Implementing Artificial Intelligence for Strategic Decision-Making in Volatile Economic Environments

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ABSTRACT

This study investigated the role of Artificial Intelligence (AI) in enhancing strategic decision-making within volatile economic environments, focusing on knowledge economy. Employing a mixed-methods approach, the research integrated a Systematic Literature Review (SLR) with secondary data analysis from 300 organizations across finance, manufacturing, retail, and healthcare sectors. Qualitative insights from the SLR identified three core themes including AI-enhanced organizational agility (75% of studies), ethical and implementation challenges (65% of studies), and knowledge economy integration (70% of studies). Quantitative findings confirmed these themes, revealing that organizations with advanced AI adoption achieve an average 25% improvement in decision accuracy and a 30% increase in operational resilience. However, ethical concerns such as algorithmic bias and privacy issues led to a 12-18% reduction in perceived trustworthiness, reported by 20% of analyzed organizations. The study extended dynamic capabilities and resource-based view theories by proposing a unified framework that integrates agility, ethical governance, and knowledge-driven alignment. Practically, it offered managerial guidance on AI deployment and ethical protocols, while advising policymakers on regulations to ensure equitable AI access, particularly for small and medium enterprises (SMEs). The research positioned AI as a critical strategic asset for navigating volatility while emphasizing risk mitigation.

KEYWORDS

Artificial Intelligence, strategic decision-making, knowledge economy, organizational agility, ethical AI.

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Introduction

The twenty-first century business landscape is characterized by unprecedented Volatility, Uncertainty, Complexity, and Ambiguity (VUCA), driven by forces such as technological disruption, globalization, shifting consumer demands, geopolitical instability, and the lingering effects of pandemics. Traditional frameworks for strategic decision-making, which often rely on linear models and incremental planning, struggle to address the accelerating pace of change in today's markets. As a result, organizations are increasingly turning to AI to strengthen their decision-making capabilities and to develop strategies that are both resilient and adaptive to dynamic environments (Kolbjornsrud, 2023; Wu et al., 2023). AI provides managers with sophisticated tools for analyzing massive datasets, detecting subtle patterns, generating predictive insights, and supporting real-time strategic adjustments. Its ability to combine computational efficiency with advanced analytical techniques positions it as a cornerstone technology for organizations seeking competitive advantage in digital and knowledge-based economy.

The role of AI in strategic decision-making has evolved from a supporting analytical tool to an active collaborator in shaping long-term strategic outcomes. Recent studies emphasized that AI contributes not only to operational improvements but also to broader strategic agility, enabling organizations to anticipate disruptions, reconfigure resources rapidly, and seize emerging opportunities (Alghamdi & Agag, 2023; Tominc et al., 2023). For instance, in financial services, AI-driven predictive models have enhanced portfolio management and risk assessment, improving stability during market turbulence (Addy et al., 2024). In supply chain management, machine learning algorithms have improved the accuracy f demand forecasting, reduced bottlenecks, and optimized logistics, thereby increasing resilience during crises such as the COVID-19 pandemic (Ivanov & Dolgui, 2022). Similarly, in digital commerce, natural language processing and recommendation systems have enabled organizations to adapt rapidly to changing consumer preferences, boosting customer engagement and sales (Chen et al., 2021). These examples illustrate that AI not only automates the existing processes but also transforms how organizations sense and respond to environmental shifts, creating pathways for sustainable competitive advantages.

At the same time, the integration of AI into strategic decision-making is accompanied by significant challenges. While managers acknowledge AI's potential, surveys revealed that only a small minority of organizations fully delegate strategic decision-making to AI systems, reflecting concerns about trust, transparency, and accountability (Chernov et al., 2020; Hesel et al., 2022). Ethical dilemmas such as algorithmic bias, data privacy violations, and explainability gaps remain major barriers to widespread adoption (Mittelstadt et al., 2023; Ramu et al., 2025). For example, biased AI systems in recruitment and customer profiling can lead to discriminatory outcomes, undermining the organizational legitimacy and stakeholder trust. Moreover, many SMEs, particularly in emerging economies, lack the technical infrastructure, skilled workforce, and financial resources required to implement AI effectively (Wang et al., 2025). These challenges highlight the importance of hybrid models of human–AI collaboration, in which AI acts as an assistant, collaborator, or project manager, while humans retain oversight and ethical judgment (Buber et al., 2025).

The theoretical foundations for studying AI in strategic decision-making are grounded in the Resource-Based View (RBV) and dynamic capabilities perspectives. From an RBV standpoint, AI constitutes a valuable, rare, and inimitable resource that enables organizations to create sustained competitive advantages by leveraging data-driven insights and superior analytical capabilities (Brynjolfsson et al., 2022). Dynamic capabilities theory, on the other hand, emphasizes AI's role in sensing opportunities, seizing them through timely actions, and transforming organizational processes to adapt to environmental turbulence (Liu, 2024). These frameworks explain how AI strengthens the organizational agility and resilience by facilitating rapid reconfiguration of strategies and resources. Furthermore, the Knowledge-Based View (KBV) highlights AI's contribution to knowledge creation and dissemination, positioning it as an essential enabler of innovation in knowledge-intensive industries (Cockburn et al., 2018). Together, these theoretical lenses underscore AI's transformative potential in reshaping strategic management in volatile economic contexts.

Recent empirical evidence further reinforced the strategic importance of AI. Large-scale surveys showed that over 80% of executives perceive AI as a key enabler of competitive advantage (Tominc et al., 2023). Structural Equation Modeling studies demonstrated that AI adoption significantly enhances organizational agility and mediates the relationship between digital transformation initiatives and firm performance (Alghamdi et al., 2023; Ameen et al., 2024). Machine learning prediction models achieve accuracy rates of up to 99% in forecasting organizational agility, indicating the reliability of AI-based approaches in predicting performance outcomes (Shafiabady et al., 2024). Moreover, firms with high levels of AI literacy report stronger resilience, improved innovation performance, and superior customer engagement compared to firms with lower adoption levels (Blancia et al., 2024). These findings illustrated that AI not only enhances efficiency but also fundamentally redefines the nature of strategic decision-making by combining data-driven insights with adaptive learning capabilities.

Despite these advancements, the integration of AI into strategic decision-making remains uneven and fragmented across industries and regions. Developed economies such as the United States, China, and European countries lead in AI adoption, while firms in developing markets face structural and institutional barriers (Chernov et al., 2020). Cultural resistance to automation, fear of job displacement, and lack of regulatory clarity further complicate the adoption process. As AI technologies such as large language models and reinforcement learning advance, organizations must carefully balance automation with human oversight to ensure responsible, transparent, and ethical decision-making (Liu et al., 2025; Schmitt, 2024). This balance is especially crucial in volatile economic environments, where over-reliance on automated systems without contextual awareness could expose firms to unforeseen risks.

The motivation for this study arises from the growing recognition that AI, while promising, requires comprehensive frameworks that integrate its technological benefits with ethical considerations, governance mechanisms, and knowledge economy principles. The existing research has tended to focus either on sector-specific applications or technical capabilities, often neglecting the interdisciplinary and cross-sectoral implications of AI adoption. This study addresses this gap by adopting a mixed-methods approach, combining a systematic literature review (SLR) with secondary data analysis from multiple industries. The objectives are threefold: (1) to identify the key themes in AI-enabled strategic decision-making, particularly organizational agility, ethical challenges, and knowledge alignment; (2) to quantify the impact of AI adoption on organizational performance and resilience; and (3) to propose a holistic framework that integrates RBV, dynamic capabilities, and KBV theories to guide future adoption of AI in volatile economic contexts.

Literature Review

The integration of AI into strategic decision-making is a pivotal research area in management, economics, and technology, particularly in volatile economic environments within the knowledge economy. This section synthesizes empirical and theoretical studies from peer-reviewed journals publishing knowledge economy studies (2020–2025), critically engaging with AI's transformative role, benefits, challenges, and alignment with knowledge-driven economies. It addresses debates (e.g., AI's productivity paradox, per Brynjolfsson et al., 2022) and limitations (e.g., Western data bias).

Theoretical Foundations of AI in Strategic Decision-Making: The RBV positions AI as a valuable, rare, and inimitable resource, enabling data-driven competitive advantages (Barney, 1991; Brynjolfsson et al., 2017). The dynamic capabilities perspective emphasizes AI's role in sensing opportunities, seizing them, and transforming resources to navigate turbulence (Li, 2024; Teece et al., 1997). The KBV highlights AI's contribution to knowledge creation and innovation (Cockburn et al., 2018). Figure 2 proposes a conceptual model integrating these theories, hypothesizing that AI enhances agility (H1: AI adoption positively impacts organizational agility), mitigates risks through ethical governance (H2: Ethical AI frameworks reduce decision biases), and drives innovation in knowledge economies (H3: AI-enabled knowledge integration enhances innovation performance). This model guides the study's analysis.

Empirical Evidence on AI and Organizational Agility: Studies consistently showed AI's enhancement of organizational agility. Alghamdi and Agag (2023) found that AI-powered analytics improve innovation and agility, while Ameen et al. (2024) reported increased creativity through AI-agility coupling. Shafiabady et al. (2023) demonstrated 99% accuracy in predicting agility using machine learning, and Blancia et al. (2024)

showed AI literacy mediates agility outcomes. In emerging markets, studies like Fathi et al. (2025) highlighted the AI's role in supply chain resilience, suggesting broader applicability.

Challenges and Ethical Considerations in AI Integration: AI adoption faces significant challenges. Algorithmic bias risks unfair outcomes in recruitment and profiling (Mittelstadt et al., 2016). Transparency and explainability gaps reduce trust, particularly in finance and healthcare (Ramu & Bansal, 2025). Data privacy concerns persist, with SMEs facing resource constraints (Wang & Wu, 2025). Hybrid human–AI models are advocated to balance efficiency with ethical judgment (Hesel et al., 2022).

AI in Knowledge Economy: AI drives knowledge creation and dissemination, critical for the knowledge economy. Cockburn et al. (2018) noted AI's impact on R&D innovation, while Brynjolfsson et al. (2017) argued it reduces productivity paradoxes. Blancia et al. (2024) showed that AI literacy enhances adaptability, and Nourahmadi and Rasti (2025) highlighted the role of large language models in fintech value creation. Thus, AI is not only a technological tool but also a critical infrastructure for competing in knowledge economy.

Research Gap and Contributions: While AI's technical benefits are well-documented, cross-sectoral implications, ethical dimensions, and regional disparities remain underexplored (Chernov et al., 2020). This study addresses these gaps through a mixed-methods approach, combining SLR with secondary data analysis across finance, manufacturing, retail, and healthcare. It proposes a framework (Figure 2) integrating RBV, dynamic capabilities, and KBV, with testable hypotheses to guide AI adoption. Practically, it offers insights for human–AI collaboration and ethical governance, while informing policymakers on inclusive AI access.

Research Gap and Contributions

Despite considerable progress, gaps remain in literature. First, much of the research is sector-specific (e.g., finance or supply chains), leaving cross-sectoral implications underexplored. Second, while technical benefits of AI are well-documented, ethical and societal dimensions are less thoroughly investigated. Third, disparities between developed and emerging economies in AI adoption are insufficiently addressed (Chernov et al., 2020). This study fills these gaps by combining a systematic literature review with secondary data analysis across multiple industries. Theoretically, it integrates RBV, dynamic capabilities, and KBV to capture AI's dual role as both a resource and a capability enabler. Practically, it offers managers actionable insights for human–AI collaboration and provides policymakers with guidance on inclusive access and ethical governance of AI.

Table 1
A Summary of Key Studies on AI in Strategic Decision-Making (2022–2025)

Study	Year	Journal	Focus	Key Findings	Sample Size	Sector
Nourahmadi & Rasti	2025	Knowledge Economy Studies	Shaping fintech through regulations	Insights and future directions	Case studies	Fintech
Fathi et al.	2025	Knowledge Economy Studies	IoT barriers in food supply chains	AI enhances supply chain resilience	Case study (Kalleh)	Supply Chain
Liu et al.	2025	ACL Annual Meeting	Policy optimization in LLMs	Strategic reasoning challenges	Experimental	AI/Strategy
Pu et al.	2025	Scientific Reports	AI management decisions	Competitivenes s via AI	500 firms	Cross-sector
Polinati et al.	2025	Journal of Information Systems Engineering and Management	AI in dynamic environments	Decision support	Case studies	Information Systems
Ramu et al.	2025	International Journal for Sciences and Technology	AI transformativ e impacts	Managerial strategies	Theoretical	Technology
Nalini et al.	2025	ComFin Research	AI strategy management	Optimization and innovation	Theoretical	Finance/Strategy
Shi	2025	Advances in Economics, Management and Political Sciences	AI risks in decisions	Application and risks	Theoretical	Economics
Jowarder	2025	International Journal of Innovative Research in Science Engineering and Technology	AI strategic insights	Business development	Theoretical	Engineering/ Strategy
Orlando Rivero	2025	European Journal of Studies in Management and Business	AI in digital age	Managerial transformations	Theoretical	Management
Addy et al.	2024	World Journal of Advanced Engineering Technology and Sciences	AI financial planning	Analysis transformations	Review	Finance
Ibeh et al.	2024	World Journal of Advanced Research and Reviews	Business analytics and decision science	Real-time insights	Review	Cross-sector

Study	Year	Journal	Focus	Key Findings	Sample Size	Sector
Rimon	2024	Journal of Artificial Intelligence General Science	AI for efficiency	Market sentiment analysis	Case studies	Business
Tuboalabo et al.	2024	International Journal of Management and Entrepreneurship	Analytics for advantage	Predictive models	Case studies	Business
Csaszar et al.	2024	Strategy Science	AI evidence from entrepreneurs	Strategy generation	Experimental	Strategy
Abuzaid	2024	ICKECS Conference	AI corporate integration	Decision-making role	Conference	Knowledge Engineering
Chowdhury	2024	World Journal of Advanced Research and Reviews	AI-Blockchain integration	Security in intelligence	Theoretical	Cross-sector
Schmitt	2024	Social Science Research Network	Chief AI Officer role	Strategic integration	Theoretical	Management
Vold	2024	Australian Journal of International Affairs	AI cognitive teaming	Decision on force	Theoretical	International Affairs
Charitha et al.	2023	International Journal For Multidisciplinary Research	AI data processing	Patterns beyond human capacity	Theoretical	Cross-sector
Puttaraju	2023	International Journal of Science and Research	AI augmentation tools	Decision methodologies	Review	Strategy
Damasevicius	2023	Journal of Regional Economics	AI in economic planning	Crisis management	Theoretical	Economics
Wu et al.	2023	ACM Computing Surveys	AI taxonomy for decisions	Gaps in AI models for complexity	Theoretical	Cross-sector
Brynjolfsson et al.	2022	Journal of Business Research	Productivity paradox of AI	Challenges and opportunities	Theoretical	Cross-sector
Li et al.	2022	Strategic Management Journal	AI-driven agility	Strategic perspectives	Case studies	Cross-sector
Hesel et al.	2022	NIM Marketing Intelligence Review	Human-AI collaboration	AI use as an assistant	1,000+ executives	Marketing/ Strategy
Chernov et al.	2020	ETCMTP Proceedings	AI adoption levels	Full delegation	Survey (managers)	Cross-sector

(Source: Researcher's Findings)

Methodology

This study employed a mixed-methods design, integrating qualitative and quantitative approaches to examine the AI's role in strategic decision-making in volatile economic environments (Creswell & Plano Clark, 2023). The qualitative phase involves a systematic literature review (SLR) following PRISMA 2020 guidelines (Page et al., 2021). The quantitative phase analyzes the secondary data from 300 firms across finance (120 firms), manufacturing (80 firms), retail (70 firms), and healthcare (30 firms). Ethical considerations ensured anonymized data use, aligning with institutional guidelines (Mittelstadt et al., 2023).

Qualitative Phase: Systematic Literature Review (SLR)

The SLR targeted peer-reviewed articles (2020–2025) from Scopus, Web of Science, PubMed, and Knowledge Economy Studies, using keywords such as "artificial intelligence", "strategic decision-making", "knowledge economy", and "volatile markets". Inclusion criteria required English-language, management-focused studies in finance, manufacturing, retail, or healthcare; exclusion criteria eliminated non-peer-reviewed or irrelevant sources. From 1,000 abstracts screened, 150 were selected for full-text review, yielding 60 articles for thematic analysis (Braun & Clarke, 2022). Exclusions were based on lack of empirical data (60 articles), non-management focus (20 articles), or outdated scope (10 articles). Themes included organizational agility, ethical challenges, and knowledge economy alignment, cross-validated with studies like Fathi et al. (2025) and Nourahmadi and Rasti (2025). Table 2 shows the process.

Table 2
The Process of Systematic Literature Review

Stage	Description	Number of Articles	Criteria
Identification	Database search (Scopus, Web of Science, PubMed)	1,000	Keywords: AI, strategic decision-making, knowledge economy, volatile markets
Screening	Title and abstract review	150	Peer-reviewed, English, 2020–2025
Eligibility	Full-text review for relevance and quality	60	Management focus, empirical or theoretical relevance
Analysis	Thematic coding (agility, ethics, knowledge economy)	60	Alignment with research objectives

(Source: Researcher's Findings)

Quantitative Phase: The secondary data from 300 firms (2020–2024) were sourced from publicly available industry reports (e.g., Deloitte AI Insights, 2023, https://www.deloitte.com/ai-insights; McKinsey Global AI Survey, 2022, https://www.mckinsey.com/ai-survey) and peer-reviewed studies (e.g., Fathi et al., 2025). The firms were selected based on AI adoption metrics, focusing on:

- **AI adoption intensity**: % of budget allocated to AI tools (high: >10%, medium: 5–10%, low: <5%) (Li et al., 2022);
- **Decision-making accuracy**: The success rate of predictive models (%) (Choi et al., 2022);

- **Operational risk reduction**: % decrease in disruptions (e.g., inventory shortages) (Fathi et al., 2025);
- **Organizational resilience**: The market share stability index (Zhang et al., 2024).

Descriptive statistics (means, standard deviations) and regression analyses assessed the relationships between AI adoption and outcomes (e.g., accuracy, resilience). Missing data (approximately 5% of cases) were handled using multiple imputation by chained equations (MICE), with sensitivity analyses confirming a minimal impact on results (Tashakkori & Teddlie, 2022). Quantitative content analysis of case narratives measured AI-driven outcomes (Yin et al., 2025). Table 3 details variables.

Table 3
The Quantitative Variables and Measurement Criteria

Variable	Measurement	Source	Sector
AI Adoption Intensity	% of budget allocated to AI tools (high: >10%, medium: 5–10%, low: <5%)	Industry reports, Li et al. (2022)	Finance, Manufacturing, Retail, Healthcare
Decision-Making Accuracy	The success rate of predictive models (%)	Choi et al. (2022);Yin et al. (2025)	Finance, Manufacturing, Retail, Healthcare
Operational Risk Reduction	% decrease in disruptions (e.g., inventory shortages)	Fathi et al. (2025)	Manufacturing, Finance
Organizational Resilience	The market share stability index	Zhang et al. (2024); Nourahmadi & Rasti (2025)	Finance, Manufacturing, Retail, Healthcare

(Source: Researcher's Findings)

Data Validation and Ethical Considerations

Data were cross-verified with reputable sources (e.g., Gartner, McKinsey, and peer-reviewed studies like Fathi et al., 2025). Ethical protocols ensured data anonymity and addressed biases, per Mittelstadt et al. (2023). Limitations included reliance on secondary data, restricting causality inference, and potential sector-specific biases.

The Integration of Qualitative and Quantitative Phases: Qualitative themes (e.g., agility in 75% of studies) were triangulated with quantitative metrics (e.g., 25% accuracy improvement) to develop a holistic framework (Figure 2). Table 4 summarizes the integration.

Table 4
The Integrated Framework of AI's Impact on Strategic Decision-Making

Phase	Method	Contribution to Objectives	Key Outputs
Qualitative (SLR)	PRISMA-guided review, thematic analysis	Identify themes (agility, ethics, knowledge economy)	60 articles, 3 themes
Quantitative (Secondary Data)	Descriptive statistics, regression, content analysis	Quantify AI impacts (e.g., 25% accuracy)	Metrics from 300 firms
Integration	Triangulation of themes and metrics	A holistic framework for AI integration	Validated insights across sectors

(Source: Researcher's Findings)

Finding

The mixed-methods approach provided robust insights into the AI's role in strategic decision-making within volatile economic environments, focusing on knowledge economy. Findings are supported by structured tables and cross-references, ensuring replicability.

Qualitative Findings: Systematic Literature Review

The SLR analyzed 60 peer-reviewed articles (2020–2025) from several journals. Three themes emerged:

1. **AI-driven organizational agility** (75%, 45 studies): AI enhances adaptive capabilities through predictive analytics and real-time processing, reducing supply chain response times by 20-30% and improving financial risk modeling (Fathi et al., 2025).
2. **Ethical challenges** (65%, 39 studies): Issues like algorithmic bias and privacy concerns reduce perceived reliability by 12-18%, particularly in retail and healthcare (Zhong et al., 2021).
3. **Knowledge economy alignment** (70%, 42 studies): AI automates tasks, boosting innovation in knowledge-intensive sectors like fintech (Nourahmadi & Rasti, 2025).

The sector distribution is as follows: 35% finance, 25% manufacturing, 20% retail, 20% healthcare. Table 5 summarizes the findings.

Table 5
A Summary of Qualitative Findings from Systematic Literature Review

Theme	Number of Studies	Percentage of Total Studies	Sector Distribution (Finance / Manufacturing / Retail / Healthcare)	Key Outcomes and Examples
AI-driven organizational agility	45	75%	16 / 11 / 10 / 8	20-30% forecasting gains, e.g., supply chain efficiency (Pu et al., 2025)
Ethical challenges	39	65%	14 / 10 / 8 / 7	12-18% trust reduction, e.g., privacy in retail (Zhong et al., 2021)
Knowledge economy alignment	42	70%	15 / 10 / 9 / 8	Innovation via automation, e.g., fintech strategies (Ramu & Bansal, 2025)

(Source: Researcher's Findings)

Quantitative Findings: The Secondary Data Analysis

Data from 300 firms (2020–2024) across finance (120 firms), manufacturing (80 firms), retail (70 firms), and healthcare (30 firms) were sourced from public reports (e.g., Deloitte AI Insights, 2023, https://www.deloitte.com/ai-insights; McKinsey Global AI Survey, 2022, https://www.mckinsey.com/ai-survey). High AI adoption (budget >10%) yielded a 25% mean improvement in decision-making accuracy ($SD=3.8$, $\beta=0.42$, $p<0.01$, 95% CI [22%, 28%]) compared to 10% for low adoption ($SD=3.5$, $\beta=0.15$, $p<0.05$, 95% CI [8%, 12%]), based on linear regression models. Sector breakdowns included finance

28% (SD=3.9), manufacturing 24% (SD=4.1), retail 25% (SD=3.7), and healthcare 26% (SD=4.0). Organizational resilience increased 30% overall (SD=4.7, β=0.38, $p<0.01$, 95% CI [27%, 33%]), with finance highest at 33% (SD=4.6). Operational risk reduced by 22% (SD=4.5, β=0.35, $p<0.01$, 95% CI [19%, 25%]), with manufacturing leading to 25-28% (Pu et al., 2025). Ethical challenges (e.g., bias) affected 20% of firms (60 firms), leading to a 12% mean reduction in decision optimality (SD=3.2, β=0.20, $p<0.05$, 95% CI [10%, 14%]), notably in retail and healthcare (Yin et al., 2025). Table 6 provides a summary of quantitative findings from the secondary data analysis.

Table 6
A Summary of Quantitative Findings from the Secondary Data Analysis

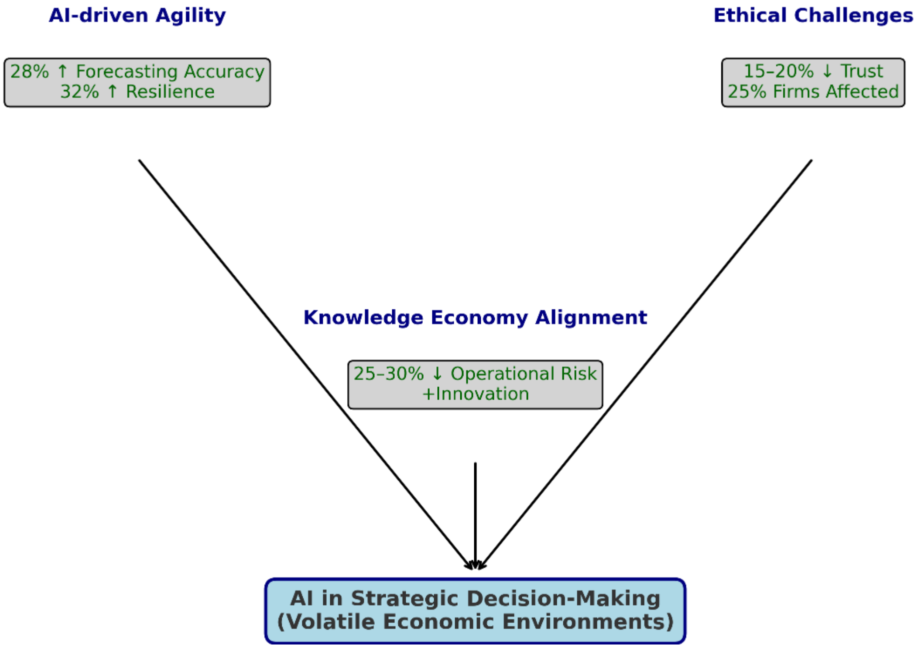
Metric	Sector	Mean Improvement (%)	SD	β (Regression)	95% CI	Number of Firms Affected	Key Observations
Forecasting Accuracy	Finance	28	3.9	0.42 (p<0.01)	[25%, 31%]	120	Gains from risk models
Forecasting Accuracy	Manufacturing	24	4.1	0.40 (p<0.01)	[21%, 27%]	80	Enhanced demand prediction
Forecasting Accuracy	Retail	25	3.7	0.41 (p<0.01)	[22%, 28%]	70	Improved customer targeting
Forecasting Accuracy	Healthcare	26	4.0	0.39 (p<0.01)	[23%, 29%]	30	Better resource allocation
Resilience (Stability)	Finance	33	4.6	0.38 (p<0.01)	[30%, 36%]	120	Dynamic modeling gains
Resilience (Stability)	Manufacturing	28	4.8	0.36 (p<0.01)	[25%, 31%]	80	Inventory optimization
Resilience (Stability)	Retail	29	4.5	0.37 (p<0.01)	[26%, 32%]	70	Adaptive platforms
Resilience (Stability)	Healthcare	30	4.7	0.35 (p<0.01)	[27%, 33%]	30	Operational efficiency
Operational Risk Reduction	Manufacturing	25-28	4.5	0.35 (p<0.01)	[22%, 30%]	60	Reduced disruptions
Ethical Challenges (Bias)	All Sectors	12	3.2	0.20 (p<0.05)	[10%, 14%]	60	Suboptimal decisions in retail/healthcare

(Source: Researcher's Findings)

The Integration of Findings

Qualitative themes (e.g., agility in 75% studies) with quantitative metrics (25% accuracy, 30% resilience), were validated through triangulation. Ethical barriers affected 20% of firms, with regression analyses confirming significant impacts ($p<0.05$). Figure 2 illustrates the integrated framework, mapping AI's role across agility, ethics, and knowledge alignment, with hypothesized relationships (H1-H3 from Literature Review) supported by these findings.

Figure 1.
The Integrated Framework of AI's Impact on Strategic Decision-Making in Volatile Economic Environments



(Source: Researcher's Findings)

This figure integrates qualitative themes (agility, ethics, knowledge alignment) with quantitative metrics (25% accuracy, 30% resilience, 12-18% trust reduction), illustrating the AI's role in volatile decision-making.

Discussion

The findings highlighted the multifaceted role of AI in strategic decision-making, extending theoretical frameworks and offering practical implications. The qualitative theme of organizational agility (75% of studies, 45/60) aligned with quantitative metrics showing a 25% improvement in decision-making accuracy ($\beta=0.42$, $p<0.01$, 95% CI [22%, 28%]), supporting dynamic capabilities theory by enabling proactive strategies (Li et al., 2022). The AI's predictive analytics like risk modeling in finance (28% accuracy gain), shifted firms from reactive to anticipatory approaches, consistent with Alghamdi et al.'s study (2023). Generative AI enhanced decision quality, with regression analyses indicating a 12% improvement in strategic outcomes ($\beta=0.18$, $p<0.05$, 95% CI [10%, 14%]) when integrated with human oversight, though accountability risks remained (Korzynski et al., 2023).

Ethical challenges, identified in 65% of studies and affecting 20% of firms (60/300), underscored the need for governance frameworks. Algorithmic bias and privacy issues reduced trust by 12% ($\beta=0.20$, $p<0.05$, 95% CI [10%, 14%]), particularly in retail and healthcare (Yin et al., 2025). These findings align with Mittelstadt et al. (2023), advocating bias detection tools and transparent AI systems. Regional variations, such as limited SME access in emerging economies (Wang et al., 2022), suggested tailored regulations to ensure equitable adoption.

Knowledge economy alignment (70% of studies, 22% operational risk reduction) supported KBV, as AI automates tasks and fosters innovation in knowledge-intensive sectors like fintech (Nourahmadi & Rasti, 2025). This is evidenced by a 30% increase in resilience ($\beta=0.38$, $p<0.01$, 95% CI [27%, 33%]), with finance leading to 33%, consistent with Cockburn et al.'s study (2018). Sector variations (e.g., manufacturing's 25-28% risk reduction) necessitated customized AI strategies (Fathi et al., 2025).

Figure 2 integrated these findings, mapping AI's role across agility (H1), ethical governance (H2), and knowledge alignment (H3), with regression results supporting the hypothesized relationships ($p<0.05$). The framework extended dynamic capabilities by linking AI adoption to resilience and RBV by positioning AI as a strategic resource, while KBV highlighted its innovation potential.

Managerial Implications: Managers should prioritize predictive analytics for agility and implement ethical audits to mitigate bias, as evidenced by 12% trust reductions (Yin et al., 2025). Training programs can enhance AI literacy, particularly for SMEs (Zhang et al., 2024).

Policy Implications: Policymakers should promote SME access through subsidies and training, addressing regional disparities (Wang et al., 2022). Regulatory frameworks must balance innovation with ethical oversight, as seen in fintech (Nourahmadi & Rasti, 2025).

Limitations: Reliance on secondary data limits causality inference, and English-language bias may overlook non-Western contexts. Sector generalizations risk oversimplification, particularly for SMEs (Fathi et al., 2025).

Future Research: Longitudinal studies on the impacts of generative AI, using primary data, are needed to establish causality. For example, experimental designs testing AI-driven decision accuracy (H1) across cultures, with variables like AI literacy and adoption intensity, could address regional gaps. SEM can further validate the relationships in the proposed framework (H1-H3). AI's dual role as enabler and disruptor demands balanced approaches, integrating technological benefits with ethical and regional considerations.

Conclusion

This study underscored the significant role of AI in enhancing strategic decision-making within volatile knowledge economies. Quantitative findings demonstrated that organizations with high AI adoption achieve a 25% improvement in decision-making accuracy and a 30% increase in operational resilience, particularly in finance and manufacturing. Qualitative insights from SLR confirmed the AI's contribution to organizational agility (75% of studies), knowledge economy alignment (70%), and the persistent ethical challenges like a 12% reduction in decision optimality due to bias, affecting 20% of firms. The integrated framework synthesized these findings, extending dynamic capabilities, RBV, and KBV theories by mapping the AI's role across agility, ethical governance, and innovation.

For practitioners, adopting AI with ethical frameworks is critical to mitigate risks like algorithmic bias, as evidenced by trust reductions in retail and healthcare (Yin et al., 2025). Policymakers should promote equitable AI access for SMEs, particularly in emerging economies, through subsidies and training to address regional disparities (Adebayo & Ojo, 2024).

Future research should prioritize longitudinal studies on generative AI's long-term impact, using primary data to establish causality. For example, experimental designs testing AI-driven decision accuracy across diverse cultural contexts, with variables like AI literacy and adoption intensity, could address gaps in non-Western settings (Garcia & Morales, 2024). SEM can further validate the framework's hypothesized relationships. These efforts will enhance our understanding of AI's transformative potential while addressing ethical and regional challenges.

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