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AI-Assisted Strategic Decisions in SMEs: An Integrative Review and Governance Framework

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ABSTRACT: This article examines the conditions under which artificial intelligence (AI) can support strategic decision-making in small and medium-sized enterprises (SMEs), with particular attention to the Vietnamese management context. Drawing on a focused integrative review of 14 traceable sources (10 Vietnamese-language and four English-language sources), the paper distinguishes AI-assisted analysis from delegating decision authority to automated systems. The synthesis suggests that the managerial value of AI depends on data quality, managers' interpretive capability, integration into strategic processes, and risk oversight. A four-layer conceptual framework is proposed: data foundations, analytical interpretation, accountable human decisions, and post-decision control and learning. The framework has not been empirically validated. The paper discusses phased adoption and a future research agenda for Vietnamese SMEs.

KEYWORDS: Artificial intelligence, strategic decision-making, SMEs, AI governance, integrative review.

1. INTRODUCTION

Artificial intelligence is moving beyond routine automation toward forecasting, opportunity identification, and strategic option development. For resource-constrained SMEs, faster analysis can be valuable. Yet a strategic decision involves more than prediction: it also requires goal setting, resource trade-offs, accountability, and judgment under uncertainty.

Recent international studies have already reviewed AI adoption barriers in SMEs and investigated AI in strategic decision-making (Oldemeyer et al., 2025; Aiudi et al., 2026; Chiodo et al., 2026). This paper therefore does not claim that the topic is unexplored. Its intended contribution is a management-oriented framework that clarifies decision authority and control mechanisms for Vietnamese SMEs.

Vietnam's national AI strategy and SME digital-transformation policies provide a supportive policy setting (Prime Minister of Vietnam, 2021, 2026). Three questions guide the review: Which stages of strategic decision-making can AI support? Which organizational conditions shape its value? How should SMEs assign decision responsibility?

2. CONCEPTS AND SCOPE

Strategic decision-making refers here to consequential, long-term choices about markets, business models, resource allocation, or competitive positioning. Unlike repetitive operational choices, these decisions involve uncertainty, contextual interpretation, and managerial values.

AI encompasses machine learning, predictive analytics, and generative AI tools used to collect, process, interpret, or simulate information. Crucially, AI-assisted recommendations differ from autonomous decision authority. Human managers must remain identifiable as responsible decision-makers for major strategic choices.

Prior work identifies applications across marketing, finance, operations, and innovation, alongside constraints related to skills, data, and costs (Le Dinh et al., 2025; Oldemeyer et al., 2025). Vietnamese analyses likewise suggest a gap between using digital tools and embedding them in organizational processes (Pham Vu Tuan, 2026; Chung Thuy An, 2026).

3. INTEGRATIVE REVIEW APPROACH

This article uses a focused integrative literature review, not a systematic review. Sources were selected purposively for their relevance to AI-assisted strategic decisions, SME capabilities, governance and the Vietnamese institutional setting. The 14-source corpus includes four English-language academic studies, five Vietnamese-language academic or analytical articles, and five Vietnamese policy documents. Policy sources are used only to describe the institutional setting, not as empirical evidence of business outcomes. Selection was based on identifiable authorship, publication details and substantive relevance; the review does not claim exhaustive database coverage.

The working corpus comprises 14 sources with traceable links or DOIs: 10 Vietnamese-language sources (71.4%) and four English-language sources (28.6%). The language mix reflects the manuscript design rather than the composition of the global evidence base. Policy documents inform the institutional context and are not treated as empirical evidence of AI effects.

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The analysis compared sources across five themes: data, managerial capabilities, decision processes, governance risks and outcomes. We examined whether findings concerned strategic rather than routine decisions and separated empirical findings from conceptual arguments and policy provisions. Given the purposive and limited corpus, no effect sizes, prevalence estimates or causal relationships are inferred.

Inclusion criteria were: identifiable authorship or issuing authority and publication year; direct relevance to AI, SMEs, strategic decisions, or governance risks; and sufficient substantive content for comparison. Promotional materials, tool advertisements, and items with indeterminate provenance were excluded from the conceptual analysis. These are editorial criteria applied to the working corpus, not a claim that an exhaustive database search was conducted. Full-text and bibliographic verification of each source remains necessary before submission.

4. FINDINGS AND DISCUSSION

4.1. AI across decision stages. During problem recognition, AI can consolidate market signals and customer feedback. During option development, it can assist with scenario construction, sensitivity assessment, and risk comparison. At the selection stage, managers must scrutinize assumptions and feasibility rather than equating algorithmic scores with strategically optimal choices. After implementation, actual results should be used to examine forecasting errors. Aiudi et al. (2026) report potential improvements in decision speed and formalization, while also highlighting resource and cultural constraints.

4.2. Data and interpretive capabilities. AI is useful only when inputs are sufficiently relevant, verifiable, and current. SMEs may face fragmented records, limited standardization, and shortages of analytical expertise, as discussed by Oldemeyer et al. (2025). Investing in tools without first specifying the business question may increase costs without improving decisions. Vietnamese discussions of timely accounting information also emphasize the organizational importance of information processes (Le Thi Oanh, 2026).

4.3. Leadership and coordination. Software alone does not produce managerial value. Decision-makers must ask appropriate questions, recognize model limitations, and assess trade-offs that cannot be quantified. Functions should agree on inputs, performance criteria, and approval responsibilities. Vietnamese work on AI in human-resource management highlights the relevance of skills and job redesign (Vu Thi Thanh Huong, 2022). For many SMEs, a small cross-functional team may be more realistic than a dedicated AI department.

4.4. Risks and accountability. Biased data, fabricated generative-AI outputs, exposure of confidential information, and excessive reliance on recommendations can undermine decisions. Organizations should specify acceptable inputs, source-verification procedures, approval authority, and audit trails. Le Thu Thuy and Nguyen Tai Vuong (2026) discuss both opportunities and challenges of AI in the digital economy. Safeguards are especially important for investment, market-entry, and major staffing decisions.

4.5. Vietnamese policy context. Decision 127/QD-TTg provides the national AI strategy; Decree 80/2021/ND-CP and Circular 06/2022/TT-BKHDT address SME support; Decision 1970/QD-BTTTT concerns digital-transformation assessment; and the 2026–2030 SME digital-transformation scheme reinforces policy support. These measures provide an enabling environment but do not substitute for firm-level governance and investment appraisal.

5. PROPOSED GOVERNANCE FRAMEWORK

The synthesis yields a proposed Data–Interpretation–Decision–Control (DIDC) framework. Layer 1, Data: specify the strategic question, lawful data sources, quality standards, and access rights. Layer 2, Interpretation: combine AI analysis with market knowledge and assessment of model assumptions and errors. Layer 3, Decision: compare alternatives, challenge AI recommendations, assign approval authority, and document the rationale. Layer 4, Control: track outcomes, correct errors, protect data, and update the process.

The proposed Data–Interpretation–Decision–Control (DIDC) sequence is a practical synthesis rather than a claim to invent its component principles. Existing SME studies address implementation barriers and decision-process changes (Oldemeyer et al., 2025; Aiudi et al., 2026), while Chiodo et al. (2026) integrate broader antecedents and outcomes. DIDC adds a narrower management question: at which point should an SME verify evidence, challenge AI output, authorize a strategic choice and review the outcome? Its value is therefore a decision-level checklist that can be examined in future field research.

The propositions have distinct conceptual rationales. P1 concerns the relevance and reliability of inputs underlying AI recommendations. P2 reflects managers' ability to interrogate assumptions, interpret outputs, and apply domain knowledge. P3 concerns bias, confidentiality, and accountability risks in the absence of oversight. P4 concerns the role of approval and feedback procedures in translating algorithmic suggestions into organizational decisions. These are theoretical propositions, not empirically established effects.

DIDC is a conceptual proposition, not an empirically validated model. Its intended contribution is to shift attention from whether a firm uses AI to how AI is scrutinized and governed within strategic decisions. An SME could pilot the approach in demand forecasting or segment selection, then expand to budgeting only after demonstrating adequate predictive quality and safeguards.

Four testable propositions follow: P1, data quality is positively associated with the usefulness of AI recommendations; P2, managerial interpretive capability moderates the relationship between AI use and decision quality; P3, approval and audit-trail mechanisms reduce overreliance risks; and P4, post-decision learning increases the value derived from AI over time. These are hypotheses for future research, not established findings.

Illustrative hypothetical case: an SME considering entry into a new market could use AI to aggregate demand signals (Data), ask its commercial team to assess representativeness and forecasting assumptions (Interpretation), require management to authorize the investment (Decision), and monitor forecast errors to revise the strategy (Control). This example is not field evidence or a demonstration of framework effectiveness.

6. MANAGERIAL IMPLICATIONS AND RESEARCH AGENDA

SMEs should start with a measurable decision problem such as demand forecasting, target-market selection, or product portfolio adjustment. Before acquiring tools, they should assess existing data, total cost, and process integration. During pilots, AI recommendations should be compared with managerial assessments, discrepancies recorded, and consequential decisions justified.

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Training should cover question formulation, source assessment, assumption checking, and risk recognition—not merely software operation. Firms should also identify decisions for which AI may advise but cannot authorize action. Public support programs could combine data advisory services, executive training, and risk-governance guidance rather than focusing only on tool purchases.

Future studies could compare SMEs by sector and size, distinguish operational from strategic AI adoption, and test the moderating role of digital leadership. Longitudinal designs should measure observed decision quality rather than relying only on perceived benefits. Further work should distinguish generative from predictive AI under different degrees of uncertainty.

7. CONCLUSION AND LIMITATIONS

AI can support strategic decisions in SMEs, but benefits cannot be inferred merely from tool adoption. This article's principal conceptual contribution is the DIDC framework emphasizing data, interpretation, accountable human choice, and post-decision learning. In Vietnam, phased implementation and explicit risk governance may be appropriate for resource-constrained firms.

Limitations include purposive source selection, a small evidence base, a substantial proportion of Vietnamese policy and commentary sources, no independent quality appraisal, and no empirical validation. The framework should therefore be treated as a set of propositions rather than causal evidence or a population-level assessment of AI adoption among Vietnamese SMEs.

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