creating intelligent systems (Wang *et al.*, 2022). Third, from a macro perspective, advanced technology enables innovations that align with environmental sustainability goals (Kumar *et al.*, 2025), which points to the importance of further research on green technologies for sustainability (Le-Dinh *et al.*, 2025). Fourth, conceptual frameworks for integrating new technologies into businesses remain nascent, as

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academic research primarily relies on firm-level theories such as the resource-based view theory, dynamic capabilities theory and technology-organization-environment theory (Zhang *et al.*, 2020; Mandal, 2018). Fifth, from a management standpoint, business-IT alignment represents a critical research area and a major concern for company managers, as many firms still treat AI as a separate activity operating in parallel to the business team (Yeow *et al.*, 2018). Maintaining business-IT alignment is challenging yet essential to ensure that IT solutions adequately address the constantly evolving business needs (Andre *et al.*, 2024). Finally, more research that comprehensively examines how consumers perceive, adopt and utilize digital technologies is crucial, as it can help businesses develop and implement effective digital strategies.

The *Journal of Trade Science* welcomes submissions that explore the directions mentioned above, as well as others that address contemporary technological trends and issues. We look forward to receiving your research and collaborating to advance current understanding of the application and impact of digital technology in business.

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