

Entrepreneurial orientation and knowledge management: Comparing configurations of native and immigrant entrepreneurial firms

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Abstract

Purpose: Knowledge-intensive entrepreneurial firms succeed when they can better marshal their knowledge resources into productive advantages, necessitating entrepreneurial orientation (EO) and knowledge management (KM) processes of knowledge acquisition, application, conversion and protection. However, configurations of EO and KM processes are unaccounted for in extant theory, and the differences between the operating context of knowledge-intensive entrepreneurial firms are unclear. Therefore, this study investigates the configurational combination of EO and KM processes in two different contexts as native and immigrant entrepreneurial firms.

Research methodology: Drawing on the knowledge-based theory, the authors apply fuzzy-set qualitative comparative analysis (QCA) and necessity analysis of QCA (NCA) to data from Malaysian native ($N= 185$) and immigrant ($N= 146$) service-oriented entrepreneurial firms.

Findings: The results demonstrate that immigrant entrepreneurial firms' performance relies on knowledge processes of knowledge acquisition and application to ensure intelligent effectuation of EO; but for native entrepreneurial firms, the critical knowledge processes for performance success are knowledge conversion and protection. The NCA suggests that EO is critical for both firms; however, conjunctive causalities differ based on KM processes.

Originality: This study enriches the emerging knowledge-based theory of the entrepreneurial-oriented firm by advancing the theory and conversation by revealing how EO, KM processes and context link in which the profile of the EO-performance relationship is *configurationally dependent*. The study advances the knowledge-based theory of entrepreneurially-oriented firms to account for entrepreneurship in context.

Keywords: entrepreneurial orientation; knowledge management; fsQCA; necessity analysis; configuration; native entrepreneurs; immigrant entrepreneurs; knowledge-based view/theory.

1. Introduction

Knowledge-intensive entrepreneurial firms succeed when they can better marshal their knowledge resources into productive advantages. Doing so calls for an entrepreneurial orientation (EO) (Covin and Wales, 2019; Gali et al., 2023) and an ability to manage knowledge (Nguyen *et al.*, 2019). Strategic knowledge management (KM) processes are critical to transforming EO-driven opportunities into wealth among entrepreneurial firms (Mostafiz *et al.*, 2021a). However, while existing research has examined causal relationships between EO and firm performance (Wales *et al.*, 2020; Upadhyay *et al.*, 2022), what sustains EO among knowledge-intensive firms¹ and enables stable returns to firm performance is unclear (Seo and Park, 2022). Notably, studies tend to overlook the context of EO (Yin *et al.*, 2020) and how the operating context of differently profiled firms can alter the EO's rent-yielding effect (Hughes *et al.*, 2022).

Entrepreneurial firms in emerging economies experience constrained access to valuable knowledge while enduring significant market uncertainties (Ojala, 2016; Mostafiz et al., 2022b). The severity of these limitations on the entrepreneurial firm also depends on whether the context of the firm is native or immigrant (Webb *et al.*, 2011). Immigrant entrepreneurial firms (IEFs) suffer more than native entrepreneurial firms (NEFs) due to their liability of foreignness and newness in the host market (Moghaddam and Judge, 2014). To overcome this, IEFs must capitalise on EO and other strategic processes to stay competitive (Dabić *et al.*, 2020). Specifically, accumulating knowledge on institutional rules and regulations, cultural norms, markets, products, prices, and trends is crucial for IEFs' survival (Neuman, 2019). The native entrepreneurial firm

¹ Knowledge-intensive firms are those which consider knowledge as a primary resource of the firm (Starbuck, 1992). Knowledge-intensive firms depend on the knowledge integral in their activities and outputs as a source of competitive advantage (Arenius *et al.*, 2005).

already possesses much of this knowledge through its general human capital and native knowledge of the country's context. Concerning knowledge-intensive entrepreneurial firms then, the IEF is at a starting disadvantage, suggesting that theory and its recommendations around what knowledge management and EO practices matter the most for entrepreneurial firms are potentially erroneous and even dangerous when context is not included in the treatise and analysis.

Concurring with McKenny *et al.* (2018), the authors emphasize that entrepreneurship research requires a *configurational* approach. To understand the context of native and immigrant entrepreneurial firms, aligning EO with strategic KM processes of knowledge acquisition, application, conversion and protection is needed to locate answers for contextual differences. For instance, one can argue that NEFs possess a higher level of EO by virtue of their nativeness as they do not endure the liability of foreignness in the host market. Likewise, IEFs also can manifest similar EO (i.e. forward-looking and opportunity-seeking behaviour) as they discontinue business in the home market (Vinogradov and Jørgensen, 2017) and with a hope to prosper in a new host market (Storti, 2014) by nurturing effective KM processes. Therefore, the need for *configurational theorizing* is paramount to capture the context differences (Covin *et al.*, 2020; McKenny *et al.*, 2018) because variance-oriented logic (i.e. regression) of uniformity does not account for context (Douglas *et al.*, 2020) and the nuances specific to IEFs and NEFs. The authors follow a configurational analysis—a set-theoretic approach (Fiss, 2011) of applying the rules of logical inference to determine which logical implications the data support—in which configurational theory allows for conjunctural causation, equifinality, asymmetry, and causal asymmetry to determine the number and character of “different causal models that exist among comparable cases” (Ragin, 1987: 167).

The guiding assumption is that forming effective KM processes is vital for knowledge-intensive entrepreneurial firms to configure EO to accrue rents from its entrepreneurial posture. Effective KM processes are required for IEFs to navigate the liability of foreignness (Johanson and Vahlne, 2015) and newness (Gimenez-Fernandez *et al.*, 2020) and to outperform native entrepreneurial competitors (Bandera *et al.*, 2016). Therefore, acute knowledge deficiencies among IEFs (Webb *et al.*, 2011) should mean they rely more on organising KM processes to create wealth than native firms from forward-looking, opportunity-seeking and risky activities (i.e. an outcome of EO). In other words, these entrepreneurial efforts require effective KM processes configured differently in IEFs than NEFs due to the liability of foreignness and newness among IEFs and thus to transform EO into successful firm performance. The lack of research on the different configurations and contexts (Hughes *et al.*, 2021b; Yin *et al.*, 2020) compounds this problem, rendering theory on the utility of EO worryingly thin (Martens *et al.*, 2016; Covin and Wales, 2019). Likewise, theory building on immigrant entrepreneurship is highly fragmented, as observed by Sundararajan and Sundararajan (2015): “a lack of synthesized and integrated models has led to a fragmented understanding of the true drivers of immigrant entrepreneurship” (p. 30). The authors consider entrepreneurial behaviour, strategic processes, and context to advance the theory in immigrant entrepreneurship, as Dabić *et al.* (2020) called for.

Knowledge is context-specific (Simeonova, 2018). Therefore, it is important to understand the necessity of different KM processes and configurations in different organisational contexts. Drawing on the knowledge-based theory (KBT) of the firm, this study anticipates significant differences in how IEFs and NEFs configure EO and KM processes to create value entrepreneurially from knowledge resources for firm performance. The research question is: *What*

configurations of EO and KM processes lead to successful performance for immigrant and native knowledge-intensive entrepreneurial firms?

This study adopts a configurational theory (Covin *et al.*, 2020; McKenny *et al.*, 2018; Douglas *et al.*, 2020; Huang *et al.*, 2021) to the KBT of the entrepreneurial firm (Hughes *et al.*, 2022), and accounting for context and consider how configurations may differ between NEFs and IEFs, the contributions of this study are twofold. First, this study advances the *theoretical scaffolding* around EO (Wales *et al.*, 2021) that effective KM processes are paramount to sustain stable returns from EO among knowledge-intensive firms. Specifically, this study establishes the KM processes initiating internally directed entrepreneurial efforts to reconfigure knowledge resources and improve performance. This study enriches the KBT of entrepreneurial firms (Hughes *et al.*, 2022) by revealing configurational combinations of EO and KM processes to acquire, apply, convert, and protect knowledge resources. Different KM processes have been demonstrated to be context-specific (Simeonova, 2018). The authors extend this evidence by showing how the content of the configurations of KM processes for transforming EO into successful performance differ between IEFs and NEFs as different organisational contexts. These insights also advance the theory of immigrant entrepreneurship (Dabić *et al.*, 2020) by asserting what EO means to IEFs, and how IEFs sustain the returns of their EO through KM processes. Second, this study establishes a triadic theoretical explanation of EO, KM processes and context (NEFs vs IEFs) to explain the conditions required to stably unlock the potential of EO (Wales *et al.*, 2020). This study draws on knowledge requirement differences between knowledge-intensive NEFs and IEFs to reveal theoretically meaningful and useful differences in configurations of EO and KM processes. Specifically, the authors demonstrate why configurational theory is necessary to theorise what KM processes work to retain the utility of EO and is sufficient to achieve firm performance when two

firms originate from different country contexts. To achieve this, this study uses fsQCA and the NCA to identify the necessary conditions to establish conjunctural causations within these configurations, revealing which KM processes are *essential* for the success of different types of entrepreneurial firms. Hence, the study contributes to the understanding of KM processes and the two views of EO: the first view sees EO as forming new outputs in which firm performance relies on knowledge acquisition and application to ensure intelligent conversion of EO among IEFs. The second view establishes that NEFs can use EO to form new knowledge. In this situation, knowledge acquisition and application are bypassed, with knowledge conversion and protection are critical elements for the success of NEFs.

2. Theoretical grounding and configurational combinations

2.1 Knowledge-based theory, epistemology, and knowledge management processes

Kaplan *et al.* (2001) highlight the following elements of the KBT of the firm. First, it draws on and encompasses many of the insights developed in behaviourally-oriented theories of the firm, including the nature of competence underpinning wealth creation and sustainable rents. Second, it adds knowledge held at the firm level to what had previously been construed only at the individual level of analysis. It emphasises organisational processes for effective knowledge management (i.e., the development of routines to accumulate, apply, code, and protect knowledge) (Rezaei *et al.*, 2020) and, ultimately, the implications for superior performance. Third, it reflects an emergent understanding that new markets provide the necessary knowledge to firms. These firms may behave very differently from their rivals, which base their business on a portfolio of intangible resources. Finally, the KBT of the firm explains entrepreneurs' increasing awareness of the importance of managing knowledge resources to secure competitive advantage. The KBT of the

firm emphasises how KM processes coincide with a strategic posture to explain how a firm is organised productively to create wealth (Hughes *et al.*, 2022). Firms are repositories of knowledge (Dosi *et al.*, 1992; Foss, 1996) in which that expertise is transformed into economically useful products and services through a set of organising principles (Kogut and Zander, 1992). EO and KM processes are such organising principles (Hughes *et al.*, 2022).

Knowledge can be viewed from different epistemological perspectives. The epistemology of possession and epistemology of practice (Cook and Brown, 1999) are outlined below. From the epistemology of possession perspective, knowledge is considered explicit and tacit (Cook and Brown, 1999). Explicit knowledge is viewed as an object which exists independently of the individual and can be easily articulated (Cook and Brown, 1999). In contrast, tacit knowledge is viewed as a ‘know-how’ possession of individuals, which is very difficult to articulate (Cook and Brown, 1999). Explicit knowledge can exist in documents and written rules, while tacit knowledge is difficult to transfer into written rules, procedures, and documents (Hislop, 2012); therefore, tacit knowledge is difficult to imitate and is considered the source of competitive advantage, innovation and improved performance. Therefore, capturing and retaining tacit knowledge are crucial processes within (entrepreneurial) organisations (Yli-Renko *et al.*, 2001). The conversion of explicit to tacit knowledge and vice versa have been highlighted as of pivotal importance to organisations, where the knowledge conversion model (Nonaka, 1994) has been the most influential. From the epistemology of possession perspective, how explicit and tacit knowledge interact as different knowledge processes to generate value for the organisations (Singh and Soltani, 2010; Nonaka, 1994; Nonaka and Takeuchi, 1995).

Contrasting to the epistemology of possession, the epistemology of practice perspective considers knowledge as constituted in practice and individual actions (Cook and Brown, 1999).

Knowledge is not considered an individual possession, but knowledge is constituted in the practice of individual actions (Cook and Brown, 1999; Blackler, 1995). From the epistemology of practice, perspective knowledge is regarded as social and contextual 'knowing' (Orlikowski, 2002; Blackler, 1995). The epistemology of practice postulates that even the possession of tacit and explicit knowledge (e.g. knowledge sharing (Rezaei *et al.*, 2022)) is short of action and activity (Cook and Brown, 1999). However, the specific activities of individuals, groups, or organisations, are not the focus of the study, the focus is the configuration of different KM processes which encompass explicit and tacit knowledge, therefore, the epistemology of possession (Cook and Brown, 1999).

The epistemology of possession is a commonly followed view (von Krogh *et al.*, 2001). Because of the encompassing of explicit and tacit knowledge it is the view followed in this study. The authors follow the definition of knowledge management as a process. Knowledge management is defined as the process through which organizations utilise their intellectual and knowledge capital to generate value (Singh and Soltani, 2010). Alavi and Leidner (2001) explain knowledge management as the acquisition, organization, and communication of tacit and explicit knowledge within organizations to maximise productivity and efficiency. Knowledge management is also defined as the process of interaction of explicit and tacit knowledge in organizational contexts (Nonaka, 1994).

As the literature provides a plethora of definitions of knowledge and knowledge management, it also has described a plethora of KM processes and models. Some studies emphasise the importance of knowledge transfer and have followed the communication theory model (Liyanage *et al.*, 2009). Other models (e.g. Blackler, 1995) categorise organizations based on the type of knowledge and the novelty of the problems these tackle, and therefore, specific KM

processes are not described. An influential model describing knowledge conversion processes for knowledge creation is developed by Nonaka (1994). The knowledge conversion model outlines processes for converting tacit and explicit knowledge, which are: socialisation (tacit to tacit), externalisation (tacit to explicit), combination (explicit to explicit), internalisation (explicit to tacit). The knowledge conversion model has been used extensively (e.g. Lee and Choi, 2003) and extended in the literature (e.g. Hedlund, 1994) has extended the ontological dimension explaining knowledge transfer and transformation processes. While the knowledge conversion model provides a foundation for knowledge creation and the conversion of tacit and explicit knowledge, the model does not consider the application of knowledge. Knowledge application is vital for organizations as the value of knowledge is leveraged in its application (Gourlay, 2006; Choi *et al.*, 2010).

Some studies emphasise that the most important KM process is knowledge creation, others knowledge transfer, others knowledge application, and knowledge retention. In this study, it is postulated that these different KM processes are important and that their importance or need would differ on the organizational context where firms operate, as the organizational context, capabilities, and strategies would determine what combination of KM processes is the combination the organizations need to achieve entrepreneurship, competitive advantage, innovation. While studies have focused on selected knowledge processes, such as knowledge sharing (Yi, 2009) and innovation (Darroch, 2005), a holistic and broad understanding of the different KM processes, particularly in different contexts, and their role in transforming EO into successful performance, is needed. Importantly, the effects of the different KM processes differ based on organizational contexts (Simeonova, 2018). Therefore, as it is important to encompass different knowledge processes and understand their configurations in organizations operating in different contexts, the

authors follow the broad KM processes dimensions provided by Gold *et al.* (2001). Gold *et al.* (2001) outline the following dimensions: knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection as an organisation's ability to manage knowledge competitively and postulate that these KM processes are the essential conditions for effective knowledge management.

Knowledge acquisition processes help with accumulating knowledge, e.g., creation, capturing, collaboration (Gold *et al.*, 2001; Inkpen, 1996; Davenport and Prusak, 1998; Singh and Gupta, 2014). Acquisition of knowledge refers to the propensity of firms to obtain knowledge from markets and the external environment. Firms can also create new knowledge by re-engineering existing knowledge by gathering entrepreneurial experiences (Drucker, 1985), such as through an EO. Knowledge conversion processes render the existing and acquired knowledge useful, including its organization, integration, and coordination (Gold *et al.*, 2001; Grant, 1996). The knowledge conversion process refers to the ability of the firm to codify existing information to create economic value (Gold *et al.*, 2001). It is the mechanism for knowledge defragmentation, integration, combination, structure, coordination, and distribution. As knowledge accumulation is expensive (Darroch, 2003), poorly maintained or lost knowledge can cost a firm its competitive edge. For instance, effective conversion and distribution of knowledge reduce resource exploitation and minimise knowledge redundancy (Davenport and Klahr, 1998). Knowledge application processes are the processes of knowledge use and action, which include storage, application, and sharing (Gold *et al.*, 2001; Davenport and Klahr, 1998; Alavi and Leidner, 2001; Singh and Gupta, 2014). In the knowledge application process, firms use their accumulated knowledge (Darroch, 2005). An adequate knowledge application process includes the firm's storage, retrieval, contribution and sharing of knowledge (Turulja and Bajgorić, 2018). Knowledge

protection processes are designed to protect knowledge within organizations through policies, procedures, and technology to restrict knowledge access (Gold *et al.*, 2001; Porter, 1996). Knowledge protection processes aim to manage knowledge in its original and constructive condition and prevent it from altering and transferring to other organizations (Gold *et al.*, 2001; Väyrynen *et al.*, 2013).

2.2 A knowledge-based theory of entrepreneurial orientation as configuration

EO is conceptualised as a set of entrepreneurial behaviours consisting of proactiveness, risk-taking and innovativeness (Covin and Slevin, 1989; Miller, 1983). Aligning with the configuration theory (Wales *et al.*, 2020), this study treats EO as a product of the shared variance of its three dimensions. EO is both a knowledge-generating and transforming mechanism (Hughes *et al.*, 2022). This depiction is also commensurate with the KBT of the firm: the firm emerges as a vehicle to accumulate, transform and generate wealth from knowledge (Hughes *et al.*, 2022).

Innovativeness is defined as an organisational effort to encourage creativity and experiment with new ideas to develop new products, services and processes (Lumpkin and Dess, 1996). *Proactiveness* spans a firm's ability to develop and seize initiatives related to market opportunity through implementing innovation before competitors and leading on market changes (Morris *et al.*, 2011). *Risk-taking* means the willingness to depart from routine activities by taking actions such as venturing into new markets, risky borrowings and resource allocations with uncertain outcomes (Wiklund and Shepherd, 2011). The dimensions of EO should be recognised collectively to achieve an overall manifestation of entrepreneurship as an attribute for knowledge-intensive NEFs and IEFs. As entrepreneurial firms, IEF and NEF manifest EO behaviour (Dabić *et al.*, 2020; Hughes *et al.*, 2021b). Non-entrepreneurial firms are conservative in allocating resources and

expanding businesses (Nummela *et al.*, 2020) with a management style of being non-innovative, risk-averse, and passive or reactive (Covin and Slevin, 1988; Reuber *et al.*, 2017) and sometimes so reluctant to adopt entrepreneurial behaviour (Alayo *et al.*, 2019).

The EO-as-organisational configuration perspective captures internally directed entrepreneurial effort to link organisational processes with entrepreneurial behaviours (Wales *et al.*, 2020). Studies in this tradition evidence the contextual dependence of EO among new ventures (Hughes and Morgan, 2007; Hughes *et al.*, 2007; Real *et al.*, 2014) in institutionally and environmentally challenging economies (Yin *et al.*, 2020) and SMEs experiencing technological pressures (Kearney *et al.*, 2018) as potentially dependent on knowledge processes (Kearney *et al.*, 2018; Hughes *et al.*, 2018; Hughes and Mustafa, 2017). Many studies acknowledge the positive relationship between EO and firm performance (Covin and Wales, 2019) but routinely fail to explain how firms organise for EO and to theorise why differences persist among entrepreneurial firms. Configuration theory suggests that equifinal configurational paths of conditions exist as multiple routes to the same outcome. Therefore, the equifinality approach is needed to reveal the subtle effects of the interdependence of multiple conditions (Jin *et al.*, 2020), which helps to contribute to long-standing questions about how the EO-performance relationship manifests in different contexts (Covin and Wales, 2019; Wales *et al.*, 2020; Seyed Kalali, 2022).

In a KBT of the entrepreneurial-oriented firm, the equifinality assumption is essential to appreciate why differences in the ways entrepreneurial firms need to organise to acquire, apply, convert and protect knowledge (Gold *et al.*, 2001; Huber, 1991) to transform entrepreneurially oriented behaviours into greater or fewer economically useful products or services (Grant, 1996; Kogut and Zander 1992). Among NEFs and IEFs, extracting wealth from EO is especially challenging. First, EO generates high-risk, novel, forward-looking and greatly uncertain

behaviours. Transforming those initiatives into wealth requires acquiring and applying knowledge prudently to ensure intelligent action. Young entrepreneurial firms possess learning constraints of newness brought about by their relatively thin knowledge stocks (Hughes *et al.*, 2014). Formalising processes to acquire, transform and apply knowledge is essential to ensure its actions are intelligent and well-informed (Hughes *et al.*, 2014). Second, EO behaviours generate activities that create new knowledge as the firm explores new frontiers. Capturing that knowledge and refining firm behaviours require formalised knowledge processes that protect it and convert it into productive outcomes. For knowledge-intensive IEFs experiencing local and institutional barriers, the extent to which they create and protect new knowledge (Jafari-Sadeghi *et al.*, 2022) can help against their native rivals (Aliaga-Isla and Rialp, 2013; Boso *et al.*, 2013). Relatedly, “owning resources (knowledge) is not necessarily going to provide any advantage to the firm” (Darroch, 2005, p. 102). Those knowledge-intensive NEFs and IEFs that prosper more should differ based on how well they harness and configure the necessary KM processes in conjunction with EO as these firms manifest EO to acquire new knowledge. For IEFs especially, their lack of host country advantages (Shinnar and Young, 2008) suggests a far greater reliance on KM processes versus native firms that possess relatively more initial knowledge stocks, benefit from local access to knowledge, or are endowed with institutional knowledge of their domestic markets. For NEFs, EO is a greater priority to defeat immigrant entrants with prior knowledge stocks to cloud their visions of new market innovations (e.g., Hughes *et al.*, 2014).

2.3 Configurational theorising between EO and KM processes among NEFs and IEFs

Four theoretical assumptions are required to establish configurational theorising: conjunction, equifinality, asymmetry, and causal asymmetry (Furnari *et al.*, 2021; Misangyi and Acharya, 2014;

Misangyi *et al.*, 2017). Conjunction refers to the assumption that rather than having a single condition, the outcome can be achieved through a combination of multiple conditions (Misangyi *et al.*, 2017). Therefore, no single condition is *sufficient* to explain a high score in an outcome condition (Pandey *et al.*, 2022). In the configuration, EO, and KM processes, can lead to firm performance, which can also differ based on the context of the entrepreneurial firm (i.e. IEFs vs NEFs). Practising EO is appealing in theory, but the expense of manifesting EO is enormous (Wales *et al.*, 2011). As Covin and Wales (2019) eloquently warn, “EO in itself is not the recipe for long-term organisational success” (p. 11); it requires complementary strategic processes. From a KBT of EO, those strategic processes are the KM processes needed to harness intellectual capital to ensure EO initiatives are channelled productively, poor entrepreneurial endeavours are terminated in a timely fashion, and resources are not wasted on poorly executed efforts. However, the starting points among entrepreneurial forms for knowledgeable and informed activities vary by the operating context of the firms (Yin *et al.*, 2020). Further, the contextual differences between IEFs and NEFs in Malaysia are described in Table 1, which can influence these entrepreneurial firms in manifesting EO and navigating the KM processes differently. For instance, whereas NEFs can own multiple businesses in Malaysia, the IEFs owners can only hold one new business and 50% of an existing business (MM2H, 2020a). Such disparity in terms of policies can limit IEFs entrepreneurialism, such as opportunity-seeking behaviour in expanding businesses and staying competitive. It also implies that NEFs can enjoy intra-organisational knowledge transfer by virtue of owning multiple ventures; in contrast, IEFs can suffer lesser access to knowledge resources due to the liabilities of foreignness in the host country.

[Insert Table 1 about here]

Second, equifinality refers to the assumption that the same outcome condition can be achieved through different configurational combinations of conditions (Misangyi *et al.*, 2017). Wu *et al.* (2014) argue that multiple configurational combinations of conditions may co-exist and be sufficient to attain a high score for an outcome condition. Equifinality will occur in the event of a trade-off between the strength and weakness of other input conditions or different interaction effects of the input conditions on the outcome condition (Gresov and Drazin, 1997). For example, international intensity can be equally effective at maximising the degree of internationalisation (Arikan and Shenkar, 2021), depending on how they are paired to achieve the internationalisation objective of the firms (Satyanarayana *et al.*, 2022). In the context of IEFs and NEFs in Malaysia, this study theorises that the equifinal forms of EO and KM processes may co-exist due to their differential role in effectuating knowledge. For example, IEFs may exhibit highly dense configurations of EO, and KM processes compared to NEFs, which can substitute stringent KM processes with only those activities that buttress a smaller set of limitations in its domestic markets. Knowledge of subtleties and informal cultural standards are further than the reach of most IEFs, exacerbating barriers rooted in barriers of information and legitimacy asymmetries. Therefore, IEFs may have fewer EO and KM processes configurations available to them. In contrast, NEFs have fewer barriers and constraints. They may have a larger number of configurations available to them in which their KM processes need not be as rigorous as those needed for IEFs to complement the firm performance.

Third, asymmetry refers to the assumption of contrarian cases. Under this assumption, the input condition that leads to a high score for an outcome condition does not necessarily incur a low score if the same input condition is absent (Furnari *et al.*, 2021). For example, the effects of EO are inconclusive (Covin and Wales, 2019), with some positive effects (Engelen *et al.*, 2015;

Gupta and Batra, 2016) and negative effects on firm performance (Morgan *et al.*, 2015; Song *et al.*, 2017), which eventually warrant a configurational theorisation (Wales *et al.*, 2020). In the context of IEFs and NEFs, NEFs may use EO to create unique knowledge to compete against new entrants, such as IEFs for whom host country disadvantages compel a search for innovative solutions (Vinogradov and Jørgensen, 2017). The most important to the NEF are the KM processes around conversion (for codification) and protection (for defence from being stolen or inadvertent spill-over). Because they have a greater capacity to access local networks and have knowledge and experience of the market, well-developed knowledge acquisition and application processes are less critical than codification and protection (Teece, 2000). Conversely, their weaker initial knowledge endowments and lack of host country experience due to the liability of foreignness and newness require IEFs to learn from competitors and the market (Inouye *et al.*, 2020); necessitating most elements of KM processes concurrently and in combination to replace missing human and social capital the development of which are lengthy processes (Kanas *et al.*, 2009) — supporting the theory; opportunity recognition ability (Kloosterman and Rath, 2001) and qualifications (Vinogradov and Kolvereid (2007) have been identified as critical success factors in IEFs. In contrast, prior experiences are crucial to achieving success among NEFs (Vinogradov and Jørgensen, 2017).

The final assumption of configurational theorising is causal asymmetry. In this assumption, the configurational combinations of conditions that lead to a high score for an outcome condition are not mirrored opposites of those leading to a low score for the same outcome condition (Fiss, 2011). In simple words, the condition that leads to the higher firm performance of IEFs may differ from those that lead to the low firm performance of NEFs or those that have no impact on the performance of NEFs. This assumption of configurational theorisation contrasts with conventional

correlation thinking, as correlation theorisation is based on a symmetric relationship compared to configurational theorising (i.e., asymmetric relationship) (Fiss, 2011).

In the equifinality approach, both sufficiency and necessity are required to reveal the causal interdependence of multiple conditions that can act in parallel to outline an effect and confer the presence of the equifinal configurational combination of conditions that may co-exist to incur a high score in the outcome condition (Ragin, 2009). Sufficiency presents equifinal configurational combinations of conditions; however, necessity is required to reveal the single necessary condition (Dul, 2016). Performing NCA is crucial to fully evaluate and understand the configurational results (Douglas *et al.*, 2020) and answer *causal asymmetry*. For instance, the four sub-dimensions of KM processes as knowledge acquisition, knowledge conversion, knowledge application, knowledge protection, and EO may not generate value uniformly for IEFs and NEFs due to the differences in liabilities and barriers (as mentioned above). Due to the high liability of foreignness and newness among IEFs (Moghaddam and Judge, 2014), their KM processes and priorities may vary compared to NEFs (Teece, 2000), and EO can complement firm performance differently. Therefore, applying NCA is apparent to achieve completeness in configurational theorising.

3. Research methods

3.1 Research context

This study is based on survey data from knowledge-intensive Malaysian entrepreneurial firms operating in the service sector. Malaysia provides an interesting setting for understanding entrepreneurial activities because of its unique economic growth trajectory as well as distinct cultural, political, and social environments (Ahmad and Xavier, 2012). The Malaysian Government introduced the MM2H (Malaysia Second Home) as an investment migration program

to elevate growth further in 2002. As of 2018, the program has approved 43,943 applicants (IMI, 2019b) and has contributed approximately US\$4.5 billion to the GDP (IMI, 2019a). According to the World Bank (2022), 'As an upper middle-income country, Malaysia is both a contributor to the development of low- and middle-income countries and a beneficiary of global experience in its journey towards high-income and developed nation status'. The growth ambition to develop as a high-income country makes entrepreneurial environments in Malaysia unique from other emerging countries in the region. For example, the key achievements over the past five years include participation of the government and the private sector in policy reforms that have: increased competition, reduced prices, and reduced the costs of doing business in Malaysia through advisory support and workshops provided to the PEMUDAH, a special task force responsible for facilitating entrepreneurial activities (World Bank, 2022). As a result, it is anticipated that half of the total GDP of Malaysia will originate from entrepreneurial activities by 2030 (New Strait Times, 2019).

Literature suggests that service sectors have been contributing considerably to the country's economic growth, shifting Malaysia from a low-cost exporting country to an innovative and services specialist (Hodgkinson *et al.*, 2016). In Malaysia, 98.5% of businesses are SMEs, contributing 36.6% to the overall GDP; about 89% of SMEs are in the service sector, 5.3% in manufacturing and 4.3% in construction (SME Corp, 2019). Importantly, these firms are highly proactive, forward-looking, and risk-takers, posing rich entrepreneurial behaviour (Mostafiz *et al.*, 2021a) and significantly pouring resources into innovation to achieve competitive advantage (Chong *et al.*, 2019). Since many of the SMEs are operating in the service sector of Malaysia and the importance of knowledge management is crucial in the knowledge-intensive service sector

(Chaston, 2012) since it helps to homogenise the sample but retain a level of heterogeneity to achieve consensus in the findings of this study.

3.2 Data collection and sample

This study used the MATRADE directory to select the samples for NEFs, where 7298 SMEs were listed in the directory, of which 3123 firms operate in the service sector. These firms were randomly contacted through phone to verify their existence, origin, and willingness to participate in the study. Then, the authors emailed the survey questionnaire (in English) to those firms that agreed to participate (i.e., 945 firms). Multiple criteria were used to determine the samples. First, the authors asked these respondents about their ownership structures to identify whether they have any foreign owners. Second, information on the number of employees was requested from the respondent to ensure that the sample represents SMEs² criteria. Third, to validate their entrepreneurship status, two questions were asked to the entrepreneurs: “*whether the firm introduced any new products in the market in the last three years*”; “*whether the firm identified and recognised any new/novel opportunities in the last three years*” on a five-point Likert scale. The mean values of these questions are 3.92 and 4.11, respectively. Finally, 185 valid responses were identified that fulfilled the criteria. The response rate was 19.6%. The key respondents were the entrepreneurs of the firms. They were the key persons making strategic decisions, responsible for organisational objectives, and knowledgeable about EO, KM processes, and performance.

For IEFs, there is no database available as of 2018. Therefore, the authors communicated with the agents listed in the MM2H database. About 266 agents were registered with the Ministry

² According to the SME Corp (2019), the number of employees ranges from 0-75 for service sector to achieve the SMEs status in Malaysia.

of Tourism and Culture Malaysia (MM2H, 2018). The recipients of MM2H status are only allowed to establish businesses. Sasse and Thielemann (2005) note that the owners of the firms who have been outside of their native country and operate a business at least twelve months in the host country are to be considered as immigrant entrepreneurs. Phone communications were organised with these agents to collect information on the recipients of the MM2H program. A complete assurance was given to the agents that the data would be only used for academic research and not be disclosed elsewhere. The authors managed to get information of 1396 recipients of the MM2H program. After that, these firms were randomly contacted (via phone communication) to verify their operations and willingness to participate in the research. The authors emailed the survey questionnaire (in English) to these firms (i.e. 400) that agreed to participate in the research. Data on firm size were collected to determine SME status and ownership structure to determine whether the immigrant owns the majority of a firm and its operation (i.e. service/manufacturer). Those samples where the immigrant owns less than 50% of the firms were excluded from the dataset. IEF's entrepreneurial status has been checked by following the same criteria as NEFs. The mean value was 4.11 and 4.29, respectively. Finally, 146 valid responses were carried forward for statistical analyses. The response rate was 36.5%. In both cases, the authors computed the effect size of the sample and achieved adequate statistical power of 80%, 0.17 for NEFs and 0.16 for IEFs (Hair *et al.*, 2016). The data of this study were collected in two different timeframes. The authors collected data on EO and KM processes in the first round. In the second round (after four months), the authors collected data on firm performance for both IEFs and NEFs. A nonresponse bias test was conducted on both samples via a *t*-test of each variable, comparing the first 7% of the dataset with the last 7% in each round (Armstrong and Overton, 1977). The results show no statistically significant nonresponse bias ($p > 0.05$) between the two groups for neither NEFs nor

IEFs. Informant competence was assessed on a five-point Likert scale (1=strongly disagree; 5=strongly agree). The results achieved an average level of 4.39 and 4.62 in IEFs and NEFs, respectively, indicating that the informants in this research were competent in providing information (Heide and Weiss, 1995).

3.3 Measurement

Items and their properties are described and outlined in Appendix 1. Firm performance was measured by evaluating a firm's profitability and sales performance. Firm profitability and sales performance were adapted from Boso *et al.* (2013) and Menguc and Auh (2008). All items were measured on a five-point Likert scale. Kirca (2011) suggests the use of subjective measurement scales over objective measurement scales to operationalise performance in an emerging economy. Entrepreneurial SMEs are often reluctant to share objective performance data (Kirca, 2011). Prior studies demonstrate a strong correlation between subjective and objective performance measures (Dess and Robinson Jr, 1984). Therefore, it is advisable to use subjective measurement when objective data is unavailable (Kirca, 2011).

This study measured EO by its three sub-dimensions, representing innovativeness, risk-taking, and proactiveness sourced from a combination of Covin and Slevin (1989), Hughes and Morgan (2007), and Jambulingam *et al.* (2005) since scales specific to service firms are uncommon. The KM processes were measured through its sub-dimensions: knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection, using the items from Gold *et al.* (2001). All EO and KM processes items were measured on a five-point Likert scale (1=strongly disagree/very poor; 5=strongly agree/very good). All constructs in the study were adopted from previously validated items.

4. Analysis and results

4.1 Data characteristics and descriptive statistics

The results demonstrate that NEFs were on an average of eleven years old (min. five years and max. 15 years; $SD=3.20$) and employed on average 38 people (min. 18 and max. 75 people; $SD=8.6$). For IEFs, the average age was six years (min. three years and a maximum of 10 years; $SD=3.5$). These firms consisted of employees on an average of 31 people (min. 16 and max. 57; $SD=6.3$). The owners of NEFs were Malaysian, including 71% Malay, 26% Indian Malaysian, and the rest were Chinese Malay. For IEFs, 36% of firms were owned by Chinese, 28% by Korean, 26% by Pakistanis, and 10% by Bangladeshi immigrants. The finding represents that 49% are software development services firms, 23% are advertising and marketing consultancy services, 18% in architectural services, 16% in engineering and technical services and 10% in financial solution services for NEFs. For IEFs, 32% are IT services, 26% are database and data-processing services, 24% are miscellaneous electrical and electronics repair services, and 18% are visa and travel consultancy services. The results also show that first-generation immigrant entrepreneurs own and manage the sample firms. Tables 2a and 2b highlight the descriptive statistics of the variables.

[Insert Tables 2a and 2b about here]

4.2 Reliability and validity

Table 3 outlines the results of reliability and validity analyses. The Cronbach alpha values for all constructs are higher than 0.70, confirming internal consistency (Hair *et al.*, 2016). The average variance extracted (AVE) values are higher than 0.50 for each construct (Table 3). The square root of the AVE value (diagonal values in Tables 2a and 2b) for each construct is higher

than the corresponding correlations. The standard loadings of the items (Appendix 1) are higher than 0.6. Therefore, this study concludes that the measurement items used are reliable and valid.

[Insert Table 3 about here]

4.3 *fsQCA analysis*

In this study, there are several reasons to adopt configurational theorisation over reductionist analysis. First, reductionist analysis, for example, regression only captures individual conditions in isolation rather than delivering complex combinations required to account for context (Beynon *et al.*, 2021; Deng *et al.*, 2019). In configurational theorising, some conditions will only have effects in conjunction with other conditions, but not on their own (Woodside, 2014). Therefore, if multiple configurational combinations co-exist that lead to the same outcome, then the reductionist analysis cannot capture the potential of equifinality (Pickernell *et al.*, 2019; Şahin *et al.*, 2019). For instance, the different KM processes of knowledge acquisition, application, conversion and protection (because the purpose of each KM process is distinct) can conjunct with EO differently and specific to IEFs and NEFs – as an unproductive use of knowledge resource leads firms to lose competitive advantages (Teece, 2000). This study proposes configurational theorising because it has the strength to deal with all of these possibilities and generate nuanced and complex combinations of configurations required by IEFs and NEFs, which is not possible by applying reductionist analysis. This study uses fuzzy-set qualitative comparative analysis (*fsQCA*) to investigate the potential of equifinality and necessity analysis of QCA (*NCA*) to establish a single condition within configuration to data on Malaysian knowledge-intensive NEFs and IEFs.

fsQCA incorporates equifinality over a single solution achieved by regression (Ragin, 2009). Regression analysis is performed in cases where relationships are symmetrical. In asymmetrical relationships, contrarian case analysis can reveal such relationships, warranting

fsQCA (Woodside, 2014). First, the authors performed a contrarian case analysis between conditions and firm performance. All cases were divided into the highest and lowest quintiles. The mean value of the items was used to compute the factor score. This study rounded off the factor scores and obtained five quintiles for each condition. A cross-tabulation analysis was performed, and the cases were distributed into groups. The grey zones in Tables 4a and 4b represent the contrarian cases that contradict with the main effects (Woodside, 2014). Second, the effect size of the relationship between each condition and the performance for NEFs and IEFs were considerably small. Therefore, the presence of contrarian cases and low effect-size values further warrants applying fsQCA to analyse these asymmetrical relationships (Hughes *et al.*, 2017).

[Insert Tables 4a and 4b about here]

In fsQCA, the original data of the conditions and outcomes are needed to transform into fuzzy membership scores ranging from 0.00 to 1.00. This process was achieved by conducting a data calibration method where non-membership scores represent 5%, cross-over anchors represent 50%, and full membership represents 95% of the value (Ragin, 2009). The authors then created the truth table algorithm based on the calibrated fuzzy scores. It helps to reorganise the sufficient configurations for the outcome and eliminate the remaining configurations. The authors followed a minimum consistency cut-off point of 0.75 (Cheng *et al.*, 2013) and removed those cases that did not qualify (Fiss, 2011). Tables 5a and 5b highlight the results of truth table algorithm for IEFs and NEFs, respectively. The authors then computed standard analysis on the remaining scores and identified the configurational combinations with high scores to the outcomes. Although ‘specific analysis’ can produce fsQCA outputs, ‘standard analysis’ is accepted in management research

(Hughes *et al.*, 2017). Table 6 highlights the results of intermediate solutions³ of configurational combinations of EO and KM processes to complement the performance of IEFs and NEFs.

[Insert Tables 5a, 5b, and 6 about here]

Two fit parameters (consistency and coverage) are used to explain the results of fsQCA. Ragin (2009) suggests that “consistency measures the degree to which a relation of necessity or sufficiency between a causal condition and an outcome is met within a given dataset; coverage provides a measure of empirical relevance” (analogous to R^2 in regression) (Hughes *et al.*, 2017, p. 180). To obtain adequate sufficiency, high consistency is required in the subset relationships (Cheng *et al.*, 2013). The minimum consistency value for IEFs is 0.80 and for NEFs is 0.81, representing very high levels of consistency. Therefore, these configurations are sufficient conditions for the performance success of IEFs and NEFs. Coverage refers to the extent of configurations responsible for achieving the outcomes (Fiss, 2007). For both IEFs and NEFs, the minimum value is 0.30 for raw and solution coverage (Hughes *et al.*, 2017), indicating a large proportion of the performance of IEFs and NEFs. Four configurational paths (Figure 1: 1a, 2a, 3a, and 4a) for IEFs and five configurational paths (Figure 2: 1b, 2b, 3b, 4b, and 5b) for NEFs were found sufficient to achieve performance success. These multiple configurational combinations co-exist and are opposed to a single model. Therefore, firms are not limited to following one single model but could transfer from one to another to enjoy high performance.

[Insert Figures 1 and 2 about here]

4.4 Necessity analysis of QCA

³The standard analysis produces three different outputs: complex solutions, parsimonious solutions, and intermediate solutions. The most accepted solution in management research is an intermediate solution, as it is superior to both other solutions (Cheng *et al.*, 2013).

fsQCA tests for *sufficiency* but not *necessity* (Fainshmidt *et al.*, 2020). The authors employ NCA to resolve this limitation. The insights into the complex native and immigrant entrepreneurship setting in an emerging economy context are more actionable than if one analytical technique was used. The original survey data or calibrated score from fsQCA can be used to perform NCA (Mostafiz *et al.*, 2021b). However, the authors used the fsQCA-calibrated scores to perform an NCA to maintain consistency. The outcome condition was set to firm performance against the input conditions of EO, knowledge acquisition, application, conversion and protection to investigate necessary conditions. The recommended cut-off point for consistency is > 0.90 (Schneider and Wagemann, 2012; Soto Setzke *et al.*, 2021). Table 7 highlights its results. The findings demonstrate that EO (0.913), knowledge acquisition (0.916) and knowledge application (0.908) are the necessary conditions among IEFs. For NEFs, EO (0.901), knowledge conversion (0.91) and knowledge protection (0.900) are the necessary conditions for firm performance.

[Insert Table 7 about here]

4.5 Robustness analysis

Following Emmenegger *et al.* (2014), after creating the truth table algorithm, the authors changed the minimum consistency cut-off point to 0.60 from 0.75 and removed those cases that did not qualify for the configurations (Fiss, 2011). Then, the authors computed a standard analysis based on the remaining scores and identified the configurational combinations with high scores to the outcome. The results of the robustness analysis are outlined in Table 8. The results show some variations but do not significantly challenge the original fsQCA results.

[Insert Table 8 about here]

5. Discussion

The study aimed to understand '*what configurations of EO and KM processes lead to successful performance for immigrant and native knowledge-intensive entrepreneurial firms?*' Based on the KBT of entrepreneurial firms (Hughes *et al.*, 2022) and configurational theorising of EO (Covin *et al.*, 2020; McKenny *et al.*, 2018; Douglas *et al.*, 2020; Huang *et al.*, 2021), the study revealed multiple configurational combinations of EO and KM processes of knowledge acquisition, application, conversion and protection distinct between IEFs and NEFs. The results indicate that IEFs have fewer equifinal configurations available to them than NEFs, and these paths are *prima facie* dense. The findings further illustrate that most configurations for NEFs also require a dense set of KM processes, which asserts the importance of concurrently considering EO and KM processes as crucial organising principles for firm performance among IEFs and NEFs. The difference is in what specific aspects are sufficient and necessary, which are explained next.

Paths related to IEFs. Path 1a (knowledge-led IEFs) achieves high raw and unique coverage and is the most beneficial combination of EO and KM processes to secure superior performance. NCA results complement this path as EO and knowledge acquisition and application are revealed as the necessary conditions to enhance IEFs' performance. Previous studies suggest that IEFs can benefit from having a high-level of EO to develop networks (which serve as sources of knowledge) to tackle the liability of foreignness (Joardar and Wu, 2011) and achieve firm growth (Wang and Altinay, 2012). The novelty to the EO debate is how the configurations explain and provide the missing mechanisms required to convert EO to performance under these circumstances, with knowledge acquisition and application being the core requirements. For IEFs, then, EO is not enough, nor is it sufficient to merely have channels to acquire knowledge. This result affirms concerns led by Covin and Wales (2019) that EO is theoretically long-linked with firm performance (Seyed Kalali, 2022). Wales *et al.* (2020) suggest that the answer is in how EO

configures with other organisational processes to enable firm performance. While the KBT of EO attests to this, this study reveals nuance as knowledge *acquisition* and *application* as the most fundamental necessary conditions for IEFs in Malaysia. Theoretically, only by applying knowledge (acquired or created) can an IEF minimise the liability of foreignness and newness and resolve its challenges to achieve performance success.

However, path 3a (knowledge-acquiring IEFs) is distinct from other paths for IEFs, where knowledge acquisition achieves full membership and application, and conversion earns partial membership. Scholars now recognise that EO is contextually dependent and specific (Yin *et al.*, 2020). The authors suggest that it is possible to secure firm performance if IEFs acquire the proper knowledge and leverage its application and conversion prudently. Both fsQCA and NCA findings indicate that effective knowledge acquisition and application processes enable firm performance in IEFs. This process complements the idea of a learning orientation (Altinay *et al.*, 2016). Learning stimulates knowledge stocks and augments other capabilities to exploit new opportunities and meet emerging consumer needs (Turulja and Bajgorić, 2018) as consumers can switch to more affordable prices or better quality services (Baycan-Levent and Nijkamp, 2009). Securing a leading market role through nurturing knowledge acquisition and effective application is compulsory for IEFs.

Paths related to NEFs. Path 1b (knowledge-led NEFs – highest raw and unique coverage) reveals that NEFs can succeed by capitalising on EO, knowledge acquisition, conversion, and protection processes. NCA also complements these findings revealing that knowledge conversion and protection are necessary conditions for NEFs' performance. Compared to IEFs, where knowledge application was the prominent KM process, knowledge protection is critical for NEFs. Knowledge protection is an arduous and complicated process. It not only includes protecting

knowledge from theft but also guards against the inappropriate use of knowledge by competitors (Gold *et al.*, 2001). It is essential for NEFs because of their vulnerability to new entrepreneurial entrants (such as IEFs themselves) and the risk that domestic advantages stimulate complacency. The intellectual capital and property from their EO are reinforced by protecting knowledge to buttress competitive advantage. It is interesting to note how none of the paths relating to IEFs requires knowledge protection, yet four of the five paths for NEFs require knowledge protection. This is commensurate with the view that NEFs and IEFs require different KM processes organising principles, as this study theorised, indicating that a KBT of EO and KM processes is context-specific (Hughes *et al.*, 2022). IEFs require knowledge accumulation and application processes to rapidly and comprehensively close high relative knowledge gaps to their native peers. NEFs, on the other hand, must convert and protect their unique knowledge to sustain their domestic country's advantages over IEFs (i.e. the defensive and knowledge using NEFs). This difference demonstrates that a generic examination of KM processes and not accounting for context will fail to theorise the specific investments needed by IEFs and NEFs accurately. Theoretically, EO is insufficient, and the results demonstrate the need to configure EO with elements of KM processes—their importance is determined by the context of the entrepreneurial firm as an immigrant or native.

Absent of the liability of foreignness in the home market, NEFs can compete without strenuous KM efforts, provided knowledge conversion and protection processes are in place. Two very different conceptualisations emerge of what integration between EO, and KM processes must consist of for NEFs relative to IEFs. The knowledge protection process via patent or trademark is troublesome (Nguyen *et al.*, 2019), especially in an emerging economy like Malaysia, where the liability of foreignness may drive IEFs to learn and acquire knowledge from NEFs aggressively. This risk partly explains why knowledge conversion and protection matter for NEFs but

knowledge acquisition and application are critical for IEFs. These results raise important contributions to an emerging KBT of the entrepreneurially oriented firm, discussed next.

6. Contributions, implications, and conclusion

6.1 Theoretical contributions

Covin and Wales (2019) and Wales *et al.* (2020) call for new treatments of EO, specifically into its configuration with strategic dimensions. However, these calls traditionally omit the significance of context (Yin *et al.*, 2020). This is part of a broader debate in the entrepreneurship field about entrepreneurship *in context* (Welter *et al.*, 2019). Mostafiz *et al.* (2022) and Yin *et al.* (2020) halt this general trend and emphasise why context matters in the EO rent-yielding process. The study's findings delineate similarities and differences between NEFs and IEFs and demonstrate the role of operating context in providing a triadic theoretical explanation of EO, KM processes and context (NEFs vs IEFs). Regression studies commonly relegate contextual aspects to control variables. Instead, this study considered the empirical context directly and argued that equifinal and different configurations are needed based on the operating context of the entrepreneurial firm.

Understanding the phenomena that describe how EO manifests and creates wealth within firms and in a different context is critical for targeted theory development. It constitutes the first contribution of the study. This study enriches the emerging KBT of the entrepreneurially-oriented firm (Hughes *et al.*, 2022) by revealing how EO, KM processes and context (i.e. triadic theoretical explanation) link in ways in which the profile of the EO-performance relationship is *configurationally dependent*. Importantly, this study demonstrates how these configurations are *contextually dependent* by revealing which KM processes are more important and necessary because of contextual differences between immigrant and native firms. This study remedies long-

standing deficiencies in EO research identified by McKenny *et al.* (2018) that “context is clearly an important factor when considering strategic EO, and more research is needed in this area” (p. 516). Knowledge is also context-specific (Simeonova, 2018), and the findings reveal necessary differences in the KM processes of firms with different organisational contexts. The findings show that knowledge-intensive and service-oriented NEFs and IEFs *do not* share the *same* EO and KM process configurations for high firm performance. However, they both rely on configuring EO and KM processes. These insights subtly reveal how a blanket application of the knowledge-based theory to EO studies is erroneous because the features of KM processes most relevant to NEFs (conversion and protection) are markedly different to IEFs (acquisition and application).

This study enriches the KBT of entrepreneurial firms by illustrating that different KM processes support two views of EO. First, EO efforts provide novel opportunities that are advantageous for performance. This relies on knowledge acquisition and application to ensure intelligent conversion of EO efforts among IEFs into wealthy performance. The second is that EO can create new knowledge through learning mobility (Alegre and Chiva, 2013). Knowledge acquisition and application are bypassed in this situation, and knowledge conversion and protection are the critical success factors for NEFs. However, the authors find this second scenario is only consistent for NEFs and would be dangerous for IEFs because it breaches the necessary KM processes conditions revealed in NCA. Furthermore, the study highlights that the general theoretical dominance in strategy and entrepreneurship research has obscured critical nuances in managing entrepreneurial firms (Kearney *et al.*, 2018). Therefore, an investment in generic KM processes is neither efficient nor effective theoretically or in practice; the contextual differences caused by an immigrant versus native entrepreneurial status is a necessary feature of a KBT of the entrepreneurial firm in the future.

Second, this study demonstrates equifinality by theoretically arguing and empirically establishing that multiple sufficient pathways exist to combine EO and KM processes to achieve firm performance. Using fsQCA, the authors contribute to the existing research gap by answering “*how is entrepreneurship expressed with key organizational elements?*” to generate performance, as called for by Wales *et al.* (2020; p. 14). This study provides theory and evidence for equifinality in the EO literature. Thus, while the fsQCA analyses reveal sufficient pathways to configure EO and KM processes for performance, the NCA reveals the minimum necessary to cause performance for knowledge-intensive IEFs and NEFs. These analyses explicate the different strategies different types of firms should use, discrediting the idea that EO alone is sufficient to complement the firm performance. These insights contribute to the literature on EO (Covin and Wales, 2019) and immigrant entrepreneurship (Aliaga-Isla and Rialp, 2013) by revealing how organisations should manifest EO in conjunction with firm-specific strategic processes (i.e. knowledge acquisition and application for IEFs; knowledge conversion and protection for NEFs) to generate pathways to firm performance. Thus, this study adds to the burgeoning literature on the context-specificity of EO (Yin *et al.*, 2020; Mostafiz *et al.*, 2022), context-specificity of knowledge and KM processes (Simeonova, 2018), and enriches the theoretical scaffolding around EO-configurations as called for by Wales *et al.* (2021).

6.2 Practical implications

The study provides rich implications for IEF and NEF managers. EO is necessary to enhance firm performance for IEF and NEFs operating in Malaysia. For knowledge acquisition, IEFs need to escalate EO efforts to explore market opportunities, create new networks, and acquire knowledge. These Malaysian IEFs can collaborate with the NEFs in terms of network building. NEFs need to

use prior experiences to explore new frontiers and capitalise on existing networks to develop knowledge stocks. The study's findings suggest that to apply knowledge efficiently, Malaysian IEFs need to provide services to established firms (mostly NEFs) to learn and facilitate knowledge know-how and expand their market. The process will enable Malaysian IEFs to quickly establish a foothold in the market and overcome challenges related to liabilities, such as cultural differences, language barriers, and limited access to resources. Conversely, NEFs could improve the existing knowledge application process through technological advancements. In this initiative, EO has a significant role in increasing innovation and competitiveness. By effectively leveraging their knowledge and applying it in new and innovative ways, NEFs, can ensure competitiveness in the market. The finding suggests that knowledge conversion for IEFs should be considered after successfully securing effective knowledge acquisition and application. Since knowledge conversion is a complex and resource-consuming process, hasty decisions and deploying a significant amount of resources into knowledge conversion can cause unintended consequences for these Malaysian IEFs. On the contrary, to achieve knowledge conversion, Malaysian NEFs need to participate in inter-firm knowledge dissemination (i.e., intra-firm because they are not limited to owning a single entity) through inimitable competitive intelligence and enhance innovation (Mostafiz, Ahmed, & Hughes, 2022a) and absorb knowledge from competitors, suppliers, employees and consumers. The conversion should be further complemented by knowledge protection for NEFs. Because by protecting their knowledge through effective knowledge management practices, these Malaysian NEFs can ensure that their valuable assets are not lost or stolen. It could be achieved by securing patents or trademarks to protect a firm's intellectual properties. However, since the process of protecting intellectual properties is complex and bureaucratic in an emerging economy such as Malaysia (Jähnichen, 2017), pressures (both

access and financial) for IEFs in Malaysia could be much higher and daunting due to the liabilities these firms already experience considering their immigrant status.

6.3 Conclusion, limitations and future research

This study explains how IEFs and NEFs differ in triadic configurations of EO, KM processes and context needed for firm performance. However, some limitations exist. First, the sample originates from Malaysia. Despite the Malaysian data, this study considers that the theory is generally transferable due to its emphasis on the NEF/IEF context over an economic context. Second, different cultures, market dynamics or explicit entrepreneurial challenges have not been incorporated. Future research incorporating the cultural backgrounds of entrepreneurs and their different exposures to challenges may yield additional insights. This study encourages future researchers to refine emerging KBT on the entrepreneurially oriented firm by focusing on QCA methodology to provide a nuanced EO analysis and develop novel theoretical contributions with other managerial elements. Third, the limitation of the study also includes the cross-sectional nature of the configurational analysis originating from a single person's response. Therefore, a cross-country investigation of KM processes can merit more profound insights into the theory development. Replicating the study in another country by incorporating other conditions, multiple respondents and context can reduce possible bias. Fourth, the IEFs sample only captures first-generation immigrant entrepreneurs. The KM processes could be influenced by time as second or third-generation immigrant entrepreneurs can be more profound in managing knowledge. This study also encourages future researchers to analyze EO in combination with various strategic elements to stay competitive and refine the theoretical knowledge further.

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List of Tables

Table 1 Characteristics of NEFs and IEFs

Theme	Native entrepreneurial firms	Immigrant entrepreneurial firms
Status	Firms owned by Malaysian natives.	Firms owned by an immigrant who is a recent arrival and operated business for at least twelve months in Malaysia.
Tax policy	The corporation tax ranges from 17% - 24%, depending on the paid-up capital and revenue (Chambers, 2021).	The MM2H holders will not receive any preferential treatment and are entitled to pay the same income tax if the income is generated in Malaysia (MM2H, 2021a).
Residency status	Natives are permanent residents of Malaysia.	MM2H holders will never get permanent residency or citizenship status in Malaysia. However, they can renew the residency every ten years (MM2H, 2020c).
Fixed deposit	Natives do not need to maintain any fixed deposit to operate the business.	The MM2H receivers always have to maintain a fixed deposit of approx. \$ 0.125 million for an individual under the age of 50 and \$ 0.087 million for an individual above the age of 50 (MM2h, 2020b).
New business ownership	The natives can own multiple new businesses.	The MM2H receivers only can own one new business (MM2H, 2021b).
Existing business ownership	The natives can own multiple existing businesses.	The MM2H receivers only can own one existing business; however, the ownership cannot exceed 50% of the share capital (MM2H, 2020a).

Table 2a Correlation matrix and descriptive statistics of NEFs ($N = 185$)

Constructs in the model	1	2	3	4	5	6
(1) Entrepreneurial orientation	0.788					
(2) Knowledge acquisition	0.381*	0.741				
(3) Knowledge application	0.401*	0.518*	0.762			
(4) Knowledge conversion	0.263*	0.319*	0.266**	0.742		
(5) Knowledge protection	0.229**	0.317*	0.221**	0.211**	0.770	
(6) Firm performance	0.218*	0.266*	0.313*	0.233*	0.292*	0.743
Mean Score	51.290	31.56	38.52	39.60	32.12	25.64
Standard Deviation	4.28	5.30	5.11	5.02	2.60	4.10
Skewness: Statistics	0.732	-0.584	0.560	0.357	-0.398	-0.196
Kurtosis: Statistics	1.622	-1.018	-0.879	-1.233	0.274	0.355
Calibration threshold	5% for non-membership – 50% for cross-over anchors – 95% for full membership					

Note: Diagonal is the square root of the AVE.

**Correlations significant at the 0.05 level

***Correlations significant at the 0.01 level

Table 2b Correlation matrix and descriptive statistics of IEFs ($N = 146$)

Constructs in the model	1	2	3	4	5	6
(1) Entrepreneurial orientation	0.794					
(2) Knowledge acquisition	0.310*	0.724				
(3) Knowledge application	0.432*	0.408*	0.723			
(4) Knowledge conversion	0.371*	0.392*	0.212**	0.748		
(5) Knowledge protection	0.288**	0.290*	0.247**	0.281**	0.739	
(6) Firm performance	0.227*	0.319*	0.289*	0.290*	0.301*	0.752
Mean Score	49.53	35.91	36.99	33.53	38.56	26.39
Standard Deviation	3.27	3.67	2.83	3.76	3.84	4.53
Skewness: Statistics	0.059	0.044	-0.613	-0.501	0.198	-0.338
Kurtosis: Statistics	0.719	0.220	0.194	1.059	0.071	-0.248
Calibration threshold	5% for non-membership – 50% for cross-over anchors – 95% for full membership					

Note: Diagonal is the square root of the AVE.

**Correlations significant at the 0.05 level

***Correlations significant at the 0.01 level

Table 3 Summary of the reliability and validity analysis

Constructs	Std. loadings	Std. loadings
	(Native, $n=185$)	(Immigrant, $n=146$)
EO	($\alpha = 0.718$, AVE = 0.624)	($\alpha = 0.749$, AVE = 0.631)
Knowledge acquisition	($\alpha = 0.713$, AVE = 0.549)	($\alpha = 0.781$, AVE = 0.526)
Knowledge application	($\alpha = 0.719$, AVE = 0.581)	($\alpha = 0.736$, AVE = 0.539)
Knowledge conversion	($\alpha = 0.741$, AVE = 0.549)	($\alpha = 0.773$, AVE = 0.581)
Knowledge protection	($\alpha = 0.802$, AVE = 0.593)	($\alpha = 0.796$, AVE = 0.521)
Firm performance	($\alpha = 0.741$, AVE = 0.616)	($\alpha = 0.763$, AVE = 0.524)

Table 4a Contrarian case analysis for antecedents and NEFs' performance

Construct / Quintile	Firm performance					Total count	Effect size
	1	2	3	4	5		
Entrepreneurial orientation	1	5	2	0	1	0	8
	2	3	12	17	21	0	53
	3	2	17	21	49	8	97
	4	0	2	0	1	9	12
	5	0	0	0	3	12	15
Total count	10	33	38	75	29	185	0.249
Knowledge acquisition	1	5	3	0	0	0	8
	2	5	28	14	6	0	53
	3	0	1	19	11	0	31
	4	0	1	5	48	3	57
	5	0	0	0	10	26	36
Total count	10	33	38	75	29	185	-0.103
Knowledge application	1	4	5	4	0	0	13
	2	6	27	26	30	0	89
	3	0	1	6	29	4	40
	4	0	0	1	7	5	13
	5	0	0	1	9	20	30
Total count	10	33	38	75	29	185	0.228
Knowledge conversion	1	1	6	6	0	0	13
	2	8	20	25	6	0	59
	3	1	6	7	23	0	37
	4	0	1	0	31	3	35
	5	0	0	0	15	26	41
Total count	10	33	38	75	29	185	0.149
Knowledge protection	1	2	1	0	0	0	3
	2	5	7	1	0	0	13
	3	3	19	19	12	0	53
	4	0	5	18	58	14	95
	5	0	1	0	5	15	21
Total count	10	33	38	75	29	185	0.317

Table 4b Contrarian case analysis for antecedents and IEFs' performance

Construct / Quintile	Firm performance					Total count	Effect size
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		1	2	3	4	5		
Entrepreneurial orientation	1	0	1	0	0	0	1	0.104
	2	4	14	11	1	0	30	
	3	2	16	20	40	10	88	
	4	1	1	0	9	9	20	
	5	0	0	0	1	6	7	
Total count		7	32	31	51	25	146	
Knowledge acquisition	1	1	6	5	1	0	13	0.119
	2	3	17	6	6	4	36	
	3	3	9	18	37	12	79	
	4	0	0	2	5	1	8	
	5	0	0	0	2	8	10	
Total count		7	32	31	51	25	146	
Knowledge application	1	0	1	0	0	0	1	0.172
	2	1	7	5	0	0	13	
	3	3	10	6	15	2	36	
	4	2	11	17	26	9	65	
	5	1	3	3	10	14	31	
Total count		7	32	31	51	25	146	
Knowledge conversion	1	0	8	4	0	0	12	0.096
	2	5	12	6	10	1	34	
	3	1	7	12	15	2	37	
	4	1	4	8	20	12	45	
	5	0	1	1	6	10	18	
Total count		7	32	31	51	25	146	
Knowledge protection	1	1	11	5	4	0	21	0.148
	2	4	11	8	11	0	34	
	3	1	5	11	10	2	29	
	4	1	4	6	15	11	37	
	5	0	1	1	11	12	25	
Total count		7	32	31	51	25	146	

Table 5a Truth table algorithm for IEFs

EO	KAQ	KAP	KCN	KPR	Number of firms	Firm performance	Consistency
1	1	1	0	0	3	1	0.912
1	0	1	1	1	2	1	0.905
1	1	1	0	1	14	1	0.904
1	1	1	0	0	27	1	0.896
1	1	1	1	0	22	1	0.841
1	0	0	0	1	1	1	0.815
1	1	1	1	1	13	1	0.789
1	0	0	1	0	3	1	0.773
1	1	1	0	1	19	1	0.762
0	0	0	1	0	2	1	0.758
0	1	1	1	0	2	1	0.751
1	1	1	0	0	29	0	0.742
0	0	1	1	0	1	0	0.726
1	0	1	1	1	2	0	0.669
0	1	0	1	1	1	0	0.567
1	1	0	0	1	2	0	0.548
1	0	0	0	0	1	0	0.449
0	0	1	0	0	2	0	0.419

Table 5b Truth table algorithm for NEFs

EO	KAQ	KAP	KCN	KPR	Number of firms	Firm performance	Consistency
0	1	0	1	1	3	1	0.991
1	0	1	1	1	24	1	0.983
1	1	0	1	1	1	1	0.781
0	1	0	1	0	5	1	0.971
1	0	0	1	1	30	1	0.965
1	1	0	1	0	2	1	0.959
0	0	0	1	1	1	1	0.944
0	1	1	1	1	12	1	0.928
0	1	0	1	0	21	1	0.896
1	0	1	1	0	7	1	0.855
1	1	1	0	0	1	1	0.849
0	1	1	1	0	1	1	0.828
1	1	1	1	1	2	1	0.821
0	1	1	1	0	2	1	0.782
1	1	0	1	0	4	1	0.768
0	0	0	0	1	8	1	0.763
1	0	0	0	0	1	0	0.638
0	0	1	1	0	2	0	0.596
0	0	1	1	0	12	0	0.515
0	0	1	0	1	2	0	0.482
1	0	0	0	1	25	0	0.442
1	0	0	1	1	3	0	0.419
1	0	1	0	1	6	0	0.399
1	0	1	0	0	7	0	0.351
0	0	0	0	1	3	0	0.319

Table 6 fsQCA analysis of the configurational combinations between IEFs and NEFs

	Path	EO	KAQ	KAP	KCN	KPR	Raw coverage	Unique coverage	Consistency	Solution coverage	Solution consistency
Immigrant entrepreneurial firms (n=146)	1a	●	●	●		⊗	0.411285	0.123368	0.953654		
	2a	○	○	●	⊗		0.318301	0.118374	0.872352	0.881936	0.736284
	3a		●	○	○	⊗	0.312864	0.108364	0.839569		
	4a	●	●	○	○	⊗	0.343746	0.112475	0.809925		
Native entrepreneurial firms (n=185)	1b	●	●		●	○	0.419251	0.121945	0.974197		
	2b	○	○	⊗	○	●	0.409364	0.108194	0.922170		
	3b	●	⊗	○	●	●	0.391844	0.119427	0.871528	0.828459	0.715619
	4b	○	○	○		●	0.355628	0.114188	0.834285		
	5b	●	○	●	●		0.331994	0.112056	0.819217		

Note: EO= Entrepreneurial orientation; KAQ= Knowledge acquisition; KAP= Knowledge application; KCN= Knowledge conversion; KPR= Knowledge Protection. ‘●’ represents full membership (core condition); ‘○’ represents partial membership (peripheral condition); ‘⊗’ represents negate and ‘blank’ represents no membership

Table 7 The necessity analysis of QCA results of immigrant and native firms

Condition	Outcome condition: firm performance			
	Immigrant firms		Native firms	
	Consistency	Coverage	Consistency	Coverage
EO	0.913	0.756	0.901	0.691
KAQ	0.916	0.744	0.861	0.699
KAP	0.908	0.727	0.829	0.744
KCN	0.763	0.729	0.910	0.762
KPR	0.649	0.701	0.900	0.751

Legends: EO= Entrepreneurial orientation; KAQ= Knowledge acquisition; KAP= Knowledge application; KCN= Knowledge conversion; KPR= Knowledge Protection.

Note: Bold represents cut-off point for consistency value

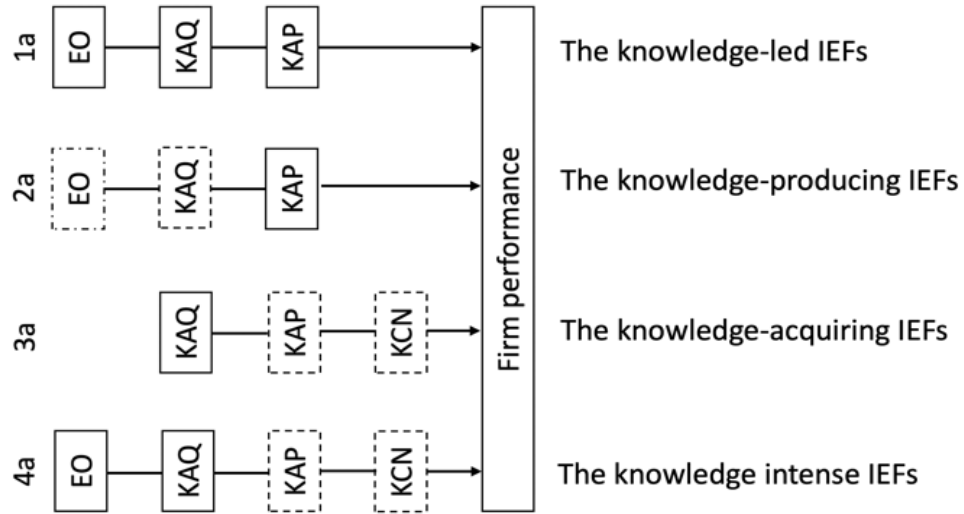
Table 8 Robustness check (consistency cut-off point 0.60)

	Path	EO	KAQ	KAP	KCN	KPR	Raw coverage	Unique coverage	Consistency	Solution coverage	Solution consistency
Immigrant entrepreneurial firms (n=146)	1a	○	●	○		⊗	0.399059	0.119962	0.839016		
	2a	○	●	●	○		0.423754	0.1273291	0.924087	0.814358	0.742649
	3a	⊗	○	○	⊗	⊗	0.303301	0.1070252	0.802197		
	4a		○	●	○	○	0.314376	0.1164244	0.836482		
Native entrepreneurial firms (n=185)	1b	●	⊗	⊗	●	●	0.413437	0.1136432	0.912138		
	2b	●	○	⊗	○		0.325793	0.0898351	0.826904	0.813627	0.738477
	3b	○	⊗	○	●	●	0.318251	0.0891176	0.8129239		
	4b	○		●	○	○	0.302614	0.0855468	0.8101816		

Note: EO= Entrepreneurial orientation; KAQ= Knowledge acquisition; KAP= Knowledge application; KCN= Knowledge conversion; KPR= Knowledge Protection. ‘●’ represents full membership (core condition); ‘○’ represents partial membership (peripheral condition); ‘⊗’ represents negate and ‘blank’ represents no membership.

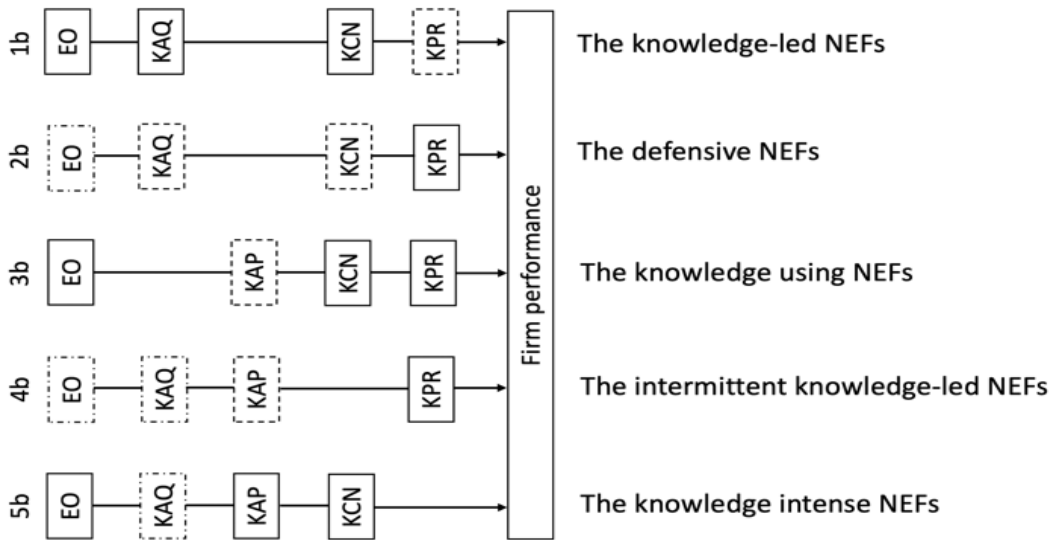
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Figure 1 Configurational combinations for IEFs



Note: EO= Entrepreneurial orientation; KAQ= Knowledge acquisition; KAP= Knowledge application; KCN= Knowledge conversion. □ represents partial membership and ◻ represents full membership

Figure 2 Configurational combinations for NEFs



Note: EO= Entrepreneurial orientation; KAQ= Knowledge acquisition; KAP= Knowledge application; KCN= Knowledge conversion; KPR= Knowledge Protection. □ represents partial membership and ◻ represents full membership