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The role of artificial intelligence in international strategic decision-making for SMEs

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Abstract

Purpose – The study investigates the integration of artificial intelligence (AI) into the international strategic decision-making processes (ISDMPs) of small- and medium-sized enterprises (SMEs), assessing its potential to improve quality, speed and accuracy of decisions, while also identifying key barriers to adoption.

Design/methodology/approach – The research employs a qualitative thematic analysis within a multiple case study design involving six Italian manufacturing SMEs. Data were collected through semi-structured interviews with key international decision-makers. Guided by the Strategic Decision-Making Process (SDMP) theory, the analysis explores the role of AI in shaping decision-making dynamics, including quality, decentralization, communication and formalization.

Findings – While AI demonstrates significant potential to democratize decision-making, accelerate operations and support international expansion, its adoption by SMEs remains cautious and incremental. Challenges and major barriers to full integration include financial constraints, limited technical expertise and cultural resistance to change. The development of a conceptual framework illustrating how AI reshapes the dimensions of SDMP within SMEs further reveals how firms with greater AI awareness tend to demonstrate higher decision-making speed and formalization, while constraints such as resource scarcity hinder decentralization and cross-functional collaboration. Moreover, human-centric values and organizational culture mediate the strategic impact of AI.

Originality/value – The paper extends the SDMP theory to the underexplored context of AI adoption in SMEs, offering a theoretically grounded and empirically informed framework. Not only it highlights AI's dual role as both a structuring and enabling force in ISDMPs but also provides actionable insights for SMEs and policymakers to strategically implement AI technologies, enhance international competitiveness and manage the challenges of digital transformation with greater efficiency.

Keywords Artificial intelligence, International strategic decisions, Strategic decision making, SMEs, Thematic analysis, Multiple case study

Paper type Research article

1. Introduction

The digital transformation has emerged as a central theme in the management debate (Zoppelletto *et al.*, 2023). Far from being a simple information technology evolution, this transformation greatly affects firms' activities, business models, decision-making processes, boundaries, cultures and value chains (Iscaro *et al.*, 2022). This process integrates modern technologies that enhance data gathering, storage and analysis, encompassing numerous innovations such as robotic automation, additive manufacturing, artificial intelligence (AI) and the internet of Things (IoT) (Strange *et al.*, 2022). Among these, AI offers essential opportunities for innovation and growth across various industries by extending the cognitive,

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analytical and even creative capacities traditionally associated with human decision-making (Dwivedi *et al.*, 2021; Kumar *et al.*, 2022). The managerial relevance of AI is accentuated by both the disruptive nature of its applications and the centrality of data as a strategic asset in contemporary business environments (Biloslavo *et al.*, 2024).

The OECD (2022, p. 4) defines AI as "*a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments with varying levels of autonomy*". Core features such as adaptive learning, relational inference and dynamic evolution enable AI systems to continuously refine their performance by leveraging data and experiential inputs (Brock and Von Wangenheim, 2019). Its transformative potential lies in its ability to address complex problems traditionally managed by human intelligence (Ahn *et al.*, 2022). Through work automation, data-driven insights and robust predictive analytics, AI integration helps manage complex global situations (Bag *et al.*, 2021; Wamba-Taguimdje *et al.*, 2020) and enables continuous operational refinement, leading organizations to improved decision-making, increased productivity and competitive advantage (Magistretti *et al.*, 2019; Denicolai *et al.*, 2021). The incorporation of AI into organizational processes offers strategic benefits including enhanced demand forecasting and risk management, optimized supply chain coordination, improved logistical performance and greater support for international operations (Li *et al.*, 2021). Additionally, AI enhances customer engagement through increased efficiency and personalized support, particularly via intelligent chatbot systems (Wu and Zheng, 2025; Cheng *et al.*, 2021). From a production perspective, firms with extensive AI experience report higher innovation results (Rammer *et al.*, 2022). Moreover, AI's ability to automate content summarization facilitates the simplification and dissemination of complex information, thereby improving organizational knowledge management (Garcia-Mendez *et al.*, 2023; Rezaei *et al.*, 2024).

These advantages can significantly enhance the effectiveness of international business (IB) activities, where managing complexity, ensuring agility and driving innovation are critical to success. Within this context, analyzing the impact of different types of knowledge on international strategic decision-making (ISDM) becomes particularly relevant, as it describes how organizations and policymakers face complex global environments (Ding *et al.*, 2024). Consequently, interdisciplinary research at the intersection of AI and IB is gaining increasing attention. The OECD Trade Policy Paper (2022) emphasizes AI's capacity to refine market selection processes and manufacturing location strategies. Complementary research highlights its influence on firm-level competitiveness (Feliciano-Cestero *et al.*, 2023; Baabdullah *et al.*, 2021; Bag *et al.*, 2021), as well as its contribution to strengthening international connectivity through partnerships, stakeholder engagement and optimization of entry modes (Benito *et al.*, 2022). Recent contributions further reinforce the transformative role of AI in shaping strategic decision-making within international business, especially for small- and medium-sized enterprises (SMEs). Notably, AI tools are increasingly employed to support real-time scenario planning, predictive analytics and data-driven international strategy development, assisting firms in responding to volatile global markets (Orlando Rivero, 2025). Additionally, empirical evidence confirms that AI is capable of generating internationalization strategies with a degree of sophistication comparable to that of experienced entrepreneurs, thereby redefining the sources of competitive advantage in IB contexts (Csaszar *et al.*, 2024).

However, while multinational enterprises (MNEs) are leveraging AI, especially to identify foreign market opportunities and streamline international operations (Dillon *et al.*, 2020), SMEs encounter more significant difficulties in managing digital transformation due to limitations in size and resources (Saleem *et al.*, 2024). This is particularly noteworthy, given that AI can offer SMEs more sustainable and cost-effective business solutions (Castillo and Taherdoost, 2023), contributing to the development of new business models and enhancing both customer and entrepreneurial experiences (Enshassi *et al.*, 2024; Peretz-Andersson *et al.*, 2024). Furthermore, AI's adaptability enables small businesses to maintain technological

relevance while avoiding the substantial recurring costs of full infrastructure replacements. As such, AI is recognized as a driver of economic growth, productivity and opportunity creation, also for SMEs' international activities (Meltzer, 2018), and its growing accessibility has generated interest in both the workplace and the commercial environment (Menzies *et al.*, 2024). Recent studies confirm that AI adoption accelerates SMEs' digital competitiveness and enables them to adapt internationalization strategies more proactively by simulating market scenarios and customizing offerings to global audiences (Aizenberh, 2024).

Within the realm of international strategic decisions (ISDs), AI has emerged as a valuable tool for managerial support, particularly in tasks such as international market selection (IMS). This growing line of inquiry has attracted considerable scholarly interest, highlighting the need for advanced AI-driven models that can enhance market analysis, accurately forecast foreign market trends, and support the development of data-informed entry strategies (Menzies *et al.*, 2024). In addition to IMS, other critical ISDs include entry mode choice (Francioni *et al.*, 2015) and the identification of suitable foreign partners, such as prospective clients, agents, and distributors. Consequently, the global success of SMEs may be significantly impacted by using AI in key ISDs (Denicolai *et al.*, 2021; Kumar *et al.*, 2022).

Such capabilities are particularly beneficial for SMEs, which frequently lack thorough internationalization plans and methodical strategies for market selection (Vissak and Francioni, 2013; Musso and Francioni, 2014), as they can use AI to accelerate their expansion. Following the footsteps of Fish (2006), who addressed the issue of IMS using AI computing and Kohonen Self-Organizing Maps, a contemporary example may be the successful application of Large Language Models to identify an appropriate foreign market for a recently developed product. Similarly, AI can assist in finding potential clusters of cross-national segments.

Despite the potential benefits, many SMEs remain hesitant to adopt AI technologies. This reluctance is largely attributed to structural limitations related to firm size, including restricted financial capacity and insufficient technical expertise (Silva and Gonçalves, 2022). The effective integration of AI into SMEs necessitates the resolution of important concerns, including trust, data security, cost-effectiveness, managerial dedication, and technological expertise (Enshassi *et al.*, 2024). Consequently, further empirical research and actionable guidance are required to assist them in recognizing the strategic value of AI and to facilitate its practical adoption in alignment with their business models and operational contexts (Prem, 2019).

In response to this gap, this research is grounded in the Strategic Decision-Making Process (SDMP) theory (Dean and Sharfman, 1996; Dimitratos *et al.*, 2011a, b; Esch *et al.*, 2019; Dwivedi *et al.*, 2021), which conceptualizes decision-making as a structured process which involves key dimensions such as decision quality and speed, hierarchical decentralization, lateral communication, and formalization. Specifically, we propose that AI tools introduce new mechanisms that reshape these SDMP dimensions within the context of resource-constrained firms operating globally. This constitutes a novel theoretical contribution, as we illustrate how AI integration may enhance or constrain each SDMP dimension in real-world SME settings. In doing so, the present study extends the application of SDMP theory to the relatively understudied context of AI-driven ISDs in SMEs and advances the theoretical scope of the theory by positioning AI as a mediating mechanism that shapes the structure, speed and decentralization of decision-making under resource constraints.

To achieve these objectives, a multiple case study approach involving six small manufacturing companies located in central Italy has been adopted. Specifically, following the suggestion of Ratten *et al.* (2024), interviews with main decision-makers in international activities have been conducted to understand their perceptions and experiences on AI adoption processes. By adopting the SDMP lens as a focus and thematic analysis to identify and examine key themes and sub-themes (Braun and Clarke, 2021), the study captures the complexity and richness of SMEs' experiences with AI. This provides insights that are both

contextually grounded and theoretically meaningful and ensures a clear understanding of how technological innovation intersects with organizational strategy in the context of IB.

From a theoretical perspective, the study contributes by extending the SDMP framework to the AI–internationalization nexus in SMEs. It shows how AI can function both as a structuring and enabling mechanism across core dimensions of strategic decision-making, offering valuable insights into the interplay between emerging technologies and established decision-making approaches in the context of small firms. Further, it provides a comprehensive analysis of how AI can enhance SMEs' ISDM, identifying the key benefits and challenges associated with AI adoption. In addition, it presents practical recommendations to support successful implementation of AI adoption in SMEs.

The paper is structured as follows: the next section provides an overview of the relevant literature; Section 3 describes the adopted methodology, while Section 4 presents the analysis of the main results; Section 5 discusses the themes emerged in the analysis while also presenting a final framework that encompasses the dimensions of strategic decision-making process explored. Finally, the last section presents the conclusive remarks, discussing the theoretical and managerial implications, acknowledging the limitations of the study and suggesting directions for future research.

2. Literature review

2.1 Strategic decision-making process and artificial intelligence

Strategic decision-making processes are essential for the success of firms, particularly those operating in international markets. They represent an established construct in strategic management research (Dean and Sharfman, 1996; Eisenhardt and Zbaracki, 1992), referring to the patterns, structures and practices through which organizations develop and implement strategic decisions. These processes are shaped by cognitive, contextual and structural factors, including information use, decision speed, communication flows, formalization and decentralization (Elbanna, 2006; Schwenk, 1995). A critical component of SDMPs lies in the effective configuration and deployment of organizational resources and capabilities, activities closely tied to the pursuit of sustained competitive advantage and long-term performance optimization (Dean and Sharfman, 1996; Mintzberg *et al.*, 1976). Within the international context, the international strategic decision-making process (ISDMP) extends these principles to the global arena, encompassing decisions that directly influence firms' international positioning and strategic direction.

In this scenario, AI technologies are indispensable tools for improving the dimensions that characterize and compose SDMPs, including decision-making quality and speed, hierarchical decentralization, lateral communication and formalization. Indeed, AI's ability to process vast amounts of data, identify patterns, and generate insights, offers new opportunities for improving *decision-making quality and speed* (Dwivedi *et al.*, 2021; Kumar *et al.*, 2022; Kaggwa *et al.*, 2024). Notably, AI-powered predictive models have demonstrated strong potential in replicating complex international business scenarios and forecasting strategic outcomes, making them particularly valuable in turbulent and uncertain global environments (Vudugula *et al.*, 2023).

Additionally, within the framework of SDMP, *hierarchical decentralization* refers to the vertical dimension of decision-making, characterized by the extent to which different hierarchical levels within an organization are involved in strategic choices (Dimitratos *et al.*, 2011a, b). This multilevel involvement enhances inclusivity, organizational learning, and responsiveness, qualities that are particularly critical for companies facing the complexities of internationalization. In this context, AI can facilitate the hierarchical decentralization dimension by providing decision-makers at different levels of the organization with access to real-time data and insights, enabling more informed and autonomous decision-making (Bag *et al.*, 2021).

Regarding *lateral communication*, AI can enhance collaboration and information sharing across departments and international subsidiaries by integrating data from various sources and providing a unified platform for analysis and decision-making (Cheng *et al.*, 2021). AI-powered tools such as machine learning algorithms can help identify trends and correlations that might not be evident through traditional analysis, encouraging a more collaborative and informed approach to strategic decision-making.

Furthermore, the integration of AI has been demonstrated to facilitate the *formalization* of decision-making processes. AI can standardize data collection and analysis procedures, ensuring consistency and accuracy in decision-making (Denicolai *et al.*, 2021). AI algorithms can automate routine tasks, reduce human errors and provide decision-makers with structured insights, enabling more systematic and reliable decision-making processes. This is particularly valuable in the international context, where consistency and accuracy in data interpretation are crucial for making strategic decisions across different foreign markets.

2.2 Key international strategic decisions and AI applications

ISDMPs play a central role in shaping the global expansion strategies of firms. They encompass key decisions like IMS (Francioni *et al.*, 2013, 2015), entry mode selection (EMS) (Agarwal and Ramaswami, 1992) and the selection of the appropriate foreign partners, such as international clients, agents and distributors. Among these, IMS is particularly complex, as it involves managing heterogeneous market environments while facing the inherent uncertainty and risk associated with international expansion. The academic literature has extensively investigated the challenges of identifying and evaluating new foreign markets (Francioni and Martín Martín, 2024). Given the variety of international markets and the difficulties businesses encounter when locating, assessing, choosing and seizing opportunities overseas, IMS demonstrates its strategic role in firm performance (Brouthers *et al.*, 2009; Martín Martín *et al.*, 2022; He *et al.*, 2016). Moreover, research has highlighted the significant strategic and financial risks associated with poor market selection. As noted by Papadopoulos and Martín Martín (2011), entering inappropriate markets may incur higher costs and lead to substantial missed opportunities, while more informed market choices can yield considerable strategic benefits.

EMS constitutes another critical strategic decision, involving the selection of governance forms such as exporting, contractual modes, joint ventures or wholly owned subsidiaries (Ji and Dimitratos, 2013). Research has established a positive link between optimal EMS and export performance (Brouthers, 2002). Alongside IMS, EMS involves identifying target segments and suitable international partners, such as clients, agents and distributors (Francioni *et al.*, 2015; Francioni and Martín Martín, 2024).

In the specific domain of ISDMPs, several AI tools have been analyzed to understand their specific impact on IMS or EMS because they have proven to be increasingly relevant. AI algorithms, such as Kohonen Self-Organizing Maps (SOMs), have been shown to assist in low-cost market screening, offering companies an accessible way to assess foreign markets systematically (Fish, 2006). Moreover, AI facilitates the analysis of network structures and country-specific externalities, which can lead to more strategically grounded business engagements and more effective connections with international suppliers, intermediaries, and clients. Notably, Menzies *et al.* (2024), using a narrative literature review, investigate how AI can be incorporated into the various strategies, practices, and activities of IB, including an examination of both IMS and EMS. Their study demonstrates that AI enhances IMS by improving international prospect identification, market trend forecasting, and reducing psychic distance. It also facilitates informed decision-making by evaluating country-specific externalities and streamlining the identification of suppliers, partners, and clients, strengthening global networks. In EMS, AI mainly contributes to IB ecosystems by enhancing the selection process. Additionally, it supports the development of digital platforms, facilitates crowdsourcing and freelance networks, and ensures compliance with export

regulations through the analysis of product descriptions about legal standards. Extending these insights, Dillon *et al.* (2020) introduce digital infrastructure models that incorporate cloud computing, crowdfunding, and machine learning to examine how entrepreneurs gain international experience and how this, in turn, influences opportunity recognition and exploitation. The evolution of AI applications is further exemplified by tools such as Google's Gemini, which reflect the expanding capabilities of AI in IB contexts. Similarly, large language models like ChatGPT have demonstrated substantial usefulness in analyzing customer feedbacks, unstructured data, and audience profiles, offering firms insights into target markets that directly inform both IMS and EMS processes (Haleem *et al.*, 2022). In this regard, generative AI is increasingly recognized not merely as a tool for operational enhancement, but also as a transformative force within the cognitive and creative dimensions of international strategy formulation (Sadaf *et al.*, 2023; Cimino *et al.*, 2024). Similarly, AI-powered segmentation technologies have proven effective in identifying and targeting specific consumer segments with customized marketing approaches, thereby streamlining market entry strategies, and enhancing the overall efficiency of internationalization efforts (Saleem *et al.*, 2024). Moreover, the integration of generative AI tools facilitates the evaluation of international strategic alternatives by simulating competitive positioning and entry mode implications in real time (Doshi *et al.*, 2025).

Despite these advancements, research on the use of AI in ISDMPs remains scarce, particularly for SMEs. Most studies focus on large enterprises or theoretical applications without detailing the specific needs and challenges of smaller firms. To the best of authors' knowledge, only a few contributions, such as Fish (2006) and Saleem *et al.* (2024), explicitly address SMEs. The former emphasizes the use of low-cost AI approaches for market screening, while the latter highlights the need to integrate AI with business model innovation to achieve meaningful internationalization results. However, both studies require updates to reflect the latest developments in AI technology and its applications.

2.3 AI adoption in small and medium-sized enterprises and its impact on international strategic decisions

While AI enhances SDMPs, SMEs face unique challenges in adoption, including financial constraints, lack of technical expertise, and concerns about data security and privacy (Silva and Gonçalves, 2022). They struggle with foreign market expansion due to limited resources and uncertainty about where to start, frequently resulting in early disengagement from cross-border initiatives (Fish, 2006). These barriers can hinder the effective integration of AI technologies in their SDMPs.

Despite these challenges, AI can significantly improve SMEs' international competitiveness by offering advanced data analysis, market prediction, and customer engagement tools (Enshassi *et al.*, 2024). Predictive analytics enables SMEs to anticipate market trends and customer preferences in international markets, allowing more informed decisions. Additionally, AI assists SMEs in optimizing resource allocation by automating repetitive tasks, thus enabling decision-makers to reallocate focus toward higher-value strategic activities, and ultimately increasing their operational efficiency (Denicolai *et al.*, 2021).

Concerning IMS, previous studies highlight the potential of AI for SMEs. For instance, Fish and Ruby (2009) developed an AI-based model tailored for SMEs, offering a cost-effective approach to guide IMS choices. Similarly, Neubert (2018) found that lean global startups can use AI algorithms to help estimate the potential of future international markets. However, to the best of the authors' knowledge, no studies have examined the perceived benefits, barriers, and concerns that influence decision-makers' decisions to adopt AI in their firms and during ISDs. Moreover, as Menzies *et al.* (2024) stressed, studies should look at how AI can help with IB data collection, decision-making, and market selection.

For this reason, this paper aims to answer the following research questions (RQs):

RQ1. How do SMEs' decision-makers adopt AI digital technologies in their ISDs?

RQ2. How does AI integration reshape Strategic Decision-Making Process dimensions in firms operating in international markets?

3. Methodology

3.1 Research design

To address the research questions, the study adopts a multiple case study approach, highly relevant in international research (Eisenhardt, 1989; Ghauri, 2004; Yin, 2009, 2018). Multiple case studies allow comparisons across different contexts, providing a comprehensive understanding of both unique and shared experiences. The approach is particularly appropriate for this research because it facilitates an in-depth exploration of how contextual factors influence AI adoption in ISDs. Six interviews were conducted, one with a key informant from each participating firm. This approach is consistent with established precedents in qualitative IB research (Hultman *et al.*, 2021; Sousa *et al.*, 2008). Several scholars have demonstrated that conducting a single interview per case can be methodologically robust, particularly when the study adopts an exploratory aim and combines interview data with additional sources for triangulation. For instance, Käss *et al.* (2024) introduce the concept of "multiple mini case studies" in which one informant per case provides focused insights on specific phenomena, enabling cross-case comparisons while maintaining theoretical rigor.

Piekkari *et al.* (2009) provide further support for this approach, showing that IB case studies based on a single respondent per firm are widely accepted when methodological transparency and data triangulation are ensured. Following Eisenhardt (1989), the range between 4 and 10 companies is suitable for the multiple case studies. Also, Pauwels and Matthyssens (2004) point out that the number of cases is not the criteria for evaluating the quality of the research, as the critical point is that the selected cases should reveal the research problem and fit the research objectives (Ghauri, 2004).

3.2 Case selection and data collection

Cases were selected through purposive sampling, a non-probability sampling technique in which participants are selected based on specific characteristics and their relevance to the research objectives (Palinkas *et al.*, 2015). This approach ensures that selected cases offer meaningful insights into the phenomenon under investigation by capturing variation across relevant dimensions. The selection criteria included: (1) less than 250 employees and an annual turnover of at least €50 million [1]; (2) active involvement in international operations, generating at least 25% of total sales abroad (Knight *et al.*, 2004), conducted for at least two consecutive years; (3) evidence of either existing or exploratory AI adoption efforts.

The decision to target SMEs is due to their dominance in the Italian economy, particularly well known for their proactive adoption of digital innovations (Matarazzo *et al.*, 2021). The relevance of this sample stems from the significance of Italian SMEs in both the national and European industrial landscape. SMEs form the backbone of Italy's economy and are integral to European supply chains. However, they often encounter structural limitations when integrating advanced technologies like AI, including resource constraints and workforce digital skill gaps (Kapustina *et al.*, 2017). Specifically, the sample for this study comprises six SMEs located in the Marche region of central Italy, a historically industrialized territory known for its dense network of manufacturing districts and strong export-oriented tradition. The region is particularly active in sectors such as mechanical engineering, furniture, and specialized production (Potter *et al.*, 2010; Mucelli *et al.*, 2015), and SMEs based in this area often emerge from artisanal traditions but have demonstrated a growing openness to internationalization and innovation (Testi, 2023; Cainelli and Zoboli, 2004), particularly through the adoption of emerging digital technologies. This dual orientation, rooted in

tradition yet seeking technological modernization, makes them an especially insightful sample for investigating the dynamics of AI adoption within the ISDMP. The selected SMEs reflect this regional specialization, operating in industries such as mechanical components, security doors, safety equipment, wood-processing machinery, and high-end furniture production. By focusing on this regional and industrial context, the study provides a deep and contextually rich understanding of how SMEs face digital transformation and internationalization. The selected companies are introduced in Table 1 with fictional labels for confidentiality reasons.

Consistent with established methodological frameworks (Rashid *et al.*, 2019; Yin, 2009), the study carried out the following steps: planning, design, preparation, data collection, analysis and development of findings. Data was collected via semi-structured interviews, balancing structured responses with exploratory insights (Kallio *et al.*, 2016). The interviews were conducted in a structured format, lasting between 45 and 60 min, with the participants' consent for recording. The goal was to explore six key areas to gather insights: company background, AI adoption strategies, the role of AI in international markets, integration into decision-making, challenges encountered, and future plans. In line with methodological triangulation principles (Eisenhardt, 1989), interview data was supplemented by a range of secondary sources, including internal company documents, official websites, white papers, publicly available reports (e.g. annual reports, EU policy documents), and sector-specific databases (such as Archiproducts, chamber of commerce portals, and trade associations). Internal documents offered insights into the firm's strategic orientation, digital transformation initiatives, and historical decision-making patterns. Company websites allowed the research team to assess communication strategies, international engagement, and the presence of AI-related initiatives in publicly presented narratives. Public reports and sector analyses provided essential contextual grounding, enabling the interpretation of firm-level behaviors within broader industry and policy dynamics. These materials were consulted prior to the interviews to inform the design of the interview protocol, ensuring contextual relevance, and to cross-validate the information provided by respondents during data collection.

3.3 Data analysis

Thematic analysis was chosen due to its flexibility and suitability for exploring emerging topics like AI adoption in ISDs. Given the novelty and complexity of the subject, this method allows for a systematic yet adaptable approach to uncover key and novel insights. While underutilized in business studies, thematic analysis effectively identifies latent themes, making it ideal for examining how SMEs perceive, adopt, and implement AI. This ensures an iterative, grounded interpretation, contributing to the growing but still nascent literature on AI in IB. For data analysis, the process followed the steps outlined by Braun and Clarke (2021): (1) familiarization with data through repeated reading of transcripts for deep understanding; (2) initial coding using both deductive and inductive approaches; (3) themes identification through grouping into themes aligned with the research objectives; (4) theme refinement to ensure coherence and alignment with the data; (5) definition and contextualization of themes; (6) writing of the analysis where themes were integrated into a coherent findings section.

The SDMP theory (Dean and Sharfman, 1996; Eisenhardt and Zbaracki, 1992; Elbanna, 2006; Schwenk, 1995) guided the thematic analysis of this study, informing the coding framework and interpretation of how AI influences each decision-making dimension. In investigating the adoption of AI in ISDs among SMEs, the SDMP lens was applied, focusing on decision-making quality and speed, hierarchical decentralization, lateral communication, and formalization as key dimensions. These dimensions were incorporated into the interview framework to capture AI's role in shaping SMEs' adaptability and competitiveness in international markets. To enhance rigor and credibility, a reflexive approach was maintained to minimize bias (Braun *et al.*, 2023). Triangulation of multiple data sources and member checking with respondents further validated findings. For confidentiality, the six Italian manufacturing firms remain anonymous using fictional labels (A, B, C, D, E, F) instead of company names.

Table 1. Firms' and respondents' overview

Firm	International situation	Employees	Sector/product	Respondent's role	Degree and use of AI in IB activities
Firm A	8 years in international markets, passive approach relying on referrals and platforms	102	Mechanical Processing	Managing Director	Currently not using AI, but considering it for strategic decision-making, especially in logistics and international sales. Evaluating Salesforce Einstein and IBM Watson
Firm B	30+ years in international markets, active approach with trade fairs and regional teams	103	Devices for working at height and safety	Marketing and export manager	Moderate to high use of AI. ChatGPT and Adobe tools are used for market analysis, multilingual content and communication adaptation. Enhances speed and coherence of international strategies
Firm C	Founded in 1970s, exports >50% to diverse markets, strong export focus	73	Furniture	Export manager	Basic and emerging use of ChatGPT for multilingual content, technical documentation and product naming. Mostly applied in technical and sales departments
Firm D	Emerging international focus, exploring e-commerce for France, limited international reach	44	Security doors	Sales manager	Minimal use. Considering chatbot for FAQs in e-commerce. AI has not yet applied to international strategic decisions. Cultural and resource barriers present
Firm E	Manufacturing expertise with growing focus on export opportunities	67	Wood processing machinery	Export manager	Exploratory use of ChatGPT and Gemini for analyzing new markets, prioritizing international targets and identifying trade barriers and opportunities
Firm F	Started exporting around 2010, mostly in Europe and Canada, with passive, project-driven expansion	17	Furniture	Back-office export	Light but effective use of ChatGPT and Gemini for market trend analysis, communication adaptation and cultural localization. Supports decision-making and speeds up response to foreign inquiries

Source(s): Authors' own work

4. Results analysis

In response to RQ1, the following sections explore how decision-makers in SMEs use AI technologies in the context of ISDs, based on their reported experiences, strategic intent, perceptions, and applications of AI in IB operations. To support the analysis across the various investigated topics, all key quotations emerging from the interviews are presented in Table 2, with the aim of enhancing clarity and transparency of the findings.

4.1 AI adoption and strategic vision

The adoption and strategic vision of AI among the SMEs reflect a spectrum of engagement, showing variations in implementation and intent. Firm A is in the early exploratory stage, with its managing director independently researching AI tools for logistics and market analysis. However, progress is limited by a lack of expertise and a clear roadmap. Firm B, by contrast, demonstrates a more integrated AI approach, using tools like ChatGPT for content creation and Adobe's AI-enhanced applications for image processing. Their AI usage enhances workflow efficiency and decision-making, though it remains operational rather than transformative. Firm C focuses on internal efficiencies, using AI-driven translation tools to overcome linguistic and communication barriers in international operations affirming: "*We experimented with AI for content generation and translation. We are now exploring further automation possibilities*" *(. . .)* "*AI ensures culturally and linguistically appropriate content, minimizing misinterpretation*". Similarly, firm D explores AI-driven chatbots to improve customer service on its e-commerce platforms. However, economic and infrastructure constraints hinder full implementation. Firm E is cautiously testing AI in data-driven manufacturing and considering predictive analytics. Their approach prioritizes incremental modernization while assessing AI's feasibility within traditional workflows, reflecting an intent to modernize operations incrementally while assessing the feasibility of AI integration within their traditional manufacturing workflows. Finally, firm F presents a pragmatic and proactive engagement with AI. Initially unfamiliar with the potential of AI, the firm became aware of its utility through external webinars and began experimenting with tools like ChatGPT and Gemini. AI is now used to support a variety of international strategic tasks such as market analysis, client profiling, translation, and communication adaptation. Across the spectrum, the adoption of AI within the SMEs reveals an evolving landscape where operational efficiency often precedes strategic innovation.

4.2 The role of AI in international market strategy

The role of AI in shaping international market strategies among SMEs is characterized by cautious optimism, with significant room for growth. Firms A and D see AI's potential in customer behavior analysis and market segmentation but face expertise and financial barriers, limiting the adoption. In this sense, firm A reports that they are exploring tools such as Salesforce Einstein and IBM Watson for market data analysis but note that they still need to assess their potential usefulness for the company. By contrast, Firm B actively uses AI in market research, leveraging ChatGPT for regional analysis and consumer preference insights to adapt marketing strategies. However, strategic decisions like market entry and partner selection remain human-led, reflecting a hybrid AI-human approach, affirming "*AI helps us in market analysis and adapting our marketing to different markets, but it is not yet fully integrated*". Firm C focuses on AI's role in global communication, using AI-driven translations to ensure culturally and linguistically appropriate marketing materials. This highlights AI's value in cross-border engagement, though broader strategic applications remain limited. Firm E has not yet integrated AI into international strategies, prioritizing operational efficiency over market-oriented AI applications. Finally, firm F offers a compelling case of how AI can enhance international market strategies. Although AI adoption is still informal and non-systematic, the company uses tools like ChatGPT and Gemini to perform exploratory market analyses, evaluate entry scenarios, and assess cultural

Table 2. Main quotations emerged for the topics discussed

Firm	AI adoption and strategic vision	The role of AI in international market strategy	AI integration and decision-making process	AI adoption challenges	Future plans
Firm A	"We are evaluating AI as a future opportunity. I am starting to gather information and study which tools might be useful"	"I am reading many articles and success stories related to the metalworking sector that use artificial intelligence . . . I realize there is potential" "I am reading about tools like Salesforce Einstein and IBM Watson that can analyze market data, but I still need to understand if they would be useful for us"	"I'm starting to gather information . . . with an external consultant we're applying for funding calls . . . with the aim of improving critical processes like logistics" "We are still at the early stages of integrating AI into our decision-making process" "We are considering involving more staff in exploring AI solutions, especially for sales and logistics"	"I don't know them well . . . I definitely need to study them better . . . I still don't fully trust them" "We still rely on traditional methods . . . we rely on word of mouth . . . our ability to analyze international markets is practically nonexistent" "The main challenge has been a lack of internal knowledge about the tools available and the investments required"	"I am starting to get informed and study which tools might be used . . . to exploit them. I am also thinking of involving other figures to implement AI-based solutions in our internal strategic departments" "As I said, I am open to using artificial intelligence tools to make internationalization strategy decisions"
Firm B	"We have expanded the use of AI to several departments to improve operational efficiency and stay up to date with new technologies"	"AI was used for preliminary market analyses . . . it supports initial analyses by offering a clearer view of market dynamics" "AI has been useful for analyzing terminology and local preferences, improving the adaptation of communication materials to cultural specificities"	"It improved the speed of content creation . . . AI has standardized technical terminology to better adapt content to international markets" "We organize training courses and constantly evaluate new technologies . . . we anticipate that the use of AI could increase decision-making autonomy in the future" "We use AI mainly in content creation and preliminary market research, but it has not yet been applied to strategic decision-making"	"We don't yet use advanced predictive tools . . . AI only supports preliminary research" "We don't yet use advanced predictive tools . . . AI only supports preliminary research"	"We are gradually expanding the use of AI . . . we are evaluating integration with AI also in departments like administration and e-commerce" "ChatGPT has helped speed up the processing of market analysis and content . . . but we are not yet using advanced predictive tools"

(*continued*)

Table 2. Continued

Firm	AI adoption and strategic vision	The role of AI in international market strategy	AI integration and decision-making process	AI adoption challenges	Future plans
Firm C	"We started with AI gradually. The first concrete use was ChatGPT to speed up translation processes" "We experimented with AI for content generation and translation. We are now exploring further automation possibilities" "AI ensures culturally and linguistically appropriate content, minimizing misinterpretation"	"We have integrated ChatGPT into our workstations . . . when we need to write short editorials for different markets, I have used it quite a lot" "We're a bit old style . . . the human factor is what gets appreciated first . . . but we can't pretend the world isn't changing" "AI helps us in market analysis and adapting our marketing to different markets, but it is not yet fully integrated"	"ChatGPT . . . is definitely a great help . . . if before I had to rack my brain to make certain presentations, now . . . it's a big help"	"We're a bit old style . . . our sector is quite old style anyway . . . the human factor is what's appreciated first" "We started with AI gradually . . . in an extremely superficial way . . . we were very busy with a large number of new developments" "We are still trying to understand how AI can be useful for us. The main challenge is cultural adaptation rather than financial or technical constraints"	"We are planning in 2025 to train ourselves more on this . . . every brochure we make is always done in five languages, so we have always handled translation internally . . ." "We mainly use ChatGPT to support the sales and technical teams. It helps with translation and reviewing multilingual content . . ."
Firm D	"Artificial intelligence scares me a lot. I'm still a pen-and-paper person"	"We'll definitely launch the chatbot in France . . . what we'll do in Italy might also be an option for more mature markets"	"I definitely also have personal resistance . . . I always prefer active, let's say bibliographic, research"	"I definitely have personal resistance . . . I'm not aware of the benefits . . . we haven't been encouraged to learn about it" "We considered virtual headsets . . . but it required a big effort, economically speaking" "I have a lot of fear about AI. I am still very much a pen-and-paper person"	"We have been evaluating chatbots for some time. We will definitely launch e-commerce in France, and the chatbot will be useful" "I think it can be a tool for informational and educational purposes . . . but I'm really still very much paper and pen"

(*continued*)

Table 2. Continued

Firm	AI adoption and strategic vision	The role of AI in international market strategy	AI integration and decision-making process	AI adoption challenges	Future plans
Firm E	"We have been using AI since 2024 mainly to collect initial data on new countries. It has allowed us to develop a much more precise entry strategy"	"Thanks to ChatGPT, we managed to get a preliminary analysis of local demand for our machinery . . . to develop a much more precise entry strategy"	"Currently, we use it mainly in the sales and marketing departments . . . it helps us identify priorities in international markets"	"The biggest difficulty was adapting our internal processes to this new way of thinking."; "The transition required a change in mindset and investments in new skills"	"We believe that in the future, AI can be used to optimize logistics and improve internal communication among our international teams" "Thanks to ChatGPT . . . we were able to obtain a preliminary analysis of local demand . . . identifying the main logistical and regulatory obstacles"
Firm F	"ChatGPT has become for us a sort of 'digital colleague' that allows us to better understand the context before acting"	"We asked ChatGPT for an overview of the custom furniture market, it gave us information such as trends, required certifications, and competitors" "We started rewriting our product sheets and brochures according to the destination culture . . . with the help of AI we are starting to speak the customer's language" "With ChatGPT or Gemini, we can get a clear and structured summary within an hour . . . it allows us to be much faster in the response and presentation phase"	"AI is present in our company, but it is not yet structurally integrated . . . it's more of an occasional, cross-functional support" "AI is helping us better distinguish markets and prepare with greater precision . . . it has helped us avoid at least a couple of missteps"	"AI is not yet structurally integrated . . . we still rely heavily on our experience . . . we don't have the internal resources to manage projects of that scale" "We're not talking about a structural revolution . . . AI adoption is not yet systematic for us"	"We are starting to think about something more advanced for 2025, maybe a small predictive tool integrated into our ERP system . . ." "Now we can do a first analysis internally . . . we don't eliminate intuition, but we support it with data, synthesis, and insights that AI makes accessible in real time" "The goal, for us, is not to digitalize everything blindly, but to understand which tools can truly add value and save time. AI is a powerful lever, but it must be used with balance and adapted to our real context, made of relationships, artisanal care, and experience"

Source(s): Authors' own work

preferences in new target countries. These tools have supported the company in avoiding market missteps, identifying opportunities, and aligning the company material (i.e. brochures) with the new country's expectations.

Collectively, SMEs recognize AI's strategic potential, yet practical constraints and hesitations slow down broader adoption.

4.3 AI integration and decision-making process

The integration of AI into decision-making processes among the SMEs demonstrates different degrees of skill and commitment. Firms A and C acknowledge AI's potential to analyze data and forecast trends but emphasize the importance of aligning these tools with their specific operational contexts to prevent generic or misaligned applications. They note that they are still in the early stages of integrating AI into their decision-making processes and are considering involving more staff in exploring AI solutions, especially in sales and logistics. Firm B adopts AI, particularly ChatGPT, to speed up decision-making and improve the creation of marketing content. While AI improves efficiency, human oversight remains essential for complex strategic decisions: "*We use AI mainly in content creation and preliminary market research, but it has not yet been applied to strategic decision-making*". Firm D is in early exploratory stages, facing financial and infrastructural challenges, limiting AI integration into decision-making. Firm E is experimenting with AI in production planning and logistics, focusing on internal efficiencies rather than strategic transformation. Finally, firm F, despite lacking a formal IT department or predictive analytics systems, uses AI tools regularly to simulate international scenarios, evaluate market conditions, and support strategic assessments, such as choosing between direct or indirect export modes. The respondent reports that AI reduces the time required to gather and interpret data from platforms like Archiproducts and social media, accelerating early-stage decisions. The firm also applies AI to filter foreign market opportunities more rationally, shifting from intuition-based decisions to a more data-informed process. Across the cases, AI is integrated incrementally, prioritizing applications with immediate and measurable benefits. The gradual adoption reflects resource constraints and organizational inertia, demonstrating a pragmatic approach to AI-driven decision-making.

4.4 AI adoption challenges

There are many obstacles to SMEs' adoption of AI, including financial, cultural, and technical ones. Financial constraints are common, particularly for smaller firms like firm D, where the cost of advanced AI tools often exceeds budgetary allowances. This financial barrier limits access to transformative technologies, compelling SMEs to prioritize incremental and cost-effective solutions. Moreover, the manager expresses significant hesitation toward AI tools, admitting a strong sense of fear and describing herself as still very much a "pen-and-paper" person as highlighted by firms A and E. In the case of Firm A, knowledge gaps emerge as a significant challenge, with the lack of familiarity with AI tools cited as a key barrier to adoption. This deficiency limits the firm's ability to identify appropriate technologies, and weakens confidence in their practical implementation, as they point out that the main difficulty has been the absence of internal knowledge regarding available tools and the investments they entail.

Addressing this challenge requires targeted training programs and accessible resources that help demystify AI for smaller enterprises. Cultural resistance also plays a role, as exemplified by firm C affirming: "*We are still trying to understand how AI can be useful for us. The main challenge is cultural adaptation rather than financial or technical constraints*". Employee skepticism, fueled by fears of job displacement and doubts about AI's reliability, has slowed the pace of adoption. Overcoming such resistance necessitates a concerted effort to demonstrate AI's benefits through pilot projects and success stories. Additionally, firm B noted operational challenges, especially in integrating AI into existing workflows without

causing disruptions. Firm F reinforces many of these barriers, particularly the lack of technical infrastructure and internal expertise. The export back office admits that more advanced implementations, such as predictive analytics or CRM-integrated AI modules, remain out of reach due to time constraints, limited resources, and the absence of IT personnel. Moreover, the artisanal nature of the company reinforces a preference for intuitive, human-centric decision-making, which may slow full-scale adoption of more autonomous AI systems. These challenges highlight the need for tailored implementation strategies that align with organizational structures and capabilities.

4.5 Future plans

Despite various challenges, SMEs expressed optimism regarding the transformative potential of AI. Firm A indicated intentions to explore AI applications in logistics optimization and advanced market analysis, while Firm B reported plans to expand its use of predictive analytics and to enhance e-commerce platforms, particularly by focusing on personalized customer experiences. Moreover, the firm also referred to translation capabilities as a noteworthy application area, which it described as "very reliable." Firm B further suggested that AI could soon become central to business decision-making processes. These initiatives are consistent with the proactive international strategies adopted by these firms. Firm C plans to leverage AI for deriving customer insights and evaluating international partners, all while preserving a human-centric approach to decision-making. Firm D reported its intention to develop AI-driven customer service tools and to enhance e-commerce capabilities through chatbot implementation. Firm E conveyed a cautiously optimistic stance toward the integration of AI into production and logistics operations. It emphasized a gradual modernization process to prevent disruption of core functions and highlighted ongoing considerations around AI-based automation in production lines and AI-driven analytics for sales and customer behavior. Firm F sees AI as a long-term strategic partner rather than a temporary trend. In the short term, it plans to integrate AI into its CRM to enhance analysis of international customer behavior, response times, and purchasing preferences. Additionally, the firm is exploring generative AI solutions for rapid 3D rendering and customized product previews. Looking ahead, Firm F envisions developing an AI assistant embedded in daily decision-making processes: "*The goal, for us, is not to digitalize everything blindly, but to understand which tools can truly add value and save time. AI is a powerful lever, but it must be used with balance and adapted to our real context, made of relationships, artisanal care, and experience*." This reflects a grounded yet ambitious approach, where AI is seen as a capacity multiplier, especially for SMEs operating internationally, while maintaining a strong human and craftsmanship-centered identity. Collectively, SMEs view AI as a driver of innovation and competitive advantage but stress the need for alignment with organizational goals, continuous learning, and ethical considerations. Their pragmatic step-by-step approach reflects AI's potential, tempered by real-world SMEs' constraints.

5. Discussions

The thematic analysis identifies five emerging themes that capture the multifaceted experiences of AI adoption among the SMEs interviewed. These themes not only highlight the dynamic interplay of challenges and opportunities but also provide valuable insights into the complexities of integrating AI technologies into ISDMP.

5.1 Awareness and understanding of AI

The first theme that emerges concerns the *awareness and understanding of AI*. Notably, the degree of AI awareness across the SMEs interviewed reflects a broad spectrum, ranging from basic recognition to active engagement with sophisticated tools. Firm C, for instance, exemplifies a practical and applied understanding of AI, employing tools such as translation

software to facilitate global communication and create localized content that resonates with different markets. This proactive approach highlights the potential of AI to bridge linguistic and cultural divides, positioning the firm as a frontrunner in its adoption path. Conversely, firm E remains in a preliminary exploratory phase, where AI's relevance is acknowledged but limited to CRM platforms with basic capabilities. Their approach underscores the initial stages of understanding AI's potential and broader implications. Firms A and B occupy intermediate and advanced stages of AI awareness, respectively. Firm A demonstrates moderate awareness, focusing on specific tools, indicating a growing curiosity about how AI can enhance business processes. In contrast, firm B showcases an advanced adoption stage, where AI seamlessly integrates into operational workflows, including market analysis and streamlining business processes. Meanwhile, Firm D's understanding of AI remains nascent, with its perception shaped by accessible, consumer-facing tools such as ChatGPT. Finally, firm F demonstrates a high level of practical awareness of AI, actively employing tools like ChatGPT and Gemini for scenario simulation, cultural insight, and communication tailoring. Despite the absence of formal technical training, the firm has developed an intuitive and strategically grounded understanding of AI's potential. The firm's experience highlights how SMEs can leverage practical experimentation and adaptive learning to compensate for limited infrastructure, enhancing a culture of innovation driven by accessible AI tools. These variations emphasize the critical influence of exposure, organizational readiness, and the sectoral context in shaping SMEs' perceptions of AI. Research suggests that moving from basic awareness to practical application requires targeted interventions tailored to SMEs' unique needs (Hussain and Rizwan, 2024). Workshops, industry-specific case studies, and hands-on demonstrations can effectively showcase AI's strategic value. By creating a culture of learning and experimentation, SMEs can overcome initial hesitations and align their understanding of AI with tangible business opportunities.

5.2 Perceived benefits of AI in ISDMP

Across the interviews, the *perceived benefits of AI in ISDMP* emerged as a recurring theme, highlighting its potential to transform operational efficiency and enhance strategic decision-making processes. For example, firm C emphasizes AI's ability to bridge cultural and linguistic barriers, enabling seamless communication in international markets. This capability not only improves operational workflows but also strengthens relationships with global partners and customers. Similarly, firm E identifies the potential of AI-enabled CRM systems to enhance customer segmentation, enabling more targeted and effective marketing strategies. Firm B provides concrete examples of AI's tangible benefits, citing significant time savings and improved accuracy in tasks such as translations, content creation, and preliminary market research. These advancements demonstrate how AI can automate repetitive tasks, allowing employees to focus on high-value strategic activities. While still in the early stages of adoption, Firm A envisions AI as a critical tool for logistics optimization and identifying market opportunities, signaling a forward-looking perspective on its utility. Firm F identifies several concrete advantages stemming from AI adoption, particularly in the context of ISDM. AI enables faster decision cycles, more targeted communication with international clients, and efficient pre-evaluation of new markets. The use of AI to filter opportunities, identify trends, and simulate market scenarios has enhanced the firm's responsiveness and agility. These insights suggest AI's emerging role in supporting data-driven strategic planning and the automation of routine processes, as increasingly recognized in practitioner-oriented sources [2]. Specifically, AI's capabilities in IMS, predictive analytics, and customer relationship management empower SMEs to allocate resources more effectively and achieve competitive advantages in global markets. However, underutilizing AI's advanced features, such as export mode optimization or strategic partner selection, points to significant untapped opportunities. By addressing these gaps, SMEs can unlock the full potential of AI and strengthen their strategic decision-making processes.

5.3 Barriers connected to AI adoption

Another emerging theme concerns the *barriers connected to AI adoption*. Financial constraints are particularly pronounced, with firms C and E identifying limited budgets as a significant impediment to adopting advanced AI solutions. This challenge is compounded by infrastructural limitations, which hinder firm E's ability to scale AI initiatives effectively. On the other hand, Firm D highlights a lack of technical expertise and cultural resistance within the organization as key obstacles to adoption, as further supported by firm F. Employee skepticism, cited by firm C, further underscores the need for trust-building initiatives and transparent communication to create a culture of innovation. Even firm B, an advanced adopter, emphasizes the importance of developing scalable and cost-effective AI solutions tailored to the unique needs of SMEs. These barriers reflect broader trends in SME digital transformation, where resource limitations and organizational inertia frequently emerge as significant challenges. Recent evidence by Abuzaid (2024) confirms that SMEs often lack the foundational infrastructure and strategic AI frameworks necessary to translate interest into implementation, especially in cross-border operations. This is consistent with Yusuf *et al.* (2024), who highlight that technical and infrastructural barriers significantly impact AI adoption in SMEs. One major issue is the lack of accurate data. AI systems rely on high-quality data to make effective decisions, but incomplete or inaccurate data can hinder the generation of valuable insights.

Additionally, many SMEs lack the necessary technical infrastructure to implement and scale AI technologies, including hardware, software, and IT systems (Ochuba *et al.*, 2024). This absence of infrastructure limits their ability to deploy AI solutions effectively. The sophisticated nature of AI can be overwhelming for SMEs, particularly those without in-house technical expertise, making it difficult for them to understand and implement these technologies. Moreover, limited access to relevant data sources restricts SMEs' ability to train AI models, reducing the effectiveness and applicability of AI solutions for their specific needs (Lada *et al.*, 2023). To address these issues, incremental adoption strategies, such as piloting affordable AI tools like ChatGPT, can provide a low-risk entry point for SMEs. Lastly, collaborative partnerships with technology providers, industry associations, and academic institutions can offer the technical expertise and financial support necessary to overcome adoption hurdles. By leveraging these partnerships, SMEs can build the capabilities required to face the complexities of AI integration.

5.4 Human-centric implications

A recurring theme across the interviews concerns the *human-centric implications* of AI adoption, highlighting widespread apprehensions about its impact on roles, relationships, and decision-making processes. Firm C underscores the importance of maintaining personalized customer interactions, cautioning against an over-reliance on AI that could erode trust and relational dynamics. Similarly, firm E highlights the need to balance human judgment with AI-driven decision-making, ensuring that the technology complements rather than replaces human expertise. Also, firm F places a strong emphasis on maintaining its artisanal identity and personalized client relationships. AI is seen as a complement rather than a substitute for human judgment. Firms A and B echo these concerns, emphasizing the importance of transparency and employee involvement in AI adoption processes. Talent shortage and skill gap are some of the primary strategic challenges of most SMEs in the AI environment (Dwivedi *et al.*, 2021; Johnson *et al.*, 2021). At present, many practitioners do not have a clear understanding of the capabilities and basic procedures required by organizations to obtain the potential of AI, and they are unable to solve the problem of human resources required for the promotion of AI (Lu *et al.*, 2022). This framing aligns with the affect-enacted model proposed by Grego *et al.* (2024), which explains how strategic decisions in SMEs are not solely shaped by formal analysis, but by emotions, contextual cues, and personal interpretations of what is seen as strategically meaningful. Moreover, these perspectives align with literature advocating

for a collaborative approach to AI integration, where the technology is designed to augment rather than replace human capabilities (Xu and Gao, 2024). By enhancing an inclusive and transparent adoption process, SMEs can address employee apprehensions, build trust, and ensure that AI is perceived as an enabler of strategic growth rather than a threat to job security.

5.5 Potential for strategic transformation

Finally, the *potential for strategic transformation* is an emerging theme. Firm C exemplifies the strategic use of AI to enhance global communication and envisions broader applications in areas such as strategic planning and market expansion. Firm E, while cautious, recognizes AI's potential to revolutionize customer insights and market positioning, signaling a growing awareness of its strategic value. Firm F recognizes AI's high potential to transform its internationalization strategy. It currently employs AI to simulate market entry, scout for potential partners, and adapt its offerings to culturally diverse audiences. Although complete transformation is still in progress, the firm sees clear pathways for strategic growth through continued AI integration. Firm B represents the most advanced stage of strategic transformation, integrating AI into marketing, operational workflows, and real-time decision-making processes. This comprehensive approach highlights AI's ability to drive cross-departmental collaboration, enhance predictive analytics, and support data-driven decision-making. In contrast, firms A and D remain in exploratory phases, lacking clear roadmaps for comprehensive AI adoption. These findings underscore the need for tailored training, accessible funding mechanisms, and sector-specific AI solutions that align with SMEs' operational contexts (Proietti and Magnani, 2025).

In this sense, Table 3 captures and summarizes the main results of the thematic analysis.

5.6 Linking findings with SDMP dimensions

This section addresses RQ2, examining how the integration of AI influences the core dimensions of the SDMP within SMEs operating in international contexts. Interpreted through the SDMP dimensions identified by literature, these emerging themes allow us to explain how AI helps in this process, especially in the international context. For clarity reasons, Table 4 provides a comprehensive summary of the responses, highlighting how each firm engages in these dimensions within their strategic decision-making processes.

In particular, the first dimension analyzed is *decision-making quality and speed*. Firms like companies B and C demonstrate proactive approaches by integrating AI tools like ChatGPT for operational decisions. This enables them to enhance decision speed while maintaining high quality. In contrast, firms like A and D exhibit slower processes due to reliance on traditional methods. Firm E represents a transitional case, cautiously exploring AI technologies to improve decision-making quality. Firm F's decision-making processes have notably improved in both quality and speed due to the integration of AI tools. By using platforms like ChatGPT and Gemini, the firm can simulate various international market scenarios, adapt strategies quickly, and tailor communications based on cultural nuances. While decision-making remains largely centralized, AI-supported insights from non-management staff are increasingly shaping strategic inputs. The literature demonstrates that AI's capacity to analyze large datasets and generate actionable insights can significantly enhance this dimension by enabling faster, data-driven strategic decisions (Dwivedi *et al.*, 2021). Grashof and Kopka (2023) also demonstrate that efficiently adopting AI technologies equips human resources with essential information and skills, such as computer literacy, critical thinking, and effective decision-making.

The second dimension analyzed is *hierarchical decentralization*, which is influenced by AI's ability to provide decision-makers at different organizational levels with real-time data and insights (Bag *et al.*, 2021). Firms like B are taking initial steps toward decentralization by encouraging cross-departmental collaboration through AI tools. On the other hand, companies A and D remain centralized, limiting broader participation in strategic decision-making. Firm

Table 3. Thematic analysis

Firm	Awareness and understanding of AI	Perceived benefits of AI in ISDMPs	Barriers to AI adoption	Human-centric concerns	Potential for strategic transformation
Firm A	Moderate awareness; exploring AI tools like Salesforce Einstein for logistics and market insights	Envisions AI for logistics optimization and identifying market opportunities, but in early stages	Limited by moderate financial resources and lack of a clear roadmap for adoption	Concerned about transparency and employee involvement in the adoption process	Exploring possibilities but lacks a clear implementation roadmap
Firm B	High awareness; advanced adoption of AI for operational streamlining and market analysis	Significant benefits include time savings, operational efficiency and improved market research	Resource constraints exist but offset by scalable AI solutions tailored to SME needs	Emphasizes maintaining trust and balancing AI with human decision-making	Advanced integration into marketing and operational workflows; leveraging cross-departmental AI
Firm C	Practical understanding; uses AI for translation tools and localized content for global communication	AI bridges linguistic/cultural gaps and supports international communication	Financial constraints, employee skepticism, and lack of technical expertise	Fears over-reliance on AI could harm personalized customer interactions	Uses AI for global communication; envisions broader applications in strategic planning
Firm D	Nascent understanding; associates AI with basic tools like ChatGPT	Limited benefits recognized, focused on basic AI applications	Financial and technical constraints; cultural resistance within the organization	Minimal focus on human-centric concerns due to low AI adoption	Lacks transformative use due to low understanding and implementation
Firm E	Basic awareness; exploring CRM platforms with limited AI functionality	Sees potential for AI in CRM-enhanced customer segmentation but remains in the exploratory phase	Financial and infrastructural barriers; limited budgets hinder broader adoption	Stresses the need to balance human judgment with AI capabilities in decision-making	Cautious exploration; recognizes AI's potential for customer insights and market positioning
Firm F	High practical awareness; uses tools like ChatGPT and Gemini for scenario simulation, cultural insights, and communication. Strong intuitive grasp of AI's potential despite limited formal training	Enables quicker decision-making, customized communication, and pre-assessment of new markets. AI supports market filtering, trend identification and more responsive client engagement	Lack of internal technical expertise, limited time and resources and no dedicated IT infrastructure	Strong emphasis on preserving artisanal identity and personalized customer relationships; AI is used as a complement, not a replacement	High potential recognized; AI used in market entry simulation, partner scouting and cultural adaptation. Transformation is seen possible through further integration and external consulting

Source(s): Authors' own work

Table 4. SDMP dimensions explored

Firm	Decision-making quality and speed	Hierarchical decentralization	Lateral communication	Formalization
Firm A	The decision-making process is slow and traditional, primarily relying on client referrals and passive strategies. AI tools are not yet integrated but are recognized as a means to enhance data-driven decision-making in the future. The company focuses on strategic long-term considerations but lacks immediate action plans	Decision-making is centralized, with key strategic moves decided by the AD and a small leadership team. Potential for decentralization exists with AI, as tools might empower broader organizational input	Communication remains traditional, with limited integration of technology to enhance cross-departmental dialogue. AI's role in fostering collaboration is acknowledged but not yet implemented	Low level of formalization. Processes are not standardized, and strategic decisions rely heavily on informal referrals and traditional methods
Firm B	Demonstrates moderate integration of AI for operational decisions (e.g. market analysis and content generation). Decision speed is enhanced by tools like ChatGPT but remains reliant on human oversight. High-quality decisions result from continuous team training and structured evaluation	Emerging decentralization, with different departments gradually adopting AI tools. Collaboration between marketing, e-commerce, and administration demonstrates potential for broader horizontal integration	Encourages lateral communication through tools like Power BI. The potential of AI for collaboration, particularly in international teams, is being evaluated	Medium to high formalization. AI tools are integrated into operational tasks, streamlining content creation and enhancing consistency in international communication
Firm C	Employs a proactive decision-making approach focused on international markets. While AI is not yet core, the firm shows enthusiasm for future integration, particularly in market analysis and partner selection. Decision-making is relatively swift due to the company's emphasis on structured export strategies	Hierarchically centralized but shows openness to exploring team autonomy with AI tools, particularly for operational tasks like translations and market outreach	Operates with a functional level of lateral communication but plans to improve it using AI to streamline translation and international content development	High formalization. The firm employs structured international strategies and is exploring AI to further enhance precision and efficiency in processes

(*continued*)

Table 4. Continued

Firm	Decision-making quality and speed	Hierarchical decentralization	Lateral communication	Formalization
Firm D	Decision-making is heavily influenced by cost and resource constraints. AI adoption, such as chatbots for customer interactions, is cautiously considered, reflecting a conservative approach. The speed of decision-making is constrained by limited exploration of advanced tools	Strongly centralized with limited delegation. Decision-making authority remains with top management, influenced by resource limitations	Minimal lateral communication. Departments operate independently with limited inter-departmental collaboration due to resource and technology constraints	Moderate formalization. Limited AI adoption reflects structured but cautious approaches to change
Firm E	Decision-making is cautiously transitioning towards leveraging AI tools. The firm acknowledges the potential for AI in enhancing data analysis and operational decisions but remains in the exploratory phase. This slows the speed of strategic implementation, though quality is emphasized through careful evaluation	While decision-making is primarily centralized, the firm recognizes the potential of AI tools to decentralize processes, especially in areas such as logistics and market analysis. Implementation plans are in the early stages	Lateral communication is in a nascent stage, with AI tools being considered to improve collaboration across departments. The firm views this as essential for optimizing workflows and decision-making	Moderate formalization with growing interest in standardizing processes through AI tools. The firm is in the process of evaluating technologies to streamline data management and operational workflows
Firm F	Gradual AI adoption has improved the speed and quality of decision-making through tools like ChatGPT and Gemini. The firm uses AI for scenario simulation, market trend analysis and communication adaptation, enabling faster and more informed ISDs	Decision-making remains largely centralized but is increasingly influenced by AI-supported insights from non-management staff. There is growing consideration to decentralize through digital tools, especially for marketing and market selection	AI tools such as ChatGPT and Gemini facilitate informal but effective cross-functional communication, especially for content creation, cultural adaptation and market research. There is increasing awareness of the need for more structured lateral integration	Low to moderate formalization. While the company leverages AI for strategic planning and communication, process standardization remains limited due to artisanal nature and flexible structure

Source(s): Authors' own work

E sees potential in using AI to decentralize processes, particularly in logistics and market analysis, demonstrating that the ability of AI to democratize access to information can increase agility and responsiveness, which is crucial for adapting to dynamic international markets. Similarly, firm F has a growing openness toward decentralization, especially for tasks related to market selection and strategy. AI tools are beginning to empower staff at lower hierarchical levels by providing them with relevant insights and decision-support capabilities.

The third dimension is *lateral communication* that is vital for effective ISDMPs, facilitating collaboration and information sharing across departments and international subsidiaries. While Firm B is exploring tools to enhance inter-departmental dialogue, other firms have yet to fully embrace AI for this purpose fully. Firm E is beginning to recognize the importance of leveraging AI to improve lateral communication, which could streamline workflows and decision-making. In firm F, while formal mechanisms are still evolving, the current AI-enabled practices lay a promising foundation for future horizontal integration and cross-departmental synergy. AI-powered platforms that integrate data from various sources can create unified frameworks for collaboration, encouraging a more cohesive and informed approach to strategic decisions (Cheng *et al.*, 2021), guaranteeing an opportunity for enhanced communication and collaboration between businesses (Oldemeyer *et al.*, 2024).

Finally, the *formalization* dimension ensures consistency and accuracy in strategic decision-making, which is particularly important in international contexts. Firms like C exhibit high formalization levels, leveraging structured processes for their international strategies. Firm E, with moderate formalization, is exploring AI tools to standardize workflows and improve data management. Companies A and D remain less formalized, relying on traditional and informal methods. In firm F, formalization is limited, reflecting the company's preference for adaptive processes that preserve creativity and craftsmanship. Nevertheless, the integration of AI has introduced some degree of consistency, particularly in strategic documentation and international client interactions, suggesting that further formalization may emerge organically as AI adoption matures. AI's role in automating routine tasks and standardizing data collection and analysis can enhance formalization, ensuring systematic and reliable decision-making processes (Denicolai *et al.*, 2021).

Therefore, integrating AI technologies into SDMP dimensions offers transformative opportunities for firms operating in international markets. By leveraging AI's capabilities, organizations can improve their agility, collaboration, and consistency, thereby enhancing their overall strategic effectiveness in a global context.

5.7 Development of a final integrative framework

To further interpret these findings, a final integrative framework (Figure 1) was developed by linking the thematic insights emerged from the case studies with the four SDMP dimensions. This framework reflects the patterns and associations observed across cases, showing how the AI-related themes that emerged interact with decision-making structures in multifaceted ways. It highlights how SMEs' strategic responses to AI are shaped by internal perceptions and contextual constraints. These, in turn, shape changes in the quality, structure, and formalization of ISDMPs. The framework provides a practical tool for understanding the pathways through which AI enables or constrains strategic evolution.

Specifically, firms with greater awareness and understanding of AI tend to exhibit faster, more structured decision-making processes. This awareness often reflects a practical familiarity with AI tools, thereby enabling more data-driven and strategic choices. As a result, these firms begin shifting from intuition-based decision models to more evidence-based and AI-supported approaches.

Often firms that perceive clear benefits from AI adoption are the ones that initiate changes in their organizational dynamics. They begin to decentralize decision-making and promote cross-functional collaboration, supported by AI tools that democratize information access and reduce dependency on top-down control.

Theme	Decision-Making Quality and Speed	Hierarchical Decentralization	Lateral Communication	Formalization
Awareness and understanding of AI	↑	↑	↑	↑
Perceived benefits of AI in ISDMPs	↑	↑	↑	↑
Barriers to AI adoption	↓	↓	↓	↓
Human-centric concerns	↔	↔	↔	↔
Potential for strategic transformation	↑	↑	↑	↑

Figure 1. Final framework encompassing the discussions emerged. Source: Authors' own work

Conversely, firms facing barriers such as limited resources, technical gaps, or cultural resistance tend to retain centralized and static decision structures. These limitations restrict their ability to formalize processes or engage in collaborative decision-making, thereby slowing their capacity for innovation.

Human-centric concerns, such as maintaining artisanal identity, trust, or personalized relationships, do not block AI adoption, but introduce tensions to be carefully managed at the company level. These firms often integrate AI cautiously, positioning it as a support tool rather than a replacement, to preserve key human values in their strategic activities.

Lastly, the potential for strategic transformation is most evident in firms already experimenting with AI for internationalization, scenario planning, or operational optimization. In such cases, AI begins to influence not only execution, but also strategic direction, signaling a shift from tactical use to a more transformative role in decision-making.

6. Conclusions

6.1 Conclusive remarks and implications

This research adopts the SDMP framework to systematically examine how SMEs integrate AI into their ISDM. The SDMP dimensions explored – decision quality and speed, decentralization, lateral communication, and formalization – serve not only as analytical categories but also as organizational mechanisms that mediate the impact of AI on strategic orientation. The findings highlight AI's significant role in transforming SMEs' international strategic decision-making by facilitating IMS and EMS through market analysis, opportunity recognition, and operational efficiency. However, financial constraints, skill gaps, cultural resistance and infrastructural challenges continue to limit AI's full impact. The study demonstrates that AI democratizes decision-making, helping SMEs bridge resource disparities with larger firms by enabling cost-effective data processing, pattern recognition and insight generation. This supports existing research on AI's role in improving decision-making efficiency (Dwivedi *et al.*, 2021; Kumar *et al.*, 2022). However, SMEs face significant adoption barriers, reinforcing the need for tailored interventions (Silva and Gonçalves, 2022). This study aligns with research showing that AI enhances SME competitiveness through data-driven insights and efficiency gains (Denicolai *et al.*, 2021; Baabdullah *et al.*, 2021). However, challenges such as cost, and expertise limitations mirror concerns raised by Silva and Gonçalves (2022). Unlike prior research that focuses on large enterprises' aggressive AI adoption (Bag *et al.*, 2021; Dillon *et al.*, 2020), this study emphasizes SMEs' cautious, incremental approach. This underscores the importance of context-specific AI strategies aligned with SMEs' capabilities and constraints.

From a theoretical perspective, this study contributes to SDMP theory by extending it to the context of AI adoption in internationally active SMEs, demonstrating how AI integration reshapes these dimensions by enhancing decision-making speed and quality, facilitating decentralization, improving lateral communication and formalizing decision processes. These findings are particularly relevant for resource-constrained firms operating globally, highlighting AI's potential to transform strategic behavior and structure. It enriches the AI and IB literature by addressing SMEs' unique challenges and opportunities, which have been largely overlooked compared to large enterprises. It offers a contextualized framework that integrates resource limitations and adaptive strategies, extending research on AI-enabled decision-making (Dwivedi *et al.*, 2021; Magistretti *et al.*, 2019). Research demonstrates how AI contributes to strategic decision-making dimensions, such as decision quality and speed, hierarchical decentralization, lateral communication and formalization of processes. These dimensions align with literature emphasizing AI's structural and procedural benefits in complex decision-making (Bag *et al.*, 2021; Cheng *et al.*, 2021). Additionally, this study advances IB research by situating AI within IMS and EMS, building on prior works (Fish and Ruby, 2009; Menzies *et al.*, 2024). It highlights AI-driven tools such as generative models and advanced analytics that assist SMEs in identifying foreign markets and selecting optimal entry

strategies, expanding frameworks on technology's role in internationalization (Lecerf and Omrani, 2020).

From a managerial perspective, findings emphasize the strategic and incremental adoption of AI. SMEs should begin using cost-effective AI tools (e.g. ChatGPT) to enhance market analysis, content creation and customer segmentation. For example, as shown in Firm F, ChatGPT was used to simulate international scenarios and assess certification requirements in the foreign market enabling more informed pre-entry evaluations. Similarly, Firm C leveraged AI-driven translation tools to adapt technical product documentation, minimizing miscommunication in international sales. These cases illustrate how low-barrier tools can serve as a first step toward more structured AI use. Additionally, SMEs may apply AI tools to identify market clusters or conduct preliminary screening for EMS, functions that previously required either external consultants or intuitive work.

Moreover, AI literacy should be cultivated through multilevel training strategies. While structured corporate training is essential, especially through pilot projects that demonstrate clear returns, the findings reveal that many SME's managers initiate their AI exploration autonomously, using publicly available tools like ChatGPT or Gemini without formal training. This suggests a strong case for promoting accessible self-help learning resources, such as online courses, video tutorials or platform-integrated guidance, tailored to the specific needs and time constraints of SMEs. These decentralized forms of training lower the barriers to experimentation while empowering firms to proceed incrementally, as shown in cases like Firm F and Firm A. For instance, the export manager in Firm A began using AI tools to explore logistics optimization strategies before engaging in formal digital transformation processes. This highlights the importance of enabling early experimentation with lightweight, practical tools that can demonstrate immediate value.

Nonetheless, advancing from exploratory to transformative AI adoption requires structural investments in education. As several firms noted, one of the most persistent barriers lies in the lack of internal expertise and AI literacy. Therefore, embedding AI into university and high school curricula would enhance a broader societal readiness for AI and equip future generations of entrepreneurs and managers with the skills required to evaluate and leverage AI tools effectively. This kind of long-term capacity building is particularly crucial for SMEs, which often lack the resources to hire external consultants or build internal tech departments. Introducing case-based learning or industry simulations at the academic level, for example, scenario analysis for IMS using generative AI tools, could further reinforce applied competencies in real business contexts. These educational efforts should be complemented by public and institutional support systems, including AI competence centers, regional digital innovation hubs or open repositories of validated use cases. These shared infrastructures would help SMEs mitigate uncertainty and accelerate the shift from isolated operational use (e.g. translation or marketing) to more strategic applications, such as international market analysis, entry mode assessment or partner evaluation.

Lastly, a hybrid AI–human approach should be adopted, whereby AI complements rather than replaces expertise, particularly in high-stakes decisions such as market entry and partner selection. In this respect, the study recommends that policymakers and industry associations support SMEs through subsidies for AI adoption, accessible training programs and partnerships with technology providers.

6.2 Limitations and avenues for future research

Despite the valuable insights provided by this study, several limitations highlight the need for further research. First, the geographic and industry focus on six Italian manufacturing SMEs limits the generalizability of the findings, as different sectors, such as services or retail, may present unique challenges and opportunities for AI adoption. Similarly, while rich in contextual detail, the qualitative methodology introduces potential biases inherent to subjective interpretations and self-reported data. This calls for future research employing

mixed-method approaches to validate findings and enhance robustness. Additionally, the cross-sectional nature of this study offers a snapshot of AI adoption without capturing its longitudinal impacts on SME performance and internationalization, underscoring the need for long-term studies to track these dynamics over time.

The scope of the study, focused on IMS and EMS, further leaves other critical dimensions of ISDMPs underexplored, including areas like international risk assessment, network building and supply chain optimization. Future research should expand its scope to investigate AI's role across these decision areas, providing a holistic understanding of its strategic implications. Broadening the research context to include diverse industries, geographic regions and cultural settings would offer richer insights into how AI adoption varies and reveal patterns unique to SMEs compared to larger enterprises. Finally, as AI adoption scales, ethical and human-centric considerations become paramount. Future studies should examine the effects of AI on job roles, ethics in decision-making and worker dynamics, with a focus on building inclusivity and trust. Future research can fill these gaps and offer practical advice to help SMEs manage the challenges of international markets while exploiting AI's potential.

Ethical statement

All the research steps have been conducted in accordance with the guidelines of the Ethical Committee for Human Experimentation of the Urbino University. This agrees with the basic principles established in national and international documents on good practices in human experimentation. This study was conducted in accordance with the ethical standards outlined in the Declaration of Helsinki and in compliance with the General Data Protection Regulation (GDPR) of the European Union. Participants were informed that all data would be de-identified and only reported in the aggregate.

Notes

1. According to the European Union's SMEs definition, their annual turnover is equal to or below €50 million and a balance sheet total is equal to or below €43 million (https://ec.europa.eu/growth/smes/business-friendlyenvironment/sme-definition_en, accessed February 13, 2025).
2. https://www.thestrategyinstitute.org/insights/the-role-of-ai-in-transforming-strategic-planning-processes?utm_source=chatgpt.com

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