Chapter 12
Future Financial Decision-Making Systems:
A New Era of Smart Finance

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ABSTRACT

This study explores the transformative impact of AI, blockchain, and big data on financial decision-making, market efficiency, and inclusion, examining case studies in AI-driven credit scoring, blockchain for cross-border remittances, and algorithmic trading. It addresses ethical concerns, including privacy and transparency, and uses a mixed-method approach, including literature review, data analysis, and expert interviews, to identify key opportunities and challenges. The study recommends further research into integrating emerging technologies, developing robust regulatory frameworks, and fostering cross-border collaboration to shape the future of finance in the digital age. The study aims to critically assess how emerging technologies like

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AI, blockchain, and big data reshape financial decision-making, enhance market efficiency, and promote financial inclusion while addressing ethical challenges and regulatory issues in innovative finance.

1. OVERVIEW OF FINANCIAL DECISION-MAKING SYSTEMS

This study explores the transformative impact of innovative finance, powered by AI, blockchain, and big data, on financial decision-making, market efficiency, and financial inclusion, analyzing case studies in AI-driven credit scoring, blockchain for cross-border remittances, and algorithmic trading while addressing ethical concerns such as privacy and transparency; through a mixed methodology of literature review, data analysis, and expert interviews, it highlights key opportunities and challenges, recommending further research into the integration of emerging technologies, robust regulatory frameworks, and cross-border collaboration to shape the future of finance in the digital age (Bhatnagar & Sehajpal, 2024).

In traditional financial systems, investment, credit, and market strategy decisions relied heavily on historical data, forecasting, financial reporting, and expert judgment. However, human biases, limited real-time data, and an inability to adjust to sudden market shifts often hindered these decisions, leading to suboptimal decisions and gaps in risk assessment during crises (R. Kumar, Malhotra, et al., 2023; Malhotra et al., 2021).

The decision-making process was siloed across departments and institutions, with fragmented information and limited access to real-time data. As financial markets grew in complexity, traditional methods became inadequate, highlighting the need for a more agile, data-driven approach (P. Sharma et al., 2022).

Emergence of Smart finance:

The emergence of smart finance denotes a transformative change in financial decision-making, guided by AI, big data analytics, ML, and blockchain technology, fostering a proactive, data-empowered system that enables near instantaneous, instructed decisions (R. Kumar, Lande, et al., 2023), with AI and ML processing vast datasets at remarkable speeds to identify complex patterns and deliver predictive analytics. In contrast, big data from various sources like social media and IoT facilitates granular insights into market sentiment and occurring risks, and blockchain improves transparency and security, fostering trust, financial automation, and efficiency in dealings, algorithmic trading, and personalized wealth management through AI-driven robo-advisors (R. Kumar & Khanna, 2023).