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THINKING FAST AND GLOBAL: THE ROLE OF HEURISTICS IN INTERNATIONAL SME DECISION-MAKING

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ABSTRACT

This systematic review investigates the use of heuristics in the internationalization process of SMEs. By asking this open-ended question: "How do SMEs use heuristics during the internationalization process?" This study seeks to understand how these firms employ heuristics, the areas in which heuristics are applied, and how decision-makers handle uncertainty in the context of internationalization. This review analyzes eleven relevant works, drawn from scientific databases (Scopus, Web of science) and the snowball sampling. Thematic and descriptive analyses are conducted to identify trends, difficulties, and outcomes related to the use of heuristics in SME internationalization. While highlighting the scarcity of interdisciplinary research, the review emphasizes the potential of heuristics for mitigating uncertainty. Interestingly, the research suggests a clear distinction between heuristics and judgment-based decisions. This initial exploration identifies a critical gap: limited research on different types of heuristics and their impact on SME decision-making in the international context. Additionally, the need to compare heuristics used in international business with those identified in psychology is stressed to avoid redundant terminology. Claiming to be the first of its kind, this review clarifies our understanding of heuristics in SME internationalization and opens doors for future investigations into this under-explored but potentially valuable area.

KEYWORDS

heuristics, international SME, rules of thumb, cognitive shortcuts, systematic literature review

INTRODUCTION

A traditional point of departure for most internationalization studies is that entering foreign markets is risky and that uncertainty prevails between the firm's home market and the foreign market it is targeting. This uncertainty is a product of multiple factors ranging from political risk, lack of experience to institutional and cultural differences, and can compromise not only the international endeavor but the very existence of the firm (Oliveira et al., 2019). To conquer this threat, decision makers need to be well aware of the challenges that lie ahead when embarking on this uncertain journey; however, the pressure

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to make swift decisions often compels business owners to rely on heuristics, which can be a double-edged sword. This divergence reflects the current state of the literature.

Heuristics emerged as a result of the bounded rationality of decision makers first coined by H. Simon (1955) and later labeled as 'cognitive biases' by Tversky & Kahneman (1974). With the proliferation of studies in the area, researchers began to witness the positive side of heuristics which later developed into the 'fast and frugal' current with Gigerenzer and colleagues as the main advocates (2022). Such advancements resulted in the debate we are currently facing. Yet, the international business (IB) literature seems disconnected from this debate since few, if any, studies have tackled the use of heuristics within the international context (Guercini, Milanesi, 2020), particularly for SMEs who are most susceptible to these challenges. Our systematic review seeks to remedy this gap by serving as the first study to illuminate the trends, difficulties, and outcomes associated with the application of heuristics in SMEs' internationalization. Which begs the open-ended question, "How are heuristics employed by SMEs during their internationalization process?"

In the next section we will delve into the two currents of the debate that shape the literature on the use of heuristics, followed by the methodology that guided our research, the thematic analysis of the selected articles and then we round up the paper with a discussion and a conclusion of the main findings.

THEORETICAL BACKGROUND

The heuristics and bias approach

This paradigm connects systematic errors (biases) in decision-making to mental shortcuts (heuristics). The notion of bounded rationality, which holds that human cognitive constraints limit our ability to make completely logical decisions, is the foundation of this approach (Simon, 1955). The seminal work of Kahneman and Tversky (1974) linked heuristics and biases for the first time. Their work paved the way for further exploration, culminating in Kahneman's Nobel Prize in Economics (2002) for his contributions to prospect theory (Kahneman, Tversky, 1979) which sheds light on how individuals evaluate potential gains and losses when faced with uncertainty.

The psychological foundations of human cognition, judgment, and decision-making have been extensively studied during the past four decades, greatly expanding our knowledge of how and why entrepreneurial decision-making frequently deviates from logical models, and to this day this paradigm remains relevant (Palmucci, Ferraris, 2023).

The fast-and-frugal approach

Despite its simplifying nature, scholars recognize the value of heuristics. Goldstein and Gigerenzer (2002) consider them as a form of 'ecological rationality'. This notion highlights the ability to use the structure of information that is readily available in our environment (ibid). In this paradigm, researchers recognize that heuristics can be strategically useful in some cases (Gigerenzer et al., 2022), contrasting with Kahneman et al.'s (1986) more skeptical approach, which acknowledges their value but emphasizes the risk of information neglect. Heuristics are useful cognitive processes that concentrate on pertinent environmental cues for the 'fast-and-frugal' school (Gigerenzer, Brighton, 2009). Researchers in this field investigate the rationale and timing of applying basic guidelines to capitalize on these properties. This involves understanding which cues to pay attention to first, when to give up looking for more information, and how to apply the signals you've gathered to make decisions (Czerlinski et al., 1999).

This discussion has gained momentum in the fields of entrepreneurship and strategic management research (Cristofaro, Giannetti, 2021), igniting a conversation across disciplines with organizational theory (Bingham, Eisenhardt, 2011, Saab, Botelho, 2020). However, the IB literature remains a curious outlier. The area appears to have paid little attention to the function of heuristics and elementary judgment types, especially for SMEs, despite acknowledging the inherent unpredictability of international expansion. It is still necessary to pursue additional research to fully comprehend the nature of both individual and international decision-making processes.

METHODOLOGY

Following recognized protocols for performing a systematic review (Cefis et al., 2022, Cristofaro, Giannetti, 2021), we used a rigorous and replicable method to locate and synthesize relevant research. This methodology has several advantages over typical reviews, including the use of clear search criteria and a focus on linking current findings to past research (Tranfield, Denyer, Smart, 2003).

Search Strategy and Selection Criteria:

1) Databases: To ensure complete coverage of relevant literature, we scanned two major academic databases: Scopus and WoS (Tranfield et al., 2003).
2) Publication type and language: To guarantee quality control, we confined our search to peer-reviewed journal papers written in English.
3) Search query for Heuristics: To capture the concept of heuristics, we included a broad variety of synonymous words, as proposed by Kahneman (2011): "heuristic*," "cognitive shortcut*," "shortcut*," "rule of thumb*," "mental rule*," or "cognitive rule*." This initial search yielded 146,742 items from Scopus and 188,955 from WoS
4) Keywords for SMEs Internationalization: Martineau & Pastoriza (2016) suggested the following keywords to make sure the studies were centered on international SMEs: ("SME" OR "SMEs" OR "small firm*" OR "small enterprise*" OR "small and medium enterprise*" OR "small and medium firm*") AND ("internationalization" OR "internationalisation"). This produced 56 results after merging datasets and eliminating duplicates.
5) Abstracts Screening: Each author separately examined the remaining papers' abstracts to determine the extent to which they addressed the research topic and the variables under investigation. This resulted in 10 papers for further evaluation.
6) Full-Text Review: The remaining papers were thoroughly reviewed and evaluated to ensure that they were consistent with the research aims. This approach resulted in 7 papers.
7) Snowballing Technique: Finally, we used a snowballing strategy in which references from selected papers were evaluated to discover other relevant studies. This method resulted in four additional papers, increasing the total sample size to 11 empirical studies.

The chosen papers underwent a thematic analysis, in which the results of separate investigations were combined to identify major themes that appeared throughout the body of literature. Further exploration of the thematic analysis will be provided in the following sections

Thematic analysis

Our analysis centers on four key thematic categories identified from the selected articles (see Table 1). These categories align with four of the five study areas highlighted by Guercini, Milanesi (2020) within the IB domain: Foreign market entry, post-entry international expansion, international entrepreneurship, and foreign market selection.

Table 1. Thematic analysis overview

Topic/area	**Authors/year**	**No articles**
International entrepreneurship	(Barron et al., 2016; Galkina & Chetty, 2015; Khorrami et al., 2017; Niittymies, 2020; Perks & Hughes, 2008)	**5**
Foreign market entry	(Oehme & Bort, 2015; Masiello & Izzo, 2019; Guercini & Runfola, 2021; Gray et al., 2017)	**4**
Foreign market selection	(Bell, 1995)	**1**
Post-entry international expansion	(Pellegrino & McNaughton, 2017)	**1**

International entrepreneurship

The category "International Entrepreneurship" produced the most articles (Barron et al., 2016, Galkina, Chetty, 2015, Khorrami et al., 2017, Niittymies, 2020, Perks, Hughes, 2008) revealing an intriguing interplay between heuristics and entrepreneurial decision-making in the international context. Khorrami et al. (2017) emphasize the importance of heuristics, particularly in emerging economies with limited knowledge of managing the inherent risks of internationalization. Their findings back up the "fast-and-frugal" approach and establish a 'hybrid' category of heuristics, stressing their multifaceted nature. Another facet is added by Perks & Hughes (2008), who argue that entrepreneurs in mid-sized firms might prioritize opportunity seeking over initial resource abundance, suggesting heuristics as a deliberate strategy.

Galkina and Chetty (2015) demonstrate how effectuation theory, which emphasizes entrepreneurial decision-making, is compatible with the Uppsala model, bridging the gap between entrepreneurship and IB. According to their research, entrepreneurs leverage heuristics to create networks and find partners, and this non-predictive, effectual reasoning process gives rise to internationalization opportunities. Niittymies (2020) investigates the importance of experience, concluding that, while heuristics aid in expansion planning, entrepreneurs may not fully apply them initially. Interestingly, expertise does not guarantee superior heuristics; only after accumulating a certain amount of context-specific experience can management teams effectively use them in unusual circumstances.

In their exploration of crisis management, Barron et al. (2016) show how SMEs actively employ heuristics to navigate political crises, such as the Eurozone crisis of 2012. According to their research, entrepreneurs are more inclined to pursue new export opportunities if they have established procedures for utilizing political information. This study also discloses an unexpected finding—SMEs may lower current export commitments in reaction to declining market conditions, despite using heuristics to seek new opportunities.

Foreign market entry

This category emerged as a prominent theme, with four studies exploring diverse aspects (Gray et al., 2017, Masiello, Izzo, 2019, Guercini, Runfola, 2021, Oehme, Bort, 2015). Gray et al. (2017) looked into the reshoring and offshoring decisions of US SMEs. Notably, the first offshore decisions were based on a simple heuristic, ‘lowest per-unit landed cost (LPLC),’ demonstrating the potential for heuristics to impact even complicated internationalization decisions. This conclusion is consistent with the ‘take the best’ heuristic, in which executives analyze options based on readily available cues and select the most advantageous one (Gigerenzer, Brighton, 2009).

Social networks are also essential for finding opportunities abroad. The ‘social embeddedness’ of internationalization is shown by Masiello & Izzo's (2019) discovery that SMEs frequently detect internationalization opportunities through the flow of information and heuristics that are shared within their social networks. This implies that SMEs use their networks to help them tackle the risks associated with expanding into new markets.

Guercini & Runfola (2021) identified eight SMEs' rules of thumb when focusing on export decisions in B2B marketplaces. Among these heuristics were matching product offerings with target markets and providing discounts to mitigate non-payment uncertainty. The authors divided these heuristics into three categories: choosing export markets (shaped by factors such as cultural proximity or perceived demand), defining the product offering (which includes product adjustments, pricing plans, and communication strategies), and setting export prices (which may be guided by cost-plus pricing or competition). Guercini and Runfola (2021) argue for greater awareness of heuristics.

Understanding these mental shortcuts allows SMEs to leverage their strengths while reducing potential biases. Interestingly, they claim that heuristics can outperform complicated, data-driven algorithms, especially when dealing with limited data or time restrictions. Another study that challenges conventional views by Oehme and Bort (2015) claiming that SME entry decisions are not always logical and analytical. Their findings show that SMEs frequently imitate the internationalization methods of their network peers, which serves as a practical shortcut in the early stages. However, this strategy is significantly dependent on the strength and form of existing network connections.

Foreign market selection

While most studies explored general heuristics in foreign market entry, only one delved specifically into market selection (Bell, 1995). This study validated the idea that ‘psychic distance’ is a critical component for software companies in Scandinavia. When they first started exporting, SMEs usually focused on ‘closer’ markets. For instance, Finland's businesses gave priority to close-knit markets such as Sweden, Norway, and the former USSR, with whom they had deep historical connections. In a similar vein, Norwegians prioritized Finland, Sweden, or the UK, while Irish businesses favored the UK. Even without a direct focus on heuristics, Bell (1995) points to ‘client followership’. This heuristic suggests that firms select new export markets depending on the foreign strategies and preferences of their domestic clients. Their findings also challenge the classic ‘stage’ model of internationalization, which considers the process as linear and predictable. Instead, the research points to a more nuanced reality, in which factors such as customer loyalty and contacts with foreign suppliers can have a major impact on market selection, especially for software firms with established networks.

Post-entry international expansion

Pellegrino and McNaughton (2017) wrap up the thematic analysis by their longitudinal study on the learning processes and information sources employed by eight New Zealand SMEs undergoing internationalization. Their findings prove distinct learning patterns across two groups: firms undergoing rapid internationalization and their slower counterparts.

Congenital learning, which included the founders' prior knowledge and experience, was prominent during the pre-internationalization period (Pellegrino, McNaughton, 2017). This original ‘knowledge base’ had a considerable impact on early internationalization efforts, particularly for rapidly internationalizing enterprises looking for quick market penetration. However, the authors emphasize the short duration of this phase, since practical learning quickly prevails once firms penetrate foreign markets.

During internationalization, experiential learning—which is defined as ‘learning by doing’ through triumphs and setbacks in the new market environment—takes center stage as the main learning tool (Pellegrino, McNaughton, 2017). This shows that the practical lessons learned from real-world experiences quickly override the founders' initial expertise, which is important for starting the internationalization process.

The availability of resources was a crucial factor influencing learning in every group. Due to limited resources, SMEs were frequently compelled to prioritize learning about specific aspects of their internationalization plan in a sequential manner. When resources were scarce, some companies replaced the knowledge they would have otherwise obtained from distributors with experiential knowledge gleaned through heuristics (trial and error). As firms matured and resource allocation expanded, the relative value of internal learning sources grew, resulting in a decline in dependence on external sources. Additionally, the study highlighted a change in the learning curves and objectives for both rapidly and gradually internationalizing businesses. Product knowledge was focused in the early phases, while foreign market knowledge and wider internationalization expertise emerged as priorities in the later stages.

CONCLUSION

This review examined the various applications of heuristics in IB research. Three different groups emerged from our literature analysis. The first group (e.g., Gray et al., 2017, Masiello, Izzo, 2019) adheres to the "heuristics and bias paradigm" and the "fast and frugal heuristics paradigm" (Kahneman, Tversky, 1972, Khorrami et al., 2017, Niittymies, 2020). However, a gap exists in directly comparing these approaches within the IB context. Furthermore, the examined studies make no distinction between risk and uncertainty, indicating a potential area for further study. Future research might delve into whether heuristics established in clinical psychology serve as sources of bias or effective decision-making tools in internationalization, potentially drawing on existing discussions in that field.

The second group includes studies with a psychological foundation that relate heuristics to well-known models such as effectuation theory (Galkina, Chetty, 2015). Future research could examine the particular usefulness of these heuristics in this context, as these studies demonstrate their potential for use in international decision-making.

The last group focuses on heuristics that are particular to IB. Here, heuristics pertaining to past experience (experiential learning), cultural familiarity, or "psychic distance" have been identified by researchers (e.g., Guercini, Runfola, 2021).

However, several studies employ the term "heuristics" without addressing the underlying ideas. This contrasts with multidisciplinary studies, that emphasize a deeper understanding of these heuristics. Future studies should examine the use and outcomes of commonly used heuristics such as imitation, past experience, and organizational capacities more extensively. It is important for academics to critically contrast these IB specific heuristics with those found in psychology in order to cut down on duplication and provide a more coherent understanding.

Table 2. Authors, title, year, journal

No	Authors	Title	Year	Journal
1.	Barron & Hultén & Vanyushyn	The Role of Political Intelligence in Firms' Export Decisions During the Euro Crisis	2016	Journal of Small Business Management
2.	Galkina & Chetty	Effectuation and Networking of Internationalizing SMEs	2015	Management International Review
3.	Khorrami & Zarei.B & Zarei. M	Heuristics of the internationalisation of SMEs: A grounded theory method	2017	International Journal of Management and Enterprise Development
4.	Niittymies	Heuristic decision-making in firm internationalization: The influence of context-specific experience	2020	International Business Review
5.	Perks & Hughes	Entrepreneurial decision-making in internationalization: propositions from mid-size firms	2008	International Business Review
6.	Oehme & Bort	SME internationalization modes in the German biotechnology industry: The influence of imitation, network position, and international experience	2015	Journal of International Business Studies
7.	Masiello & Izzo	Interpersonal Social Networks and Internationalization of Traditional SMEs	2019	Journal of Small Business Management
8.	Guercini & Runfola	Heuristics in decision-making by exporting textiles SMEs	2021	Journal of Global Fashion Marketing
9.	Gray & Esenduran & Rungtusanatham & Skowronski	Why in the world did they reshore? Examining small to medium-sized manufacturer decisions	2017	Journal of Operations Management
10.	Bell	The internationalization of small computer software firms: A further challenge to "stage" theories	1995	European Journal of Marketing
11.	Pellegrino & McNaughton	Beyond learning by experience: The use of alternative learning processes by incrementally and rapidly internationalizing SMEs	2017	International Business Review

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