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Article

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Explaining the international opportunity recognition with the qualitative comparative analysis: The role of dynamic capabilities self-efficacy and global mindset

Omar Heredia-Portillo, Enrique Armas-Arévalos

ABSTRACT

Objective: The objective of the article is to explore the configurations of dynamic capability activities and the global mindset attributes of managers that lead to international opportunity recognition. Particularly, sensing capability, seizing capability, transforming capability, networking capability, cognition, knowledge, and behaviour.

Research Design & Methods: This was a quantitative study that uses a fuzzy set qualitative comparative analysis (fsQCA) to analyse how different combinations of sensing capability, seizing capability, transforming capability, networking capability, cognition, knowledge and behaviour are related to the international opportunity recognition (IOR). The sample was made up of a manager from 21 Mexican micro and small companies in the information technology (IT) sector. All the analyses were performed in the QCA package in R.

Findings: The findings suggest that without seizing capability, international opportunity recognitions cannot occur, and other conditions cannot compensate for their absences. There are three causal paths derived from dynamic capabilities and a global mindset that explain when managers of firms recognize opportunities abroad. Findings also show that the seizing and networking conditions are present in the three causal paths that lead to IOR. There are no paths that lead to international opportunity recognitions without the presence of seizing and networking, reflecting their relative importance in guaranteeing IOR. On the other hand, the results show the asymmetric causality of the IOR, in which different sets of conditions are observable for the occurrence and non-occurrence of the IOR, which does not constitute a reversal of the same conditions.

Implications & Recommendations: The results confirm that managers seeking to recognize international opportunities can benefit from a high level of dynamic capabilities, self-efficacy, and a global mindset. These factors can be reinforced by investing in training, education, or experiential learning; or by recruiting a manager with high levels of these factors. In the same way, policymakers can establish programs that allow the reinforcement of these factors. Finally, given the smaller sample size, future research can test this framework across larger datasets, contexts, and time to test the model's reliability.

Contribution & Value Added: The results of this study reinforce the existing literature on the effect of manager dynamic capabilities and global mindset on IOR. It helps to verify the assumptions of Andersson and Evers (2015) and Tabares *et al.* (2021) about manager-level factors that influence IOR, by showing that the combination of explanatory conditions derived from dynamic capabilities and a global mindset explains when a manager recognizes opportunities abroad.

Article type: research article

Keywords: international entrepreneurship; international opportunity recognition; fuzzy-set qualitative comparative analysis (fsQCA); dynamic capabilities; global mindset; self-efficacy

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INTRODUCTION

International opportunity recognitions are the beginning of the internationalisation process (Johanson & Vahlne, 2009; Kraus *et al.*, 2017). Knowing opportunities allows for advancing in the internationalisation process through commitments in relationships and determines the place where managers will expand the operations of their firms (Johanson & Vahlne, 1977; 2009). Although existing theories explicitly assume that internationalisation is preceded by opportunity recognition (OR) (Chandra *et al.*, 2009), current research offers a limited explanation of international OR, or simply pays limited attention to it (Ellis, 2011; Mainela *et al.*, 2014; Teran-Yeppez *et al.*, 2020). Opportunity recognition is so important that some international business scholars have called for more research to understand how individuals recognize and exploit international opportunities (Teran-Yeppez *et al.*, 2020; Torkkeli *et al.*, 2018; Zahra *et al.*, 2011; Zucchella, 2021).

A growing literature confirms that managers are able to recognize opportunities due to their high levels of: (1) prior knowledge about the markets, the ways of serving the markets and the client problems (Mostafiz *et al.*, 2019; Shane, 2000; Tabares *et al.*, 2021); (2) social and business networks that allow them to see and hear from a distance, and give them access to new and different types of information and ideas that are not otherwise obtainable (Chandra *et al.*, 2009; Faroque *et al.*, 2021; Tabares *et al.*, 2021); (3) alertness to notice and be sensitive to information about objects, incidents, and behaviour patterns in the environment, with particular sensitivity to manufacturer and user problems, unmet needs and interests, and novel combinations of resources (Ardichvili *et al.*, 2003; Tabares *et al.*, 2021); and (4) international entrepreneurial orientation to emphasizes innovation, risk taking, and a generally proactive approach to business in foreign markets (Knight, 2001; Slevin & Terjesen, 2011; Tabares *et al.*, 2021; Wach, 2015). These factors can be important in several cases, but there is more to the international OR that needs to be looked at (Zucchella, 2021). Recently, dynamic capabilities (DC) and global mindset (GM) have found increasing acceptance among researchers seeking to explain accelerated internationalisation and international OR, arguing that managers possess high levels of these factors to recognize opportunities and capture value by exploiting them (Andersson & Evers, 2015; Ardichvili *et al.*, 2003; Knight & Cavusgil, 2004; Mainela *et al.*, 2014; Mathews & Zander, 2007; Nummela *et al.*, 2004; Schweizer *et al.*, 2010; Teece, 2016; Weerawardena *et al.*, 2007). Therefore, it is crucial to focus on the entrepreneurial processes of opportunity recognition and exploitation while studying business internationalisation (Wach, 2015). Teece (2018) calls for studies that focus on specific aspects of dynamic capabilities and opportunity recognition. However, there is still a paucity of empirical evidence on the effect of dynamic capabilities (Andersson & Evers, 2015; Buccieri *et al.*, 2020; Faroque *et al.*, 2021; Feng *et al.*, 2023; Helfat & Peteraf, 2015; Jones *et al.*, 2011; Mostafiz *et al.*, 2019) and the global mindset of entrepreneurs in the international OR (He *et al.*, 2020; Jones *et al.*, 2011; Torkkeli *et al.*, 2018). Even though the international OR is an important factor in the individual's decision to start the internationalisation process (Johanson & Vahlne, 2009; Kraus *et al.*, 2017). This has resulted in 'the opportunity side of the internationalisation process not being very well developed' (Johanson & Vahlne, 2015, p. 167), and many doubts about how managers discover and exploit international opportunities (Zahra *et al.*, 2011; Zucchella, 2021).

International OR is the trigger for the internationalisation process and deserves more attention than has been obtained so far (Chandra *et al.*, 2009). Therefore, this article studies how the different combinations of the dynamic capability activities and the global mindset attributes of the manager influence the international OR, based on the perspective of dynamic capabilities (Al-Aali & Teece, 2014), global mindset (Felicio *et al.*, 2016a; Nummela *et al.*, 2004), self-efficacy (Bandura, 2006), networking (Johanson & Vahlne, 2015) and fuzzy sets (Dusa, 2019; Ragin, 2008). The analysis was carried out at the level of the manager, because it is considered fundamental and less restrictive than at the level of the firm when seeking to understand internationalisation as a process that involves recognizing and exploiting international opportunities (Chandra, 2007; Ellis, 2011; Jones *et al.*, 2011; Muzychenko & Liesch, 2015; Zahra *et al.*, 2011). However, the studies that relate dynamic capabilities to international OR mostly maintain a theoretical approach (Al-Aali & Teece, 2014; Andersson & Evers, 2015; Bai & Johanson, 2018; Weerawar-

dena *et al.*, 2007; Zahra *et al.*, 2022), making it difficult to operationalize the concepts (Correa *et al.*, 2019). For this reason, this article uses, for analytical purposes, a direct analogy of dynamic capabilities through Bandura (2006) self-efficacy. Dynamic capabilities self-efficacy (DCS) is an attempt to capture the levels of the dynamic capabilities of the manager, allowing the intangible concepts involved to be measured and analysed more reliably (Barney *et al.*, 2011; Kevill *et al.*, 2017). On the other hand, since many international business (IB) phenomena are inherently configurational, fuzzy set qualitative comparative analysis (fsQCA) was adopted to address these patterns (Fainshmidt, 2020; Fainshmidt *et al.*, 2020). Fuzzy-set QCA has been accepted by the international business and entrepreneurship field, evidenced by the increasing number of publications using this method in indexed and high-impact journals (Ciravegna *et al.*, 2018; Dul, 2016; Felicio *et al.*, 2016; Fiss, 2011; Kusa *et al.*, 2021, 2022; Mostafiz *et al.*, 2021; Roig-Tierno *et al.*, 2017; Suder *et al.*, 2022; Tóth *et al.*, 2015). The fuzzy-set QCA was the ideal set theory technique to demonstrate how the membership of the cases in the causal conditions (dynamic capability activities and the global mindset attribute) relate to their membership in the outcome of interest (international OR), allowing to examine the causal conditions together to find equifinality where more than one path leads to the international OR (Fainshmidt, 2020).

The article aims to explore the configurations of dynamic capability activities and the global mindset attributes that lead to international opportunity recognition, particularly, sensing capability, seizing capability, transforming capability, networking capability, cognition, knowledge, and behaviour. Therefore, the following research question was addressed: what configurations of dynamic capability activities and the global mindset attributes lead to international opportunity recognition? The originality of this study lies in reinforcing the existing literature on the effect of manager dynamic capabilities and global mindset on international OR and reducing the paucity of empirical evidence on the subject (Andersson & Evers, 2015; Buccieri *et al.*, 2020; Faroque *et al.*, 2021; Feng *et al.*, 2023; He *et al.*, 2020; Helfat & Peteraf, 2015; Jones *et al.*, 2011; Mostafiz *et al.*, 2019; Torkkeli *et al.*, 2018). Furthermore, it seeks to verify the assumptions of Andersson and Evers (2015) and Tabares *et al.* (2021) about the manager-level factors that influence the international OR. It also provides valuable information to managers, owners, and entrepreneurs, who can benefit from a high level of dynamic capabilities self-efficacy and a global mindset. These factors can be reinforced in two ways. The first is an investment in training programs such as design thinking (Liedtka & Ogilvie, 2011), value proposition design (Osterwalder *et al.*, 2014), customer development (Blank & Dorf, 2012), business model design (Osterwalder & Pigneur, 2010), lean start-up (Ries, 2011; Teece, 2016), and lean launchpad (Blank *et al.*, 2014). The second is to recruit a manager with high levels of these factors. For policymakers, this study provides guidance for more effective and efficient assistance in the internationalization process. Policymakers can reinforce dynamic capability activities and the global mindset attributes, establishing training programs where managers learn to deeply understand customer needs, design, and validating and innovating business models. In addition, they may conduct business seminars and international trade shows that link managers with foreign buyers, sellers, and intermediaries.

The rest of the document is organized as follows. Section 1 will review the literature on international opportunity recognition, dynamic capabilities, and global mindsets. Section 2 will present the measures applied for data collection and describes the research methodology followed. Section 3 will present the empirical results, and the final section of the document will include the discussion and conclusions of the results highlighting the theoretical and practical implications and demonstrate the limitations of the study and recommends the potential direction of future research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Theoretical reasoning resides at the level of the individual and in predicting differences in the international OR. Theoretical logic was developed based on how different configurations of dynamic capability activities and the global mindset attributes lead to international OR. For this purpose, it begins with the definition of the dynamic capability activities and the global mindset attributes. Based on this review, hypotheses were developed about how these factors lead to international opportunity recognition.

Dynamic Capabilities Self-efficacy and International OR

While previous studies often conceptualize dynamic capabilities as organization-level capabilities (Di Stefano *et al.*, 2014), recent research in international business (Distel *et al.*, 2019) and international entrepreneurship (Mostafiz *et al.*, 2019) has emphasized the importance of understanding dynamic capabilities from the perspective of the individual. This study argues that dynamic capabilities and self-efficacy are concerned with skills/capabilities and offer potentially valuable synergies at the individual level (Kevill *et al.*, 2017) and thus are inherently difficult to study in terms of firm-level processes (Distel *et al.*, 2019; Helfat & Peteraf, 2015; Teece, 2012). This is consistent with Teece (2012), who suggests that the ability to assess and prescribe asset configuration changes rests on the shoulders of top managers, and the quality of organizations' managers is an important foundation for the strength or weakness of its dynamic capabilities (Teece, 2016). The quality of managers can be linked to their personal characteristics, as Bendig *et al.* (2018) and Durán *et al.* (2022) comment, levels of education, leadership styles, and the degree of self-efficacy of managers are relevant factors for developing dynamic capabilities in companies. In this sense, Helfat and Peteraf (2015) suggest that dynamic capabilities not only encompass the ability to perform physical activities, but also one or more mental activities that comprise cognition that can support dynamic capabilities to explain the strategic change of organizations, and the differences in the levels of cognitive abilities between individuals explain who more accurately detect new opportunities and threats. Thus, dynamic capabilities and self-efficacy may offer valuable synergies to counter the paucity of empirical studies seeking to apply, extend, and test the construct of dynamic capabilities in the context of international business (Zahra *et al.*, 2022).

Based on the above, self-efficacy could accurately reflect the processes and activities that comprise the dynamic capabilities (Bandura, 2006; Kevill *et al.*, 2017), because the perception of self-efficacy reflects people's judgments on their abilities to organize and execute courses of action required to achieve certain goals (Bandura, 1997; 2006). Therefore, the levels of dynamic capabilities of managers can be measured through the level of belief that they maintain about their own dynamic capabilities rather than by the dynamic capabilities that they really possess (Bandura, 2006; Kevill *et al.*, 2017). That is, the perception of dynamic capabilities self-efficacy reflects the degree to which the individual can perform dynamic capability activities. In consequence, the stronger the sense of personal efficacy, the greater the perseverance and the probability that the chosen dynamic capability activities will be carried out successfully (Bandura, 2006; Barney *et al.*, 2011).

Al-Aali and Teece (2014) suggest that in order to operationalize dynamic capabilities in the international context they can be usefully disaggregated into three groups of managerial processes and activities performed within the organization. However, although networking activities have a positive and significant relationship with dynamic capabilities (Abbas *et al.*, 2019), and a prominent role in successful internationalization (Weerawardena *et al.*, 2007) and the detection of international opportunities (Bai & Johanson, 2018), it is not conceptualized as a dynamic capability (Mort & Weerawardena, 2006). To fill this knowledge gap, in the present study, we added networking activities to the operationalization of dynamic capabilities in the international context. Because networking is a dynamic capability that changes throughout the evolution of the internationalization process, managers start with a set of networks which are continually renewed (Mort & Weerawardena, 2006).

In the literature, different self-efficacy scales are used to determine whether a person will try to participate in or avoid a task (Bandura, 1997; 2006): creative self-efficacy (Alvarez-Huerta *et al.*, 2022; Beghetto & Karwowski, 2017); international entrepreneurial self-efficacy (Wasowska, 2019); entrepreneurial self-efficacy (Alvarez-Huerta *et al.*, 2022; Shepherd & Patzelt, 2018); leadership self-efficacy (Dwyer, 2019); and networking self-efficacy (Kregar *et al.*, 2019). However, there is no self-efficacy scale for dynamic capabilities to determine manager's level of belief in their ability to successfully participate in activities involving dynamic capabilities: sensing, seizing, networking, and transforming. Using a self-efficacy scale is an attempt to capture the levels of the dynamic capabilities of managers, allowing the intangible concepts involved to be measured and analysed more reliably (Barney *et al.*, 2011; Kevill *et al.*, 2017). Furthermore, it could help reduce the paucity of empirical studies that focus

on applying, extending, and testing the construct of dynamic capabilities (Zahra *et al.*, 2022). Therefore, there is a need to introduce a new concept in this research that connects self-efficacy with dynamic capabilities. The concept is called dynamic capabilities self-efficacy and can be defined as a characteristic of managers that influences the success of their dynamic capabilities.

Dynamic capabilities provide managers with a wide range of diverse resources and capabilities; however, if managers lack perceived self-efficacy, these capabilities may not exist (Kevill *et al.*, 2017). Thus, dynamic capabilities self-efficacy refers to the manager's belief in his or her ability to successfully perform the activities that comprise the dynamic capabilities. That is, based on the literature review, the dynamic capabilities self-efficacy can be defined as (Al-Aali & Teece, 2014; Bai & Johanson, 2018; Peng & Luo, 2000; Ritter & Gemunden, 2003; Weerawardena *et al.*, 2007): The judgment of the manager about their ability to identify opportunities and latent needs of customers at home or abroad based on the interpretation of information from various sources (sensing), address and take advantage of international opportunities through innovation, investment or the design of a business model (seizing), build, maintain and coordinate relationships with senior executives of other firms and government officials within domestic and international networks (networking), and continually renew resources and organizational routines (transforming).

Dynamic capabilities and self-efficacy are important in the process of identifying domestic and international opportunities (Andersson & Evers, 2015; Drnovsek *et al.*, 2010; Muzychenko & Liesch, 2015; Schweizer *et al.*, 2010; Teece, 2007). As Andersson and Evers (2015) and Schweizer *et al.* (2010) argue, entrepreneurs have high levels of dynamic capabilities to recognize international opportunities and capture value by exploiting them. These capabilities not only drive survival and growth during internationalisation (Sapienza *et al.*, 2006) but are also relevant to improving the performance of companies open to international trade and exposed to a combination of opportunities and threats with rapid technological changes (Teece, 2007). Mostafiz *et al.* (2019) found that there is a positive relationship between the dynamic managerial capabilities of entrepreneurs and the identification of international opportunities. Similarly, Tabares *et al.* (2021) identified that cognition, human capital, and social capital allow managers to identify a wide range of international opportunities and select the best ones. Thus, the dynamic capabilities self-efficacy, as will be seen later, is a vehicle to assign membership levels to dynamic capability sets (full membership, point of indifference, or total exclusion) in the fuzzy-set QCA analysis.

Sensing capability. This capability provides the manager with the information and knowledge necessary to detect opportunities at the local and international levels (Teece, 2007; Al-Aali & Teece, 2014). The activities that comprise this capability are like the activities of the opportunity recognition process developed in the entrepreneurship literature (Teece, 2016). Sensing capability involves exploring all technological possibilities, probing local and foreign markets, listening to customers and scanning the national and international business environment, building and testing hypotheses about the market and technological evolution, including recognition of latent demand at a global scale (Al-Aali & Teece, 2014), like, maximizing expected returns and minimizing risk by testing and adapting ideas (Osterwalder *et al.*, 2020). This is achieved when the manager is capable of interpreting and filtering information in any form and through any available source in order to create a hypothesis about the probable evolution of the technologies, the needs of the clients, and the possible market responses (Teece, 2007). Based on the above evidence, the following is hypothesized:

Proposition 1: A high level of sensing capability can lead to an increase in international OR.

Seizing capability. As Shane and Venkataraman (2000) point out, identifying opportunities is a necessary condition for entrepreneurship, but it is not enough. Once opportunities are correctly detected and calibrated, they need to be seized (Al-Aali & Teece, 2014). Exploiting opportunities requires a strong seizing capability to design and refine a business model that allows capturing a part of the value that is created for customers and having the ability to decide which ideas are most viable to mobilize available resources (Teece, 2007). In addition, it requires the ability to mobilize resources globally to address opportunities, build a global supply chain and establish strategic alliances (Al-Aali & Teece, 2014). The business model describes how an organization creates, delivers, and captures

value (Osterwalder *et al.*, 2014) and in most cases, its development begins with a deep understanding of customer needs and familiarity with the different models that already exist (Teece, 2018). Design tools (client input, ideation, visual thinking, prototyping, storytelling and scenarios) are required to complement the insights to design viable business models (Osterwalder & Pigneur, 2010). Based on the above evidence, the following is hypothesised:

Proposition 2: A high level of seizing capability can lead to an increase in international OR.

Transforming capability. It is crucial that the manager is prospective enough to make a reasonable prediction about the capabilities needed to deliver a valuable solution to customers at the right time (Al-Aali & Teece, 2014). Transforming capabilities include selective removal of old products; renovating aging facilities both nationally and globally; and changing business models, methods, and organizational culture (Al-Aali & Teece, 2014). It has to do with the ability to change outdated business models to more robust models, this includes scaling emerging business models, renewing those in decline and protecting successful ones, ensuring growth, improving returns, and minimizing risk (Osterwalder *et al.*, 2020). The goal is to continually prevent existing business models from collapsing by protecting, improving, and reinventing them (Osterwalder *et al.*, 2020; Teece, 2018). Based on the above evidence, the following is hypothesised:

Proposition 3: A high level of transforming capability can lead to an increase in international OR.

Networking capability. It suggests a superior ability to act in international networks, which is based on the knowledge accumulated by building and maintaining relevant relations (Bai & Johanson, 2018; Weerawardena *et al.*, 2007). It facilitates the development of knowledge-intensive products and improves the performance of firms in the international market (Mort & Weerawardena, 2006). Recognition of the international opportunity will depend on the size and scope of an individual network, which takes time to develop (Ellis, 2011). The networks are not static; they change throughout the evolution of the internationalization process. Managers start with a set of networks which are continually renewed (Mort & Weerawardena, 2006). Managers must have a high level of networking self-efficacy to efficiently obtain and use the resources and capabilities obtained through their networks (Kregar *et al.*, 2019). In other words, the manager needs to trust his own abilities to proactively build and develop contacts and thus be able to detect international opportunities (Wolff & Moser, 2009). Networking has proven to be effective when business ties have not yet developed, so managers need to be actively involved in networking with foreign business partners and customers to gain access to opportunity identification (He *et al.*, 2020). The networking capability allows the identification and exploitation of international opportunities (Mort & Weerawardena, 2006; Bai & Johanson, 2018; Ellis, 2011; Nowiński & Rialp, 2016; Tabares *et al.*, 2021; Weerawardena *et al.*, 2007). Even unexpected meetings with friends and colleagues at events such as parties, business seminars, and international trade fairs can become valuable sources of networking knowledge to discover new opportunities (Nowiński & Rialp, 2016; Tabares *et al.*, 2021). Network relationships trigger and motivate internationalization, influence market selection decisions, and help gain initial credibility in establishing channels and access to additional relationships (Dar, 2019). Based on the above evidence, the following is hypothesised:

Proposition 4: A high level of networking capability can lead to an increase in international OR.

Global Mindset and International OR

The development of a global mindset is based on cultural self-awareness and openness to the diffusion of foreign values and practices in management processes (He *et al.*, 2020). It is characterized by an openness and articulation of multiple cultural and strategic realities both globally and locally (Levy *et al.*, 2007; Mostafiz *et al.*, 2019). It is the ability to recognize and adapt to cultural cues to intuitively see international opportunities (Solomon & Schell, 2009). It involves scanning the world from a broad perspective, looking for unexpected trends and opportunities, embracing the complexity and contradictions inherent in global interactions (Earley *et al.*, 2007). People with a high level of global mindset value diversity and multicultural teamwork; they are inclusive rather than exclusive, comfortable with ambiguity, continually seeking to discover new meaning and reshape boundaries to improve their lives (Ear-

ley *et al.*, 2007). Moreover, they are more aware of their cognitive processes and adapt their behaviour according to an integration of personal and cultural values (Clapp-Smith *et al.*, 2007). The global mindset is the body of knowledge, cognitive, and psychological attributes that allow a global leader to influence managers, groups and organizations presenting diverse cultural, political and institutional systems to contribute to the achievement of the goals of the global organization (Beechler & Javidan, 2007).

According to Wach (2017), a global mindset of the entrepreneur stimulates internationalisation, and the level of internationalisation is explained by the level of a global mindset of managers. In the same way, Oviatt and McDougall (1994) suggest; a global vision is the most important characteristic of the directors of companies that are born globally. For this reason, the global mindset is an important antecedent that allows accepting and uniting different cultures and markets in a global approach to observe patterns that lead to recognizing and exploiting international opportunities (Weerawardena *et al.*, 2007; Knight & Cavusgil, 2004; Mathews & Zander, 2007; Nummela *et al.*, 2004; Mainela *et al.*, 2014; Ardichvili *et al.*, 2003; Gupta & Govindarajan, 2002; Mostafiz *et al.*, 2019). From the perspective of dynamic capabilities, managers with a high level of global mindset acquire resources such as contacts with local government officials and knowledge about cultures to explore international opportunities and learn from the experience (Lazaris & Freeman, 2018). This means that there is a relationship between dynamic capabilities and a global mindset that leads to discovering business opportunities across borders. The global mindset is related to the decisions, actions, knowledge and ways of thinking of the individual to establish the strategies to position the firm in the international market (Felicio *et al.*, 2016a). Its main characteristic is the ability to associate different cultures and local markets with global dynamics, that is, the ability to assess reality from a contextual, multicultural or commercial perspective, and understand the common points to identify opportunities (Earley & Peterson, 2004; Felicio *et al.*, 2015; Felicio *et al.*, 2016a; Kedia & Mukherji, 1999; Mostafiz *et al.*, 2019). The concept of a global mindset continues to be important for the successful internationalization and as a determinant of logic in managerial decision-making (Torkkeli *et al.*, 2018). The identification of opportunities stems from a change in the manager's way of thinking, from orientation to the domestic market to see the world as a great market where there are enormous opportunities to discover, and a positive attitude to internationalization to achieve the company's growth objectives (He *et al.*, 2020). Global mindset contributes directly to internationalization, by allowing overcoming the limitations of resources and knowledge necessary to enter and compete in international markets (Lazaris & Freeman, 2018). This emphasizes that leaders need cognition, knowledge, and behaviour to successfully interpret and make sense of the complexities of the global environment (Gupta & Govindarajan, 2002).

Cognition. It relates to how executives process unknown and complex information during the early phases of international expansion (DeGhetto *et al.*, 2021). Similarly, Levy *et al.* (2007) argue that executives with higher cognitive may evaluate information about opportunities abroad from different points of view. In this way, cognition could facilitate the formulation of effective global strategies to take advantage of international opportunities, thus making these opportunities more attractive (DeGhetto *et al.*, 2021). The importance of a global mindset hinges on the proposition that cognitive structures represent and order a domain of information and broadly influence information processing (Levy *et al.*, 2007). The cognitive component describes how managers use the cultural knowledge and information available to attune to their social environment, motivating a person to adapt their behaviours according to a new cultural context (Story *et al.*, 2014). Cognitive characteristics are essential in the process of recognizing international opportunities. According to Tabares *et al.* (2021), people with high intention, perceived desirability, self-efficacy, commitment, alertness, imagination, willingness, flexibility, proactivity, risk-taking, and a global mindset are psychologically equipped to pursue international opportunities successfully. Cognition enables international entrepreneurs to build their expertise by identifying the right international opportunities to achieve non-financial performance (Mostafiz *et al.*, 2019). Consequently, cognitive schemes help managers to acquire and process information that allows them to make decisions that involve capturing international opportunities and growth in foreign markets (Tabares *et al.*, 2021). Cognition shows the non-observable elements directly in the minds of managers, such as knowledge formation, judgment and evaluation, reasoning and problem-solving to detect international opportunities (Zucchella, 2021). Based on the above evidence, the following is hypothesised:

Proposition 5: A high level of cognition can lead to an increase in international OR.

Knowledge. Distribution of prior knowledge of markets, ways to serve them, and customer problems in society influences those who discover an opportunity (Shane, 2000). International knowledge is a critical intangible resource for the international OR (Shepherd & Patzelt, 2018). The efficient knowledge structure enriches the entrepreneurial capability in decision-making to understand the needs of the global market (Mostafiz *et al.*, 2019). The more international knowledge of managers (based on previous experience), the greater the amount of opportunity recognitions in foreign markets (Mostafiz *et al.*, 2021; Shepherd & Patzelt, 2018). Knowledge, generic or specific, influences the volume and type of opportunities that are detected (Eckhardt & Shane, 2003). Knowledge acquisition activities positively and significantly affect the international OR (He *et al.*, 2020). Exposure to foreign cultures is the most direct way to gain genuine information about foreign markets, this provides insight into international opportunities. Thus, the more knowledge of foreign markets or cultures, the more likely is to consider expanding into foreign markets (Bao & Yin, 2020). Based on the above evidence, the following is hypothesised:

Proposition 6: A high level of knowledge can lead to an increase in international OR.

Behaviour. It refers to the positive attitude that is reflected in the manager's proactive and visionary behaviour to take risks in building cross border relationships (Felicio *et al.*, 2016a; Nummela *et al.*, 2004). Proactivity is based on understanding the market and its requirements, also on the ability to take risks (Nummela *et al.*, 2004). Research has pointed out the importance of export attitudes in explaining the propensity to internationalize (Calof, 1994). It is a key characteristic required in international business; therefore, it is important to develop these skills for the detection of international opportunities (Nummela *et al.*, 2004). Based on the above evidence, the following is hypothesised:

Proposition 7: A high level of behaviour can lead to an increase in international OR.

International Opportunity Recognition

Recognizing opportunities take place at the manager level (Kuckertz *et al.*, 2017). For this reason, it is better to conceive of opportunities as a project perceived by a manager that is potentially profitable but so far unexplored (Casson & Wadeson, 2007). That is, they are those situations in which new goods and services can be sold at a cost greater than their cost of production (Eckhardt & Shane, 2003; Shane & Venkataraman, 2000). The manager scans the pool of potential opportunities to select the one that best meets established criteria for success (Casson & Wadeson, 2007). In the international context, people discover international opportunities through a process of intentional and deliberate exploration, use different sources and reliable information channels, previous knowledge and networks to limit the duration of the search (Tabares *et al.*, 2021). According to Tabares *et al.* (2021) and Mostafiz *et al.* (2019), cognition (self-efficacy and global mindset), human capital (education and knowledge), and social capital (networking) psychologically equip and provide managers with knowledge and information to identify a wide range of opportunities and select the best.

The international OR detonates the internationalisation process (Johanson & Vahlne, 2009; Kraus *et al.*, 2017), helps to trace the path to advance through the commitments in the relationships, and determines the place where the managers will expand the operations of their firms (Johanson & Vahlne, 1977; 2009). That is, the decision to go global and the selection of a country is preceded by the business opportunities that individuals detect through information obtained from different sources. An explicit definition of the international OR is not often given in research (Muzychenko & Liesch, 2015), much less a scale for its measurement (Kuckertz *et al.*, 2017). In consequence, this study coincided with Kuckertz *et al.* (2017) and adapted their definition and measurement scale of the opportunity recognition to the international context, therefore, the international OR is a process characterized by being alert to business opportunities in other countries, actively searching for them and gathering information about new ideas on products and services for the foreign market.

RESEARCH METHODOLOGY

Research Model

Based on the previous arguments, Figure 1 shows the research model used to explore the configurations of dynamic capability activities and the global mindset attributes that lead to international OR. In other words, the model explores whether a configuration of dynamic capability activities and the global mindset attributes is present whenever the international OR occurs (necessity) and what configuration of these conditions guarantees that the international OR occurs (sufficiency), since knowing that a configuration of dynamic capability activities and the global mindset attributes is always present is sufficient evidence to know that the international OR will also occur (Dusa, 2019). However, some authors suggest a relationship between the number of explanatory conditions and the number of cases, for example, 5.6 cases for each condition (Ide & Mello, 2022) or a minimum of 4 cases for each explanatory condition (Marx & Dusa, 2011). Berg-Schlusser and De Meur (2009) argue that a good balance, for an analysis of between 10 and 40 cases, is achieved by selecting 4 to 7 explanatory conditions. Similarly, Thiem, and Mkrtychyan (2022) concluded that there is nothing in the theory of causation or in the algorithmic machinery of QCA that puts an upper limit on the number of explanatory conditions given a certain number of cases.

Based on the above, the model uses seven conditions to explain the international opportunity recognitions (IOR), all supported by the literature: sensing (SEN), seizing (SEI), transforming (TRA), networking (NET), cognition (COG), knowledge (KNO), and behaviour (BEH). The focus of the research was on the business manager rather than groups or organizations, because the individual level of analysis is considered fundamental and less restrictive when seeking to understand internationalisation as a process that involves recognizing and exploiting international opportunities (Chandra, 2007; Ellis, 2011; Jones *et al.*, 2011; Muzychenko & Liesch, 2015; Zahra *et al.*, 2011).

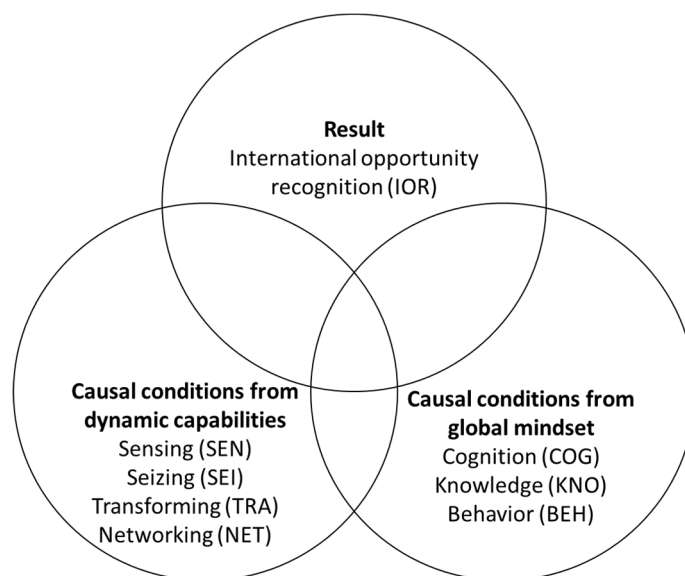


Figure 1. Research model

Source: own elaboration.

Dynamic Capabilities Self-efficacy

The existence of four activities of dynamic capabilities self-efficacy was assumed: sensing (SEN), seizing (SEI), networking (NET), and transforming (TRA). Sensing comprises seven items adapted from Al-Aali and Teece (2014), Andersson and Evers (2015), and Teece (2007, 2016): The manager can (1) explore the opportunities offered by technological developments in other countries; (2) test the feasibility of going to foreign markets; (3) listen to customers from other countries; (4) scan the global business environment; (5) build and test hypotheses about technological evolution and the global market; (6) recognize

latent demands on a global scale; and (7) deeply understand the needs of foreign customers. Seizing comprises five items adapted from Al-Aali and Teece (2014), Andersson and Evers (2015), and Teece (2007, 2016): The manager can (1) build supply chains on a global scale; (2) establish strategic alliances in other countries; (3) design and refine business models with a global vision; (4) discard ideas that do not serve the foreign market; and (5) mobilize resources on a global scale. Networking comprises five items adapted from Al-Aali and Teece (2014), Andersson and Evers (2015), Bai and Johanson (2018), Peng and Luo (2000), Ritter and Gemunden (2003), Teece (2007, 2016), and Weerawardena *et al.* (2007): The manager can build, maintain, and coordinate relationships with (1) foreign buyers; (2) foreign suppliers; (3) foreign competitors; (4) political leaders of other countries; and (5) government officials of other countries. Transforming comprises seven items adapted from Al-Aali and Teece (2014), Andersson and Evers (2015), and Teece (2007, 2016): The manager can (1) replace products and services globally; (2) renovate signature facilities globally; (3) innovate business models with a global vision; (4) renew the structure, methods and cultures of international companies; (5) quickly propagate a strategic vision at all levels of an international firm; (6) match an organization's capabilities to the international opportunity it plans to exploit; and (7) invest in additional capabilities required to enter the foreign market.

Global Mindset

The existence of three attributes of a global mindset was assumed: cognition (COG), knowledge (KNO), and behaviour (BEH). Cognition comprises four items adapted from Felicio *et al.* (2016): the manager (1) encourages interdisciplinary collaboration; (2) listens to others and changes their opinion; (3) believes that he can influence what happens around him; and (4) is an active member when working in a team. Knowledge comprises five items adapted from Felicio *et al.* (2016), Nummela *et al.* (2004), and Shane (2000): The manager (1) is in daily contact with international clients, suppliers, and employees; (2) has international travel experience; (3) has prior knowledge of the international market; (4) has prior knowledge of how to serve the international market; and (5) has prior knowledge of international customer issues. Behaviour comprises five items adapted from Felicio *et al.* (2016), Nummela *et al.* (2004): The manager (1) believes that internationalisation is the only way to achieve the company's growth objectives; (2) is willing to lead the company in the international market; (3) spends considerable time planning international operations; (4) sees the world as a single vast market; and (5) sees the world not only as a paradise but also as a school.

International Opportunity Recognition

International opportunity recognition comprises five items adapted from Kuckertz *et al.* (2017): the manager (1) is alert to business opportunities in other countries; (2) research potential foreign markets to identify business opportunities; (3) systematically looks for business opportunities in other countries; (4) seeks new ideas about products and services for foreign markets; and (5) scan the global environment for business opportunities.

Measurements, Data Collection and Analysis Method

The choice of the fuzzy-set QCA, among the different types of QCA, in this research is due to the following: (1) contemporary configurational thinking and the fuzzy-set QCA can help academics to produce ideas more closely aligned with the complex realities of international business than conventional research approaches (Fainshmidt, 2020); (2) the class of concepts involved and the empirical data at hand allowed them to be captured in fuzzy sets (Schneider & Wagemann, 2012); (3) the fuzzy-set QCA can be used for small (<50 cases) to very large (thousands of cases) sample sizes (Pappas & Woodside, 2021); and (4) it can be used to analyse data series that do not meet the assumptions required by regression analysis (Kusa *et al.*, 2022; Ragin, 2008).

A purposive sampling was used to select a manager of 21 micro and small companies in the information technology (IT) sector from the National Statistical Directory of Economic Units (DENU) of Mexico. This sampling made it possible to: (1) build a population of cases with the presence and absence of the result of interest (Ragin, 2014); and (2) leave open the possibility of adding and removing cases throughout the investigation process (Rihoux, 2017). Only Mexican-owned

companies that were not part of a multinational, subsidiary, or other international organization were selected (Chandra *et al.*, 2009). A structured online questionnaire with a manager was considered appropriate for data collection (Nummela *et al.*, 2004), which took place between October and November 2020. The informant was the founder, the owner or the manager involved in the strategic decision-making of the firm. The study focused on this type of companies, because they tend to have higher rates of internationalisation in countries with low levels of technology adoption such as Mexico (Chandra *et al.*, 2009; Nummela *et al.*, 2004; Picot *et al.*, 2015; Rönkkö & Peltonen, 2010; WEF & INSEAD, 2016). Once the questionnaire was developed, it was sent to a panel of experts in international business to discard the items considered irrelevant or of little importance (McGee *et al.*, 2009). Subsequently, the questionnaire was administered to a group of 15 managers from IT companies to modify, adjust and improve the reliability indicators, as well as to verify if the instructions and items were understandable to the subjects (García-Cabrero, 2009). The characteristics of the sample are presented in Table 1.

The measurement of all the items was carried out on a seven-point Likert scale, and due to the nature of the fuzzy-set QCA, the summed scales provided the method to calculate the seven explanatory conditions and the result (Felicio *et al.*, 2016). The dynamic capabilities self-efficacy items were phrased in terms of power and ranged from cannot do it (1) to, sure can do it (7) (Bandura, 2006; Beghetto & Karwowski, 2017; Muzychenko & Liesch, 2015). The global mindset and international opportunity recognition items ranged from strongly disagree (1) to strongly agree (7) (Felicio *et al.*, 2016; Kuckertz *et al.*, 2017). The reliability of the model scales was as follows: sensing $\alpha = 0.89$; seizing $\alpha = 0.91$; networking $\alpha = 0.86$; transforming $\alpha = 0.95$; cognition $\alpha = 0.70$; knowledge $\alpha = 0.93$; behaviour $\alpha = 0.82$; international OR $\alpha = 0.96$.

This study used a fuzzy-set QCA, a set theory analysis technique that uses formal logic and Boolean algebra in the analysis of truth tables in order to establish which conditions meet the fit parameters (consistency and coverage) to be considered necessary or sufficient for the outcome of interest (Schneider & Wagemann, 2012). The fuzzy-set QCA analysis consist of creating all combinations of conditions (factors) and establishing which factor configurations imply the expected results (outcome) by applying a logical inference (Suder *et al.*, 2022). Fuzzy-set QCA is an alternative to traditional methods and is as robust as any statistical technique including those that are based on regression analysis (Fainshmidt, 2020; Suder *et al.*, 2022). The most notable advantages of fuzzy-set QCA are: being able to bring together the best of qualitative and quantitative methods and allowing robust analysis of selected small samples through non-probability sampling (Befani, 2013). It was decided to use the QCA package in R, version 3.16 updated to April 08, 2022, with which complex, parsimonious and intermediate solutions were analysed (Dusa, 2019). The parameters to define a condition as necessary were: Inclusion of Necessity $\text{inclN} \geq 0.9$ measures the degree to which cases align to a particular rule, the more they fail to comply with this rule, the lower the value (Ragin, 2006); Relevance of Necessity $\text{RoN} \geq 0.6$ measures the triviality of the necessity, to which degree a condition is a constant when the result takes different fuzzy values (Dusa, 2019; Oana *et al.*, 2021). The parameters to define a condition, or configuration, as sufficient were: Frequency $n \geq 1$ shows the set of cases that present the same configuration (Ragin, 2006; Suder *et al.*, 2022); Inclusion of Sufficiency $\text{inclS} \geq 0.8$ reflects to what extent the presence of the sufficient configuration actually produces the result (Ragin, 2006; Suder *et al.*, 2022); Proportional Reduction in Inconsistency $\text{PRI} \geq 0.7$ measures the degree to which a configuration is sufficient for the presence and absence of the result (Flechtner & Heinrich, 2017; Oana *et al.*, 2021); Coverage $\text{covS} > 0.25$ shows how much of the result is explained by each solution term (Dusa, 2019); Unique Coverage $\text{covU} > 0$ measures how much of the explanation can only be attributed to that set and not to another (Dusa, 2019).

Table 1. Sample characteristics

Characteristic	Range	Share	Level
Sex	man	80.95%	Individual
	woman	19.04%	
Age	less than 25	4.76%	
	25–34	23.80%	
	35–44	57.14%	
	45–54	14.28%	
Studies	university studies	47.61%	
	graduate	52.38%	
Position	manager	47.61%	
	owner	52.38%	
Work experience	0–5 years	4.76%	
	6–10 years	4.76%	
	11–15 years	38.09%	
	16–20 years	28.57%	
	above 21 years	23.80%	
English level	basic	33.33%	
	medium	14.28%	
	advanced	52.38%	
Foundation	less than 1 year	9.52%	Firm
	2–5 years	28.57%	
	above 5 years	61.90%	
Size	micro	61.90%	
	small	33.33%	
	medium	4.76%	
Cluster membership	active member	23.80%	
	none	76.19%	

Source: own study.

RESULTS AND DISCUSSION

Results

Rihoux (2017) and Fiss (2011) suggest that the model to be analysed must show some relationships that a high value for a condition leads to a high value for the result. Table 2 presents the descriptive statistics and correlations for all measures. Except for cognition, all the variables present close variation values, which is good according to the recommendations of Rihoux (2017). As expected, all the explanatory conditions show a positive and significant relationship with the international OR, except for cognition, which shows a non-significant negative relationship. That is, high values of sensing capability, seizing capability, transforming capability, networking capability, knowledge, and behaviour lead to high values of international OR, which meets the recommendation of Fiss (2011).

Data Calibration

Table 3 shows calibration thresholds for conditions and outcome. To calibrate the data, a three-valued fuzzy set model was performed using a direct method (Ragin, 2006). With the help of the findTh() function, the optimal values of the three theoretical anchors of the seven conditions and the result were established (Dusa, 2019; Oana *et al.*, 2021). This allowed taking the highest values as the theoretical anchor for complete membership [1.0], an intermediate point on the scale as the qualitative limit that separates being inside or outside the set [0.5], and the lowest possible values as the total exclusion [0.0] (Ciravegna *et al.*, 2018).

Table 2. Descriptive statistics and correlations

Variable	Mean	Median	s. d	1	2	3	4	5	6	7
1. Sensing (SEN)	5.66	5.71	1.01							
2. Seizing (SEI)	5.19	5.40	1.17	0.69*						
3. Networking (NET)	4.91	5.00	1.07	0.45*	0.54*					
4. Transforming (TRA)	4.56	4.57	1.37	0.56*	0.54*	0.5*				
5. Cognition (COG)	6.38	6.50	0.56	0.25	-0.01	0.22	0.34			
6. Knowledge (KNO)	4.36	4.60	1.76	0.7*	0.6*	0.55*	0.65*	0.4		
7. Behaviour (BEH)	5.25	5.60	1.13	0.54*	0.51*	0.41	0.53*	-0.12	0.34	
8. International OR (IOR)	4.70	5.40	1.65	0.53*	0.77*	0.58*	0.61*	-0.17	0.51*	0.62*

Note: * correlations are significant at .05.

Source: own study.

Table 3. Calibration thresholds for conditions and outcome

Condition	Full member	Cross-over point	Full non-member
SEN	6.42	5.28	4.14
SEI	5.80	4.80	3.90
TRA	5.85	4.21	1.71
NET	5.80	4.80	3.60
COG	6.87	6.37	5.75
KNO	5.00	3.20	1.90
BEH	6.20	4.60	3.10
IOR	6.10	5.00	3.00

Note: theoretical anchors obtained with the function findTh() from QCA in R package.

Source: own study.

Analysis of Necessary Conditions

Identifying the necessary conditions is very important for business practice and theory, because without them the result cannot occur, and other conditions cannot compensate for its absence (Dul, 2016). In this sense, the purpose of the analysis of necessary conditions is to identify those conditions whose occurrence is necessary to achieve the international OR (Kusa *et al.*, 2022). According to Felicio *et al.* (2016), the presence of necessary conditions is relevant, but it is difficult to determine which combinations of conditions are necessary or unnecessary for a result. To deal with this problem, some authors propose the superSubset() function from the QCA package in R, to explore all possible combinations of conditions that may be required for the presence or absence of a given result (Dusa, 2019; Oana *et al.*, 2021). But this investigation follows Kusa *et al.* (2022) approach to conducting a classic test of whether individual conditions and their negations lead to the occurrence of high (low) international OR. A condition is necessary if the result is present, and the condition is also present, and it meets the established parameters (Schneider & Wagemann, 2012). Table 4 shows that seizing is a necessary, consistent [inclN = 0.91] and empirically non-trivial [RoN = 0.68] condition for the presence of international OR. In other words, the presence of a high level of seizing capability by the manager is a necessary condition for the occurrences of international OR.

Analysis of Sufficient Conditions

Sufficiency analysis is the main purpose of the QCA methodology, to find the minimum configuration of sufficient conditions for a given result (Dusa, 2019). In this research, a condition or configuration was sufficient if the result of interest occurred whenever the condition, or configuration, was present and it met the established parameters (Castillo-Ortiz & Alamos-Concha, 2017). Although the conservative and parsimonious solutions were analysed, the analysis focused on the intermediate solution applying directional expectations (Dusa, 2019; Ragin, 2009; Schneider & Wagemann, 2012), for this first a truth table was built with all the possible causal combinations, then this was reduced to the most significant configurations and later, the logical minimization was done with the Consistency Cubes Algorithm (Dusa, 2018; Tóth *et al.*,

2015). According to the results, the CEMA case, although consistent (inclS = 0.839), shows subset problems (PRI = 0.668), therefore it was eliminated from the minimization process (Table 5).

Table 4. Analysis of necessary conditions

Conditions	International OR (IOR)			International OR (~IOR)		
	inclN	RoN	covN	inclN	RoN	covN
SEN	0.870	0.610	0.684	0.606	0.464	0.429
~SEN	0.274	0.792	0.435	0.553	0.907	0.793
SEI	0.919	0.686	0.749	0.448	0.450	0.329
~SEI	0.176	0.712	0.262	0.658	0.938	0.880
NET	0.846	0.772	0.778	0.426	0.537	0.353
~NET	0.297	0.678	0.365	0.733	0.876	0.811
TRA	0.806	0.650	0.678	0.573	0.514	0.434
~TRA	0.327	0.755	0.459	0.575	0.859	0.727
COG	0.586	0.598	0.526	0.715	0.626	0.578
~COG	0.530	0.813	0.674	0.413	0.729	0.474
KNO	0.838	0.548	0.635	0.635	0.438	0.434
~KNO	0.254	0.800	0.435	0.467	0.890	0.721
BEH	0.894	0.605	0.692	0.588	0.444	0.410
~BEH	0.232	0.777	0.390	0.558	0.925	0.827
expression	1.000	0.038	0.536	0.989	0.034	0.477

Note: inclN = inclusion of necessity, threshold value ≥ 0.9 (Ragin, 2006); RoN = Relevance of necessity, threshold value ≥ 0.6 (Dusa, 2019; Oana *et al.*, 2021); covN = coverage of necessity. ~ = negation of a condition; + = logical conjunction.

Source: own study.

Table 5. Truth table for the presence of international OR

SEN	SEI	NET	TRA	COG	KNO	BEH	OUT	n	incl	PRI	cases
0	1	1	1	0	0	1	1	1	0.833	0.732	CPCO
0	1	1	1	0	1	1	1	1	0.927	0.852	MMME
1	1	0	1	0	1	1	1	1	0.839	0.668	CEMA
1	1	1	0	0	0	1	1	1	0.931	0.861	MEIC
1	1	1	0	0	1	0	1	1	0.933	0.872	CEVA
1	1	1	1	0	1	1	1	1	0.890	0.834	JSCE
1	1	1	1	1	1	1	1	5	0.853	0.818	MMGO, MSCi, CSFO, JCST, JSAG
0	0	0	0	0	0	0	0	1	0.296	0.039	NSSU
0	0	0	0	0	1	0	0	1	0.567	0.059	MSDI
0	0	0	0	1	0	1	0	1	0.442	0.132	MSIS
0	0	1	0	1	0	0	0	1	0.319	0.058	CSHM
1	0	0	0	1	0	0	0	1	0.373	0.061	NSCO
1	0	1	1	1	1	1	0	1	0.590	0.240	MMTA
1	1	0	0	0	1	1	0	1	0.759	0.330	NSEN
1	1	0	1	1	1	0	0	1	0.593	0.278	JPAL
1	1	0	1	1	1	1	0	2	0.572	0.329	NSQU, JSOC

Note: inclS = inclusion of sufficiency, threshold value ≥ 0.8 (Ragin, 2006; Suder *et al.*, 2022); PRI = proportional reduction in inconsistency, threshold value ≥ 0.7 (Flehtner & Heinrich, 2017; Oana *et al.*, 2021).

Source: own study.

Table 6 shows the three solutions that lead to the international OR. The first solution [SEN* SEI* NET* KNO] indicates that combining a high level of sensing, seizing and networking with knowledge by the manager leads to international OR. This solution explains 87.33% (inclS = 0.8733) of the international OR, includes 67.09% (covS = 0.6709) of the cases with the presence of international OR and is only sufficient for the presence of the result and not for its absence (PRI = 0.8456). The set of cases covered by this solution are (1) CEVA; (2) JSCE; (3) MMGO; (4) MSCi; (5) CSFO; (6) JCST; and (7) JSAG.

The second solution [SEN* SEI* NET* BEH] implies that combining high levels of sensing, seizing, and networking with behaviour guarantees the occurrence of the international OR. This solution explains 88.75% (inclS = 0.8875) of the international OR, includes 71.16% (covS = 0.7116) of the cases with the presence of international OR and is only sufficient for the presence of the result and not for its absence (PRI = 0.8618). The solution covers the following cases: (1) MEIC; (2) JSCE; (3) MMGO; (4) MSCl; (5) CSFO; (6) JCST; and (7) JSAG. The third solution [SEI* NET* TRA* BEH] requires combining high levels of seizing, networking and transforming with behaviour and is an empirically important way to produce the international OR. This solution explains 86.85% (inclS = 0.8685) of the international OR, includes 68.43% (covS = 0.6843) of the cases with the presence of international OR and is only sufficient for the presence of the result and not for its absence (PRI = 0.8434). The solution covers the following cases: (1) CPCO; (2) MMME; (3) JSCE; (4) MMGO; (5) MSCl; (6) CSFO; (7) JCST; and (8) JSAG.

Table 6. Intermediate solution for the presence of international opportunity recognition (IOR)

Configurations	inclS	PRI	covS	covU	Cases
SEN*SEI*NET*KNO	0.8733	0.8456	0.6709	0.0449	CEVA; JSCE; MMGO, MSCl, CSFO, JCST, JSAG
SEN*SEI*NET*BEH	0.8875	0.8618	0.7116	0.0497	MEIC; JSCE; MMGO, MSCl, CSFO, JCST, JSAG
SEI*NET*TRA*BEH	0.8685	0.8434	0.6843	0.0497	CPCO; MMME; JSCE; MMGO, MSCl, CSFO, JCST, JSAG
–	0.8792	0.8557	0.8064	–	–

Note: inclS = inclusion of sufficiency, threshold value ≥ 0.8 (Ragin, 2006; Suder *et al.*, 2022); PRI = proportional reduction in inconsistency, threshold value ≥ 0.7 (Flechtner & Heinrich, 2017; Oana *et al.*, 2021); covS = coverage, threshold value > 0.25 (Dusa, 2019); covU = unique coverage > 0 (Dusa, 2019). ~ = negation of a condition; + = logical conjunction; * = logical disjunction. Source: own study.

Analysis of the absence of international opportunity recognition (~IOR)

The configurations that lead to the presence of the result can be very different from those that lead to its absence; therefore, the non-occurrence of the result and the possibility of causal asymmetry were analysed in this research (Tóth *et al.*, 2015). A new truth table was constructed with the absence of the international OR as the result (~IOR), coded 1 if the manager showed a low level of international OR and 0 in all other cases (Dusa, 2019; Tóth *et al.*, 2015). According to the results, the NSEN case, although consistent (inclS = 0.881), shows subset problems (PRI = 0.670), therefore it was eliminated from the minimization process (Table 7).

Table 8 shows the two solutions that lead to the absence of the international OR (~IOR). The first solution [~SEI] indicates that low levels of seizing capability by the manager are an important path for the absence of the international OR. This solution explains 87.84% (inclS = 0.8784) of the absence of the international OR, includes 69.37% (covS = 0.6837) of the cases with the absence of international OR and is only sufficient for the absence of the result and not for its presence (PRI = 0.8515). The set of cases covered by this solution are (1) NSSU; (2) MSDI; (3) MSIS; (4) CSHM; (5) NSCO; and (6) MMTA. The second solution [NET* BEH] requires a combination of low levels of networking and behaviour by the manager to guarantee the absence of international OR. This solution explains 89.93% (inclS = 0.8993) of the absence of international OR, includes 51.09% (covS = 0.5109) of the cases with absence of international OR and is only sufficient for the absence of the result and not for its presence (PRI = 0.8993). The solution covers the following cases: (1) NSSU; (2) MSDI; (3) NSCOs; and (4) JPAL.

Table 7. True table for the absence of international OR

SEN	SEI	NET	TRA	COG	KNO	BEH	OUT	n	incl	PRI	cases
0	0	0	0	0	0	0	1	1	0.972	0.961	NSSU
0	0	0	0	0	1	0	1	1	0.913	0.941	MSDI
0	0	0	0	1	0	1	1	1	0.915	0.868	MSIS
0	0	1	0	1	0	0	1	1	0.958	0.942	CSHM
1	0	0	0	1	0	0	1	1	0.960	0.939	NSCO
1	0	1	1	1	1	1	1	1	0.870	0.760	MMTA
1	1	0	0	0	1	1	1	1	0.881	0.670	NSEN
1	1	0	1	1	1	0	1	1	0.844	0.722	JPAL
0	1	1	1	0	0	1	0	1	0.542	0.268	CPCO
0	1	1	1	0	1	1	0	1	0.581	0.148	MMME
1	1	0	1	0	1	1	0	1	0.676	0.332	CEMA
1	1	1	0	0	0	1	0	1	0.571	0.139	MEIC
1	1	1	0	0	1	0	0	1	0.545	0.128	CEVA
1	1	1	1	0	1	1	0	1	0.444	0.166	JSCE
1	1	0	1	1	1	1	0	2	0.790	0.671	NSQU, JSOC
1	1	1	1	1	1	1	0	5	0.313	0.150	MMGO, MSCI, CSFO, JCST, JSAG

Note: inclS = inclusion of sufficiency, threshold value ≥ 0.8 (Ragin, 2006; Suder *et al.*, 2022); PRI = proportional reduction in inconsistency, threshold value ≥ 0.7 (Flehtner & Heinrich, 2017; Oana *et al.*, 2021).

Source: own study.

Table 8. Intermediate solution for the absence of international opportunity recognition (\sim IOR)

Configurations	inclS	PRI	covS	covU	Cases
\sim SEI	0.8784	0.8515	0.6937	0.2748	NSSU; MSDI; MSIS; CSHM; NSCO; MMTA
\sim NET* \sim BEH	0.9239	0.8993	0.5109	0.0920	NSSU; MSDI; NSCO; JPAL
	0.8645	0.8336	0.7858		

Note: inclS = inclusion of sufficiency, threshold value ≥ 0.8 (Ragin, 2006; Suder *et al.*, 2022); PRI = proportional reduction in inconsistency, threshold value ≥ 0.7 (Flehtner & Heinrich, 2017; Oana *et al.*, 2021); covS = coverage, threshold value > 0.25 (Dusa, 2019); covU = unique coverage > 0 (Dusa, 2019). \sim = negation of a condition; + = logical conjunction; * = logical disjunction. Source: own study.

Discussion

Seizing is a necessary condition for international OR, without this capability international OR cannot occur and other conditions cannot compensate for its absence (Dul, 2016). This makes perfect sense because once opportunities are correctly detected and calibrated; they need to be seized (Al-Aali & Teece, 2014). This suggests that the manager must indispensably trust in his ability to design and refine a business model that allows capturing a part of the value that is created for customers and having the ability to decide which ideas are most viable to mobilize the available resources and to be able to detect international opportunities (Teece, 2007). On the other hand, the results support hypotheses 1, 2, 3, 4, 6 y 7 of this study, by revealing three antecedent configurations to international OR. The three configurations present subtle but important differences in the causal paths that lead to international OR and show that the combination of explanatory conditions, derived from dynamic capabilities and a global mindset, is what really explains when manager recognizes opportunities abroad. Solutions contain a set of INUS conditions [SEI* NET* (SEN* KNO + SEN* BEH + TRA* BEH)], which refer to those conditions that are unnecessary but sufficient to produce a result (Schneider & Wagemann, 2012) and can be obtained by factoring the model of the intermediate solution (Dusa, 2019). These conditions show two very important aspects. Firstly, the seizing and networking conditions are present in all three configurations that lead to international OR. There are no configurations that lead to international OR without the presence of seizing and networking, reflecting their relative importance in guaranteeing international OR. Secondly, these two conditions, either in combination with high levels of sensing and knowledge or sensing and behaviour or transforming and behaviour ensure the presence of international OR (Table 9).

Table 9. Common factors of the intermediate solution model for the presence of international OR

Intermediate solution model	Common factors
SEN*SEI*NET*KNO + SEN*SEI*NET*BEH + SEI*NET*TRA*BEH	SEI*NET*(SEN*KNO + SEN*BEH + TRA*BEH)

Note: ~ = negation of a condition; + = logical conjunction; * = logical disjunction.

Source: own study.

In other words, managers that detected international opportunities believe they are capable of mobilizing resources globally to address opportunities and capture value from doing so, build a global supply chain and establish strategic alliances, craft business models that capture a share of the value that is created for the client using the lean start-up method [SEI]. They also believe that they can build, maintain, and coordinate relationships with top executives of other firms and government officials within domestic and international networks [NET]. The seizing capability equips managers with the necessary and sufficient skills to exploit an opportunity, by designing a business model that allows creating, delivering and capturing a part of the value that is created for customers (Al-Aali & Teece, 2014; Osterwalder *et al.*, 2014; Teece, 2007).

As suggested by previous research, network ties, whether strong or weak, affect the way in which the attractiveness and feasibility of opportunities are perceived and not only facilitate international OR but also have the potential to trigger commitment to developing such opportunities (Nowiński & Rialp, 2016). In line with previous studies (Mostafiz *et al.*, 2019; Oviatt & McDougall, 2005), once the individuals discover an opportunity, they can combine their knowledge of the market and the product and the opportunity with the know-how and networking capability to explore where and how quickly the opportunity in foreign locations can be exploited. Networking allows individuals to establish better credibility and often establish alliances and other corporate strategies (Johanson & Vahlne, 2009), like gathering market intelligence, forging links with key overseas contacts, deepening relationships in current markets, and cultivating new segments of global buyers (Knight & Cavusgil, 2004; Mort & Weerawardena, 2006; Oviatt & McDougall, 2005). The manager needs to trust his own abilities to proactively build and develop contacts in order to efficiently obtain and use resources and capabilities that allow him to detect international opportunities (Kregar *et al.*, 2019; Wolff & Moser, 2009). Even unexpected meetings with friends and colleagues at events such as parties, business seminars, and international trade fairs can become valuable sources of networking knowledge to discover new opportunities (Nowiński & Rialp, 2016; Tabares *et al.*, 2021). Again, networking proves to be effective when business ties have not yet developed, so managers need to be actively involved in networking with foreign business partners and customers for effective access to information leading to identifying opportunities (He *et al.*, 2020).

The study shows also that the seizing and networking self-efficacy of the manager are not enough to guarantee the international OR, and they must be combined with other causal conditions in three different paths. *Firstly*, we combine them with the belief of being able to explore technological possibilities, test markets, listen to customers, scan the business environment, build and test hypotheses about technological and market evolution, and recognize latent demands on a global scale [SEN], and with experience in trips abroad and prior knowledge of the international market, how to serve it and its problems [KNO]. Wach and Głodowska (2021), proved that knowledge is crucial for internationalisation. They found that entrepreneurs with high levels of foreign language skills, previous experience in international business and international work experience has a positive impact on the pace and speed of internationalisation. This agrees with Shane (2000), even if information about a technological change is widely disseminated, only a subset of the population will have prior knowledge of markets, ways of serving markets, and customer problems, to trigger discovery of a particular opportunity. International knowledge is a critical intangible resource for the international OR (Shepherd & Patzelt, 2018). It enriches the entrepreneurial capacity in decision-making to understand the needs of the global market (Mostafiz *et al.*, 2019), positively and significantly influences the volume and type of opportunities that are detected (Eckhardt & Shane, 2003; He *et al.*, 2020). Therefore, the more internationally aware, the greater the amount of opportunity recognitions in foreign markets (Shepherd & Patzelt, 2018) and the more likely to consider going international (Bao & Yin, 2020; Mostafiz *et al.*, 2021).

Secondly, we combine them with sensing and with the positive attitude regard to internationalisation is the only way to achieve the company's objectives, be willing to lead the firm in the international market and see the world as a single and vast market [BEH]. Previous research has pointed out the importance of export attitudes in explaining the propensity to internationalize (Calof, 1994). It is considered a key characteristic of international business; therefore, it is important to develop these skills for the detection of international opportunities (Nummela *et al.*, 2004; Felicio *et al.*, 2016a). *Thirdly*, we combine them with behaviour and the perception of being able to selectively phase out declining products, renovate older facilities both nationally and globally, and innovate business models, methods, and organizational culture, and rapidly propagate a strategic vision throughout all levels of the firm considering the correct adaptation of the organization to the opportunity it plans to exploit [TRA]. This shows that it is crucial that the entrepreneur is proactive enough to make a reasonable prediction about the capabilities needed to deliver a valuable solution to customers at the right time (Al-Aali & Teece, 2014). The manager must be able to prevent existing business models from collapsing by protecting, improving and reinventing them (Osterwalder *et al.*, 2020; Teece, 2018). The results confirm what was stated by Schweizer *et al.* (2010), Andersson and Evers (2015) and Mostafiz *et al.* (2019), managers have high levels of dynamic capabilities with which they supplement learning to recognize opportunities abroad and capture value by exploiting them. And they may help develop innovative, knowledge-intensive products to outperform and overcome resource constraints in the foreign market, assess the quality of ideas, reduce uncertainty and develop the knowledge to act within networks (Bai & Johanson, 2018; Johanson & Vahlne, 2009; Mort & Weerawardena, 2006; Schweizer *et al.*, 2010; Tabares *et al.*, 2021).

CONCLUSIONS

The objective of the article was to explore the configurations of dynamic capability activities and the global mindset attributes that lead to international opportunity recognition, particularly, sensing capability, seizing capability, transforming capability, networking capability, cognition, knowledge and behaviour. The results of this study reinforce the existing literature on the effect of manager dynamic capabilities and global mindset on international OR, reducing the paucity of empirical evidence on the subject (Andersson & Evers, 2015; Bucciari *et al.*, 2020; Faroque *et al.*, 2021; Feng *et al.*, 2023; He *et al.*, 2020; Helfat & Peteraf, 2015; Jones *et al.*, 2011, 2011; Mostafiz *et al.*, 2019; Torkkeli *et al.*, 2018). In addition, it verifies the assumptions of Andersson and Evers (2015) and Tabares *et al.* (2021) about the manager-level factors that influence the international OR. All this by showing that the combination of explanatory conditions derived from dynamic capabilities and a global mindset explains when manager recognizes opportunities abroad. It also provides valuable information to managers, owners or entrepreneurs.

The results confirm that managers who actively seek to recognize international opportunities can benefit from a high level of dynamic capabilities self-efficacy and a global mindset. However, when the manager shows low levels of dynamic capabilities self-efficacy and a global mindset, he has two options to reinforce these factors. The first is to reinforce the factors by investing in training and education (Durán *et al.*, 2022) or experiential learning (Faroque *et al.*, 2021; He *et al.*, 2020; Tabares *et al.*, 2021). For example, since sensing capacity requires a deeper understanding of customer needs, it can be reinforced with design thinking (Liedtka & Ogilvie, 2011), value proposition design (Osterwalder *et al.*, 2014) and customer development (Blank & Dorf, 2012). The seizing capacity can be reinforced with business model design (Osterwalder & Pigneur, 2010), lean start-up (Ries, 2011) and lean launchpad (Blank *et al.*, 2014) programs. These programs equip individuals with the necessary tools to design and validate business models. The transforming capacity can be reinforced with programs like the one proposed by Osterwalder *et al.* (2020). This course teaches managers to manage and innovate their portfolio of business models and to establish a culture of innovation, leadership and entrepreneurship within the organization. Finally, networking capability can be strengthened by attending programs that link managers with international buyers, sellers, and intermediaries (Faroque *et al.*, 2021), even by attending unexpected meetings with friends and colleagues, such as parties, business seminars, and international trade fairs (Nowiński & Rialp, 2016; Tabares *et al.*, 2021). In relation to the global mindset, it is possible to strengthen it through exposure to foreign markets and cultures (Bao & Yin, 2020) and working in multicultural teams

(Earley *et al.*, 2007). That is, working with managers, groups and organizations that present diverse cultural, political and institutional systems (Beechler & Javidan, 2007). The second option to strengthen dynamic capabilities and the global mindset is to recruit a manager with high levels of these factors. Distel *et al.* (2019) and Bendig *et al.* (2018) state that recruiting is a feasible way to develop dynamic capabilities and can set the stage for encouraging other managers to develop new competencies.

In addition, the three different combinations of dynamic capability activities and the global mindset attributes could provide the abilities and confidence managers require to achieve superior performance of firms both in the domestic market and abroad. It allows creating a barrier to imitation, because the rivals will not be able to understand what combinations and levels of the configuration of dynamic capability activities and the global mindset attributes are based on strategies, generating an ambiguity between the causal connection of actions and results (Fiol, 1991; Lippman & Rumelt, 1982). Managers commonly have well-identified sufficient combinations of ordinary capabilities for their firms to operate in the short term (Winter, 2003), achieving technical efficiency by doing things right across core business operational, administrative and governance functions (Teece, 2014). However, while some combinations of ordinary capabilities make it possible to do the right things (Teece, 2014), the combinations of dynamic capability activities and the global mindset attributes from this research make it possible to do the right thing in a timely manner through assessing the business environment and opportunities, the correct management orchestration of resources and capabilities (Teece, 2016; 2018).

For policymakers, this study provides guidance for more effective and efficient assistance in the internationalisation process. Policymakers play a key role in the development of the dynamic capabilities self-efficacy, because individuals who perceive public policies as supportive for some entrepreneurial activities (for example, access to qualified consultants, services and information, or loans, credits and public subsidies) increase their entrepreneurial self-efficacy beliefs (Nowiński *et al.*, 2020). According to Nowiński *et al.* (2020), the support of the public policies improves individuals' perceived desirability and feasibility in terms of starting their own business. In effect, this establishes that policymakers should assist in activities that encompass the different configurations of dynamic capabilities self-efficacy and global mindset to guarantee the international OR. For example, policymakers can establish training programs where managers learn to deeply understand customer needs, design, validate, and innovate business models to reinforce managers' dynamic capabilities self-efficacy. In addition, they can conduct business seminars and international trade fairs that link managers with foreign buyers, sellers, and intermediaries, facilitate business missions abroad, and encourage the study of foreign languages, to reinforce the global mindset attributes of managers.

Beyond studying the characteristics of IT firms, this research focused on the most promising analysis for the study of the international OR, the level of the manager (Chandra, 2007; Jones *et al.*, 2011; Zahra *et al.*, 2011). When the central concern is to learn how individuals recognize international opportunities, the approach at the manager level is more appropriate and less restrictive than the approach at the firm of which the individual may be a part (Ellis, 2011). On the other hand, the results show the asymmetric causality of the international OR, in which different sets of conditions are observable for the occurrence and non-occurrence of the international OR, which does not constitute a reversal of the same conditions (Tóth *et al.*, 2015). The explanation of the presence of international OR did not provide information to infer its absence; both results (IOR, \sim IOR) required different configurations for its occurrence.

The focus on dynamic capabilities was also shown to provide a promising theoretical foundation for capturing internationalisation (Mort & Weerawardena, 2006; Mostafiz *et al.*, 2019; Zahra *et al.*, 2022), and this in combination with self-efficacy provides a vehicle for turning intangibles into tangibles for more reliable empirical research and measurement (Barney *et al.*, 2011; Kevill *et al.*, 2017). Thus, there is a substantial promise for international OR research at the nexus between entrepreneurship, internationalisation, dynamic capabilities, global mindset and self-efficacy (Mostafiz *et al.*, 2021; Sapienza *et al.*, 2006; Teece, 2018; Teran-Yeppez *et al.*, 2020; Torkkeli *et al.*, 2018; Zahra *et al.*, 2011; 2022; Zucchella, 2021). Fuzzy-set QCA is an alternative to traditional methods and is as robust as any statistical technique including those that are based on regression analysis (Fainshmidt, 2020; Suder *et al.*, 2022). The most

notable advantages of fuzzy-set QCA are being able to bring together the best of qualitative and quantitative methods and allowing robust analysis of selected small samples through non-probability sampling (Befani, 2013). Fuzzy-set QCA did not help identify the effect size of a single factor in isolation. Instead, it allowed us to understand the complex interaction of dynamic capability activities and the global mindset attributes to achieve the international OR (Oana *et al.*, 2021). The results allow us to affirm what Fiss (2011) said, the set theory method used here is very promising to overcome the current challenges because it allows a detailed analysis of the configurations of the necessary and sufficient conditions for the international OR. By analysing dynamic capability activities and the global mindset attributes with fuzzy-set QCA, the current study represents a step towards building a better understanding of the crucial role of cause-and-effect relationships in organizations, a topic that is central to both the strategy literature and the research literature in an organization (Fiss, 2011).

The size of the sample used in this research turned out to be ideal to maintain sufficient knowledge of each of the cases and to meet the objective and scope of the study (Rihoux, 2017). The instrument showed an acceptable level of reliability to record the data that represented the conditions and the outcome of interest. It checked the existence of variation and relationship between all the conditions of the model. Calibration, regardless of the chosen method (direct or indirect) produced a useful and detailed calibration of the degrees of membership of the cases in the sets with values between 0.0 and 1.0 (Ragin, 2008). Due to the lack of information to determine a high or low degree of the conditions and the result, it relied on a statistical technique of cluster analysis with the `findTh()` function of the QCA package in R to find the optimal theoretical anchors (Dusa, 2019).

This study has several limitations: (1) the study acknowledges that one of the limitations of fuzzy-set QCA with a small sample is the generalization problem. While the results of this research provided complex and detailed solutions, the means to test, refine and validate the theories, it is only possible to generalize to a small number of cases (Befani, 2013). As Mostafiz *et al.* (2021) suggest, the results may or may not show consistency if replicated. Therefore, to achieve a greater consensus, a similar study should be carried out in other economies with different industries and a bigger sample; (2) although fuzzy-set QCA is an adequate method to study causal relationships with numerous interactions, it was necessary to limit the number of explanatory conditions, because the data matrix increases exponentially depending on the number of causal conditions (Felicio *et al.*, 2016a); (3) external factors that affect the context in which the research is carried out, for example, the health contingency and the global economic crisis due to the new SARS-COV2 coronavirus (COVID-19); (4) limited support from public and private organizations; and (5) lack of literature on the operationalisation of dynamic capabilities.

Therefore, we deem it important to delve into the subject in the following way: (1) analyse other sectors and especially family firms, in which it is very certain to find other combinations of dynamic capability activities and the global mindset attributes to produce the international OR; (2) using a bigger sample, contrast the fuzzy-set QCA approach with some statistical method such as structural equations with partial least squares, to study how both methodological approaches complement each other; (3) use a more generalizable sample, which strikes a balance between the sample required for a fuzzy-set QCA study and an inferential study; (4) identify additional conditions, for example, conditions at the firm, industry, or country level, or a mix of all; (5) make additional applications of the fuzzy-set QCA within the field of international business, entrepreneurship and strategic management; (6) address perceptual limitations by developing and employing objective measures for the conditions and outcome of interest; (7) take advantage of the multiple functions offered by the QCA package in R; and (8) to deal with the limitation in the number of explanatory conditions, future research can use Dusa (2018) Consistency Cubes, a fast and efficient method for exact Boolean minimization.

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Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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