



The Role of Entrepreneurial Cognition in the Internationalization of Small and Medium Enterprises: A Systematic Literature Review

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ABSTRACT

This research utilizes a systematic literature review (SLR) to investigate the impact of entrepreneurial cognition on the international expansion of small and medium-sized enterprises (SMEs). While it is widely acknowledged that cognitive elements significantly affect how SMEs behave in foreign markets, current research remains scattered across diverse theoretical frameworks and constructs. This study analyzes 24 empirical papers from 2015 to 2025 sourced from Google Scholar and Scopus. The analysis reveals that entrepreneurial cognition is a multifaceted concept involving a global mindset, entrepreneurial orientation, managerial cognitive traits, and the ability to recognize opportunities. Furthermore, these cognitive processes are vital in driving internationalization by molding a firm's global perspective and helping leaders identify foreign market prospects. The findings also show that cognitive drivers impact international growth and export success, frequently through intermediate factors like learning orientation, innovation capacity, and decision-making frameworks. This research enhances the microfoundational perspective of SME expansion by focusing on the cognitive attributes of decision-makers rather than just structural factors.

Keywords: Entrepreneurial Cognition; SME Internationalization; Entrepreneurial Orientation; Opportunity Recognition; Systematic Literature Review



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INTRODUCTION

Small and medium enterprises (SME) are progressively entering global markets, bypassing the typical organizational constraints linked to their smaller scale. Factors such as advancements in digital technologies, integration into global value chains, and declining trade barriers have significantly reduced the thresholds for international entry (Autio *et al.*, 2018; Knight & Liesch, 2016). The growing role of digital platforms and e-commerce ecosystems has further accelerated this trend, allowing even resource-constrained firms to reach foreign customers efficiently (Brouthers, Geisser, & Rothlauf, 2016; Neubert, 2018). Consequently, many SMEs are now achieving global reach much faster than traditional theories predicted, which originally suggested that internationalization is a slow, stage-based evolutionary process driven by the gradual accumulation of experiential learning and resources (Vahlne & Johanson, 2017).

Nevertheless, internationalization patterns among SMEs remain highly diverse. Even when operating under comparable institutional and sectoral conditions, firms display widely divergent international trajectories, some expand gradually through exports, others emerge as rapid "born globals," and many remain focused solely on domestic markets (Romanello & Chiarvesio, 2019). This heterogeneity suggests that environmental conditions alone cannot fully explain internationalization patterns.

Classical internationalization theories, especially stage-based models, depict foreign market entry as an evolutionary process driven by experiential learning and escalating resource commitment (Vahlne & Johanson, 2017). Although these models continue to offer important insights, recent scholarship argues that they insufficiently explain the diversity and speed of SME internationalization in the contemporary global economy (Hilmersson & Johanson, 2016; Vahlne & Johanson, 2017). In particular, stage-based perspectives tend to emphasize organizational learning and environmental uncertainty while underestimating the central role of individual decision-makers.

This oversight is particularly significant in SMEs, where strategic direction is typically concentrated in the hands of owners or senior managers. Upper echelons and entrepreneurial cognition research shows that managerial characteristics, international orientation, prior experience, and risk preferences substantially shape international strategy and speed of expansion (Child *et al.*, 2017). This indicates that the internationalization process of SMEs is influenced not only by structural factors within the company but also by the cognitive processes of key decision-makers within the organization.

Entrepreneurial cognition is defined as the cognitive frameworks individuals employ when making assessments, judgments, and decisions related to opportunity evaluation and venture development (Muñoz, 2017). This perspective underscores how mental models, accumulated experience, existing knowledge, and information processing approaches affect opportunity identification and strategic choice under uncertain conditions (Leong, 2024). Research in the field of entrepreneurship indicates that entrepreneurs' cognitive frameworks help them evaluate opportunities, assess risks, and strategically allocate resources during the business development process (Vlačić *et al.*, 2022). In the context of SME internationalization, entrepreneurial cognition critically influences organizational international orientation, helping entrepreneurs identify opportunities in global markets, and guides foreign market expansion decisions.

Emerging research increasingly acknowledges that SME internationalization is fundamentally owner-driven, as strategic decisions in smaller firms are highly centralized and strongly influenced by entrepreneurial decision-makers (Child *et al.*, 2017). Entrepreneurial leaders interpret international opportunities, evaluate risks, allocate resources, and shape strategic direction through their cognitive frameworks and prior

experiences (Narooz & Child, 2017). In this context, constructs such as entrepreneurial orientation, global mindset, opportunity recognition, international orientation, and risk perception have been widely examined as key drivers of SME international behavior (Covin & Wales, 2018; Hennart *et al.*, 2021; Torkkeli *et al.*, 2016). These studies collectively suggest that cognitive characteristics of entrepreneurs play a fundamental role in shaping the internationalization behavior of SMEs.

However, despite these advances, the literature remains fragmented. Many studies have examined specific cognitive aspects, such as a global mindset, opportunity recognition, or entrepreneurial orientation, but these are often conducted in isolation without a clear conceptual integration. This fragmentation results in three important gaps. First, there is limited conceptual clarity regarding how entrepreneurial cognition is defined and operationalized in SME internationalization studies. Second, the mechanisms through which cognition translates into internationalization processes remain underdeveloped. Third, the existing literature provides limited systematic insights into how entrepreneurial cognition influences the internationalization outcomes of SMEs, including export performance and international growth.

To address these gaps, this study employs a systematic literature review (SLR) to synthesize and analyze existing research on entrepreneurial cognition in the context of SME internationalization. Specifically, this study seeks to answer the following research questions:

- RQ1: How is the concept of entrepreneurial cognition conceptualized in research on the internationalization of SMEs?
- RQ2: What role does entrepreneurial cognition play in influencing the internationalization process of SMEs, particularly in shaping international orientation and the identification of global market opportunities?
- RQ3: How does entrepreneurial cognition contribute to the outcomes of SME internationalization, such as export performance and the company's international growth?

By systematically synthesizing the literature, this study contributes in three ways. First, it consolidates fragmented research on entrepreneurial cognition in the context of SME internationalization and clarifies how the concept has been defined and operationalized in previous studies. Second, it provides a comprehensive understanding of how entrepreneurial cognition influences the internationalization process of SMEs, particularly in shaping international orientation and opportunity recognition. Third, it synthesizes existing empirical findings to explain how entrepreneurial cognition contributes to internationalization outcomes, such as export performance, international growth, and market expansion. In doing so, this study advances a microfoundational understanding of SME internationalization, shifting attention from structural determinants to the cognitive drivers embedded within entrepreneurial decision-makers.

LITERATURE REVIEW

SME Internationalization

Scholarly inquiry into SME internationalization has employed diverse theoretical frameworks. Traditional models, such as the Uppsala Model, describe internationalization as a gradual process in which firms progressively increase their commitment to foreign markets as they gain empirical knowledge (Vahlne & Johanson, 2017). Although this perspective remains influential, the model has been criticized for its limited applicability to SMEs, particularly in explaining early and rapid internationalization (Hilmersson &

Johanson, 2016). Another criticism of this model is its emphasis on organizational learning and environmental uncertainty, while overlooking the key role of individual decision-makers. This is particularly relevant for SMEs, where strategic direction is typically concentrated in the hands of the owner or senior managers.

Alternative theoretical perspectives, including the Born Global framework and the International New Venture theory, challenge stage-based approaches by emphasizing the role of entrepreneurs and their cognitive abilities (Veselova & Sikachev, 2026). These frameworks suggest that founders' prior international experience, opportunistic awareness, and long-term strategic vision enable SMEs to engage in internationalization from the very beginning or shortly thereafter. Consequently, recent research has increasingly focused on the micro-foundations of internationalization, particularly the cognitive and behavioural characteristics of decision-makers.

Entrepreneurial Cognition

Entrepreneurial cognition encompasses the cognitive structures and mental models individuals employ when evaluating opportunities, forming judgments, and guiding strategic decisions within uncertain environments (Muñoz, 2017). In the entrepreneurship literature, cognition has been studied through constructs such as opportunity recognition, awareness, heuristics, and risk perception (Arafat *et al.*, 2020; Molomo *et al.*, 2025). These cognitive mechanisms enable entrepreneurs to process complex information, identify worthwhile business opportunities, and allocate resources efficiently.

In the context of SME internationalization, entrepreneurial cognition has been operationalized through several interrelated constructs. Global mindset refers to the strategic posture an individual takes toward foreign markets (Felício *et al.*, 2016). International orientation reflects the entrepreneur's predisposition toward foreign markets and willingness to participate in cross-border commerce (Lazaris & Freeman, 2018). Entrepreneurial orientation captures the management's inclination toward innovation, proactive behavior, and risk-taking (Felício *et al.*, 2016). Opportunity recognition refers to the mental process of identifying and acting upon market gaps abroad (Torkkeli *et al.*, 2016). Despite the proliferation of these constructs, the literature lacks a unified conceptual framework. Many studies treat these dimensions in isolation, leading to fragmented insights into how entrepreneurial cognition collectively shapes SME internationalization.

Entrepreneurial Cognition in SME Internationalization

Recent research increasingly emphasizes the role of entrepreneurial cognition in explaining SME internationalization. Since decision-making in SMEs is often centralized in the hands of owners or managers, their cognitive characteristics can significantly influence the strategic direction of the firm. Studies show that entrepreneurs with prior international experience are more likely to perceive foreign markets as opportunities rather than threats, thereby accelerating market entry (Child *et al.*, 2017). Similarly, a strong global mindset enables entrepreneurs to navigate institutional differences and adapt strategies accordingly (Narooz & Child, 2017).

Entrepreneurial orientation is consistently associated with early internationalisation and higher levels of export intensity (Hennart *et al.*, 2021). Firms led by entrepreneurs with cognitive alertness tend to be better able to identify and capitalise on niche opportunities in foreign markets, even in the absence of formal planning. Furthermore, risk perception—shaped by cognitive biases and heuristics—influences the speed and manner of entry into foreign markets, with overconfident entrepreneurs often

adopting more aggressive expansion strategies (Alam *et al.*, 2020). However, the mechanisms through which cognition translates into international outcomes remain underexplored. For instance, it is unclear how cognitive traits interact with environmental conditions or how they evolve through learning and experience. These gaps call for a more systematic integration of cognitive perspectives into mainstream internationalization theory.

RESEARCH METHOD

This study applies a systematic literature review (SLR) to examine the role of entrepreneurial cognition in SME internationalization. A systematic literature review provides a structured and transparent approach for identifying, assessing, and synthesizing existing research on a specific topic. Compared with traditional narrative reviews, the SLR method enables researchers to systematically analyze previous studies and identify research trends, theoretical perspectives, and knowledge gaps in the literature. The methodology follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure transparency, replicability, and academic rigor (Page *et al.*, 2021).

Data Collection and Search Strategy

Relevant articles were collected from academic databases using a structured keyword search strategy. The primary database used in this study was Scopus, which is widely recognized as one of the most comprehensive databases for peer-reviewed academic publications. In addition, Google Scholar was used as a complementary database to identify additional relevant articles. The search process used combinations of the keywords “entrepreneurial cognition”, “entrepreneurial mindset”, “global mindset”, “SME internationalization”, “small and medium enterprises internationalization” and “export performance”. These keywords were combined using Boolean operators such as AND and OR to identify relevant studies. The search focused on articles published between 2015 and 2025 to ensure that the review captured recent developments in the literature. The initial search yielded 1668 articles.

Study Selection and Screening Process

The selection of articles followed the PRISMA procedure, consisting of four stages: identification, screening, eligibility, and inclusion. First, duplicate records from initial search result were identified and removed. Second, title and abstract screening was conducted to exclude studies that were not relevant to SME internationalization or entrepreneurial cognition. Third, full-text screening was performed to assess the eligibility of the remaining articles based on predefined inclusion criteria.

The inclusion criteria were: (1) articles published in peer-reviewed journal, (2) articles written in English, (3) studies focusing on SMEs or small firms, and (4) Studies examining entrepreneurial cognition or related constructs in the context of internationalization. During the eligibility stage, articles were excluded if they lacked empirical evidence or focused on large multinational corporations (MNCs) rather than SMEs.

To ensure the high quality of the synthesized literature, a quality appraisal was performed. The assessment focused on several criteria: (1) clarity of research objectives, (2) appropriateness of research design, (3) transparency of data collection methods, (4) validity and robustness of data analysis, and (5) relevance to the research questions. Each

article was systematically evaluated based on these criteria, and only studies that met acceptable quality standards were retained in the final sample. This process ensured that the review findings were derived from reliable and high-quality empirical evidence. The final selection consists of 24 articles. While the initial search yielded a large number of records, this final sample size is considered sufficient and representative based on the strict inclusion criteria, which ensure that only high-quality studies indexed in Scopus were analyzed. Furthermore, during the analysis of these 24 articles, thematic saturation was achieved, that is, the main patterns regarding cognitive mechanisms consistently recurred, so that adding further samples would not significantly alter the core findings of this study. The detailed process of identification, screening, eligibility, and inclusion of the studies is visually summarized in the PRISMA flow diagram below (Figure 1).

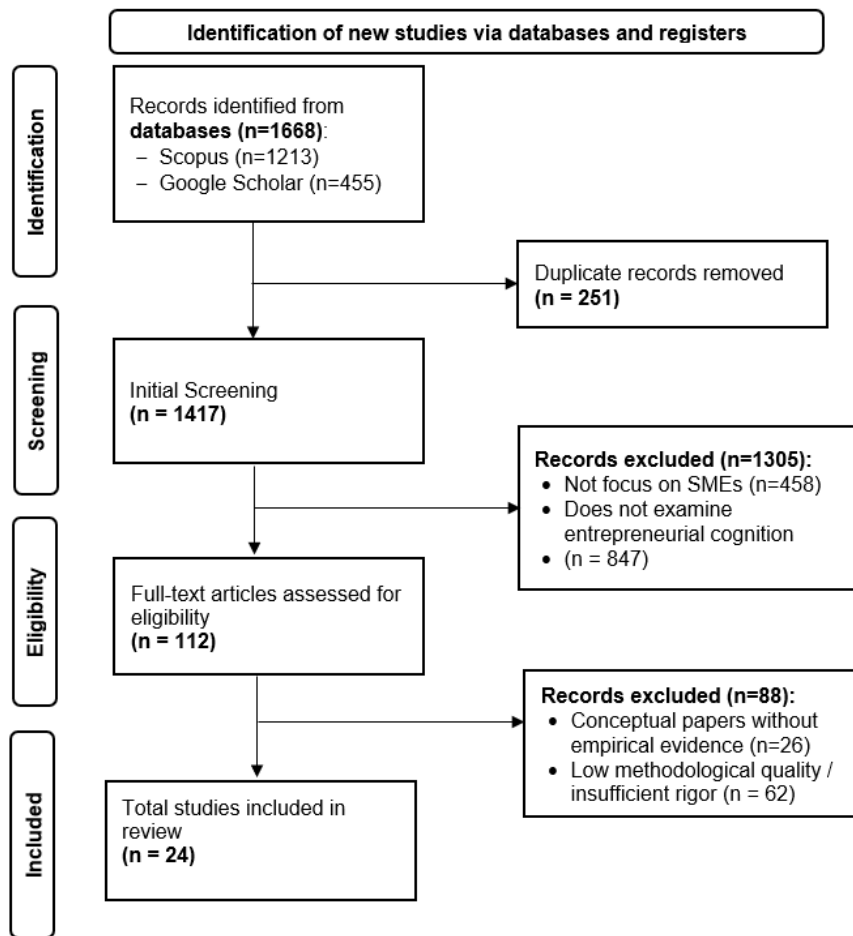


Figure 1. PRISMA Flow Diagram for Systematic Literature Review
 Source: Own Compilation (2026)

Data Analysis

The selected articles were analyzed using a thematic analysis approach. This approach allows researchers to identify key themes and patterns across the literature. In this study, the reviewed articles were categorized into several themes related to the role of entrepreneurial cognition in SME internationalization. Based on the literature review, three main themes were identified. First, entrepreneurial cognition as international orientation, which explains how global mindset and international orientation influence SMEs' intention to internationalize. Second, entrepreneurial cognition in opportunity recognition and strategic decision-making, which focuses on how cognitive processes help entrepreneurs identify international opportunities and make strategic decisions.

Third, entrepreneurial cognition and internationalization outcomes, which examines how cognitive characteristics influence international performance, such as export performance and international market growth. These themes were then used to synthesize the findings of previous studies and develop a conceptual understanding of the role of entrepreneurial cognition in SME internationalization.

RESEARCH RESULTS

This systematic literature review synthesized 24 empirical studies published between 2015 and 2025, examining the role of entrepreneurial cognition in SME internationalization. Based on thematic analysis, the findings are organized into three main themes that correspond to the research questions: (1) Entrepreneurial Cognition as International Orientation (addressing RQ1), (2) Entrepreneurial Cognition in Opportunity Recognition and Strategic Decision-Making (addressing RQ2), and (3) Entrepreneurial Cognition and Internationalization Outcomes (addressing RQ3). A structured overview of the thematic synthesis is provided in Table 1.

Table 1. Synthesis of Findings on Entrepreneurial Cognition in SME Internationalization

Theme	Key Constructs	Main Findings	Representative Studies
Theme 1: Entrepreneurial Cognition as International Orientation (RQ1: Conceptualization)	<ul style="list-style-type: none"> • Entrepreneurial Orientation (EO) • International Entrepreneurial Orientation (IEO) • Global Mindset • Individual Cognitive Attributes • Entrepreneurial Culture 	<ul style="list-style-type: none"> • EO/IEO dominantly conceptualized through innovativeness, proactiveness, and risk-taking • Global mindset distinguished between individual and corporate levels • Upper echelons perspective links CEO attributes (age, education, experience) to internationalization • Conceptualizations remain fragmented with limited consensus on definitions and measurement 	(Asemokha <i>et al.</i> , 2019; Dimitratos <i>et al.</i> , 2016; Felicio <i>et al.</i> , 2016; Forcadell & Úbeda, 2022; Saeed & Ziaulhaq, 2019)
Theme 2: Entrepreneurial Cognition in Opportunity Recognition and Strategic Decision-Making (RQ2: Process)	<ul style="list-style-type: none"> • Opportunity Recognition Competence • Decision-Making Logics • Effectuation vs. Causation • Mental Images • Risk Perception • Cognitive Heuristics 	<ul style="list-style-type: none"> • Cognition enables identification and exploitation of international opportunities through knowledge and imagination • EO influences opportunity development through effectuation and causation logics (full mediation) • Collective mental images shape joint internationalization opportunities • Risk-taking (not innovativeness/proactiveness) consistently predicts outcomes in some contexts • Cognitive biases influence pace and mode of foreign market entry 	(Dana <i>et al.</i> , 2016; Haaja, 2020; Karami <i>et al.</i> , 2023; Maitland & Sammartino, 2015; Oyson & Whittaker, 2015; Torkkeli <i>et al.</i> , 2018)

Theme 3: Entrepreneurial Cognition and Internationalization Outcomes (RQ3: Performance)	<ul style="list-style-type: none"> • Export Performance • International Growth • Speed of Internationalization • Geographic Scope • Firm Performance 	<ul style="list-style-type: none"> • Direct positive effects of EO/IEO on international performance (most studies) • Full mediation through: business model innovation, learning orientation, decision-making logics, innovation capability • Moderation by: network capability, proactiveness, export planning, sector context • Risk-taking shows stronger effects than innovativeness/proactiveness in some contexts • Cognition-performance link is context-dependent 	(Asemokha <i>et al.</i> , 2019; Brouthers <i>et al.</i> , 2015; Ismail & Alam, 2019; Nuryakin & Maryati, 2022; Ribau <i>et al.</i> , 2018; Solano Acosta <i>et al.</i> , 2018; Yoon <i>et al.</i> , 2018)
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Source: Own Compilation (2026)

Entrepreneurial Cognition as International Orientation

The first theme addresses RQ1, which focuses on identifying and analysing how entrepreneurial cognition is conceptualized in research on the internationalization of SMEs. This review found that entrepreneurial cognition in the literature on SME internationalisation has been conceptualized through several interrelated constructs, with entrepreneurial orientation (EO) and international entrepreneurial orientation (IEO) being the most prominent. Eighteen of the 24 studies reviewed operationalised entrepreneurial cognition through the dimensions of EO or IEO, which typically comprise innovation, proactivity and risk-taking. Asemokha *et al.* (2019) conceptualized entrepreneurial cognition as EO and analysed its relationship with business model innovation in Finnish SMEs. Similarly, Forcadell & Úbeda (2022) developed the concept of Individual Entrepreneurial Orientation (IEO) based on entrepreneurial experience, whilst Yoon *et al.* (2018) and Solano Acosta *et al.* (2018) used IEO as a multidimensional construct in South Korean and Mexican exporting SMEs, respectively.

Several studies have broadened conceptualization beyond traditional dimensions of entrepreneurial orientation. Swoboda & Olejnik (2016) defined IEO as a dynamic capability that mediates the relationship between scanning and planning processes and international performance. Karami *et al.* (2023) integrate entrepreneurial cognition with decision-making logic, demonstrating that EO influences the development of international opportunities through the logic of effectuation and causality. Ribau *et al.* (2017) distinguish between proactive and reactive SMEs, and find that EO mediates the relationship between innovation capability and export performance only for proactive firms.

A second area of research conceptualizes entrepreneurial cognition through the construction of a global mindset and international orientation. Felício *et al.* (2016) distinguish between individual global mindsets (cognition, knowledge, behaviour) and corporate global mindsets (analytical, risk-taking, aggressive, situational, strategic posture), demonstrating that different configurations of these attributes lead to the internationalisation of SMEs. Dimitratos *et al.* (2016) use an entrepreneurial culture incorporating attitudes towards risk, market orientation, and network orientation to describe differences in internationalization patterns.

A number of studies have adopted a corporate-level perspective, conceptualizing entrepreneurial cognition through the demographic and cognitive attributes of CEOs.

Saeed & Ziaulhaq (2019) studied the cognitive attributes of CEOs, including age, education, tenure, and political connections, and found that education and political connections had a positive effect on the internationalization of SMEs, meanwhile age had a negative effect. García-Cabrera *et al.* (2016) introduced the concept of entrepreneurial perceptions regarding institutional dimensions and opportunity motivation, demonstrating that normative institutions enhance opportunity motivation, which in turn influences internationalization.

In summary, the conceptualization of entrepreneurial cognition in research on the internationalisation of SMEs is multidimensional and fragmented. Although EO/IEO dominates the literature, studies are increasingly recognising the need to incorporate global mindset, decision-making logic, and individual cognitive attributes. However, there is still limited consensus on definitions and measurement, with studies employing diverse operationalisations, thereby complicating cross-study comparisons.

Entrepreneurial Cognition in Opportunity Recognition and Strategic Decision-Making

The second theme addresses RQ2, which analyzes the role of entrepreneurial cognition in the internationalization process of SMEs, particularly in the development of an international orientation and the identification of global market opportunities. Seven studies explicitly examined opportunity recognition as a key mechanism illustrating how entrepreneurial cognition influences internationalization. Torkkeli *et al.* (2018) found that competence in recognizing international opportunities significantly enhances the international performance of SMEs, and that entrepreneurial orientation strengthens firms' ability to identify and exploit international opportunities. Oyson & Whittaker (2015) provide in-depth qualitative insights showing that entrepreneurs discover international opportunities through two cognitive pathways: knowledge and imagination, suggesting that opportunity recognition is not merely a passive discovery process, but an active cognitive construction.

Several other studies have examined how cognitive processes lead to strategic decisions. Karami *et al.* (2023) demonstrate that the relationship between entrepreneurial orientation and the development of international opportunities is fully mediated by effectual and causal decision-making logic. Similarly, Haaja (2020) highlights the role of mental images in recognizing collective international opportunities. Entrepreneurs rely on cognitive perceptions of collaboration and foreign market attractiveness when identifying opportunities for joint internationalization. Hsieh *et al.* (2019) also emphasize that entrepreneurial cognition enhances firms' ability to evaluate international opportunities and select foreign markets. These findings suggest that entrepreneurial cognition does not directly create opportunities, but rather works through the decision-making frameworks that entrepreneurs employ in an international environment characterised by uncertainty.

In conclusion, entrepreneurial cognition plays a fundamental role both in identifying international opportunities and in shaping strategic decision-making processes. Cognition operates through various mechanisms, such as the ability to identify opportunities directly and decision-making logic (effectuation and causality). However, the studies reviewed indicate that cognition rarely operates in isolation, but rather interacts with networks, capabilities, and environmental conditions to produce internationalisation outcomes.

Entrepreneurial Cognition and Internationalization Outcomes

The third theme examines RQ3, which analyses how entrepreneurial cognition contributes to the internationalisation outcomes of SMEs, such as export performance and the firms' international growth. Fifteen studies investigated the direct relationship between entrepreneurial cognition and internationalization outcomes, with mixed findings. Most studies reported a positive direct effect. Yoon *et al.* (2018) found that IEO significantly improved international performance among technology-based SMEs in South Korea. Solano Acosta *et al.* (2018) demonstrated that IEO significantly enhances the international performance of exporting SMEs in Mexico. Theodosiou *et al.* (2025) found that IEO significantly increases the international performance of firms by facilitating the proactive identification and utilization of foreign market opportunities.

A key finding across multiple studies is that the relationship between entrepreneurial cognition and internationalization outcomes is often mediated by other variables. Asemokha *et al.* (2019) showed that business model innovation fully mediates the relationship between entrepreneurial cognition and international performance. Forcadell & Úbeda (2022) discovered that international entrepreneurship (measured as the speed of internationalization) mediates the relationship between IEO and firm performance. Swoboda & Olejnik (2016) demonstrated that IEO fully mediates the relationship between scanning/planning processes and international performance.

Several other studies have identified moderating variables. Yoon *et al.* (2018) discovered that networking capabilities act as a positive moderator in the relationship between EO dimensions and international performance. Ribau *et al.* (2017) found that the mediating role of EO between innovation capabilities and export performance applies only to proactive SMEs, not reactive ones. Dana *et al.* (2016) found that export planning moderates the relationship between risk-taking and export performance, and that international experience enhances export performance only when supported by export planning.

The reviewed studies ranged across multiple countries and contexts, revealing significant variations. Studies from emerging economies (García-Cabrera *et al.*, 2016; Maitland & Sammartino, 2015; Nuryakin, 2024; Rouijel, 2024) generally showed positive relationships between cognition (Aghazadeh & Zandi, 2022; García-Cabrera *et al.*, 2016; Nuryakin & Maryati, 2022; Rouijel, 2024) and performance but emphasized the importance of institutional context and networking capabilities. Felício *et al.* (2016) found sector-specific differences in how global mindset configurations lead to internationalization outcomes.

DISCUSSION

The findings of this systematic literature review provide a deeper understanding of how entrepreneurial cognition shapes the internationalization of SMEs. By synthesizing previous research, this review underlines the central role of cognitive factors in explaining variations in internationalization behavior among SMEs. The findings also provide several important contributions to the literature while revealing significant gaps and future research directions.

The review affirms that entrepreneurial cognition in SME internationalization research is a multidimensional construct that encompasses entrepreneurial orientation, global mindset, international orientation, opportunity recognition competence, decision-making logics, and individual cognitive attributes. However, the literature lacks conceptual integration. Most studies operationalize cognition through EO/IEO dimensions, potentially overlooking other cognitive aspects that may be equally

important. This finding addresses RQ1 and broadens Mitchell *et al.*'s (2007) entrepreneurial cognition framework by situating it within the context of internationalization research.

By summarizing cognitive perspectives, this review presents a microfoundational understanding of SME internationalization. The findings are consistent with Child *et al.*'s (2017) argument that SME internationalization is fundamentally owner-driven and shaped by the cognitive frameworks of entrepreneurial decision-makers. The review broadens this perspective by identifying specific cognitive mechanisms—opportunity recognition competence, effectual reasoning, mental images, and risk perception—through which entrepreneurs influence internationalization processes and outcomes. This addresses the call for more attention to microfoundations in international business research.

This review strongly supports the role of entrepreneurial cognition in opportunity recognition (RQ2). Entrepreneurs with a well-developed cognitive framework are better able to identify and capitalize on international opportunities, consistent with Baron's (2006) theory of pattern recognition. However, these findings further expand the literature by demonstrating that opportunity recognition is not a purely individual cognitive process—but rather shaped by networks (Oyson & Whittaker, 2015), collective mental representations (Haaja, 2020), and decision-making logic (Karami *et al.*, 2023). This suggests that entrepreneurial cognition in internationalization must be understood as socially embedded, not purely individual.

This review emphasizes how cognitive frameworks shape strategic decision-making in an international environment marked by uncertainty. The finding that the logic of effectuation and causality acts as a mediator in the relationship between effectuation and opportunity development (Karami *et al.*, 2023) is particularly significant. This suggests that entrepreneurial cognition influences internationalization not by giving pre-packaged solutions, but by shaping entrepreneurs' responses to uncertainty—whether through experimental effectuate reasoning or goal-oriented causal planning. This aligns with Sarasvathy's (2001) theory of effectuation and extends it into the context of internationalization.

This review also gives a deeper understanding of how entrepreneurial cognition contributes to internationalization outcomes (RQ3). Although prior research often assumed a direct relationship between cognition and performance, the synthesized findings reveal a more complex pattern. Cognition operates through various mediating mechanisms—business model innovation, learning orientation, innovation capability, and network accessibility. This suggests that cognitive advantages must be realized into organizational capabilities and strategic actions to generate performance outcomes, in line with the dynamic capabilities perspective (Teece, 2007).

The identification of moderating factors such as networking ability, proactive attitudes, export planning, and sectoral context indicates that the relationship between cognition and performance is conditional, not universal. This explains why some studies have reported strong effects, while others have found insignificant or inconsistent relationships. It also suggests that entrepreneurs' cognitive strengths are most valuable when reinforced by the right organizational capabilities and strategic planning.

Lastly, this review was driven by three identified gaps. First, regarding conceptual clarity, this review confirms the existence of fragmentation, but also reveals an emerging convergence around a multidimensional conceptualization that encompasses EO/IEO, global mindset, and opportunity recognition. Second, regarding mechanisms, this review identifies various mediation pathways (business model innovation, decision-making logic, learning orientation, innovation capability) that explain how cognition

translates into internationalization. Third, regarding outcomes, this review synthesizes evidence linking cognition to export performance, international growth, the pace of internationalization, and market expansion, while also revealing important contextual contingencies.

This review has several limitations. First, the literature search confined itself to English-language peer-reviewed articles, potentially excluding relevant studies in other languages or non-peer-reviewed sources. Second, the focus on Scopus and Google Scholar may have overlooked relevant articles indexed in other databases. Third, the heterogeneity in conceptualization and measurement across various studies limits direct comparisons. Future research should explore several directions. First, there is a need for greater conceptual clarity and measurement consistency to enable cumulative knowledge building. Second, longitudinal studies are needed to explore how entrepreneurial cognition develops through internationalization experiences. Third, comparative studies across various institutional contexts will enhance understanding of boundary conditions. Fourth, research should address the potential dark side of entrepreneurial cognition, such as overconfidence leading to premature or excessive internationalization. Fifth, integration with emerging technologies and digitalization perspectives will enrich understanding of cognition in contemporary internationalization.

This study also has several practical implications. For entrepreneurs and SME managers, these findings suggest that developing cognitive abilities—including a global mindset, the skill to recognize opportunities, and logical decision-making—can enhance the success of internationalization. However, cognitive advantages alone are not enough; they must be realized into organizational capabilities through business model innovation, learning, and networking. For policymakers, support programs should not only focus on providing resources but also on developing entrepreneurs' cognitive and decision-making capabilities for international markets.

CONCLUSIONS

This systematic literature review provides an overview of research on entrepreneurial cognition in the internationalization of SMEs, addressing three research questions related to conceptualization, processes, and outcomes. The review reveals that entrepreneurial cognition is conceptualized through various constructs, including EO/IEO, global mindset, opportunity recognition competence, and individual cognitive attributes. Cognition has a fundamental role in shaping the recognition of international opportunities and strategic decision-making, operating through mechanisms such as effectuation logic and causal logic. Cognition's contribution to internationalization is achieved through direct pathways and various mediating mechanisms, with important moderating conditions. Overall, this study demonstrates that SME internationalization is not only influenced by external factors, but also by the cognitive characteristics of entrepreneurs. Entrepreneurial cognition serves as a key driver that shapes both the process and outcomes of internationalization. By advancing a microfoundational understanding of SME internationalization, this review provides a foundation for future research and offers practical insights for entrepreneurs and policymakers.

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