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Bridging the AI Adoption Gap in Swedish SMEs: A Framework for AI Integration in Relation to Digital Maturity

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Thesis Report submitted by **Tarek Omari** and **Syed Tauseef Ahmad** to the University of Skövde, for the Master's Degree (MSc) at the School of Business.

11/9/2026

We hereby certify that all material in this thesis that is not our own work has been identified, and that no work is included for which a degree has already been conferred on us.

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Abstract

This study examines how an integrated framework can support AI integration within Small and Medium-sized Enterprises (SMEs) in Sweden in relation to digital maturity. Despite Sweden's advanced digital environment, many SMEs face challenges related to limited resources, AI competencies, organizational readiness, and effective AI adoption. Drawing on the Technology–Organization–Environment (TOE) framework, Diffusion of Innovations (DOI) theory, and Dynamic Capabilities, the study used a qualitative design based on nine semi-structured interviews with professionals from Swedish SMEs. The findings show that AI is primarily used to improve operational efficiency and support existing workflows. At the same time, organizational capabilities, managerial perceptions, trust, human oversight, and digital maturity influence the extent of AI integration. The study further suggests that accessible AI tools can serve as a digital maturity bridge, enabling resource-constrained SMEs to build capabilities and gradually progress toward more advanced AI integration. Overall, the study provides a structured understanding of AI integration within Swedish SMEs and highlights the organizational and managerial capabilities required for effective adoption.

Keywords: Artificial Intelligence (AI), SMEs, AI Integration, Digital Maturity, TOE, DOI, Dynamic Capabilities.

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1. Introduction

1.1 Background

Small and medium-sized enterprises (SMEs) are the dominant form of enterprise in the global private sector and are widely recognized as key drivers of entrepreneurship, innovation, employment, and regional economic development (Audretsch & Thurik, 2001; OECD, 2023). Accounting for over 90% of businesses worldwide (World Bank, 2024) and approximately 99% of enterprises across Europe (European Commission, 2024), SMEs also have a similarly dominant presence in the Nordic countries (OECD, 2023). SMEs generate most private-sector employment, foster decentralized value creation, and strengthen regional economic resilience. Under the European Commission's definition of SMEs (European Commission, 2003), an SME is formally classified as an enterprise employing fewer than 250 individuals, with either an annual turnover not exceeding €50 million or an annual balance sheet total not exceeding €43 million.

Enterprise Category	**Staff Headcount**	**Annual Turnover**	**OR**	**Balance Sheet Total**
Medium-sized	< 250	≤ €50 million		≤ €43 million
Small	< 50	≤ €10 million		≤ €10 million
Micro	< 10	≤ €2 million		≤ €2 million

Table 1. European Commission Definition and Classification of SMEs

For decades, the Nordic region has been recognized as a global leader in digital readiness, supported by advanced infrastructure and innovation-oriented policies. This ambition is reflected in the Nordic Vision 2030, a ministerial initiative to make the Nordics and the Baltics the most digitally integrated and sustainable region in the world (Nordic Council of Ministers, 2023). Despite this supportive digital environment, many SMEs still struggle to adopt and integrate Artificial Intelligence (AI). While large enterprises continue to advance their digital transformation, many SMEs face persistent structural and organizational barriers, including limited financial resources, insufficient data quality, a lack of relevant expertise, and uncertainty about the value of AI investments (Sánchez et al., 2025).

Among enterprises that considered adopting AI in 2025 but decided not to, the lack of relevant expertise was the primary barrier for 74.7% of enterprises. This included 72.7% of small enterprises and 82.4% of medium-sized enterprises (Statistics Sweden, 2025). These figures highlight that access to AI technologies alone does not ensure successful adoption. SMEs also require the knowledge, skills, organizational structures, and technological capabilities necessary to integrate AI into their existing processes. Consequently, differences in organizational capabilities may influence how effectively SMEs move from basic digitalization toward more systematic AI integration.

SMEs vary in their readiness to adopt and integrate AI, and digital maturity helps explain these differences. Digital maturity is an organization's ability to strategically integrate digital technologies, data, and organizational capabilities into business processes and decision-making (Westerman et al., 2014; Verhoef et al., 2021). Digital maturity therefore extends beyond the availability of digital technologies and includes the organizational capabilities needed to use them effectively. SMEs with stronger digital capabilities may be better positioned to recognize AI's potential, experiment with different applications, and integrate AI into established workflows. In contrast, SMEs with more limited digital capabilities may face greater challenges related to infrastructure, expertise, organizational readiness, and strategic integration (OECD, 2023; European Commission, 2024). Digital maturity therefore provides an important lens for understanding differences in how SMEs approach AI integration within the same digital environment.

The transition toward AI integration requires SMEs to move beyond simply acquiring digital tools and to develop the organizational capabilities needed to use them effectively. Resource and capability constraints can limit this process, particularly when SMEs lack

the financial resources, technical expertise, or organizational structures required to integrate AI into existing workflows (OECD, 2023; European Commission, 2024; Soomro et al., 2025). Managers may also perceive AI as costly, technically complex, and difficult to integrate with existing technologies and workforce capabilities. These concerns are particularly important in SMEs, where limited financial resources, insufficient AI-related knowledge and skills, low levels of digital maturity, and inadequate technological infrastructure can constrain AI implementation. Without sufficient organizational readiness, management support, and appropriate implementation capabilities, AI adoption may therefore remain fragmented and application-specific rather than developing into broader and more systematic organizational integration (Oldemeyer et al., 2025). This underscores the importance of understanding how digital maturity and organizational capabilities shape SMEs' ability to integrate AI effectively.

1.2 Problematization

Although research on AI adoption among SMEs has expanded, a gap remains in understanding how SMEs systematically integrate AI and how organizational conditions influence this process (Garg et al., 2025). Existing research has identified various technological, organizational, and environmental factors that influence AI adoption. However, less attention has been given to how SMEs' existing digital capabilities and organizational readiness shape their ability to integrate AI into organizational processes. This distinction matters because access to AI technologies does not necessarily lead to meaningful organizational integration. Understanding AI integration therefore requires considering the digital capabilities that enable firms to adopt, implement, and develop AI-related practices over time.

This gap is evident in Statistics Sweden's adoption rates: AI is used by 71.9% of large enterprises, compared with 30.8% of small enterprises and 49.6% of medium-sized enterprises in Sweden (Statistics Sweden, 2025). These differences indicate that a digitally advanced national environment does not necessarily translate into equal levels of AI integration among firms. While Swedish SMEs operate within a highly developed digital ecosystem, their ability to benefit from AI may depend on internal factors such as digital capabilities, employee expertise, organizational readiness, and the ability to integrate new technologies into existing processes. The gap between national digital

readiness and firm-level AI integration therefore highlights the importance of examining organizational digital maturity.

These challenges are compounded by resource constraints, including limited access to high-quality data and a lack of in-house expertise, which heighten hesitation to adopt AI (Sánchez et al., 2025). Although AI tools are increasingly accessible, SMEs may lack the organizational capabilities required to integrate them systematically into their operations. This suggests that the effectiveness of AI integration depends not only on technological availability but also on an organization's ability to develop knowledge, coordinate resources, establish appropriate processes, and learn from AI implementation. Consequently, digital maturity is an important organizational condition that shapes how SMEs turn access to AI technologies into meaningful organizational use. Thus, this thesis offers a structured perspective on how Swedish SMEs can systematically integrate AI to support organizational competitiveness and develop digital capability.

For many SMEs, developing advanced marketing capabilities requires financial investment and access to high-quality data. These constraints prevent smaller firms from competing with large organizations that have greater technological and financial resources (OECD, 2023; European Commission, 2024). In this context, the increasing availability of accessible AI tools gives SMEs access to technological capabilities that were previously harder to obtain. However, access to such tools does not automatically lead to organizational transformation. SMEs must also develop the skills, knowledge, processes, and organizational routines required to use AI effectively. AI can therefore support capability development, but the extent to which these benefits are realized depends on the firm's existing digital maturity and its ability to learn and adapt.

Despite this potential, many SMEs still face barriers stemming from limited technical expertise, limited data availability, and the perceived complexity of AI solutions. These challenges reinforce the gap between technological potential and practical implementation. Prior research also indicates that many AI solutions remain too complex or resource-intensive for SMEs, limiting their accessibility and usability (Bettoni et al., 2021). Many SMEs focus on short-term operational goals rather than investing in long-term digital transformation, which can further widen the gap between technologically advanced firms and resource-constrained SMEs operating in increasingly data-driven markets (Verhoef et al., 2021; Teece et al., 1997). Therefore, SMEs need more accessible approaches to integrate AI into their organizational practices and workflows without extensive technical expertise. Addressing these barriers requires

a deeper understanding of how SMEs perceive, adopt, and implement AI in real-world contexts. This study examines how firms develop and reconfigure capabilities in line with the Dynamic Capabilities framework, enabling them to respond to technological challenges.

This study draws on established theories of technology adoption and organizational capability development, particularly the Technology–Organization–Environment (TOE) framework, the Diffusion of Innovations (DOI) theory, and the Dynamic Capabilities perspective. TOE provides a basis for understanding how technological, organizational, and environmental conditions influence AI integration, while DOI helps explain how organizations perceive and experiment with new technologies. Dynamic Capabilities, in turn, explains how firms develop, adapt, and reconfigure their capabilities in response to technological change.

1.3 Aim and Research Question

This thesis aims to examine how Swedish SMEs can integrate AI in relation to digital maturity and to develop a practical framework to support this integration. In particular, the study focuses on SMEs that face resource constraints and limited organizational capabilities, which can create challenges in adopting and integrating AI effectively (Sánchez et al., 2025).

Furthermore, the study investigates whether low-cost AI tools can serve as a digital maturity bridge, enabling firms with limited capabilities to gradually develop their AI capabilities and strengthen their ability to integrate AI systematically. Accordingly, the study is guided by the following research question:

How can an integrated framework support AI integration within Swedish SMEs in relation to digital maturity?

2. Literature Review

2.1 The Economic Potential and Marketing Impact of Generative AI in SMEs

Generative AI is a significant driver of economic value, with McKinsey & Company (2023) estimating a potential annual contribution of $2.6–$4.4 trillion across 63 use cases. This extends existing artificial intelligence and analytics capabilities, increasing their impact by approximately 15–40%. Although the effects are expected to span all industries, sectors such as banking, high technology, and life sciences are projected to experience the largest relative revenue gains. Beyond broad automation timelines, generative AI is currently disrupting enterprise communication most heavily, suggesting that up to 50% of work activities could be automated by 2045 (McKinsey Global Institute, 2023).

Within functional domains, marketing and sales are highlighted as among the most impacted areas (McKinsey Global Institute, 2023). In marketing, productivity gains are estimated at 5–15% of total functional spend, largely because generative AI can integrate and use previously fragmented, unstructured data, enabling firms to deliver personalized, consistent customer communication at scale (McKinsey Global Institute, 2023). For organizations with limited resources, this capability marks a major operational shift, changing traditional content creation into a process focused on AI-driven strategic oversight (Grewal et al., 2025). In sales, this optimization can improve productivity by approximately 3–5% through applications such as automated lead prioritization, personalized outreach generation, enhanced search engine optimization, and multimodal product discovery tools, reducing barriers to international market access (McKinsey Global Institute, 2023). These capabilities are particularly relevant to SMEs, where limited financial, technological, and human resources can constrain the development of advanced marketing capabilities. Abrokwah-Larbi (2023) suggests that generative AI can help SMEs develop customer personalization capabilities by enabling them to leverage data and digital technologies more effectively.

When viewed through a national-level analytical lens, these global projections are also evident in Sweden and the broader Nordic region. Sweden consistently ranks among Europe's most digitally advanced countries, with strong digital infrastructure, a skilled workforce, and the technological readiness that positions firms to benefit from adopting

generative AI (European Commission, 2024; OECD, 2023). Crucially, the literature suggests this value distribution will be driven more by functional application than by sectoral variation, with marketing and sales, software engineering, and customer operations accounting for the largest shares. Marketing and sales, software engineering, and customer operations involve high volumes of content generation and information processing, making them well suited to generative AI applications.

Examining the sectoral and occupational impacts of generative AI reveals that industries such as high-tech and advanced manufacturing are expected to undergo significant transformation. In contrast, service-oriented sectors are likely to benefit from productivity gains in decision-making, collaboration, data management, and other areas that have historically grown more slowly. The impact is expected to be most pronounced among white-collar occupations, including business and legal professionals, STEM roles, and education and training workers. The Swedish workforce is characterized by high levels of education and digital competence, which facilitate the adoption and effective use of generative AI technologies (Statistics Sweden, 2025).

Despite these opportunities, the literature also highlights several risks associated with adopting generative AI (Kirchhübel & Brown, 2024; Bujold et al., 2024). Using publicly available training data raises concerns about plagiarism, copyright infringement, and broader intellectual property violations (Kirchhübel & Brown, 2024). Additionally, biased or unrepresentative training data may produce algorithmic outputs that reinforce existing biases, posing ethical and reputational risks for organizations (Zhang & Gosline, 2023). To mitigate these challenges and realize the potential benefits of generative AI, effective human oversight and organizational adaptation are essential. McKinsey Global Institute (2023) emphasizes the importance of human involvement in strategic decision-making and investment in workforce transformation as employees move toward AI-augmented roles. This is consistent with emerging research showing that AI is most effective when it complements rather than replaces human judgment, requiring organizations to develop appropriate skills, work practices, and governance mechanisms for effective human–AI collaboration (Zhang & Gosline, 2023; Bujold et al., 2024; Fenwick et al., 2024). However, a key limitation of the existing evidence is its reliance on large-scale enterprise contexts, which may not fully reflect the operational constraints and adoption realities SMEs face, particularly those with limited financial resources, technical expertise, and organizational capabilities.

2.2 Digital Maturity and Structural Constraints in Swedish SMEs

Comparative studies of European economies consistently rank Sweden among the leading countries in digitalization and innovation performance, highlighting strong complementarities between digital adoption and outcomes such as productivity and innovation capacity (European Commission, 2024). However, evaluating Sweden solely at the national level obscures significant domestic differences. Peripheral Swedish regions operate under structural conditions that differ from those of metropolitan hubs such as Stockholm or Gothenburg, and SMEs in these areas face persistent constraints in workforce competencies, technology readiness, and access to resources (Pugh et al., 2024).

In this context, peripheral SMEs are often characterized as innovation "followers" rather than "leaders" (Shearmur, 2011), suggesting that adoption of advanced technologies, including GenAI, is likely to be reactive, following proof-of-concept in larger firms and urban centers. Nevertheless, Eder (2019) argues that weak regional innovation systems do not necessarily constitute binding constraints, as firms may compensate by accessing "global pipelines" of knowledge, technologies, and platforms. A prominent empirical case of this mechanism is The LEGO Group, headquartered in Billund, Denmark. Despite its rural, peripheral location far from major European technology hubs, LEGO bypassed local ecosystem limitations by leveraging global open-innovation platforms (such as *LEGO Ideas*) and enterprise digital networks to transform from a traditional manufacturer into a platform-driven global leader (Farahmand et al., 2024; Shearmur, 2011). When applied to emerging digital tools like Generative AI, this synthesized framework suggests that in digitally mature environments like Sweden, geographic location no longer serves as a binding bottleneck for technological access. Rather, competitive advantage pivots away from physical proximity toward an SME's internal absorptive capacity, specifically, its ability to assimilate globally pipeline-sourced tools and adapt them into localized, need-driven workflows (Eder, 2019; Shearmur, 2011).

This organizational dimension is reinforced by Gürdür, El-Khoury, and Törngren (2019), whose empirical assessment of data analytics readiness across Swedish industry reveals a consistent asymmetry. While resource and cultural readiness are high, reflecting strong technological access and broad acceptance of data-driven decision-making, organizational readiness remains the weakest dimension across sectors. Firms report

persistent difficulties embedding analytics into decision-making structures, establishing governance frameworks, and securing senior management engagement. The primary constraint to advanced technology adoption in Swedish industry is therefore not technological capability or cultural resistance, but organizational structure and integration. For peripheral SMEs, this implies that while access to GenAI tools and positive attitudes may enable initial experimentation, sustained value creation depends on the capacity to embed AI into workflows, managerial practices, and strategic priorities (Gürdür et al., 2019).

In practice, technology adoption in peripheral SMEs is expected to follow an incremental path, with GenAI used to automate discrete functions such as marketing, sales, and customer interactions, rather than being embedded through large-scale organizational transformation (Pugh et al., 2024; Gürdür et al., 2019). Importantly, this should not be interpreted through a deficit lens, as peripheral firms have demonstrated adaptability and resilience that the innovation literature frequently underestimates (Pugh et al., 2024). From this perspective, GenAI may serve as a partial leveling mechanism, reducing barriers to capability development, expanding market reach, and enabling forms of value creation previously concentrated in larger, resource-rich firms (Sánchez et al., 2025).

Nevertheless, this opportunity is structurally ambivalent. As Artioli (2018) notes, the growing centrality of platform-based ecosystems means that SMEs adopting GenAI become increasingly dependent on large technology providers. This raises critical questions about value capture, data sovereignty, and the geographic distribution of economic gains. While GenAI may reduce certain capability gaps, it risks reinforcing structural asymmetries, as value creation in peripheral regions becomes increasingly decoupled from value capture within globally concentrated platform economies (cf. Piketty, 2014).

2.3 Theoretical Perspectives on AI Adoption

To explain the adoption and use of generative AI in SMEs, prior research frequently draws on three primary theoretical perspectives: the Technology–Organization–Environment (TOE) framework, Diffusion of Innovations (DOI) theory, and Resource-Based perspectives. In the literature, the TOE framework (Tornatzky & Fleischer, 1990) is widely used to map external and structural determinants of technology adoption. Studies using TOE highlight how external pressures—such as market competition and

regulatory demands—interact with internal technological readiness and organizational capacity to shape adoption decisions (Prakash, 2025; Sánchez et al., 2025).

Alongside TOE, DOI theory (Rogers, 2003) is commonly utilized to analyze how managerial perceptions of innovation characteristics influence adoption rates. Existing adoption literature demonstrates that innovations perceived to offer high relative advantage and strong compatibility with existing organizational workflows diffuse significantly faster (Soomro et al., 2025). Within SME settings, where decision-making is often centralized around key individuals, DOI has proven particularly effective for evaluating how individual leadership attitudes drive initial adoption choices (Soomro et al., 2025).

However, adoption literature increasingly notes that adoption alone does not guarantee superior organizational performance. Drawing on Resource-Based Theory (RBT) and its extension into Dynamic Capabilities, recent studies argue that value creation from complex technologies such as AI requires mobilizing complementary organizational resources and internal competencies (Mikalef & Gupta, 2021; Kwiotkowska, 2025). From this perspective, technological access is necessary but insufficient, emphasizing that long-term competitive outcomes depend on an organization's underlying capacity to adapt, learn, and continuously reconfigure its processes (Teece et al., 1997; Kwiotkowska, 2025).

2.4 Navigating the AI Frontier: Implementation Pathways and Critical Perspectives

Le Dinh, Vu, and Tran (2025), drawing on a systematic review of 50 studies, provide a comprehensive mapping of artificial intelligence (AI) technologies and their functional applications in small and medium-sized enterprises (SMEs). Unlike larger enterprises, which typically invest in long-term, large-scale AI initiatives, SMEs tend to prioritize solutions that deliver rapid returns on investment and are easy to implement. This distinction explains variation in both the types of technologies adopted and the pathways through which adoption occurs, reflecting the resource constraints and strategic priorities that characterize SME environments.

Scholars have identified several core AI technologies relevant to SMEs, each contributing to organizational performance in distinct ways (Huang & Rust, 2021; Davenport et al., 2020). Machine learning (ML) plays a central role in enabling data-driven decision-

making and improving operational efficiency (Davenport et al., 2020). Generative AI (GenAI), defined as systems that create content by learning patterns from large datasets, is increasingly transforming business functions such as marketing, customer support, and report generation through large language models (Huang & Rust, 2021; Davenport et al., 2020). In parallel, robotic process automation (RPA) automates repetitive, structured tasks, such as data entry and system logging, serving as a virtual workforce for resource-constrained firms (Huang & Rust, 2021). Explainable AI (XAI) further enhances transparency and trust in AI systems in contexts that require accountability and regulatory compliance (Gunning et al., 2019).

At the functional level, AI applications can transform multiple core business areas within SMEs. In sales and marketing, Generative AI enables consumer behavior analysis, personalized advertising, and continuous customer engagement through chatbots, ultimately improving conversion rates (Huang & Rust, 2021; Grewal et al., 2025). Across operations, finance, and human resources, AI supports activities such as sales forecasting, inventory management, financial risk assessment, and process optimization. However, realizing these benefits depends on several interrelated organizational and technological enablers. Employee training and competency development in data analysis and AI tools are foundational, as they determine the organization's ability to use technological resources effectively (Gürdür et al., 2019; Mikalef & Gupta, 2021). Furthermore, technological infrastructure, cloud-based solutions, and AI-as-a-Service platforms provide scalable, cost-effective ways to overcome financial and technical barriers. Scholars such as Le Dinh et al. (2025) and Mikalef and Gupta (2021) also suggest that cultivating a data-driven organizational culture, combined with strategic partnerships with technology vendors, academic institutions, and peer SMEs, enhances adoption outcomes. A phased implementation approach, beginning with pilot projects and gradually scaling, reduces uncertainty and enables organizational learning (Rogers, 2003; Le Dinh et al., 2025). In the long term, success depends on the organization's ability to remain flexible and responsive to technological change while aligning AI adoption with broader strategic objectives.

Generally, the literature reviewed in this chapter shows that technological opportunities, organizational capabilities, managerial decision-making, and broader environmental conditions influence AI adoption in SMEs. However, although previous studies offer valuable insights into these dimensions, they rarely integrate them into a single explanatory framework that captures the complexity of AI integration in relation to

digital maturity. This limitation underpins the integrated theoretical framework that guides this study's empirical analysis.

2.5 Theoretical Framework

The selection of theoretical perspectives for this study is guided by the nature of the research problem and the level at which AI adoption and integration are examined. Existing technology acceptance perspectives provide an important starting point for understanding the relationship between individuals and technological systems. For example, the Technology Acceptance Model (TAM) explains technology acceptance primarily through perceived usefulness and perceived ease of use, while the Unified Theory of Acceptance and Use of Technology (UTAUT) extends this perspective by incorporating factors such as performance expectancy, effort expectancy, social influence, and facilitating conditions. These perspectives matter because managerial perceptions and attitudes can shape organizational technology decisions; however, they primarily focus on individual acceptance and use. The present study moves beyond whether AI is perceived as useful, acceptable, or easy to use, as the increasing relevance of AI is not the primary issue under investigation. Instead, the focus is on how SMEs respond to AI as an emerging technological and competitive force and how multiple organizational and contextual conditions shape their ability to adopt and integrate it.

A resource-based perspective offers a relevant theoretical starting point by emphasizing the role of firm-specific resources and capabilities in creating and sustaining competitive advantage. Resource-Based Theory (RBT) is therefore relevant to understanding why differences in resources, knowledge, skills, and technological assets may influence an SME's ability to engage with AI. However, the resource-based view provides a relatively static explanation of the firm's resource position. It offers less insight into how these resources change, combine, and reconfigure in response to rapid technological and environmental change. For this reason, RBT serves as an important conceptual foundation for understanding the resource dimension of the study rather than a primary framework for explaining AI integration. Dynamic Capabilities extends this resource-oriented logic by focusing on the firm's ability to sense changes and opportunities, seize them by mobilizing resources, and transform or reconfigure its resource base and organizational structures in response to changing conditions. These limitations in existing perspectives support a move toward an integrated framework that combines the

Technology–Organization–Environment (TOE) framework, Diffusion of Innovations (DOI), and Dynamic Capabilities.

To examine how an integrated framework can support AI integration in Swedish SMEs, this study adopts a theoretical framework that combines the Technology–Organization–Environment (TOE) framework, Diffusion of Innovations (DOI) theory, and Dynamic Capabilities. While prior research often relies on a single theoretical perspective to explain technology adoption, such approaches risk overlooking the dynamic interactions among structural conditions, managerial cognition, and strategic transformation.

Building on the theoretical perspectives reviewed above, this study integrates these frameworks because no single theory sufficiently explains the complexity of AI integration within Swedish SMEs. Each framework offers a distinct yet complementary perspective. The TOE framework explains the technological, organizational, and environmental conditions that influence AI adoption; DOI theory focuses on how managers perceive and evaluate AI innovations; and the Dynamic Capabilities perspective explains how organizations develop, adapt, and reconfigure resources to sustain AI integration over time. Collectively, these perspectives provide a comprehensive lens for understanding AI in relation to digital maturity.

This perspective is relevant for resource-constrained SMEs, where technological access alone does not ensure successful AI implementation. Rather, effective AI integration depends on the interaction between organizational readiness, managerial decision-making, and the firm's ability to continuously develop new capabilities. Accordingly, this chapter presents the conceptual framework that guides the empirical analysis and interpretation of the findings.

The TOE framework outlines the structural conditions that influence AI adoption by examining technological, organizational, and environmental contexts. It remains highly relevant in organizational and innovation research because it offers a holistic view of the factors shaping technology adoption decisions (Prakash, 2025). In this study, the technological context includes both internal digital infrastructure and the availability of low-cost, off-the-shelf generative AI tools that can advance digital adoption for businesses facing challenges. However, these technological opportunities do not operate in isolation. Organizational constraints, such as limited resources, flat hierarchies, and the absence of specialized roles, often conflict with these systems, making it difficult to integrate AI effectively into organizational practices. The environmental context

introduces external pressures and support mechanisms, including competitive intensity from digitally advanced firms and broader digitalization initiatives in Sweden. Crucially, interactions among these dimensions may create operational tensions; for example, while AI tools are increasingly accessible, firms may lack the organizational readiness to use them effectively, highlighting the complex structural barriers SMEs face.

While the TOE framework captures the structural conditions shaping adoption, DOI theory (Rogers, 2003) highlights the role of human agency by focusing on how decision-makers perceive technological innovations. In SME contexts, where decision-making is often centralized, managerial perceptions are critical to determining whether AI is adopted. This study focuses on two key perceived attributes: relative advantage and compatibility. Relative advantage refers to the extent to which AI adoption is perceived to offer greater value than existing approaches. Compatibility reflects how well AI tools align with the firm's existing values and practices. These attributes help explain how managers evaluate AI's efficiency and cost benefits while considering whether its use aligns with existing organizational practices and brand-related requirements.

To examine how digital maturity shapes AI integration within SMEs, this study adopts the Dynamic Capabilities framework (Teece et al., 1997), which emphasizes how firms adapt to rapidly changing environments. This process is conceptualized through three interrelated capabilities: sensing, seizing, and reconfiguring. Sensing is the ability of managers to identify both the risks associated with the widening "AI divide" and the opportunities presented by generative AI to enhance customer insights. Seizing involves mobilizing internal and external resources to implement AI-driven initiatives once managers recognize their value. Reconfiguring involves transforming organizational structures, processes, and governance to integrate AI into organizational practices and workflows. In SMEs, these capabilities are likely to develop incrementally because of resource constraints, making the transition to AI-enabled organizational applications gradual rather than immediate. From this perspective, reconfiguration marks the stage at which AI adoption shifts from a basic operational experiment to a sustained strategic and competitive outcome.

The three frameworks, TOE, DOI theory, and Dynamic Capabilities, offer a process-oriented lens for understanding AI adoption in SMEs. TOE defines the structural conditions, DOI explains how managers interpret them, and Dynamic Capabilities show how firms respond and adapt over time. AI adoption is thus conceptualized as a multi-

stage, iterative process shaped by structural constraints, managerial perceptions, and organizational transformation tied to digital maturity.

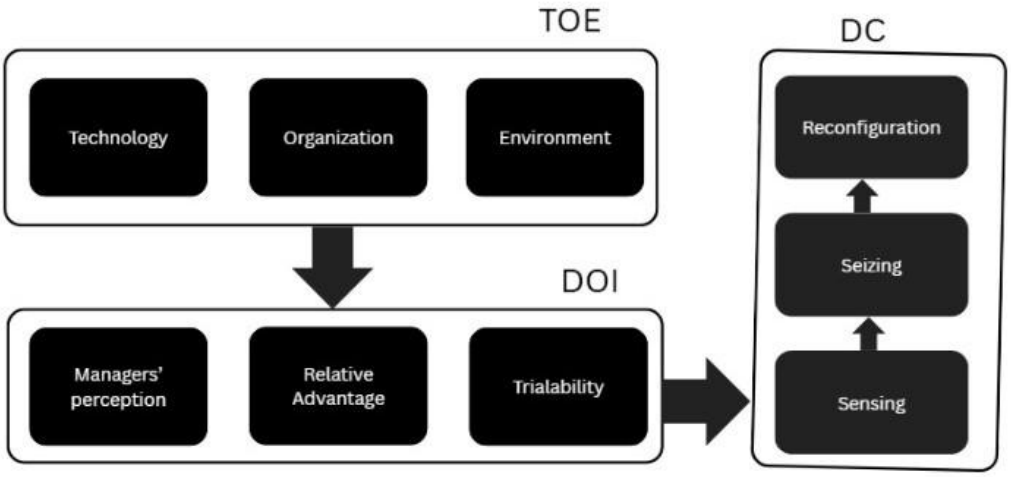

Figure 1. Theoretical Framework: Integrating TOE, DOI, and Dynamic Capabilities. Self-Created (2026)

In this framework, the three perspectives are treated as sequential and mutually reinforcing rather than independent. TOE explains the conditions under which AI adoption is possible, DOI explains why managers choose to adopt or resist AI technologies, and Dynamic Capabilities explain how organizations transform initial adoption into sustained organizational value. This progression supports the study's central argument that AI integration is an evolutionary process rather than a single adoption decision. Within this integrated process, AI tools are conceptualized as a "digital maturity bridge," enabling resource-constrained SMEs to progress from initial experimentation to more advanced, integrated organizational applications. Each dimension is operationalized using observable indicators, including digital infrastructure (TOE), managerial perceptions (DOI), and capability development (Dynamic Capabilities), ensuring logical alignment between the theoretical framework and the empirical analysis of the qualitative data.

The following table summarizes the alignment of these theoretical dimensions to illustrate how they facilitate the transition across the digital maturity bridge:

Dimensions	**TOE Context Framework**	**DOI Theory Attributes**	**Dynamic Capabilities Framework**
Infrastructure	Technological	Compatibility	Sensing (Discovery)
Decision-making	Organizational	Relative Advantage	Seizing (Execution)
Marketing Strategy	Environmental	Complexity	Reconfiguring (Transformation)

Table 2. A Theoretical Framework Combining TOE, DOI, and Dynamic Capabilities.

3. Methodology

3.1 Research Design

This study adopts a qualitative research design with an inductive analytical orientation to explore how SME managers perceive, approach, and respond to AI adoption and integration within their organizations. A qualitative approach is appropriate because it enables an in-depth examination of participants' experiences, perceptions, decision-making processes, and contextual conditions that quantitative methods may not adequately capture (Aspers & Corte, 2019; Sutton & Austin, 2015).

Semi-structured interviews ensured consistency across participants while allowing flexibility to explore issues that emerged from their responses (Mojtahed et al., 2014). The interview questions (see Appendix 1) were informed by the TOE, DOI, and Dynamic Capabilities perspectives and addressed technological, organizational, environmental, innovation-related, and capability-related dimensions of AI adoption and integration. However, these theoretical perspectives guided the scope of data collection rather than imposing predetermined categories on the empirical analysis.

The inductive analytical orientation reflects the study's focus on identifying themes from the empirical data rather than testing predetermined theoretical propositions. Although the selected theoretical perspectives informed the development of the interview questions, the themes were derived from participants' accounts and were not constrained by the constructs of the selected theories. This approach allowed the analysis to capture context-specific factors, barriers, perceptions, and organizational responses emerging from the data. The identified themes were subsequently interpreted in relation to the selected theoretical perspectives.

Furthermore, qualitative interviews enable exploration of the underlying mechanisms that shape AI adoption and integration, rather than merely establishing whether adoption occurs (Knott et al., 2022). Previous research highlights that qualitative methods are particularly useful for examining complex decision-making processes and contextual factors that quantitative approaches may overlook (Bilgin, 2017; Sutton & Austin, 2015; Verhoef & Casebeer, 1997). In the context of SMEs, where decision-making is often influenced by limited resources, flatter organizational structures, and evolving digital capabilities, semi-structured interviews provide an opportunity to capture participants' experiences and organizational contexts in depth. This approach also

allowed themes to emerge from the empirical data, including ethical concerns, perceived risks, and tensions between AI use and brand authenticity.

3.2 Research Perspective

This study is grounded in a relativist ontology and an interpretivist epistemology. A relativist ontology holds that reality is socially constructed and that multiple realities may exist depending on individuals' experiences, interactions, and contexts. Accordingly, SME managers may perceive and respond to AI adoption and integration differently based on their organizational circumstances. For example, one manager may view AI as a strategic enabler, while another may see it as a potential threat to creativity or brand identity (Rassokha, 2022).

Consistent with this position, the study adopts an interpretivist epistemology that focuses on how individuals interpret their experiences and construct meaning within specific contexts (Alharahsheh & Pius, 2020). This perspective informed the study by emphasizing participants' experiences and interpretations rather than assuming a single objective understanding of AI adoption. Semi-structured interviews therefore allowed participants to describe their perspectives, experiences, motivations, and concerns while enabling the researcher to explore issues that emerged during the interviews.

The interpretivist epistemology also informed the analysis. The researcher's role was not limited to that of a neutral observer, as interpreting participants' accounts was part of the knowledge-generation process. Consistent with the study's inductive analytical orientation, themes emerged from participants' accounts rather than being imposed by predetermined theoretical categories. The emerging themes were subsequently interpreted through the TOE, DOI, and Dynamic Capabilities perspectives. Thus, the research perspective informed the study's approach to data collection, researcher–participant interaction, analysis, and interpretation.

3.3 Sample and Recruitment

This study used purposive sampling to recruit nine participants from Sweden's SME sector. This strategy suits qualitative research because it enables the selection of information-rich cases relevant to the research question (Palinkas et al., 2015). Rather than aiming for statistical generalization, the study sought to generate in-depth insights into how SME managers interpret and respond to AI adoption within their organizations.

The sample focused on SMEs with some experience using or adopting AI, as direct experience was considered essential for examining the processes, perceptions, barriers, and organizational responses associated with AI adoption and integration. This allowed participants to reflect on actual experiences rather than hypothetical intentions. The study excluded SMEs with no prior AI use because it focuses on AI adoption and integration. This sampling decision may limit the findings' ability to explain the reasons for complete non-adoption. It should therefore be recognized as a potential limitation and a source of selection bias.

Participants were selected based on three inclusion criteria: (1) relevant professional experience in the SME sector, (2) fluency in English or Swedish, and (3) regular use of AI tools. These criteria ensured that participants had sufficient knowledge and experience with AI tools and their organizational applications, enabling them to offer meaningful, informed perspectives.

We recruited participants through professional outreach and engagement with Swedish SME networks, including business incubators and entrepreneurial hubs. This targeted approach facilitated access to participants actively operating in the digital economy and therefore more likely to have encountered AI-driven tools or practices. Although purposive sampling and a relatively small sample size may limit the findings' generalizability, this approach aligns with the study's interpretivist orientation. The goal is not to produce statistically representative results but to develop a rich, context-specific understanding of AI adoption in Swedish SMEs.

3.4 Data Collection

This study collected data through semi-structured interviews with SME managers operating in the Swedish market. This method was selected to enable an in-depth exploration of participants' experiences, perceptions, and decision-making processes regarding the adoption and daily use of AI within their organizations. Semi-structured interviews balance consistency and flexibility, allowing researchers to follow a structured set of questions grounded in the frameworks while also giving participants the freedom to elaborate on their responses and introduce insights (Mojtahed et al., 2014). The interviews were conducted over one week, with each lasting approximately 30 minutes. All sessions were primarily conducted via the Zoom app, ensuring accessibility and convenience for participants with varying schedules. Table A3 in Appendix 3 provides a

detailed description of the research participants, including their background and education.

A semi-structured interview guide (Appendix 1) aligned with the research objectives and ensured consistency across interviews. The guide included open-ended questions covering key areas, including AI tool usage, perceived benefits and challenges, organizational factors influencing adoption, and the impact of AI on organizational and operational practices. Participants were encouraged to elaborate on their answers, and follow-up questions were used as needed to gain deeper insights and clarify responses. This approach enabled the collection of rich, detailed, and contextually grounded data while maintaining a consistent structure across all interviews.

All interviews were conducted in English to ensure clear, consistent communication. With participants' informed consent, the researcher audio-recorded interviews to ensure accurate, complete data. The recordings were transcribed using Otter AI, which helped organize the data and facilitated familiarization with the material. Throughout data collection, the researcher maintained a neutral, open interview environment, allowing participants to share their perspectives freely without influence or bias. This ensured that the collected data were reliable and reflected participants' genuine experiences.

3.5 Data Analysis

To analyze the qualitative interview data, this study used thematic analysis based on the six-phase framework established by Braun and Clarke (2012, 2014, 2019) and Byrne (2021). This method was chosen for its flexibility in identifying, analyzing, and reporting patterns in the data, which is essential for understanding complex perceptions of AI adoption within SMEs.

The six-phase framework consists of:

1. Familiarization
2. Coding
3. Generating themes
4. Reviewing themes
5. Defining themes

6. Writing the report

In the first phase, familiarization involved deep engagement with the data to understand the content and participants' perspectives. Following each interview, audio recordings were transcribed verbatim. This transcription served as an initial stage of analysis, enabling the early identification of recurring terms and ideas within the SME context. Once the transcripts were finalized, the researchers read them multiple times, taking notes on initial impressions, potential patterns, and points of interest.

The second phase, coding, involved identifying recurring concepts and patterns in the interview data. The primary aim was to reduce the complexity of qualitative data by breaking it into manageable, interpretable segments (Ahmed et al., 2025). Following transcription, Otter AI supported initial coding by organizing the data and helping identify recurring terms and ideas during the familiarization stage. However, we conducted primary coding manually to ensure greater interpretive and analytical depth. This involved carefully reviewing transcripts and assigning descriptive labels to relevant segments of data on AI adoption, including perceived benefits, challenges, and usage practices. Manual coding enabled closer engagement with the data and context-sensitive interpretation, which are essential in qualitative research. Once initial codes were generated, they were grouped into broader categories based on similarities and relationships across interviews. This iterative process involved multiple rounds of refinement to ensure that the codes accurately reflected the data and contributed meaningfully to theme development.

The third phase, theme generation, was more interpretive and analytical. Rather than summarizing the data, this stage focused on identifying patterns of shared meaning across participants' responses. Codes were organized into tables to explore relationships among categories. For example, codes such as “unclear ROI” and “high subscription costs” were grouped under the broader theme of economic uncertainty. Themes were developed by grouping related codes that captured significant aspects of SME experiences. We reviewed each candidate theme against the original data to ensure sufficient supporting evidence. Themes with limited support were combined with others, while broad themes were refined or divided.

The fourth phase, reviewing themes, involved a critical, iterative evaluation of the identified themes (Ahmed et al., 2025). At this stage, themes were assessed both at the level of individual data extracts and across the entire dataset to ensure coherence,

consistency, and relevance. This process ensured that the themes accurately reflected the perspectives of Swedish SME participants.

The fifth phase, defining and naming themes, focused on refining each theme to clearly capture its essence and relevance to the research question (Ahmed et al., 2025). Each theme was carefully defined to represent a distinct aspect of the data and to contribute meaningfully to the overall analysis.

The final phase, writing the report, involved presenting the findings in a structured, logical manner. To ensure transparency and validity, I used compelling extracts (direct quotations) from the interview transcripts to illustrate each theme. These extracts served as evidence, enabling readers to trace how the interpretations were grounded in participants' own words. We then interpreted the findings in relation to the existing literature on AI adoption, providing a comprehensive discussion.

We interpreted the identified themes in relation to the study's conceptual framework, which includes the TOE framework, Diffusion of Innovations theory, and Dynamic Capabilities. This approach ensured that the analysis moved beyond description to provide deeper theoretical insights into AI adoption within Swedish SMEs. To ensure theoretical alignment, the interview questions reflected the study's conceptual framework. Specifically, questions about technological infrastructure and external pressures align with the TOE framework; perceptions of AI benefits and compatibility reflect DOI attributes; and questions addressing organizational change and adaptation align with the Dynamic Capabilities perspective (sensing, seizing, and reconfiguring).

3.6 Ethical Considerations

This study was conducted in accordance with the ethical guidelines for research involving human subjects and the European Union's General Data Protection Regulation (GDPR). To protect all participants and preserve the integrity of the Swedish SME sector, the following protocols were implemented:

(1) Informed Consent: Participants received a formal Letter of Information. The document outlined the study's purpose, the voluntary nature of participation, and the right to withdraw at any time without providing a reason. The researchers obtained explicit written or recorded verbal consent before the interviews began. The consent letter explained the study's aims and outlined ethical considerations, including confidentiality and anonymity (Mirza et al., 2023).

(2) Data Privacy: To protect participants' privacy, all data were anonymized. The interviewer replaced real names and specific company titles with descriptors (e.g., "Manager, SME A"). The interviewer removed any identifying metadata from digital platforms during transcription. The interviewer ensured that information collected from participants remained private and confidential and that no third party accessed the raw data unless the participant explicitly permitted disclosure (Laryeafio et al., 2023). These measures were important given the sensitivity of business-related information and the potential reputational risks for SMEs.

(3) General Data Protection Regulation (GDPR): All personal data were processed in accordance with GDPR principles, including lawfulness, fairness, transparency, data minimization, and storage limitation. Only data necessary to address the research question were collected and processed. Audio recordings and transcripts were securely stored on password-protected devices. No data were shared with third parties or stored on unencrypted personal devices, thereby ensuring compliance with data protection standards.

(4) Data Deletion Routine: Audio files were deleted after the transcripts were successfully verified. All remaining primary data will be permanently erased after the thesis is published and graded to ensure no sensitive business information is retained long-term.

3.7 Limitations

While the methodology was designed to provide deep and meaningful insights into AI adoption among Swedish SMEs, several important limitations must be acknowledged. First, the study's sample size and generalizability are constrained. With nine participants, the findings are not intended to be statistically representative of the entire Swedish SME population. Instead, the study prioritizes qualitative depth, aiming to generate transferable insights applicable to similar SME contexts rather than statistical generalization.

Second, a potential selection bias arises from including SMEs with prior experience using or adopting AI. This sampling criterion was intentionally aligned with the study's scope, which focuses on how SMEs approach, experience, and integrate AI. However, this means the findings reflect the experiences of SMEs with some exposure to AI and do not capture perspectives from SMEs that have not yet engaged with AI.

In addition, the geographic focus is limited to Sweden. Given Sweden's advanced digital infrastructure and unique business culture, the AI adoption perspectives identified in this study may not directly apply to SMEs in other economic or cultural contexts. Furthermore, because the data rely on semi-structured interviews, self-reporting bias is a risk. Participants may describe their AI usage in ways that align with perceived industry trends or professional expectations, a phenomenon known as social desirability bias.

4. Empirical Findings and Analysis

This chapter presents findings from nine semi-structured interviews with professionals from small and medium-sized enterprises (SMEs) operating in the Swedish market. The purpose of this chapter is to systematically present empirical data on how artificial intelligence (AI) is perceived, interpreted, and adopted across marketing and operational practices. Following Braun and Clarke's (2012, 2014, 2019) six-phase thematic analysis, the data were analyzed to identify recurring patterns, shared meanings, and notable variations in participants' experiences. The empirical findings indicate that digital maturity plays an important role in shaping how Swedish SMEs adopt and integrate AI. Differences in digital maturity were reflected in how far organizations progressed from basic experimentation to more systematic and integrated AI use. Less digitally mature SMEs tended to use AI for isolated, task-specific activities. In contrast, more digitally mature SMEs demonstrated a greater ability to integrate AI into workflows, build organizational capabilities, and establish more structured approaches to its use.

The analytical process involved engaging with the data, beginning with familiarization and coding, and then developing and refining themes. Through this process, individual statements became meaningful analytical units, enabling the identification of broader patterns beyond isolated responses. This approach enabled the study to capture both commonalities and differences in how organizations approach AI adoption across organizational contexts, digital maturity levels, and industry characteristics.

The analysis identified six core themes:

1. AI-driven operational efficiency
2. Organizational capability constraints
3. Trust, reliability, and human control
4. AI adoption approaches
5. The behavioral and cognitive impact of AI
6. External pressures

These themes capture the most important patterns in the data and reflect both the benefits and challenges of AI adoption. Although these themes are consistently observed across participants, the findings also reveal important differences between

SMEs and larger organizations, particularly in adoption strategies, governance mechanisms, and resource availability.

4.1 AI-driven Operational Efficiency

A recurring theme across all interviews was the perception of artificial intelligence (AI) as a tool that enhances operational efficiency. SME managers consistently emphasized that AI delivers significant time savings, reduces manual effort, and accelerates workflows across a wide range of activities. AI tools such as ChatGPT, Google Gemini, Claude, and Microsoft Copilot were highlighted by the participants as being used for content generation, email communication, documentation, customer relationship management (CRM), and sales outreach. Participants emphasized that tasks that once took considerable time, such as drafting professional emails, preparing reports, or developing marketing materials, can now be completed in minutes. For example, SME managers described using AI to quickly generate multiple versions of emails or marketing content, allowing them to select and adjust the most appropriate output. Similarly, more advanced users reported integrating AI into lead-generation processes, enabling them to reach more potential customers in less time.

Participant 2 described their experiences as

> *"AI helps in saving time in generating website content and drafting marketing emails; AI reduces website development time from weeks to significantly shorter durations."*

SMEs showed differences in digital maturity. More digitally advanced SMEs demonstrated greater integration, embedding AI into core operational processes such as customer communication and data management. In contrast, less mature SMEs tended to use AI more selectively, applying it to isolated tasks rather than integrating it systematically into their workflows.

Participant 6 (from a more digitally mature SME) expressed their experience as

> *"We developed a complete sales engine to search for potential customers; our biggest win is in the sales outreach process (saves time, enables outreach to more prospects/potential customers, and prioritizes sales calls where urgency is observed)."*

Beyond communication and sales, participants described using AI to organize documentation and improve access to customer and business information. These applications enabled faster retrieval and organization of information, which participants linked to more efficient decision-making. Across the interviews, reduced time and manual effort were especially relevant for SMEs with limited resources, as AI enabled employees to complete routine activities more quickly and free up time for other tasks.

Overall, the findings suggest that SMEs primarily use AI to optimize existing workflows rather than fundamentally transform their organizations. Managers emphasized practical, immediate gains in speed, convenience, consistency, and productivity, while evidence that AI changed core business models or strategic direction was limited. AI was generally incorporated into existing processes to support employees rather than replace established activities. By reducing the effort required for repetitive tasks, AI allowed managers and employees to focus more on activities such as strategic decision-making, customer relationships, and sales. However, this predominantly task-oriented use also indicates that, within the SMEs studied, AI adoption remains focused mainly on operational optimization rather than broader organizational transformation.

4.2 Organizational Capability Constraints

Although SME managers widely recognized AI's efficiency benefits, they consistently identified internal capability constraints as a major barrier to effective adoption. Across interviews, a key issue was the lack of AI-related skills, expertise, and structured training within organizations. In addition, many participants reported that their organizations relied heavily on individual initiative for AI adoption. In most cases, only a few individuals had basic knowledge of AI tools, while most lacked the skills to use them effectively. This uneven adoption concentrates AI use among a small number of employees rather than integrating it across teams. Consequently, the potential benefits of AI remain partially realized, as its application is limited to isolated use cases rather than embedded across organizational processes.

Participant 2 highlighted this individual dependency.

> *"I am operating as a solo AI user, and it feels like a potential constraint, creating a personal dependency."*

This reliance can create dependence on specific employees and make it harder to establish shared practices. When organizations neither share nor institutionalize AI

knowledge, they struggle to establish consistent practices and standardize workflows. As a result, AI adoption remains fragmented and poorly coordinated, reducing its overall strategic impact.

The lack of formal training programs further contributes to this issue, as SME managers often learn about AI through self-experimentation, online resources, and trial and error. While this flexibility enables rapid initial adoption, it also creates inefficiencies because users may not fully understand how to optimize AI tools, develop effective prompts, or critically evaluate outputs. The lack of formal training also contributed to concerns about security and operational barriers.

Participant 4 described their experiences as

> *"We lacked a formal introduction or training for these tools, and I have to navigate security risks and operational barriers."*

Digital maturity varies across SMEs, shaping how capability constraints arise. More digitally mature SMEs reported experimenting with multiple tools, comparing their performance, and applying them across business functions. In contrast, less mature SMEs struggle to move beyond basic use, often limiting AI applications to simple tasks and failing to fully grasp its broader capabilities.

Overall, the findings indicate that organizational capability extends beyond access to AI technology. Effective AI adoption also depends on employees' skills, learning opportunities, and the organization's ability to share and develop knowledge. When AI knowledge remains concentrated among individual employees, adoption is more likely to remain fragmented and task-oriented. Developing shared capabilities and organizational knowledge is therefore important for moving from individual AI use toward broader integration across organizational processes.

4.3 Trust, Reliability, and Human Control

Trust in artificial intelligence (AI) appeared to be a critical factor shaping both the adoption and daily use of AI tools among SME managers. Across all interviews, participants expressed concerns about the reliability, credibility, and authenticity of AI-generated outputs. These concerns centered on hallucinations, factual inaccuracies, and AI's tendency to produce content that may appear generated, exaggerated, or irrelevant to the context.

Participant 4 describes their experience as

> *"I consider AI-generated outputs authentic, but I still need to proofread everything myself to maintain quality and ensure that the content is accurate and not exaggerated."*

A consistent observation among SME managers was that AI-generated content does not always align with professional standards or cultural expectations. This was particularly noticeable in the Swedish context, where SMEs report that communication is generally expected to be clear, precise, and authentic.

Participant 6 describes their experience as

> *"I faced early quality issues with exaggerated claims that did not fit Swedish business culture, so I maintain control by enforcing boundaries for a humble, direct tone."*

Participants noted that AI outputs sometimes fail to meet this standard, requiring additional effort to adjust tone, wording, and messaging to better align with local style and audience expectations. As a result, AI-generated content cannot be used directly in most cases and must be refined before being shared externally.

Given these limitations, all participants emphasized the need to maintain human oversight when using AI tools. This reflects a clear human-in-the-loop approach, in which AI supports tasks and decision-making rather than replacing human judgment.

Participant 5 describes their experience as

> *"We maintain ultimate power over AI; because AI hallucinates, I make informed decisions and ensure that tool outputs are authorized rather than relying on them blindly."*

SME managers described reviewing, editing, and validating AI-generated outputs as a necessary, routine step to ensure accuracy, relevance, and appropriateness. In many cases, they saw this process as essential to maintaining professional standards and protecting the organization's credibility. They also acknowledged that AI could produce high-quality outputs when used effectively. The quality of results was often linked to the user's ability to provide clear, precise instructions and to assess and refine the output.

This suggests that trust in AI is not absolute but conditional, depending on both the user's level of expertise and the specific context in which the tool is applied.

Taken together, these findings highlight a clear tension between the efficiency gains AI offers and the risks of its use. While AI enables faster, more efficient workflows, its limitations require ongoing human oversight to ensure reliability and maintain trust. As a result, AI is not viewed as a fully autonomous system but as a supportive tool that human users must carefully manage and control.

4.4 AI Adoption Approaches

The findings reveal that AI adoption among SMEs is characterized by diverse and evolving approaches, largely shaped by organizational context, digital maturity, and individual initiative. Unlike large organizations, which often follow formalized adoption strategies, SMEs tend to adopt AI in a more flexible, informal, and iterative manner.

Many SME managers described their adoption process as exploratory, involving trial and error with various AI tools. This approach allows organizations to quickly test and implement solutions that address immediate operational needs.

Participant 4 described their experience as

> *"I adopted AI after an initial testing phase and gradually integrated it into my marketing and product management responsibilities."*

Participants reported using multiple tools for different tasks, selecting them based on performance, usability, and cost-effectiveness. While this flexibility enables SMEs to adapt rapidly to technological developments, it may also lead to unstructured adoption, with tools used inconsistently and without clear strategic alignment. This pattern reflects the notion that AI adoption in SMEs is often driven by experimentation and learning by doing rather than predefined strategies (Bettoni et al., 2021).

In addition, the findings indicate that AI adoption is closely linked to developing internal capabilities. More digitally mature SMEs took a more structured, intentional approach, integrating AI tools into their workflows and aligning their use with business objectives. These firms were more likely to evaluate the return on investment of AI tools, standardize their use across functions, and move beyond experimentation toward more coordinated implementation.

Participant 5 (more digitally mature SME) describes their experience as

> *"We explore AI tools independently of hierarchy, while following top-down processes to ensure compliance with legal standards and recommended organizational guidelines."*

In contrast, Participant 1 (less digitally mature SME) described a more informal approach.

> *"We adopted AI informally over the past two years, without formal employee training, which ultimately led to greater reliance on specific tools for specific tasks."*

In contrast, less mature SMEs and startups remained at an early stage of adoption, using AI primarily for isolated tasks rather than integrating it into broader organizational processes. This reinforces the idea that limited capabilities and a lack of strategic direction can constrain the transition from experimentation to effective implementation. In this sense, AI adoption among SMEs can be understood as a capability-building process in which progress depends on the organization's ability to learn, adapt, and institutionalize new practices (Bettoni et al., 2021).

Several participants also described AI adoption as an evolution rather than a one-time decision. Initial engagement often begins at the individual level, driven by immediate needs, and over time expands into more structured organizational use as familiarity and confidence grow. These findings suggest that AI adoption among SMEs is influenced not only by external technological opportunities but also by internal learning processes and capability development. While early adoption is characterized by flexibility and experimentation, long-term effectiveness depends on the organization's ability to transition to more structured use of AI tools.

4.5 Behavioural and Cognitive Impact of AI

AI adoption was found to affect SME managers' behavior and cognitive processes. Participants reported that AI has changed how they approach tasks such as writing, research, and problem-solving. Across interviews, we observed increased reliance on AI tools for routine tasks. Many SME managers noted that they now depend on AI to generate content, answer questions and emails, and support decision-making. While this reliance increases efficiency, it may also raise concerns about reduced cognitive

engagement. Several participants described this phenomenon as leading to dependency or “laziness,” as AI tools now automate tasks that previously required effort and critical thinking.

Participant 4 describes their experience as

> *“I feel a negative cognitive impact, catching myself feeling like I am 'not using my brain anymore' because AI provides instant research.”*

Participant 5 describes their experience as

> *“I noticed a shift toward passivity - it makes me lazy because I used to write emails manually, and now I let AI do it.”*

Participant 7 describes their experience as

> *“I gained a positive cognitive boost; AI built my confidence in front of clients and improved my writing and thinking skills through feedback.”*

However, AI was also linked to positive cognitive outcomes. Participants reported improvements in writing quality, especially in emails, which helped them communicate more professionally and structure their ideas more effectively before important meetings. In some cases, AI served as a learning tool, providing feedback and helping users refine their thinking and problem-solving. Moreover, AI was seen as a tool that increased confidence in professional communication by generating well-structured, polished outputs. It enabled SME managers to present themselves more effectively.

This dual impact reflects the complex relationship between AI and human cognition. While AI enhances productivity and supports cognitive processes, it also reshapes traditional work habits and raises concerns about overreliance. As a result, SME managers must balance AI's benefits with the need to preserve critical thinking and independent decision-making.

4.6 External Pressures

The findings indicate that external pressures play a major role in shaping AI adoption among Swedish SMEs. Competition and shifting market expectations have influenced SME managers' perceptions of the need to adopt and experiment with AI. Several participants noted that competitors' growing use of AI created pressure to monitor

technological developments and consider similar applications within their own organizations.

Participant 3 describes their experience as

> *"We face high pressure from competitors rapidly adopting AI in financial services, forcing us to stay on track."*

AI adoption was therefore not always driven solely by internal efficiency needs but also by concerns about maintaining competitiveness in an increasingly digital business environment.

Participant 9 describes their experience as

> *"We experience competitive pressure from market players who adopted AI earlier and moved ahead of us."*

Participant 7 describes their experience as

> *"We feel strong market pressure; watching competitor investments makes us believe AI will soon be mandatory for business."*

Participants also mentioned that AI's growth across their industries has made it a daily business practice. This external pressure motivated SMEs to explore AI tools, even without formal adoption strategies. Regulatory and institutional factors also shaped AI adoption, particularly regarding data protection, privacy, and responsible AI practices. Furthermore, participants emphasized the need to ensure that AI-generated content aligns with Swedish expectations of clarity, professionalism, and authenticity, often requiring human review and adaptation before external use.

Overall, the findings indicate that both internal and external conditions shape AI adoption among Swedish SMEs. Competitive pressure can encourage experimentation and accelerate adoption, while regulatory requirements and market expectations can shape how SMEs implement and govern AI. These findings align with the environmental dimension of the TOE framework, which emphasizes how external conditions influence organizational technology adoption. The findings therefore suggest that SMEs' AI adoption decisions cannot be understood solely through internal capabilities, as competitive, regulatory, and contextual pressures also influence integration.

5. Discussion of Findings

This chapter discusses the findings in relation to the research question: How can an integrated framework support AI integration in Swedish SMEs in relation to digital maturity?

The discussion interprets the empirical findings through the theoretical perspectives introduced in the literature review, including the Technology-Organization-Environment (TOE) framework, Diffusion of Innovations (DOI) theory, and Dynamic Capabilities theory. The empirical data show that artificial intelligence (AI) increasingly supports marketing and operational activities in Swedish SMEs by improving efficiency, communication clarity, and decision-making workflows. However, the findings reveal that the effectiveness of AI adoption depends heavily on organizational capabilities, digital maturity, learning processes, and human oversight.

The data show that AI adoption among SMEs is neither standardized nor linear. Instead, organizations adopt AI gradually through experimentation, adaptation, and continuous learning. While AI offers SMEs opportunities to overcome resource constraints and improve competitiveness, realizing these benefits depends on the organization's ability to integrate AI into workflows and managerial practices. The findings expose tensions between operational efficiency and data reliability, and between technological dependence and human control, emphasizing the importance of human judgment in AI-driven environments.

5.1 AI as an Operational Enabler Rather Than a Transformational Force

One of the strongest findings across the nine interviews was that Swedish SMEs initially viewed AI as a tool for operational efficiency rather than as a transformational technology capable of reshaping organizational structures or business models. Participants described using AI for practical tasks such as content creation, email writing, customer communication, documentation, CRM management, and sales outreach. These findings align with previous literature that positions generative AI as a technology that can enhance productivity by automating repetitive, information-intensive tasks (McKinsey & Company, 2023; Le Dinh et al., 2025). The findings support the DOI concept of relative advantage (Rogers, 2003), as participants consistently associated AI with immediate operational benefits, including time savings, convenience,

and reduced manual effort. Across the interviews, AI was perceived as valuable for accelerating workflows and enabling SMEs to perform tasks more efficiently despite limited organizational resources. Participants repeatedly identified time efficiency, workflow enhancements, and cost reduction as the primary motivations for adoption.

However, while AI has delivered significant operational benefits, the findings suggest that its implementation remains gradual rather than transformational. SMEs have integrated AI into existing workflows to influence current practices rather than redesigning business models or organizational structures. This partially challenges the highly optimistic narratives in the AI literature that portray generative AI as a disruptive force capable of transforming organizations. Instead, the findings indicate that SMEs currently prioritize practical efficiency gains over long-term strategic transformation.

The TOE framework further helps explain this pattern. From a technological perspective, SMEs appear to adopt AI tools that are accessible, easy to implement, and compatible with existing operational routines. More advanced or resource-intensive forms of AI integration remain constrained by capability limitations and organizational readiness challenges. Therefore, adoption decisions are shaped more by practical organizational considerations than by technological possibilities. The findings suggest that even gradual operational adoption may contribute to broader organizational transformation over time. As SMEs increasingly integrate AI into communication, documentation, CRM systems, and customer interactions, organizational routines and managerial practices slowly evolve. In this sense, operational AI adoption may represent an early stage of a broader digital transformation that progresses as organizational capabilities mature.

5.2 Digital Maturity, Resource-Based Theory, and Organizational Capability

The findings showed that digital maturity shapes how Swedish SMEs adopt and integrate AI into marketing and operational activities. Although most participants recognized AI's potential benefits, differences emerged in how digital maturity shaped AI adoption and integration. More digitally mature SMEs were better able to systematically integrate AI into workflows, evaluate multiple AI tools, and align AI use with broader organizational objectives. In contrast, less digitally mature SMEs relied on more limited AI applications, primarily for basic tasks such as content generation or email writing. As one SME manager explained, “Since our company is still new, I would consider us to have limited digital maturity. I mainly trust AI for writing emails and generating some content for our

social media, but I do not rely on it for more advanced activities." These findings support Resource-Based Theory (RBT), which holds that technology alone does not give a competitive advantage unless organizations possess complementary capabilities that enable effective resource deployment (Mikalef & Gupta, 2021; Kwiotkowska, 2025). In this study, RBT provides a supporting foundation for Dynamic Capabilities by highlighting the importance of organizational resources, while Dynamic Capabilities extends this view by explaining how SMEs develop, adapt, and reconfigure these resources for AI integration. Although access to AI tools was relatively widespread among participants, the ability to generate meaningful organizational value varied with internal capabilities, employee competence, and organizational readiness. This indicates that AI itself is not the primary source of competitive advantage. Instead, value creation depends on the organization's ability to mobilize human capital, integrate knowledge, and align AI use with operational goals.

The empirical data also support Gürdür et al.'s (2019) argument that organizational readiness is a primary barrier to adopting advanced technology in Swedish industry. Participants highlighted capability constraints, including limited AI expertise, insufficient structured training, and uneven knowledge distribution within organizations. In several SMEs, AI use largely depended on individual initiative rather than coordinated organizational integration, limiting the organization's ability to institutionalize AI practices and maximize long-term value creation.

Within the TOE framework, these findings highlight how organizational context shapes technology adoption outcomes. Although access to technology and positive attitudes toward AI were common across SMEs, organizational integration remained inconsistent. The lack of formal governance structures, structured onboarding systems, and coordinated implementation frameworks reduced the strategic impact of AI adoption in several firms. Hence, digital maturity emerges not only as a technological condition but also as an advanced organizational capability involving learning structures, managerial coordination, and strategic alignment.

At the same time, the findings challenge deficit-oriented assumptions about resource-constrained SMEs. Although smaller firms often face structural limitations, participants demonstrated significant adaptability and flexibility in experimenting with AI technologies. Several SMEs successfully used low-cost AI tools to improve communication quality, automate administrative processes, and enhance customer outreach despite limited resources. This supports Pugh et al. (2024) and Eder (2019),

who suggest that smaller firms can influence external technological ecosystems and digital platforms even without extensive internal innovation infrastructure. The findings suggest that successful AI adoption depends less on technological access alone and more on the organization's ability to develop internal capabilities, foster organizational learning, and coordinate strategy. Digital maturity, therefore, serves as a critical mediator between AI adoption and organizational value creation.

5.3 Dynamic Capabilities and AI Adoption as an Evolutionary Process

While Resource-Based Theory explains how valuable organizational resources contribute to competitive advantage, it has been criticized for being relatively static in rapidly changing technological environments. In the context of AI adoption among SMEs, the Dynamic Capabilities theory is therefore relevant because it emphasizes an organization's ability to continuously adapt, learn, and reconfigure its internal and external resources in response to technological change.

The findings indicate the presence of dynamic capability processes, including experimentation, learning-by-doing, and the gradual integration of AI into organizational workflows. SME managers reported testing multiple AI tools, refining their use over time, and adapting AI applications to operational needs. These behaviors demonstrate sensing, seizing, and reconfiguring activities associated with Dynamic Capabilities theory. They also align with the DOI concept of trialability (Rogers, 2003), which holds that innovations are more likely to diffuse when organizations can experiment with them gradually before full implementation. Participants described adopting AI through trial and error rather than formalized long-term strategies. This illustrates how AI integration develops, beginning with simple applications and becoming embedded in daily routines. This supports the view that AI adoption is a dynamic, continuous process, shaped by ongoing learning and adaptation rather than a linear implementation (Bettoni et al., 2021).

The findings suggest that AI adoption among SMEs is closely tied to organizational learning processes. Many participants reported developing AI-related competencies independently through self-study, repeated experimentation, and the ongoing refinement of usage practices. Rather than relying on formal training programs, organizations developed AI capabilities informally through direct interaction with the

technology. This shows that AI adoption is not solely a technological process but also a process of learning and structured adaptation.

The data reveal variations in how SMEs structure AI adoption and learning processes. Some firms relied on highly individual-driven adoption patterns, in which AI use depended on the initiative of specific employees. Other organizations implemented more structured approaches involving governance systems, workshops, approval procedures, and strategic alignment mechanisms. This variation demonstrates that digital maturity influences not only the extent of AI integration but also the sophistication of organizational learning mechanisms surrounding adoption. In addition, the findings suggest that SMEs compensate for limited resources through organizational flexibility and adaptability. Unlike large organizations that may face barriers and slower implementation processes, SMEs can experiment rapidly with emerging technologies. Several participants noted that larger corporations sometimes lag in AI adoption due to governance concerns, regulatory restrictions, or organizational rigidity. An SME manager explained that they sometimes prefer one AI tool over another because certain tools have more restrictions and regulations on how they can be used. SMEs, by contrast, adopted and tested AI tools more quickly despite lacking formalized AI strategies.

SMEs' approaches to structuring AI adoption and learning can be understood through the complementary perspectives of TOE, Diffusion of Innovations, and Dynamic Capabilities. From a TOE perspective, organizational structures, employee skills, and organizational readiness shape the conditions for AI experimentation and learning. From a Diffusion of Innovations perspective, employees who initiate AI use may contribute to experimentation and the diffusion of AI practices within the organization by sharing knowledge and experience. Dynamic Capabilities, however, highlight the importance of transforming such individual-level experimentation into an organizational capability by sensing AI opportunities, seizing relevant applications, and reconfiguring existing routines and practices. Taken together, these perspectives suggest that AI adoption may initially emerge through individual employee initiative. At the same time, its development into broader organizational integration depends on the SME’s ability to support learning, mobilize resources, and embed AI practices within organizational routines.

Nevertheless, the findings also indicate that highly experimental adoption approaches may create organizational risks. Without structured governance, standardized onboarding, and coordinated training, AI use can become fragmented and rely on

individual experts. Consequently, while experimentation facilitates rapid adoption, long-term integration appears to require the gradual institutionalization of organizational learning and governance structures. AI adoption among Swedish SMEs should be understood as an evolutionary capability-building process shaped by experimentation, adaptation, and continuous organizational learning rather than as a single technological implementation event.

5.4 Trust, Reliability, and Human-in-the-Loop Governance

Trust emerged as one of the most critical factors shaping AI adoption among Swedish SMEs. Although participants widely recognized AI's operational and efficiency benefits, concerns about reliability, authenticity, hallucinations, and contextual accuracy remained prevalent. These concerns shaped how SMEs integrated AI into organizational workflows, suggesting that adoption did not necessarily imply unconditional trust in AI-generated outputs. Instead, trust appeared to develop through continued interaction with the technology and through mechanisms to evaluate and control its use.

From a Diffusion of Innovations perspective, these findings can be understood by examining how SMEs experience and evaluate AI as an innovation. Participants assessed AI not only by its perceived benefits but also by its compatibility with existing practices, organizational values, and communication expectations. AI was therefore perceived as useful yet imperfect, balancing its relative advantage against concerns about the quality and appropriateness of its outputs. This was particularly evident in marketing and customer communications, where participants emphasized authenticity, clarity, and professionalism. Several noted that AI-generated content could appear overly formal, exaggerated, or artificially corporate, requiring human adaptation to align with Swedish communication norms and expectations.

The TOE perspective further highlights that these perceptions are shaped by the technological and organizational conditions surrounding AI adoption. Concerns about reliability and contextual accuracy relate to the technological context, while the need for human validation, employee competence, and organizational guidelines reflects organizational readiness. Differences in governance practices across SMEs also indicate that organizational conditions shape how SMEs manage AI-related risks. More digitally mature SMEs were more likely to establish approved AI tools, guidelines, compliance

procedures, and controlled adoption practices. In contrast, less mature SMEs relied more heavily on individual judgment and self-learning.

The findings also demonstrate the relevance of Dynamic Capabilities in explaining how SMEs respond to these uncertainties. Rather than simply accepting or rejecting AI, participants described practices for actively managing its use. Human-in-the-loop practices, such as reviewing, editing, proofreading, and validating AI-generated outputs, can be understood as mechanisms for seizing AI opportunities while managing associated risks. As AI becomes more integrated into workflows, these practices may require reconfiguring routines, responsibilities, and governance structures. Employees and managers increasingly shift from directly producing certain outputs to supervising, refining, validating, and governing AI-assisted processes.

Taken together, the findings suggest that trust in AI is not determined solely by technical performance but is shaped by the interplay among technological characteristics, organizational conditions, and human capabilities. DOI helps explain how SMEs evaluate AI based on its benefits, compatibility, and limitations; TOE highlights how technological and organizational conditions shape its implementation; and Dynamic Capabilities explain how SMEs respond through oversight, resource mobilization, and organizational adaptation. Trust therefore emerges as an ongoing process rather than a fixed characteristic of the technology.

An important tension also emerged between the perceived benefits of AI and the ongoing need for human control. Although participants raised concerns about reliability and emphasized the need for validation, many also reported growing reliance on AI for communication, research, decision support, and routine activities. This creates a tension between efficiency and dependency: SMEs benefit from increased productivity while becoming more reliant on technologies whose outputs still require human verification. Consequently, successful AI integration does not necessarily reduce human involvement; instead, it reshapes it toward supervision, validation, and governance.

Overall, the findings indicate that AI adoption within Swedish SMEs remains human-centered. AI integration depends not on eliminating human involvement but on developing organizational capabilities that enable SMEs to balance technological opportunities with human judgment, contextual adaptation, and appropriate governance.

5.5 AI as a Digital Maturity Bridge for Swedish SMEs

One of the study's most important findings is that AI can partially bridge the digital maturity gap for resource-constrained Swedish SMEs. Even firms with limited digital maturity reported operational improvements when using accessible, low-cost AI tools. Participants described using AI to automate communication, generate marketing content, support CRM activities, organize documentation, and improve customer outreach. These findings suggest that AI enables SMEs to access capabilities that previously required greater financial and technological resources. This aligns with prior literature arguing that generative AI can reduce barriers to developing technological capabilities among smaller firms (Pugh et al., 2024; Eder, 2019). From a TOE perspective, the increasing accessibility of AI tools reduces technological and resource-related barriers to adoption, particularly for SMEs with limited infrastructure and financial capacity. Through cloud-based AI tools and AI-as-a-Service platforms, SMEs can therefore improve efficiency and professionalism without extensive technological investments.

However, the findings also show that AI does not diminish the importance of organizational capability and digital maturity. More mature SMEs integrated AI more deeply into workflows and decision-making, whereas less mature firms often remained limited to isolated or task-specific applications. From a Dynamic Capabilities perspective, this suggests that access to AI does not automatically translate into sustained organizational value. SMEs must identify relevant opportunities, mobilize resources, and reconfigure existing practices to integrate AI more extensively. Similarly, from a Diffusion of Innovations perspective, the perceived relative advantage of AI may encourage initial adoption. However, deeper diffusion depends on how compatible AI applications are with existing organizational practices and how effectively their benefits can be incorporated into everyday work. AI may therefore reduce certain capability gaps while simultaneously reinforcing the importance of organizational learning and strategic alignment.

The findings also indicate that competitive pressure increasingly drives AI adoption. Several participants expressed concern about falling behind competitors or viewed AI as necessary to remain competitive in evolving markets. This reflects the environmental dimension of TOE, where competitive pressure and changing market expectations influence technology adoption. The findings therefore suggest that AI serves as a partial, rather than complete, bridge to digital maturity. While AI can reduce operational barriers

and improve access to digital capabilities, long-term value creation remains dependent on organizational capability, learning, governance structures, and human expertise. In this sense, AI can provide SMEs with access to advanced technological capabilities. However, the extent to which these capabilities generate sustained organizational value depends on the SME's ability to integrate and adapt them within its existing organizational context.

5.6 Behavioural and Cognitive Implications of AI Adoption

Beyond operational improvements, the findings indicate that AI adoption also influences managerial behavior and cognitive processes within SMEs. Participants reported increasing reliance on AI for writing, research, communication, and administrative tasks. While this improved efficiency and convenience, several participants expressed concerns that frequent AI use could reduce independent thinking and create dependency over time. At the same time, participants identified positive cognitive outcomes, including improved writing quality, enhanced communication, greater confidence in client interactions, and support for more structured thinking. These findings suggest that AI not only supports productivity but also reshapes workplace habits and managerial practices.

From a Diffusion of Innovations perspective, these findings reflect the perceived relative advantages of AI, particularly in terms of efficiency, communication quality, and cognitive support. These benefits may encourage continued use and greater integration into everyday work. However, concerns regarding dependency and reduced independent thinking indicate that adoption also involves evaluating how AI use aligns with existing work practices and expectations.

The findings can further be interpreted through Dynamic Capabilities, particularly the reconfiguration of organizational routines and practices. As employees increasingly rely on AI for cognitive and administrative tasks, their roles may shift from producing outputs directly toward reviewing, refining, and directing AI-assisted work. This requires SMEs to adapt their routines while maintaining human judgment and critical engagement. The TOE perspective adds the organizational context, as employee capabilities, organizational readiness, and guidance influence how AI use is managed and integrated into daily work.

Taken together, the six findings show that no single factor drives AI adoption in Swedish SMEs. Instead, it emerges from the interplay of technological benefits, organizational capabilities, learning processes, trust, digital maturity, and human involvement. The first theme shows that perceived operational benefits provide an initial motivation for adoption, while the second shows that digital maturity and organizational resources determine how far AI can be integrated beyond basic tasks. The third theme shows that experimentation and organizational learning enable SMEs to build AI capabilities over time, while the fourth highlights the importance of trust, human oversight, and governance to sustain AI use. The fifth finding further shows that AI can partially reduce digital capability gaps, although deeper integration remains dependent on organizational maturity. Finally, the sixth theme shows that AI adoption also reshapes employee behavior and cognitive processes, requiring SMEs to maintain human judgment and critical engagement. Viewed together through TOE, DOI, and Dynamic Capabilities, these findings suggest that successful AI integration is an evolutionary process in which perceived benefits initiate adoption, organizational conditions and digital maturity shape development, experimentation, and learning, and build capabilities. Human oversight and governance support its sustainable integration into organizational routines.

5.7 Practical Implications

The findings have several practical implications for SME managers, employees, and policymakers. For SME managers, the study shows that affordable and accessible AI tools can improve communication, workflow efficiency, customer outreach, and operational productivity. This suggests SMEs can start creating value from AI through targeted applications without substantial technological investment.

However, successful AI adoption requires more than acquiring AI tools. SMEs should invest in employee training, AI literacy, governance, and knowledge-sharing practices to build the capabilities needed for effective, sustainable integration. Managers should encourage employees to share experiences and successful use cases so that individual experimentation can develop into broader organizational learning. A gradual approach, starting with specific and manageable use cases, can also allow SMEs to evaluate benefits, identify risks, and adapt AI practices before expanding their use.

The findings further highlight the importance of maintaining human oversight. Although AI can improve efficiency and support writing, research, communication, and decision-

making, excessive reliance may reduce critical thinking and independent problem-solving. Managers should therefore establish practices that encourage employees to review, question, and adapt AI-generated outputs rather than treating them as automatically reliable. AI adoption should complement human expertise, not replace it.

For policymakers, the findings suggest that digital transformation initiatives should focus not only on technological accessibility but also on capability development. Training programs, AI literacy initiatives, advisory services, and knowledge-sharing networks could help SMEs develop the skills required to evaluate and integrate AI effectively. Policymakers could also guide responsible AI use, including data protection, transparency, and human oversight.

Overall, the findings suggest that sustainable AI adoption among SMEs depends on combining technological accessibility with organizational capability development. While AI provides accessible opportunities to improve productivity and competitiveness, its long-term value depends on SMEs' ability to learn, adapt, and integrate AI effectively into existing organizational practices.

5.8 Concluding Discussion

The discussion across Sections 5.1–5.7 shows that AI integration within Swedish SMEs is not a one-time technological decision but an evolving organizational process. The findings indicate that SMEs initially adopt AI primarily for operational benefits, such as saving time, improving efficiency, and supporting routine activities. However, the extent to which these benefits translate into broader organizational value depends on organizational capabilities, digital maturity, learning processes, managerial perceptions, and the ability to maintain human oversight.

The findings further demonstrate that digital maturity is a key factor shaping the depth of AI integration. Less digitally mature SMEs tend to use AI for relatively simple, task-specific activities. In contrast, more digitally mature SMEs are better positioned to experiment with different AI tools, evaluate their usefulness, and integrate AI into broader organizational workflows. Thus, access to AI technology alone does not guarantee meaningful integration. SMEs also require appropriate knowledge, skills, resources, and organizational capabilities to move beyond basic adoption.

The discussion also highlights that AI integration evolves through experimentation, learning, and adaptation. SMEs may initially introduce AI for simple tasks and gradually

expand its use as employees and managers gain experience and confidence. This reflects the role of Dynamic Capabilities, which enable organizations to sense opportunities, capture AI's benefits, and reconfigure existing routines and practices. At the same time, trust, reliability, and human involvement remain important for sustaining AI use. Participants emphasized the need to evaluate and validate AI-generated outputs and to recognize that human judgment remains necessary when AI is integrated into organizational activities.

Furthermore, AI can partially bridge digital maturity gaps. Accessible AI tools can provide SMEs with limited digital capabilities with immediate support for activities such as communication, content creation, and routine work. However, the findings show that this bridging effect is limited. While AI can reduce certain capability gaps, deeper integration still depends on organizational readiness, knowledge, learning, and the ability to adapt existing practices. AI therefore does not eliminate differences in digital maturity but can offer SMEs opportunities to develop their digital capabilities gradually.

The findings also indicate that AI integration affects employee behavior and cognitive processes. Although AI can improve productivity and communication, concerns about dependency and reduced critical thinking highlight the importance of maintaining human engagement. This reinforces the need for SMEs to view AI as a technology that supports human work rather than replacing human judgment.

The findings clarify the complementary contributions of TOE, DOI, and Dynamic Capabilities. TOE explains how technological, organizational, and environmental conditions shape the context for AI integration. DOI explains how perceived benefits, compatibility, and experimentation influence initial adoption and continued AI use. Dynamic Capabilities explain how SMEs learn from AI use, adapt their routines, and develop organizational capabilities over time. Digital maturity connects these perspectives by shaping how far SMEs can move from basic AI adoption to broader organizational integration.

The practical implications in Section 5.7 follow directly from these findings. SMEs should not view AI integration only as acquiring new technologies. Instead, managers should assess their existing digital capabilities, start with applications that deliver clear operational value, encourage experimentation and learning, and gradually integrate AI into organizational routines. At the same time, human oversight, employee competence, and appropriate governance should remain central to the process.

Overall, the findings suggest that AI integration in Swedish SMEs is an evolutionary process in which perceived benefits initiate adoption, organizational conditions and digital maturity shape its development, experimentation and learning build capabilities, and human oversight supports sustained use. The integrated framework developed in this study provides a way to understand how these factors interact and how SMEs can progress from initial AI adoption toward more meaningful AI integration in relation to their digital maturity. This directly addresses the research question by showing how an integrated framework can help SMEs understand and manage AI integration as an ongoing process rather than a single technological implementation.

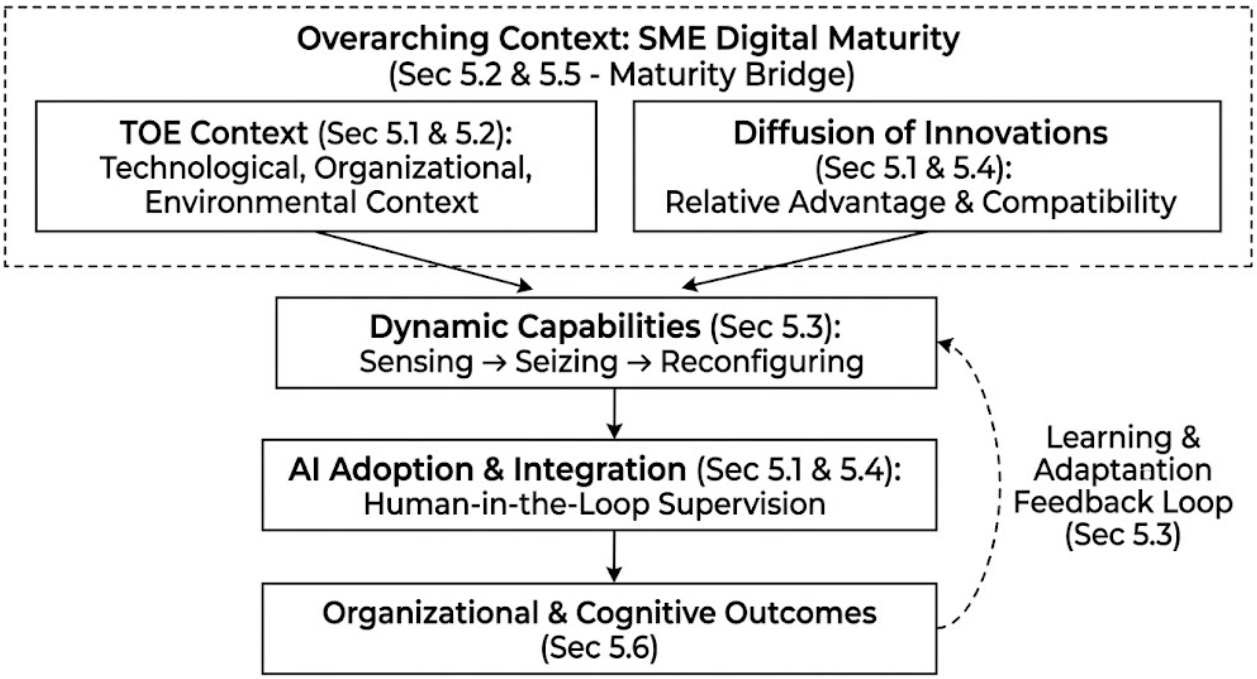

Figure 2: An Integrated Conceptual Framework for AI Adoption and Capability Development in Swedish SMEs. Self-Created (2026)

6. Conclusion

This study examined how an integrated framework can support AI integration within Swedish SMEs in relation to digital maturity. Based on the findings from nine semi-structured interviews, the study shows that AI adoption in SMEs is primarily driven by practical benefits such as improved efficiency, time savings, and reduced manual effort. However, the extent to which SMEs can integrate AI into organizational processes depends on several interconnected factors, including digital maturity, organizational capabilities, managerial perceptions, trust, human involvement, and external pressures. The findings indicate that SMEs often begin with simple, task-specific AI applications before gradually developing broader, more structured integration.

A central theoretical contribution of this thesis is synthesizing the Technology–Organization–Environment (TOE) framework, Diffusion of Innovations (DOI) theory, and Dynamic Capabilities Theory (DCT) into a unified conceptual framework. By addressing the need for an integrated theoretical perspective that explains how resource-constrained SMEs can move from basic AI tool adoption toward more systematic, process-level integration, this study extends current understanding of AI adoption beyond large-enterprise contexts. The findings show that AI integration in SMEs is not simply a technical event, but a multidimensional, evolutionary process shaped by technological, organizational, and environmental conditions, managerial perceptions, and the continuous development and reconfiguration of organizational capabilities and routines.

The integrated framework developed in this study brings together complementary perspectives to explain different aspects of AI integration. TOE highlights the technological, organizational, and environmental conditions that shape the context of AI adoption. DOI explains how perceived benefits, compatibility, and trialability influence managers' willingness to adopt and experiment with AI. Dynamic Capabilities further explains how SMEs can develop, adapt, and reconfigure their capabilities as AI becomes increasingly integrated into organizational routines. Together, these perspectives provide a more comprehensive understanding of AI integration by connecting the conditions surrounding adoption with managerial decision-making and the organizational processes through which AI use develops over time.

Digital maturity emerged as an important factor in this process. The findings indicate that less digitally mature SMEs tend to use AI for relatively simple and task-specific activities, such as content creation and email communication. In contrast, more digitally mature SMEs are more likely to experiment with multiple AI tools and integrate them across different organizational activities. At the same time, AI offers SMEs accessible, relatively low-cost opportunities to improve their digital capabilities. However, access to AI tools alone does not guarantee deeper integration or sustained organizational value. Translating AI adoption into broader organizational benefits still depends on existing capabilities, knowledge, learning processes, and managerial engagement.

The study also highlights the importance of trust, reliability, and human oversight in AI integration. Participants expressed concerns regarding the accuracy and contextual appropriateness of AI-generated outputs, emphasizing the continued need for human judgment and validation. This suggests that successful AI integration does not necessarily mean replacing human involvement, but rather developing effective ways to combine AI capabilities with human expertise. Similarly, the findings show that AI adoption can influence employee behavior and cognitive processes, creating both opportunities for improved productivity and risks of over-reliance. Maintaining critical engagement and human control is therefore important for sustainable AI use.

From a practical perspective, the findings suggest that SME managers should approach AI integration as a gradual capability-development process rather than as a one-time technological implementation. SMEs can begin with low-risk, clearly beneficial applications, evaluate outcomes, build internal AI knowledge, and progressively expand AI use as organizational capabilities and digital maturity develop. Establishing appropriate human oversight, validation practices, and internal guidelines can further support responsible and effective integration.

Overall, this study concludes that AI integration within Swedish SMEs is best understood as an evolutionary process rather than a single adoption decision. The integrated TOE–DOI–Dynamic Capabilities framework provides a structured way of understanding how technological opportunities, organizational conditions, managerial perceptions, learning, and capability development interact in this process. In relation to the research question,

the framework can support SMEs by helping managers understand not only whether AI can be adopted, but also how AI integration can develop in relation to their existing level of digital maturity and organizational capabilities.

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Appendix 1: Interview Questions

1- Describe your company's core business and your role in the organization.

2- On a scale of 1 to 10, how digitally mature do you consider your organization's current use of digital technologies and AI? Why?

3- When did your team implement GenAI (e.g., ChatGPT), and what was the initial reaction?

4- Technology: What AI tools are currently used in your workflow?

5- How does the hierarchy of your firm affect the adoption of AI? Do you feel the lack of AI skills is an internal issue?

6- Do you feel pressure from competitors using AI in the Swedish market? How does the Nordic Vision 2030 impact your long-term strategy?

7- What is the biggest benefit of AI that you have seen so far? For example, has it saved time or improved certain types of work?

8- Do you feel that AI-generated content might feel "inauthentic" for Swedish people? Do you think that people prefer the human touch?

9- How does your company sense or identify new AI opportunities? Is there a formal process for identifying new technologies, or is it mostly trial and error?

10- When identifying a useful AI tool, how do you inform or mobilize your team to use it?

11- How did AI change your habits in the company?

12- What is the one thing you would prefer to change in the Swedish SME ecosystem to make AI adoption easier?

Appendix 2: Coding Example

Data Extract	Initial Code	Category	Related Framework
AI is used mainly for content generation	AI for content creation	AI Usage	TOE – Technology
Limited use of advanced tools	Low AI sophistication	Digital Maturity	TOE – Technology
Lack of AI expertise affects sales.	Skills gap impacting performance	Capability Constraint	TOE – Organizational
Only 1–2 employees have basic AI knowledge	Limited internal AI knowledge	Human Capital	TOE – Organizational
Competitors outsource AI & marketing to agencies.	Competitive outsourcing pressure	External Pressure	TOE – Environmental
AI saves money and reduces costs.	Cost efficiency	Relative Advantage	DOI
AI saves time and resources.	Time efficiency	Relative Advantage	DOI
AI generates fast results.	Speed advantage	Relative Advantage	DOI
AI requires skills the company lacks.	Capability dependency	Capability Constraint	TOE – Organizational
AI content is seen as less credible	Trust issues with AI	Perceived Risk	DOI
The audience prefers the human touch.	Preference for human authenticity	Consumer Perception	DOI
Business owners rely on AI.	Managerial reliance on AI	Behavioural Change	Dynamic Capabilities
AI creates dependency over time.	AI dependency risk	Behavioural Risk	Dynamic Capabilities
AI requires precise input to be effective	Need for expertise in usage	Learning Requirement	Dynamic Capabilities
The company benefits from AI overall.	Net positive perception	Adoption Attitude	DOI
AI outputs are proofread and adjusted.	Human-in-the-loop validation	Process Adaptation	Dynamic Capabilities

Table A2. Coding Table Example from Interview 1.

Appendix 3: Participants Overview

Participants	Age	Industry	Education	Gender	Role in SME
Participant 1	35-45	Hotel, Restaurant, & Grocery Store	Master's	Male	Owner of SME
Participant 2	35-45	IT Consulting	Master's	Male	Owner of SME, responsible for marketing, sales, and development lead.
Participant 3	30-40	Banking & Finance	Bachelor's	Male	Data Manager
Participant 4	30-45	IT Consulting	Master's	Male	Owner of SME, responsible for marketing, sales, and core development.
Participant 5	30-40	Insurance	Master's	Male	Data Manager
Participant 6	30-40	IT Consulting	Bachelor's	Male	Owner of SME, responsible for sales, marketing, and development.
Participant 7	30-40	Taxi Company & IT	Master's	Male	Owner of SME, responsible for sales and operations.
Participant 8	30-40	Insurance	Bachelor's	Male	Data Manager
Participant 9	30-40	Manufacturing	Bachelor's	Male	Data Manager

Table A3. Participants who were interviewed in this study.

Appendix 4: Personal Reflection

Throughout the thesis process, the group demonstrated sustained collaboration, adaptability, and a commitment to producing high-quality research. The additional time provided by postponing the submission from the May round to the August round allowed us to refine our work further, engage more deeply with the literature, and reflect on our findings. This extra time enabled us to approach the research process more thoughtfully and ensure each stage of the thesis was completed thoroughly.

Securing interviews with SME managers required persistence and flexibility, and it provided valuable experience in professional communication. We invested considerable effort in contacting SME managers by email and phone to schedule interviews that aligned with the group's availability, including weekends when necessary. We also held Zoom meetings to finalize sections of the thesis, discuss pending tasks, and remind one another of deadlines, ensuring continuous progress throughout the project.

The post-defense revision process mirrored real-world product development, where multi-stakeholder engagement directly shapes and refines the final deliverable. Incorporating diverse feedback from our supervisor, opponents, and participating SME managers showed how an initial research output, much like a rough diamond, is carved and polished through iterative critique. This collaborative synthesis not only strengthened the conceptual rigor and empirical depth of our thesis but also gave us firsthand experience navigating feedback loops and driving continuous quality improvement in complex projects.

The thesis process helped us enhance professional and academic skills, including time management, working under pressure, academic writing and documentation, communication, and interviewing techniques. Conducting interviews and working with qualitative data also strengthened the group's ability to analyze and interpret information. The group divided contributions according to the requirements of the research process. One part of the work focused on ensuring that the thesis progressed and was finalized on time. Another important contribution involved reviewing academic articles to support our research question and strengthen the theoretical discussion. In addition, we arranged interviews with SME managers and prepared the interview guide (Appendix 1) for participants. Collaborative discussions throughout the process also ensured that the thesis remained aligned with its objectives and research question.

At the beginning of the research process, we viewed Artificial Intelligence primarily as a tool for automation, content generation, and efficiency. As the research progressed, this understanding became more multidimensional and strategic. The group recognized that AI integration within SMEs involves organizational, technological, and environmental factors that shape adoption, business transformation, and decision-making.

If the thesis process were repeated, the group could devote more time to reviewing emerging academic literature to deepen understanding of AI integration within SME workflows and its business implications, given that this field is still new and evolving rapidly.

In the end, this experience gave the group a deeper understanding of how AI adoption affects businesses and organizational decision-making. Working with theoretical frameworks such as the Technology-Organization-Environment (TOE), Diffusion of Innovations (DOI), and Dynamic Capabilities strengthened our analytical, research, and critical-thinking skills. This knowledge will be valuable in our future academic and professional careers, especially in areas related to digital transformation, innovation adoption, and business development.