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Determinants and Strategic Pathways of AI Integration in SME Marketing Practices

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Abstract

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This article investigates how small and medium enterprises (SMEs) integrate artificial intelligence (AI) into their marketing practices and what determinants shape different strategic pathways of integration. It asks to what extent technological, organizational, and environmental factors enable SMEs to move beyond tool level adoption toward more capability based and strategic use of AI in marketing. Using a systematic literature review of peer reviewed studies published between 2018 and 2023, the study synthesizes evidence on AI applications such as AI enhanced CRM, chatbots, recommendation engines, and customer analytics. Descriptive mapping is used to summarize contexts, methods, and types of AI use, while thematic analysis identifies recurring determinants and clusters of integration patterns. The review finds that perceived benefits, digital infrastructure, leadership support, skills, and ecosystem pressures jointly shape whether AI remains experimental or becomes embedded in SME marketing routines. It also highlights important methodological and contextual gaps and outlines future research directions on longitudinal dynamics, performance outcomes, and governance issues in AI enabled SME marketing.

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1. Introduction

Artificial intelligence (AI) is increasingly positioned as a transformative general-purpose technology in marketing, enabling fine-grained customer segmentation, real-time personalization, and predictive decision support across the customer journey (Huang & Rust, 2018, 2021; Chintalapati & Pandey, 2022). For small and medium-sized enterprises (SMEs), which often compete with limited resources and narrower margins, AI-driven marketing promises to enhance targeting efficiency, customer engagement, and strategic agility. Recent reviews of AI in marketing and digital marketing highlight how algorithmic personalization, automated content optimization, and conversational interfaces are reshaping firms' interactions with customers and reconfiguring marketing capabilities more broadly (Rabby et al., 2021; Verma et al., 2021). However, much of this knowledge has been developed from the perspective of larger organizations, leaving open important questions about how SMEs actually adopt and embed AI in their marketing practices.

Emerging empirical research on SMEs suggests both substantial potential and significant constraints. Survey and case-based evidence indicates that AI-enabled marketing can improve sales efficiency, strengthen customer relationships, and support performance outcomes when it is effectively integrated into broader digital initiatives (Fonseka et al., 2022; Kumar et al., 2023). At the same time, SMEs face pronounced barriers related to financial resources, data readiness, and skills, which shape their ability to deploy AI beyond isolated tools or pilots (Hansen & Bøgh, 2021; Lu et al., 2022). Studies of SME digital marketing capabilities highlight

fragmented technology use, ad-hoc experimentation, and persistent capability gaps in areas such as analytics, automation, and omnichannel integration (Olazo, 2022). These tensions raise the need to understand not only whether SMEs use AI in marketing, but also the determinants that enable meaningful and sustained integration.

Conceptual and empirical work has begun to explore these determinants using perspectives such as the technology-organization-environment (TOE) framework, platform ecosystems, and digital transformation. For example, Wei and Pardo (2022) show how B2B SMEs leverage AI platforms to integrate AI technologies into their value propositions, emphasizing issues of complementarities, partner orchestration, and learning. Other studies demonstrate that the performance impacts of AI in SMEs are often contingent on complementary investments in digital infrastructure, human capital, and organizational change, suggesting that adoption decisions alone are insufficient to realize strategic benefits (Fonseka et al., 2022; Lu et al., 2022). Yet much of this literature remains dispersed across disciplines and focuses either on generic AI adoption or on digital marketing more broadly, rather than specifically examining AI integration pathways in SME marketing.

Consequently, there is limited synthesized knowledge on how different determinants, including technological, organizational, environmental, and human factors, combine into strategic pathways through which SMEs integrate AI into everyday marketing activities, from campaign design and content creation to customer analytics and relationship management. While existing reviews map AI in marketing at a general level (Verma et al., 2021; Chintalapati & Pandey, 2022), there

is a lack of focused systematic analysis on SMEs that links adoption drivers and barriers to concrete integration patterns and capability trajectories. Addressing this gap, this article conducts a systematic literature review of peer-reviewed studies published between 2018 and 2023 that examine AI in SME marketing contexts. It seeks to identify the key determinants of AI integration and to inductively derive strategic pathways through which SMEs embed AI into their marketing practices, thereby offering a more coherent conceptual foundation for both scholarship and managerial action.

2. Literature Review

The broader AI in marketing literature highlights AI as a capability that reshapes value creation through enhanced analytics, personalization, and automation across the customer journey (Huang & Rust, 2018, 2021; Verma et al., 2021; Chintalapati & Pandey, 2022). Reviews and conceptual papers emphasize that AI systems augment key marketing activities such as segmentation, targeting, content optimization, and customer relationship management, often through data intensive learning processes that outpace traditional analytical techniques (Rabby et al., 2021; Verma et al., 2021). However, these studies typically focus on larger firms or sector agnostic perspectives and only tangentially address the specific constraints and configuration of AI in SME marketing contexts.

Within the SME domain, research increasingly examines AI adoption and its performance implications as part of wider digital transformation trajectories. Empirical work shows that AI enabled tools in areas such as e commerce, digital

marketing, and customer analytics can support sales growth, process efficiency, and competitive positioning when combined with broader digital initiatives (Fonseka et al., 2022; Lu et al., 2022; Kumar et al., 2023). Dynamic capability perspectives suggest that AI contributes to sensing, seizing, and reconfiguring activities that help SMEs cope with environmental turbulence and crisis conditions. For example, Drydakis (2022) demonstrates that AI applications deployed in core functions such as marketing, pricing, and cash flow management are associated with reduced business risks for SMEs during the COVID 19 pandemic, framing AI as a reconfigurable capability rather than a standalone tool.

Determinants of AI integration in SMEs are often theorized through the technology-organization-environment (TOE) framework and related adoption models. Bettoni et al. (2021) develop an AI adoption model for SMEs that conceptualizes readiness and adoption as functions of technological infrastructure, organizational resources, and environmental pressure, highlighting that AI integration requires alignment between data, skills, and strategic intent. Survey and review studies similarly link AI adoption to technological factors such as data quality and interoperability, organizational factors including leadership support and digital skills, and environmental factors such as competitive intensity and institutional support (Hansen & Bøgh, 2021; Lu et al., 2022; Wei & Pardo, 2022). These determinants are closely related to those observed for digital marketing capability more broadly, where SMEs often exhibit fragmented tool use and underdeveloped analytics capabilities (Olazo, 2022).

A complementary strand of work focuses on barriers and benefits of AI adoption in SMEs, offering more granular diagnostic insights. Bhalerao et al. (2022) synthesize evidence on constraints such as limited financial resources, lack of AI competencies, poor data readiness, and unclear strategic objectives, while also documenting benefits related to improved decision making, customer understanding, and operational efficiency. Similar themes emerge in studies of digital and AI enabled marketing, which report positive associations between AI use and outcomes like sales efficiency and customer relationship quality, but also emphasize that benefits materialize unevenly and depend on alignment with existing processes and capabilities (Fonseka et al., 2022; Kumar et al., 2023). Taken together, these strands suggest that AI integration in SME marketing is shaped by multi-level determinants and yields diverse outcomes, yet there remains limited synthesis of how these determinants combine into distinct strategic pathways of integration across marketing activities and capabilities. This systematic literature review addresses that gap by organizing prior findings around determinants and mapping how they translate into different patterns of AI enabled SME marketing practice.

3. Methods

This study used a systematic literature review design to identify and synthesize peer-reviewed research on the determinants and strategic pathways of AI integration in SME marketing practices. Searches were conducted in major academic databases, including Scopus, Web of Science, ScienceDirect, and IEEE Xplore, complemented by targeted searches in Google Scholar. A combination of keywords and Boolean

operators was used, such as "artificial intelligence" AND "small and medium enterprises" AND "marketing", "AI adoption" AND "SMEs" AND "digital marketing", and "AI" AND "SME" AND "customer analytics". The search was restricted to articles published in English between 2018 and 2023. After removing duplicates, titles and abstracts were screened, followed by full-text assessment using predefined inclusion criteria: (1) explicit focus on SMEs, (2) investigation of AI applications in marketing or closely related activities (for example, digital marketing, e commerce, customer analytics, customer relationship management), and (3) empirical or conceptual analysis of determinants, integration processes, or strategic outcomes. Studies that addressed AI in general without a clear marketing link, focused solely on large firms, or were non-peer-reviewed were excluded.

Data from the included studies were extracted using a structured coding template. For each article, information was recorded on publication details, country or region, industry context, research design, and type of AI applications in marketing. Determinants were coded along technological, organizational, environmental, and human dimensions, while AI integration was captured through patterns of use across marketing activities, capability development, and strategic positioning. Where available, outcomes related to performance, customer relationships, and risk management were also coded. To enhance reliability, coding was conducted by two reviewers, with differences resolved through discussion. The analysis combined descriptive mapping of the literature with thematic synthesis, in order to identify recurring determinants, clusters of integration patterns, and proposed strategic pathways for AI use in SME marketing.

4. Results and Discussion

4.1 Landscape of AI Integration in SME Marketing: Contexts, Methods, and AI Applications

The studies included in this review suggest that AI integration in SME marketing is still at an early but accelerating stage. Within the reviewed evidence, attention is concentrated in service, retail, and tourism sectors, and the empirical settings most often reflect upper-middle-income or emerging economy contexts. Methodologically, the literature is dominated by survey-based quantitative designs and case studies that focus on practical questions of adoption, including what motivates SMEs to try AI, what benefits they expect or experience, and what barriers inhibit further investment or scaling. Alongside this empirical stream, a smaller set of papers takes a conceptual or review-based approach to frame AI-enabled digital transformation in SMEs and to organize how AI may reshape SME activities and capabilities over time (Bettoni et al., 2021; Borges et al., 2021; Verma et al., 2021)

Across these designs, AI is primarily operationalized as a portfolio of AI-enabled marketing tools rather than as fully autonomous marketing systems. In other words, the reviewed studies tend to examine how SMEs incorporate specific AI applications into existing marketing work, instead of replacing human-led marketing with end-to-end automated systems. The most frequently discussed applications include AI-enhanced CRM, recommendation engines, chatbots, automated customer analytics, and targeted advertising. This pattern indicates that the evidence base emphasizes augmentation of established digital marketing practices and decision support at specific customer-facing touchpoints, such as managing

customer interactions, improving targeting and personalization, and generating insights from customer data to guide marketing actions (Verma et al., 2021; Fonseka et al., 2022).

4.2 Determinants, Strategic Pathways, and Evidence Gaps in AI-Enabled SME Marketing

Across the reviewed studies, determinants of AI integration in SME marketing cluster into interdependent technological, organizational, and environmental conditions. On the technological side, relative advantage and performance expectancy, such as improved targeting, higher campaign ROI, and enhanced personalization, consistently emerge as positive predictors of adoption (Fonseka et al., 2022; Kumar et al., 2023). Conversely, complexity, perceived risk, and concerns about data quality or security often dampen willingness to invest, particularly when AI is perceived as opaque or misaligned with existing digital tools and infrastructure (Hansen & Bøgh, 2021; Verma et al., 2021). Systematic reviews such as Pamungkas et al. (2023) further suggest that these technological factors rarely operate in isolation; instead, they interact with resource constraints, legacy systems, and vendor support, producing a spectrum of AI readiness conditions across SMEs.

Organizational capabilities and culture further shape whether AI remains an isolated toolset or becomes strategically embedded in marketing practice. Several studies highlight leadership vision, entrepreneurial orientation, and openness to experimentation as enabling conditions for moving beyond pilots toward sustained AI use in customer-facing activities (Bettoni et al., 2021; Bhalerao et al., 2022). In Indian SMEs, AI–CRM capability strengthens the relationship between digital

transformation and entrepreneurial processes, indicating that AI-enabled customer data systems can serve as a strategic bridge between marketing activities and firm-level growth (Chatterjee et al., 2022). Similarly, Kumar et al. (2023) demonstrate that AI-powered workforce management, when aligned with marketing and sales objectives, contributes to revenue growth by improving coordination between front-line staff and data-driven decision-making. However, many SMEs still lack in-house data skills, structured data governance, and cross-functional integration between marketing, IT, and operations, constraining their ability to scale AI beyond narrow automation tasks (Hansen & Bøgh, 2021; Rabby et al., 2021).

Environmental and ecosystem influences also shape AI integration pathways. Competitive pressure, customer expectations for digital experiences, and the availability of platform-based AI services (e.g., ad platforms, marketplace tools, cloud AI APIs) encourage SMEs to adopt AI incrementally in their marketing activities (Fonseka et al., 2022). Policy initiatives, incubators, and digital innovation hubs can lower barriers by providing training, subsidized tools, and advisory support, although the depth and accessibility of these programs vary substantially across regions (Lu et al., 2022). Pamungkas et al. (2023) note that many MSMEs still rely on relatively simple AI applications such as churn prediction or rule-based automation, suggesting that ecosystem support may be effective in promoting entry-level adoption but less effective in fostering more advanced, analytics-intensive marketing innovation.

Taken together, the reviewed studies indicate that AI integration in SME marketing is highly path-dependent. Many firms begin with basic automation and

AI-enhanced analytics in single touchpoints (e.g., social media advertising, online stores, or CRM systems) and only gradually move toward more holistic, omnichannel marketing strategies as they build data infrastructure, skills, and confidence (Borges et al., 2021; Chatterjee et al., 2022; Kumar et al., 2023). Where SMEs develop a clearer AI roadmap and align AI initiatives with customer journey logic, they tend to report stronger effects on customer acquisition, retention, and relationship value; where adoption is ad hoc or tool-driven, benefits are often limited and difficult to sustain (Bettoni et al., 2021; Pamungkas et al., 2023). Nonetheless, the evidence base remains fragmented, with relatively few studies explicitly modeling marketing performance outcomes or examining long-term strategic repositioning. This underscores the need for more longitudinal, marketing-specific research on how SMEs can transition from opportunistic AI use to more deliberate, capability-based integration pathways.

5. Conclusion

This review shows that AI integration in SME marketing is emerging but still uneven. Across the literature, AI is most often used to support existing digital marketing practices through tools such as AI enhanced CRM, chatbots, recommendation engines, and automated analytics, rather than as a basis for fully reconfiguring marketing strategy. Technological, organizational, and environmental determinants jointly shape how far SMEs move along this trajectory. Perceived benefits, digital infrastructure, and vendor support encourage experimentation, while complexity, perceived risk, and data quality concerns frequently slow deeper

investment. Organizational factors such as leadership vision, skills, and data governance are critical in turning isolated pilots into sustained capabilities, and ecosystem conditions can either lower or reinforce entry barriers.

At the same time, the evidence base has important limitations that qualify these conclusions. Many studies rely on cross sectional survey designs, self-reported performance indicators, and relatively small or convenience samples, which restricts causal inference and generalizability. Research is heavily concentrated in particular regions and sectors, and often examines AI as part of broader digital transformation without fully disentangling its specific contribution to marketing outcomes. Conceptual work on strategic pathways is still fragmented, and very few empirical studies trace how AI related decisions unfold over time or across different stages of the customer journey. These gaps may mean that current findings overemphasize early successes and underreport failed or abandoned AI initiatives.

Future research should therefore adopt more longitudinal and process-oriented designs to follow SMEs as they move from initial AI trials toward more integrated, capability-based configurations in marketing. Comparative studies across industries and institutional contexts could clarify which combinations of technological readiness, organizational capability, and ecosystem support are most conducive to strategic rather than purely tactical AI use. There is also a need for richer outcome measures that capture not only short-term campaign metrics but also customer equity, brand relationships, and resilience in turbulent environments. Finally, ethical and governance issues such as transparency, bias, and privacy deserve more systematic attention in SME settings, where formal structures may be weaker

but customer trust is often critical. Addressing these areas would strengthen the validity of future findings and provide a more robust foundation for guiding SMEs along viable strategic pathways of AI integration in marketing practice.

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