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Value chains, knowledge isolation, and performance in internationalizing SMEs

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ABSTRACT

We examine various forms of foreign knowledge generation and their impact on performance through geographic dispersion and coordination of value chains in internationalizing small and medium-sized enterprises (SMEs), particularly in traditionally internationalizing firms (TIFs) and early internationalizing firms (EIFs). Building on the knowledge isolation mechanism, we develop a model and hypotheses and examine it using structural equation methodology based on a survey of 288 internationalizing SMEs. We find that both dispersion and coordination generate *foreign knowledge* in TIFs, while coordination is key for EIFs. Another important finding is that TIFs benefit from enhanced performance through local knowledge, while EIFs benefit from internationalization knowledge. These results are apparently attributable to the existence of an underlying isolation mechanism affecting knowledge. The local knowledge of TIFs generated in geographically dispersed and coordinated value chains is difficult for competitors to imitate, thus safeguarding performance and providing evidence that TIFs benefit from a *knowledge isolation advantage of geography*. For EIFs, internationalization knowledge safeguards performance by providing a *knowledge isolation advantage of rapidness* based on accelerated foreign expansion that is difficult to replicate. The findings offer business managers valuable insights into managing value chains and, consequently, generating knowledge that has performance implications.

1. Introduction

This study focuses on the value chain activities of internationalizing small and medium-sized enterprises (SMEs), that is, "a collection of [firm's]activities that are performed to design, produce, market, deliver, and support [a firm's] product" (Porter, 1985, p. 51). Since value chains include business partners, they form an important part of business-to-business research (Evans & Berman, 2001). Benito et al. (2019) conceptualize that internationalizing SMEs may locate value chain activities in different countries and coordinate them internally within the firm or externally with their business partners. Most empirical studies on international value chains focus on large multinational enterprises (MNEs) and their knowledge transfer within complex existing structures (e.g., Elg & Hånell, 2023; Gillmore et al., 2023). Unlike MNEs, small and medium-sized enterprises (SMEs) often face liabilities of foreignness, limited resources, a narrow scope in terms of customers and products, lack of economies of scale and learning, and high dependence on external partners (Arend & Wisner, 2005). However, existing studies focusing on SMEs neglect the role of the value chain in knowledge generation, nor do they examine the impact of this knowledge on performance. This highlights an important gap that warrants further investigation.

While extant research explores knowledge creation in SMEs through operation modes (Schwens et al., 2018) and learning capabilities (Weerawardena et al., 2020) they typically overlook the value chain dimension. Hence, we contribute to the current literature by

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investigating the generation of foreign knowledge by internationalizing SMEs in terms of the dispersion (geographic spread of activities) and coordination (synchronization) of value chain activities across countries. Previous research suggests that two types of knowledge are particularly important for internationalizing SMEs: local knowledge specific to the countries in which they operate, and accumulated internationalization knowledge gained from experience in international markets (Autio, 2005; Eriksson et al., 1997). Hughes et al. (2019) have addressed local and internationalization knowledge as one construct, i.e. international market knowledge. However, earlier internationalization research argues that the knowledge types are separate and accumulate over time during internationalization processes (Eriksson et al., 2000). Surprisingly, Mejri et al. (2018) found in B2B SME context evidence of the accumulation of local knowledge but no evidence of the accumulation of internationalization knowledge. Only Soontornthum et al. (2020) examine how value chains support knowledge generation for technical adaptation in internationalizing SMEs. However, their study focuses on SMEs' dependence on a global partner and does not address different types of foreign knowledge or their performance implications.

Earlier research on internationalizing SMEs has also produced conflicting results regarding the importance of local and internationalization knowledge on performance. For instance, Åkerman (2015) found that during the internationalization process, local knowledge is positively associated with international opportunity realization, while internationalization knowledge is negatively associated. Deligianni et al. (2015) identified a link between various types of knowledge and international growth, but similar to Åkerman (2015) ignored the influence of value chain activities. Hughes et al. (2019) show that, outside a value chain context, the effect of foreign knowledge on SMEs' international performance—measured subjectively—varies with the chosen internationalization strategy. To conclude, research has only partially examined the relationship between different types of foreign knowledge and firm performance, and we are not aware of any studies that employ objective performance measures in this context.

Our research examines both early-internationalizing firms (EIFs),[1] which operate across borders soon after inception, and firms that have taken a slower approach to international expansion. We refer to the latter as traditionally internationalizing firms (TIFs)[2,3]. The rationale is that early and traditionally internationalizing strategies have different roles for knowledge (Autio, 2005). TIFs expand in line with the internationalization process model, which highlights lack of foreign market knowledge and resulting uncertainty as key constraints on international activity (Johanson & Vahlne, 1977; Vahlne & Ivarsson, 2014). In contrast, the literature on EIFs emphasizes the importance of the transferability of knowledge across countries as a key driver of rapid internationalization (Knight & Cavusgil, 2004; Oviatt & McDougall, 1994). Given these different strategic approaches, we expect variation in how firms overcome isolation barriers when transferring valuable foreign knowledge across their international value chain activities. At the same time, they must protect this knowledge from competitors (Fang et al., 2007).

The contrasting strategies of TIFs and EIFs (Zahra et al., 2000; Zhou et al., 2010) provide a basis for comparative research on the different types of knowledge generated through the geographic dispersion and coordination of value chains, and how this knowledge affects firm performance. For internationalizing firms, the ability to transfer this accumulated knowledge across their value chains, while using isolation mechanisms to prevent imitation, is likely to be critical for performance (see Fang et al., 2007; Kim, 2013; Zhang et al., 2014). Our research questions are thus: How do traditionally internationalizing firms differ from early internationalizing firms in terms of (1) the generation of local and internationalization knowledge—arising from geographic dispersion of the value chain and cross-country coordination—and (2) the impact of this knowledge on performance outcomes?

Our primary contribution is that the type of foreign knowledge gathered through value chain dispersion and coordination, combined with the firm's internationalization strategy, may constitute an isolating mechanism that protects against imitation and has performance implications. Our findings indicate that TIFs benefit from the knowledge isolation advantage of geography. Local knowledge generated in geographically dispersed and coordinated value chains is difficult for competitors to imitate and, therefore, safeguards performance. In contrast, the internationalization knowledge acquired by EIFs safeguards performance because of rapid foreign expansion that is difficult to replicate. We name this last advantage, the knowledge isolation advantage of rapidness.

2. Knowledge and isolation mechanisms

The generation of new knowledge is considered to be most efficient in domains proximate to the firm's existing knowledge (Autio et al., 2000) because knowledge generation depends on the ability to recognize the value of new external information, to assimilate it, and to apply it to operations (e.g., Cohen & Levinthal, 1990; Phene & Almeida, 2008; Reuber & Fischer, 1999). To acquire maximum benefit from generated knowledge and thus enhance performance, the knowledge should be isolated from competitors (Kim, 2013; Weerawardena et al., 2015) but also transferable within the firm and its value chain across national borders (Fang et al., 2007; Kogut & Zander, 1993).

2.1. *Internationalizing firms and local and internationalization knowledge*

Research into internationalizing firms has emphasized the relevance of location (Dunning, 1998), particularly dispersion of the value chain (Casillas & Moreno-Menéndez, 2014), as a potential source for knowledge that can provide a performance advantage. Foreign expansion enables the firm to accumulate specialized local knowledge from an array of business and institutional actors (Leiponen & Helfat, 2010). This broad exposure can confront current knowledge with a different reality, fostering the development of new technological solutions, products, and ideas (Eriksson et al., 2000; Phene et al., 2006).

It is important to examine how the firm's experience interacts with its context to create knowledge (Argote & Miron-Spektor, 2011; Phene et al., 2006); this includes internationalization, for which value chain dispersion and coordination are important considerations (Roth, 1992; Roth & Morrison, 1992; Vahlne & Ivarsson, 2014). Internationalization process frameworks note that foreign knowledge (i.e., knowledge about foreign markets and operations) is experiential (Johanson & Vahlne, 1977; Vahlne & Ivarsson, 2014). That knowledge can be divided into local and internationalization aspects: We define local knowledge as experiential business and institutional knowledge pertaining to a specific country. Eriksson et al. (1997, p. 343) describe business knowledge as "Experiential knowledge of clients, the market, and competitors" and institutional knowledge as "Experiential knowledge of government, institutional framework, rules, norms, and values." These are

[1] The literature uses the terms born globals (BGs), international new ventures (INVs), and early-internationalizing firms (EIFs) interchangeably (Knight & Liesch, 2016). We opt for the last form to denote firms that began their internationalization and achieved at least 25% of their total sales from abroad within three years of foundation (Knight & Liesch, 2016). While EIFs began their internationalization early, they may be older firms at the time of study. In contrast, INVs or BGs would still be young firms at the time of study (Coviello, 2015).

[2] TIFs follow the gradual approach to internationalization (Johanson & Vahlne, 1977) and typically internationalize later than EIFs/BGs, which is why some research also refers to them as late internationalizers (Hughes et al., 2019).

[3] As both early and traditionally internationalized firms typically continue their internationalization, in this study we refer to them as internationalizing firms.

distinguished from internationalization knowledge, which pertains, more generally, to how to organize and manage cross-border efforts. It is not specific to either a country or a mode of entry and is readily transferable within the firm. We define internationalization knowledge in line with Eriksson et al. (1997, p. 343) as experiential knowledge about "the firm's resources and capabilities of how to operate in international markets." We consider both local and internationalization knowledge for TIFs and EIFs, consistent with Autio's (2005) observation that the distinction between those two types of knowledge is relevant for both categories of internationalizing firms.

2.2. Basic logic of isolation mechanism and foreign knowledge types

The term "isolation mechanism," originally used in evolutionary biology to refer to a collection of factors that prevent species from interbreeding (Dobzhansky, 1951), has also been applied in business research to reflect the idea that competitive advantage can be sustained by introducing barriers to imitation that limit the equilibration of rents among firms (Mahoney & Pandian, 1992; Zhang et al., 2014). We focus on the isolation barriers to foreign knowledge that arise from geographic scope, rather than on the more general knowledge characteristics examined in prior studies. Specifically, we argue that the diversity of foreign markets means that geographic scope may restrain the sharing of knowledge within the firm (Fang et al., 2007) while constituting a powerful barrier to competitive imitation (Kim, 2013); this results from the causal ambiguity and uniqueness associated with foreign knowledge (Fang et al., 2007).

Prior research has suggested that causal ambiguity and uniqueness are key characteristics of knowledge that form an effective isolation mechanism (Reed & DeFillippi, 1990). Causal ambiguity refers to the difficulty in identifying the exact factors that contribute to a firm's performance (Lippman & Rumelt, 1982), making it challenging for outsiders to replicate these factors (Autio et al., 2000). It is crucial because it inhibits imitation by making it difficult for competitors to understand how complex, multilayered, and specific foreign knowledge is created and assimilated within a firm and its value chain, limits knowledge transfer, and poses challenges due to information asymmetry (Kim, 2013). Uniqueness refers to the intrinsic characteristics of knowledge created by its specificity and originality (Kim, 2013). It is associated with factor immobility, meaning that unique knowledge cannot become mobile unless it is known, and replication is inherently difficult (Lippman & Rumelt, 1982).

However, the degree of isolation varies by knowledge type—local versus internationalization. Firms with dispersed value chains accumulate deep local knowledge of clients, markets, and institutions, creating strategic advantages and facilitating opportunity recognition (Eriksson et al., 1997). Such knowledge is protected by causal ambiguity and uniqueness, reducing imitation risk. In contrast, internationalization knowledge gained through foreign expansion offers weaker isolation (Oehme & Bort, 2015). While valuable for further growth—shaping search and evaluation of opportunities (Eriksson et al., 1997)—it lacks strong causal ambiguity and country-specific depth (Kim, 2013), making it easier to replicate due to its general, routine-based nature (Fang et al., 2007). The theoretical logic illustrating the relationships and assumptions underlying our conceptualization is summarized in Fig. 1.

2.3. Value chain activities and foreign knowledge

We follow Porter's (1986) original arguments and Roth's synthesized definition (Roth, 1992, p. 534) describing how value chain dispersion "ranges from dispersed—with an entire set of organization's functional activities being replicated within each country, to concentrated—where the activities in the value chain are disaggregated and placed in single country locations" and coordination from "low—where each functional activity in different country sites is performed independent of all other sites, to high—where the functional activities are tightly linked or integrated across geographical locations." If firms are to internationalize efficiently, they must configure and coordinate their value chain

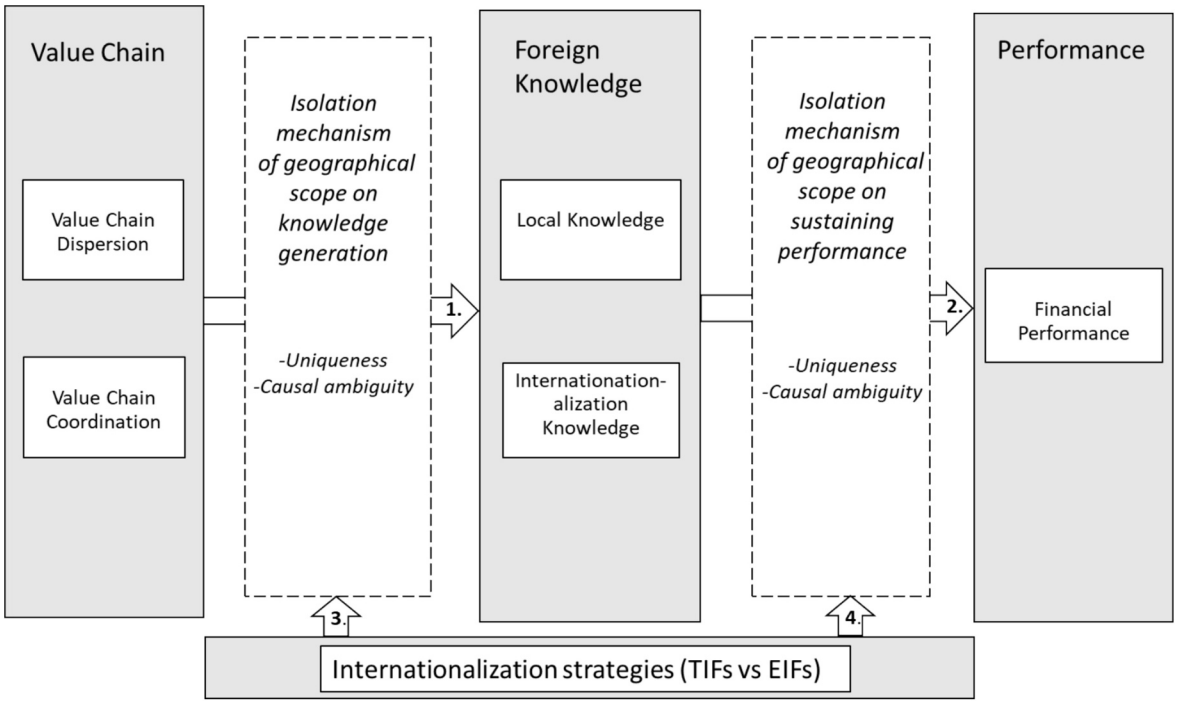

Fig. 1. Isolation mechanisms as the basis for our conceptualization: relationships and underlying assumptions. Note: TIFs = Traditionally internationalizing firms; EIFs = Early internationalizing firms. Underlying mechanisms are in italics. 1. Value chain dispersion and coordination facilitate generation of foreign knowledge isolated by uniqueness and causal ambiguity. 2. Foreign knowledge isolated from competitive imitation due to uniqueness and causal ambiguity sustain firm performance.3. Internationalization strategy of TIFs and EIFs differ in isolation mechanism for knowledge generation. 4. Internationalization strategy of TIFs and EIFs differ in isolation mechanism for sustaining performance.

activities across geographically dispersed locations.

Diversity in international value chains appears to enhance knowledge generation due to the variety of knowledge sources and richer set of experiences (Casillas & Moreno-Menéndez, 2014; Phene et al., 2006), as well as innovations (Buciuni & Pisano, 2021). Greater dispersion of the value chain should thus yield stronger local and internationalization knowledge (Eriksson et al., 1997). However, isolation mechanisms may create barriers to the flow of local knowledge acquired overseas, inhibiting its transfer within the firm. The complexity of knowledge embedded in local networks suggests that causal ambiguity plays an important role. While causal ambiguity is inherently high when local knowledge is generated from dispersed value chain locations, we argue that TIFs have an advantage over EIFs due to their internationalization strategies (Hughes et al., 2019). Traditionally internationalizing firms' more gradual approach involves deep penetration into local markets and their multilevel nested networks (Johanson & Vahlne, 2009). This provides TIFs with a variety of sources of local business and institutional knowledge (Barkema et al., 1996; Eriksson et al., 2000) and facilitates their understanding of the nature and the value of that complex local knowledge. Traditionally internationalizing firms are also more likely to employ a variety of operation modes in different countries, ranging from exporting to foreign direct investment, providing them with internationalization knowledge about operating with foreign contacts and modes of operation, thus developing stronger capabilities for managing international business operations (Gunawan & Rose, 2014). That enables them to access unique local knowledge residing within the multiple layers of country networks. Moreover, this knowledge can be transferred from diverse locations back to headquarters through established vertical organizational structures and processes (Vahlne & Ivarsson, 2014).

In contrast, the typical EIF strategy of rapid expansion to a large number of markets, using lower-commitment entry modes (Oviatt & McDougall, 1994) and selling through large channel members (Prashantham & Dhanaraj, 2015), makes it more difficult for these firms to understand the complex local knowledge embedded in nested networks. Similarly, the acquisition of internationalization knowledge can be hindered by a lack of variety in the portfolio of foreign operation modes. Obtaining knowledge through inter-organizational connections tends to be more challenging, and knowledge acquired at arm's length may not be directly transferable to the firm (Bruneel et al., 2010). Therefore, relative to TIFs, the generation of local and internationalization knowledge may suffer. On this basis, we propose the following hypotheses pertaining to the relationship between value chain dispersion and the isolation barriers associated with the two types of knowledge:

Hypothesis 1. Value chain dispersion enhances local knowledge (a) for TIFs (b) but not for EIFs.

Hypothesis 2. Value chain dispersion enhances internationalization knowledge (a) for TIFs (b) but not for EIFs.

The logic is somewhat different with respect to coordination. Creating strong internal linkages across value-chain activities allows firms to leverage knowledge from local units and their environments (Alcácer & Zhao, 2012). Accordingly, value chain coordination is essential for generating both local and internationalization knowledge (Roth, 1992). With respect to local knowledge, causal ambiguity should not represent a substantial barrier for either TIFs or EIFs, given that cross-border coordination is most likely to occur within the boundaries of the same value chain function (e.g., sharing information within the R&D function across different countries), in which shared functional competence facilitates the communication of even complex matters. Here, both informal (e.g., interpersonal) and formal coordination mechanisms (e.g., processes and technology) may be employed to increase the effectiveness of knowledge transfer (Patriotta et al., 2013). Knowledge that is incremental in nature is less unique, making it easier for the receiving unit to separate locally embedded knowledge and transplant it elsewhere within the firm (Kim, 2013). In this way, local knowledge generated via coordination should be relatively unaffected by isolation mechanisms for both EIFs and TIFs. Furthermore, the rather general nature of internationalization knowledge, with its lower levels of complexity and uniqueness, suggests that it can also be readily transplanted through coordination of the value chain, irrespective of the firm's internationalization strategy. Hence, we propose the following hypotheses regarding the relationship between value chain coordination and isolation barriers to local and internationalization knowledge:

Hypothesis 3. Value chain coordination enhances local knowledge (a) for TIFs, (b) and for EIFs.

Hypothesis 4. Value chain coordination enhances internationalization knowledge (a) for TIFs, (b) and for EIFs.

2.4. Foreign knowledge, barriers to imitation and performance

Although the existing literature is divided with respect to the performance-related impacts of internationalization (Hitt et al., 1994; Kirca et al., 2011; Zahra et al., 2000), including value chain dispersion (Lin & Hsieh, 2010; Roth, 1992) and coordination (Yeniyurt et al., 2005), the resource-based view of the firm suggests that resources – specifically those that are valuable, rare, inimitable, and non-substitutable – are associated with sustained competitive advantage, leading to higher performance (e.g., Barney, 1991). Knowledge-based resources are particularly relevant (e.g., Conner & Prahalad, 1996), especially in the international context (e.g., Kogut & Zander, 1993). Consistent with Rumelt (1984), the notion of a strong imitation barrier is salient for the development of key firm-specific resources. It should thus have a central role in explaining the performance of internationalizing firms. Local knowledge has high causal ambiguity and uniqueness, which should create a resilient barrier to isolation. Consequently, we expect that local knowledge, which is difficult for competitors to imitate, will have positive effects on the performance of TIFs. In contrast, EIFs' strategies are based on serving a global niche segment with more homogeneous customer needs (Andersson, 2025; Gabrielsson & Gabrielsson, 2013; Hennart, 2014); their results are based more on scale advantages than on applying local knowledge. This leads us to propose the following hypothesis:

Hypothesis 5. Local knowledge strengthens financial performance (a) for TIFs (b) but not for EIFs.

Internationalization knowledge is less unique and causally ambiguous, making it more imitable. For TIFs, it should not represent a particularly valuable and rare performance-creating resource. However, we expect that the EIF internationalization strategy will affect isolation barriers differently. Firstly, EIFs' rapid international expansion and reliance on complex and integrated global networks make their internationalization behaviors and operations difficult for competitors to understand (e.g., Oviatt & McDougall, 1994). The EIF model is designed to serve global niche segments while striving for economies of scale (Autio, 2017; Moen, 2002). The internationalization knowledge necessary to do this effectively entails high causal ambiguity for competitors. This approach is particularly challenging for TIFs to grasp because they follow an entirely different internationalization strategy, which involves penetrating local markets and emphasizing economies of scope at the country level (Vahlne & Ivarsson, 2014). Secondly, the EIF international expansion approach is difficult to transplant into TIFs, as it is based on rapid expansion across countries within a market niche, in stark contrast to TIFs' more gradual, country-by-country advance (Hennart, 2014). Rapid expansion requires specific managerial resources that foster internationalization, which TIFs often lack (Mohr et al., 2018). The uniqueness of EIFs' internationalization knowledge serves to inhibit imitation, with the inimitability often further enforced by context-specific information shared in global value chains, including

exclusivity agreements that EIFs have with large MNEs when seeking global distribution rights (Kano, 2018).

Accordingly, we expect the relationship between internationalization knowledge and performance to differ between TIFs and EIFs, compared to that of local knowledge. EIFs' rapid expansion enables them to protect their internationalization knowledge through an imitative protection advantage, created by causal ambiguity and uniqueness—effectively an isolation advantage of rapidness, akin to geographical scope. In contrast, TIFs typically lack this form of protection. Therefore, we expect internationalization knowledge to have a positive effect on performance for EIFs, but not for TIFs.

Accordingly, we hypothesize:

Hypothesis 6. Internationalization knowledge strengthens financial performance (a) not for TIFs, (b) but for EIFs.

The complete set of hypothesized relationships is summarized graphically in Fig. 2.

3. Data and methods

3.1. Data collection

We test the hypotheses using survey data collected from SMEs operating in Finland. We used a sampling frame incorporating the country's most important industries, including manufacturing, ICT, professional services, scientific and technical activities, and finance and insurance. The multi-industry sample helped ensure the generalizability of our findings (Morgan et al., 2004).

Finland is a small and open economy (SMOPEC) with approximately five and a half million inhabitants. The country's high levels of cultural and economic homogeneity reduce the likelihood of culturally induced variations in the perception of abstract constructs (Autio et al., 2000). Additionally, Finland is home to many internationalizing firms. The small domestic market, combined with the fact that many Finnish firms produce highly specialized products and services, effectively forces companies to seek growth internationally. The situation is typical for firms based in SMOPECs, other examples of which are the Nordic countries, Ireland, Israel, Australia, and New Zealand.

Our target population consists of privately held firms that (1) originate in Finland, (2) are SMEs, (3) founded after 1984, (4) have foreign sales, and (5) have value chain activities in multiple countries. The initial sampling frame for the study was identified using Fonecta, a reliable Finnish contact information database provider. Initially, we contacted the CEO, a board member, or a member of senior management by phone to verify that the firm met the five key criteria. We had an initial sampling frame of 885 firms, and 748 firms expressed interest in participating in the full study. Each participant was sent a link to a web-based questionnaire. Pre-notification and reminder methods were employed to increase the number of respondents (Haggett & Mitchell, 1994). In total, 401 answers were received, of which 345 were usable, yielding an overall effective response rate of 39.0% for the study. After removing those firms that did not meet the SME criterion (8 firms) or did not have value chain activities in multiple countries (49 firms), the remaining sample size was 288 firms (32.5%). Accordingly, the set of respondents informing the statistical analysis consists of 288: 117 EIFs and 171 TIFs.

This split reflects what we understand to be the proportional division of these two internationalization types among Finnish SMEs. We employed a widely used operationalization to distinguish between the two strategies for internationalization, categorizing firms that have reached the 25% threshold for foreign sales within three years of foundation as EIFs and others as TIFs (e.g., Knight & Cavusgil, 2004). The firms in our sample represent a full spectrum, ranging from the early phases of international activity to fully globalized operations.

Non-response bias is not a concern, based on two sets of comparisons between responding and nonresponding firms. Crosstabulation and χ^2 testing revealed no significant difference ($p > 0.10$) in the distributions of two-digit SIC codes, including at least 10 firms. One-way ANOVA indicated no significant differences ($p > 0.10$) in the means for eight different financial performance measures.

The SMEs in our study are relatively small, with median employee numbers ranging from five to nine for EIFs and 10–19 for TIFs, and median sales revenues for year t-1 of EUR 0.5–1 million for EIFs and EUR 1–1.2 million for TIFs. There was little difference in the extent to which EIFs (29.1%) and TIFs (23.4%) relied on the internalization (vs. externalization) of their value chain in terms of foreign direct investment (FDI). We also verified that the firm's performance was not affected by whether it had foreign direct investments.

Generally, the EIFs internationalized significantly more rapidly ($p < 0.01$) than the TIFs, with mean years to the first international sales of 0.6 and 4.6, respectively. The two categories of firms also reported marginally significant differences ($p < 0.10$) for the average number of countries to which they sell: 15.5 for EIFs and 11.2 for TIFs. While the responding TIFs have not been particularly slow to approach foreign markets, the EIFs have internationalized significantly faster and to a greater extent.

3.2. Modeling and variables

Structural equation modeling (SEM) is suitable for analyzing complex research models in international business and strategy contexts (Richter et al., 2016). Traditional SEM is a covariance-based method that estimates path coefficients to minimize the difference between the covariance matrices of the empirical and theoretical models (Fornell & Larcker, 1981). Covariance-based SEM is a theoretically sound method since its parameter estimation is stable and supports measuring the reliability of the model (Bagozzi & Yi, 2012). Accordingly, we selected covariance-based SEM to estimate the relationships shown in Fig. 2 and to test the hypotheses.

3.2.1. Dependent variables (performance)

We wanted to use an objective and accounting-based performance measure and thus measured performance as the change in EBIT margin (the percentage of earnings before interest and taxes between years

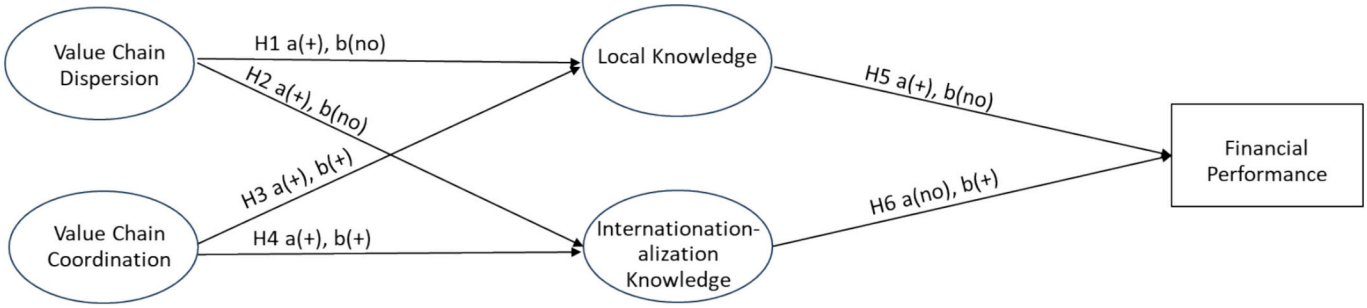

Fig. 2. Framework for the value chain dispersion and coordination of TIFs (a) and EIFs (b), and implications for performance.

t0–t2), which were obtained for all 288 firms from the Amadeus database (Bureau van Dijk).

3.2.2. Intermediate variables (knowledge)

Our measures of two types of foreign knowledge—local (e.g., competitors, customers, suppliers, language, regulations) and internationalization (e.g., international experience)—were based on each respondent's assessment of the knowledge held by the firm's senior management relative to its competitors, which earlier research has established is a valid way to measure firms' knowledge due to its competitive nature (Zhou et al., 2010). The choice of intermediate variables in the SEM was operationalized using 7-point Likert scales and based on the conceptualization of Eriksson et al. (1997) and following Zhou et al. (2010).

3.2.3. Explanatory variables (value chain dispersion and coordination)

Using a conceptualization from Porter (1986), dispersion pertains to the extent to which the firm's value chain activities are geographically concentrated, while coordination relates to the extent to which value chain activities are synchronized across the countries in which the firm operates. We operationalized the international dispersion and coordination of value chain activities using an adaptation of the measures suggested by Roth (1992). See Appendices A and B. The dispersion measures were calculated based on the sum of the number of countries in which each of the value chain activities of the firm occurred (whether internalized or externalized). Coordination measures were assessed for value chain activities using the average of responses from 7-point Likert scales, with higher values representing stronger international coordination. The dispersion and coordination constructs are formative. They are arguably caused by a set of observed variables (measured items) instead of reflective constructs in which observed variables are treated as indicators of a latent construct (Diamantopoulos & Winklhofer, 2001).

3.2.4. Control variables

Consistent with earlier studies, we included both industry- and firm-specific control variables in our models because they have the potential to affect both knowledge acquisition and performance. We controlled for industry growth, operationalized using a three-item factor based on perceptual responses (Zhou & Wu, 2010), and three firm-specific variables controlling for the levels of the previous accounting year t_{-1}; firm age and its size measured in terms of the number of employees (Thornhill & White, 2007); and EBIT margin (Kim & Ployhart, 2014). In addition, we controlled for the duration of internationalization (length of time since the firm's first foreign market entry), company type (B2C = 1, if business-to-consumer; B2C = 0, if not), and industry (services = 1, if the firm engages in services, 0 if not).

Table 1 shows descriptive statistics for the variables used in the study, separately for the TIF and EIF subsamples.

Table 2 shows the correlation coefficients between the quantitative variables used in the analysis. Companies with internationalization knowledge also tend to have local knowledge. In addition, both knowledge types correlate with dispersion and coordination, which also relate to each other.

We conducted a pilot survey to assess the measures employed in the study, which involved inviting managers from various types of firms to complete a preliminary questionnaire. The resulting feedback verified the managers' understanding of the questions, which led to some modifications to the survey instrument. The questionnaire was developed in English, translated into Finnish by a professional translator, and then retranslated into English by another professional translator, with the few deviations between the two versions fully resolved. Respondents were offered the option of completing the questionnaire in either English or Finnish.

Most of the constructs used in the study were operationalized as reflective, multi-item measures, developed using exploratory factor analysis, and refined via reliability analysis using composite reliability (CR) values. Summated scores were estimated as factor scores. Details of the items, factor loadings, and reliability for the reflective constructs are shown in Table 3. The constructs demonstrated acceptable CR, with all values exceeding 0.80. Exploratory factor analysis using the EIF and TIF subsamples yielded very similar results, so the analysis was undertaken using identically formulated factors for the two groups.

Whereas collinearity among items is necessary for a reliable reflective construct, it signifies a lack of reliability for a formative construct (Diamantopoulos & Winklhofer, 2001). The variance inflation factors (VIF) for the items used in the value chain dispersion and coordination constructs were all below 3.0 for the TIF and EIF subsamples, suggesting acceptable reliability. In addition to using previously validated measures for all constructs, we assessed external validity for the formative constructs by checking correlations with global items that should be related to them (Diamantopoulos & Winklhofer, 2001). The items comprising the dispersion and coordination constructs exhibited reasonable correlations with items pertaining to the number of countries in which the firm had sales and the firm's focus on *standardized core products or services that require minimal local adaptation*.

In addition, we conducted confirmatory factor analysis (using AMOS 25) to assess the adequacy of the constructs within the entire

Table 1
Descriptive statistics for the variables used.[a]

	TIFs			EIFs			
Variables	Mean	Median	Std.dev.	Mean	Median	Std.dev.	Difference
Change in EBIT margin (%), t_0 - t_2	0.23	0.41	10.10	−0.50	0.21	10.24	
Local knowledge	4.20	4.17	0.92	4.42	4.50	1.06	†
Internationalization knowledge	4.58	4.67	1.19	4.64	4.67	1.35	
Dispersion[b]	12.83	12.00	5.46	13.97	13.00	4.86	†
Coordination[c]	3.66	3.75	1.94	3.78	4.00	1.80	
Industry growth[d]	3.65	3.67	1.38	3.69	3.67	1.57	
Firm age, t_{-1}	17.97	19.00	5.91	12.52	12.00	6.14	**
Number of employees, t_{-1}[e]	3.78	4.00	1.49	3.34	3.00	1.34	**
EBIT margin (%), t_{-1}	1.27	2.58	19.36	−2.54	1.04	23.59	

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

[a] Differences assessed using *t*-test.

[b] Calculated based on summing the numbers of countries in which each of the value chain activities is performed by the firm, using the following scale: 0 for none, 1 for a single country, 2 for two or three countries, 3 for four or five countries, and 4 for six or more countries.

[c] Assessed for value chain activities using the average of responses from 7-point Likert scales with higher values representing stronger international coordination.

[d] Summated scale based on the mean of three items ("The growth rate of this industry in the past three years is very high," The market demand in this industry is growing rapidly," and "There are many potential customers in this industry to provide mass-marketing opportunity"); 1 = Strongly disagree and 7 = Strongly agree.

[e] Measured: 1 represents no employees, 2 for 1–4, 3 for 5–9, 4 for 10–19, 5 for 20–49, 6 for 50–99, 7 for 100–249, 8 for 250–499 employees.

Table 2
Correlation matrix for the variables used in the SEM analysis.

		1)	2)	3)	4)	5)	6)	7)	8)	9)
1)	Change in EBIT margin (%), t_0 - t_2									
2)	Local knowledge	0.05								
3)	Internationalization knowledge	0.09	0.81**							
4)	Dispersion	0.00	0.20**	0.24**						
5)	Coordination	0.05	0.37**	0.41**	0.30**					
6)	Industry growth	0.00	0.26**	0.25**	0.07	0.16**				
7)	Log of firm age, t_{-1}	0.01	−0.15*	−0.11	−0.02	−0.13*	−0.24**			
8)	Log of employees, t_{-1}	0.03	0.10	0.13*	0.19**	0.21**	0.03	0.31**		
9)	EBIT margin (%), t_{-1}	−0.15	−0.10	−0.17**	−0.01	−0.10	−0.09	0.19**	−0.03	
10)	Log of duration of Internationalization	0.01	−0.11	−0.10	0.03	−0.13*	−0.31**	0.84**	0.24**	0.23**
	n				288					

Note: * $p < 0.05$, ** $p < 0.01$.

Table 3
Factor loadings, Cronbach's α, Composite Reliability and Average Variance Extracted for reflective measures.

	Items	TIFs	EIFs
Local knowledge	*Our top managers' knowledge about…*		
	Foreign competitors	0.81	0.86
	The needs of foreign clients/customers	0.88	0.88
	Effective marketing in foreign markets	0.84	0.81
	Foreign language and norms	0.78	0.75
	Foreign business laws and regulations	0.73	0.73
	Host government agencies	0.75	0.83
	Composite reliability	*0.91*	*0.92*
	Cronbach's α	*0.88*	*0.90*
	Average variance extracted	*0.64*	*0.66*
Internationa-lization knowledge	*Our top managers'…*		
	International business experience	0.94	0.95
	Experience in dealing with foreign business contacts	0.94	0.94
	Capability for managing international operations	0.94	0.91
	Composite reliability	*0.96*	*0.95*
	Cronbach's α	*0.93*	*0.92*
	Average variance extracted	*0.88*	*0.87*

measurement model (including the formative constructs as summative indices). The results revealed a reasonably strong fit, with a comparative fit index (CFI) of 0.94, RMSEA of 0.067, χ^2 of 194.03 (df = 105), and relative χ^2/df = 2.36.

Although our model is theoretically justified, one could question the directionality of the constructs, an issue that is typically referred to as reversed causality. To empirically study this we interchanged the roles of the value chain constructs with those relating to foreign knowledge, separately TIFs and EIFs. Model fit indicators for the reversed models were inferior to the original models. The specific indirect effects in the reversed models starting from local or internationalization knowledge passing through value chain dispersion or coordination to financial performance were insignificant. This together with the inbuilt lag in the measurement of the objective performance supports the choice of the causal direction in our model.

As the dependent variable was based on objective accounting data, there is no concern over common method bias. However, other variables were obtained from individual respondents, which makes such bias possible (Podsakoff et al., 2003). Accordingly, we used both procedural and statistical approaches to mitigate that risk. Procedurally, the questionnaire was designed with this issue in mind, particularly with respect to the question order. The web-based questionnaire did not allow respondents to return to previously answered questions, thus precluding *post-hoc* changes that could artificially make the responses consistent. Respondents were guaranteed confidentiality, and extensive pilot testing ensured that questions were clear and understandable. In-depth qualitative interviews with 20 of the responding firms also yielded information that was fully consistent with those firms' survey results.

Harman's single-factor test yielded multiple factors for both the TIF and EIF subsamples, and loading all variables onto single factors accounted for no more than 22.8% of the applicable total variance, suggesting that common method bias is not a serious concern (Podsakoff et al., 2003). Finally, we used a marker variable that was theoretically unrelated to the constructs in our study, which was: *Our company has been able to attract an equal share of women and men as employees* to calculate partial correlations (Lindell & Whitney, 2001). There was no statistically significant difference between the zero-order and partial correlation matrixes.

4. Results

The results for the SEM estimation are shown in Table 4: Panel A shows the results for the TIFs, and Panel B for the EIFs. Additionally, Fig. 3 shows the estimated results graphically. First, we tested the influence of value chain dispersion and coordination on knowledge accumulation separately for TIFs and EIFs (Hypotheses 1–4). Similarly, we tested Hypotheses 5 and 6 regarding the effect of knowledge on performance.

Our analysis indicates that value chain dispersion contributes to the development of both local (b = 0.02, $p = 0.04$) and internationalization knowledge (b = 0.04, $p < 0.01$) for TIFs (Panel A); in contrast, we find no statistically significant relationships for EIFs between value chain dispersion and neither local (b = 0.00, $p < 0.87$) nor internationalization knowledge (b = 0.02, $p < 0.46$) in our sample (Panel B). However, the content of Panel A illustrates that value chain coordination contributes substantially to both types of knowledge for TIFs (b = 0.15, $p < 0.01$ (local); b = 0.22, $p < 0.01$ (internationalization)) and from Panel B that the same applies for EIFs (b = 0.16, $p < 0.01$ (local); b = 0.33, $p < 0.01$ (internationalization)). Considering the relationship between knowledge and financial performance, our data suggest that TIFs benefit from local knowledge (Panel A: b = 1.98, $p = 0.05$), while EIFs do not (Panel B: b = −1.76, $p = 0.17$). In contrast, internationalization knowledge contributes to the financial performance of EIFs (Panel B: b = 1.72, $p = 0.01$) but not TIFs (Panel A: b = −1.31, p = 0.05).

To summarize, all of the hypothesized relationships received support. The results generated an important finding: TIFs seem to benefit from enhanced performance through local knowledge, while EIFs do so through internationalization knowledge. Fig. 3 illustrates the estimated results graphically in terms of the hypothesized relationships. None of the independent control variables used were statistically significant at the 5% level (except the lagged value of financial performance).

5. Discussion

We have considered the generation of knowledge through value chain dispersion and coordination among internationalizing SMEs and the resulting performance implications, using the conceptual lens of the isolation mechanism. We compared these relationships for TIFs and EIFs

Table 4
Results of the SEM analysis: path coefficients (b), standard errors (s.e.), t-values (t) and significances (p).

Panel A

	TIFs					
Variables	b	s.e.	t	p	Hypothesis	Results
Dispersion → Local knowledge	0.02	0.01	2.07	0.04 *	H1a	Supported
Dispersion → Internationalization Knowledge	0.04	0.02	2.62	<0.01 **	H2a	Supported
Coordination → Local knowledge	0.15	0.04	4.17	<0.01 **	H3a	Supported
Coordination → Internationalization Knowledge	0.22	0.05	4.57	<0.01 **	H4a	Supported
Local knowledge → (+) Change in EBIT margin $t_0 \rightarrow t_2$	1.98	0.99	2.00	0.05 *	H5a	Supported
Internationalization Knowledge → (+) Change in EBIT margin, $t_0 \rightarrow t_2$	−1,31	0.67	−1.97	0.05 *	H6a	Supported
Industry growth	−0.52	0.71	−0.73	0.47	Control	
Log of firm age, t_{-1}	−3.18	1.75	−1.82	0.07 †	Control	
Log of employees, t_{-1}	1.69	1.82	0.93	0.36	Control	
EBIT margin, t_{-1}	−0.12	0.04	−3.13	<0.01 **	Control	
Log of internationalization duration	0.49	1.20	0.41	0.68	Control	
B2C	−1.14	1.90	−0.60	0.55	Control	
Service	−1.08	1.52	−0.71	0.48	Control	
n	171					

Panel B

	EIFs					
Variables	Estimate	s.e.	t	p	Hypothesis	Results
Dispersion → Local knowledge	−0.00	0.02	−0.17	0.87	H1b	Supported
Dispersion → Internationalization Knowledge	0.02	0.03	0.74	0.46	H2b	Supported
Coordination → Local knowledge	0.16	0.04	3.60	<0.01 **	H3b	Supported
Coordination → Internationalization Knowledge	0.33	0.07	4.78	<0.01 **	H4b	Supported
Local knowledge → (+) Change in EBIT margin $t_0 \rightarrow t_2$	−1.76	1.28	−1.37	0.17	H5b	Supported
Internationalization Knowledge → (+) Change in EBIT margin, $t_0 \rightarrow t_2$	1.72	0.70	2.46	0.01 *	H6b	Supported
Industry growth	0.20	0.64	0.32	0.75	Control	
Log of firm age, t_{-1}	0.73	1.60	0.46	0.65	Control	
Log of employees, t_{-1}	−0.90	2.29	−0.39	0.70	Control	
EBIT margin, t_{-1}	−0.04	0.04	−1.13	0.26	Control	
Log of internationalization duration	0.59	1.23	0.48	0.63	Control	
B2C	0.25	1.98	0.13	0.90	Control	
Service	−2.95	1.84	−1.60	0.11	Control	
n	117					

Panel A: Note: † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.
Panel B: Note: † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

and identified the important role of a firm's internationalization strategy. Our findings contribute to the literature on foreign market knowledge in internationalizing firms (e.g., Eriksson et al., 1997; Hughes et al., 2019; Vahlne & Ivarsson, 2014; Weerawardena et al., 2020) by providing a theoretical logic and empirical evidence that value chain dispersion allows TIFs, but not EIFs, to generate knowledge related to the local market environment by locating value chain activities in new countries (Hypothesis 1). This result is consistent with our expectations, based on the limitations of EIFs' internationalization strategies in terms of accessing isolated local knowledge. Furthermore, our expectation that the dispersion of value chain activities brings internationalization knowledge to TIFs but not for EIFs (Hypothesis 2) was supported. These findings provide theoretical justification and empirical evidence that the mechanisms for knowledge generation in TIFs during internationalization affect the development of both local and internationalization knowledge differently compared to EIFs. The TIFs strategy facilitates access to unique and ambiguous local market knowledge residing within the multiple layers of country networks and enables its transfer from diverse locations back to headquarters through established vertical organizational structures. Since EIFs expand rapidly into multiple foreign markets using low-commitment entry modes (Oviatt & McDougall, 1994) and rely on large channel partners (Prashantham & Dhanaraj, 2015), they face limitations in generating knowledge by observing other firms' successes and failures. As a result, acquiring complex, network-embedded local and internationalization knowledge becomes challenging. Moreover, knowledge generation through inter-organizational relationships is often more challenging, and knowledge obtained at arm's length may lack direct applicability to the firm (Bruneel et al., 2010).

With regard to coordination, our findings align with theoretical arguments based on knowledge isolation — specifically, that low causal ambiguity and low uniqueness within the same value chain function facilitate knowledge transfer — suggesting that value chain coordination brings local knowledge to both TIFs and EIFs (Hypothesis 3). Similarly, stronger coordination is also associated with stronger internationalization knowledge for both TIFs and EIFs (Hypothesis 4). However, this appears to be especially important for EIFs, given their inability to generate local or internationalization knowledge from value

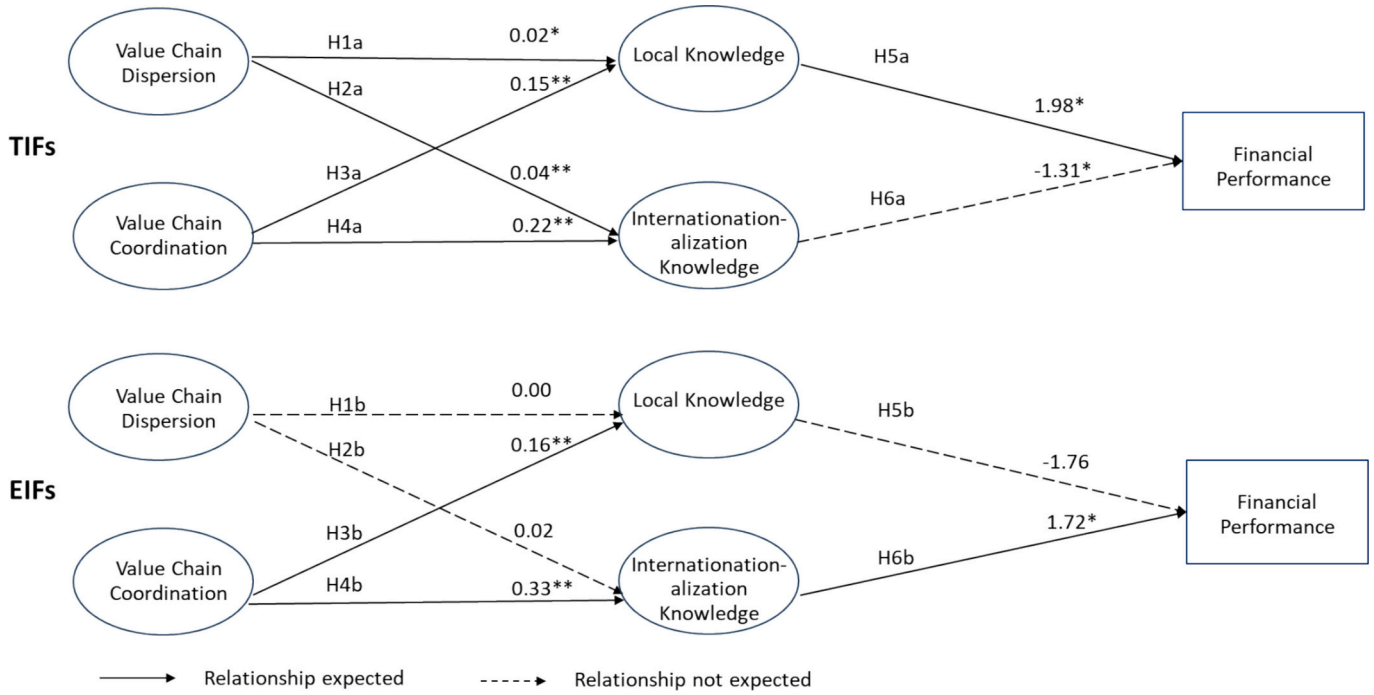

Fig. 3. Results of the analysis of the hypothesized relationships for TIFs and EIFs.

chain dispersion. In contrast, TIFs can generate such knowledge through value chain dispersion and coordination due to their deep penetration into local markets and their multilevel nested networks. Earlier research on value chains in internationalization has primarily adopted the internalizing theory perspective and focused on large multinational corporations (MNCs) (Benito et al., 2019; Üner et al., 2023). In contrast, we extend this line of inquiry to internationalizing SMEs and introduce the isolation mechanism to explain their behavior.

Our results also suggest that local knowledge is associated with stronger financial performance for TIFs but not for EIFs, supporting Hypothesis 5. Dispersed value chains, with their associated local interpersonal networks, may improve firms' ability to develop distinctive local knowledge, helping them to identify opportunities that are unavailable to less-engaged competitors. The uniqueness and ambiguity of such knowledge may comprise an isolation mechanism, protecting against imitative behavior. While earlier research has shown that geographical scope can create an imitative barrier in question of product innovations based on qualitative patent data without consideration on financial performance outcomes (Kim, 2013), we extend this consideration of isolation mechanisms to the international value chains of TIFs and EIFs, providing evidence that this is also reflected in their financial performance. Moreover, earlier research has postulated that gaining an insidership position in local networks is important (Johanson & Vahlne, 2009), we identify the underlying theoretical isolation mechanism that provides this advantage for TIFs and empirically demonstrate its association with financial performance gains.

We find that internationalization knowledge has a positive relationship with financial performance for EIFs but a marginally negative relationship for TIFs, providing support for Hypothesis 6. This finding regarding EIFs aligns with studies reporting that these firms tend to focus strongly on a single aspect of their value chain (e.g., sales), which enables them to internationalize quickly across diverse geographic markets, emphasizing breadth over country-specific depth (Autio, 2017; Moen, 2002). Eriksson et al. (1997) argued that internationalization knowledge can be transferred across countries. Our findings build on and extend this view by showing that, for EIFs, such transferable knowledge also contributes to improved financial performance. Notably, this positive effect appears to be enduring (Zander et al., 2015), as evidenced by firms in our sample that had internationalized more than a decade before our data collection. This suggests that transferable internationalization knowledge provides a lasting advantage for EIFs operating in diverse foreign markets. Our study thus contributes to the literature pertaining to foreign market knowledge in internationalizing firms by illustrating how EIFs can convert early, fast-paced international experience into enduring performance advantages, challenging assumptions that accelerated internationalization limits depth or quality of knowledge generation. While earlier studies highlight the importance of acquiring in general foreign knowledge for the growth of EIFs (Meuric & Favre-Bonté, 2024), our comparative analysis of EIFs and TIFs shows a more nuanced pattern with regards to performance. Specifically, while local knowledge enhances financial performance in TIFs, EIFs derive financial performance from internationalization knowledge.

This finding accords with our expectation that EIFs enjoy an isolation advantage rooted in the rapidity of their international expansion, which reinforces the causal ambiguity and uniqueness of the knowledge they accumulate. In competitive markets, the best protection against imitation may be acquired not from interventions to impede replication by competitors, but from enhancing transparency and replicability within the firm (McGaughey, 2002). Moreover, our findings suggest that TIFs may struggle more to protect performance-enhancing internationalization knowledge from imitation. We concur with Eriksson et al. (1997) that internationalization knowledge may be subject to imitative behavior and *ex-post* equilibration of rents among other firms (Mahoney & Pandian, 1992). In terms of financial performance, EIFs seem to be deriving benefits associated with the isolation advantage of rapidness. Earlier research has investigated EIFs and generally found a positive relationship between early internationalization and the perceived achievement of international performance (Autio et al., 2000; Schwens & Kabst, 2009). However, these studies typically assume that the effects arise from learning, yet they do not directly measure this mechanism (De Clercq et al., 2012). We contribute to this literature by showing how EIFs achieve financial performance through the generation of internationalization knowledge derived from international value chain coordination, building on a novel theoretical argument concerning the knowledge isolation advantage of rapidness. In contrast, TIFs achieve financial performance by generating local market knowledge through

international value chain configuration and coordination, grounded in the knowledge isolation advantage of geography.

6. Conclusions

6.1. Theoretical implications

Driven by the knowledge resource mobility paradox (Fang et al., 2007; Le Breton-Miller & Miller, 2015), we focused on generation of local and internationalization knowledge through the dispersion and coordination of international value chains, and their influence on SME performance. Building on theoretical insights from the concept of isolation mechanisms, we compared the impact of the internationalization strategies of EIFs and TIFs. Our approach differs from earlier research on internationalization that has primarily adopted the internalizing theory perspective and focused on large multinational corporations (MNCs) (Benito et al., 2019; Üner et al., 2023). Our theoretical model shed light on the mechanisms employed by internationalizing SMEs to generate foreign knowledge. The findings suggest that an underlying isolation mechanism explains the differences in performance between TIFs and EIFs. Accordingly, we investigated the behavior of SMEs following those two internationalization strategies.

First, we contribute theoretically to SME internationalization literature (Johanson & Vahlne, 1977; Vahlne & Ivarsson, 2014) by showing that foreign market knowledge in SMEs functions not only as a strategic resource but also as an isolation barrier to safeguard performance. TIFs benefit from *knowledge isolation advantage of geography*, which is local knowledge developed through gradual entry in geographically dispersed and coordinated value chains. This unique and ambiguous local knowledge can be transferred within the firm through value chain coordination and its established organizational structure but is difficult to imitate by competitors, and functions as an isolating mechanism that safeguards performance from competitors. Thus, we contribute by explaining how these firms can gain an insidership position and gain from that financially that earlier research has theoretically postulated to be of importance during internationalization (Johanson & Vahlne, 2009). In contrast, EIFs pursue rapid expansion in geographically dispersed foreign markets. EIFs benefit from *knowledge isolation advantage of rapidness* through accelerated accumulation of internationalization knowledge across multiple markets that is transferred within the firms through value chain coordination, which is difficult for rivals who are slower paced to replicate. Thus, the speed of internationalization knowledge generation constitutes a form of isolating mechanism and becomes a source of advantage to protect performance. The importance of rapidly generating – particularly internationalization knowledge – and applying it in foreign markets to achieve strong financial performance extends earlier research, which has not differentiated between types of foreign knowledge and has often examined EIFs in isolation rather than comparing them with TIFs (Meuric & Favre-Bonté, 2024).

Second, another theoretical contribution is that our study challenges and extends the traditional interpretation of psychic distance as primarily a liability in the internationalization process of SMEs. We build on Johanson and Wiedersheim-Paul's (1975) view of psychic distance that arises from differences in language, culture, political systems, and business practices. While they assume that psychic distance creates uncertainty and obstacles for foreign market entry, we offer a complementary perspective that psychic distance can also be a source of opportunity. We propose that geographic diversity, often associated with high psychic distance, creates fertile ground for knowledge generation. SMEs entering a range of geographically and institutionally diverse markets are exposed to a broader set of market conditions, customer behaviors, and institutional environments. This variation enables SMEs to accumulate richer and more differentiated foreign market knowledge, which could create an isolation mechanism to safeguard performance.

6.2. Managerial implications

This study has several implications for managerial practice with regard to internationalizing and managing the value chain for a successful business. These findings can guide managers of TIFs and EIFs regarding the importance of generating various types of knowledge during internationalization and how this knowledge can lead to stronger financial performance. More specifically, managers of TIFs can advance the firm gathering foreign knowledge by increasing the dispersion and coordination of their value chain activities. In contrast, the founders of EIFs might not acquire new foreign knowledge by increasing their value chain dispersion but by safeguarding the seamless coordination of their value chain activities. Managers might be wise to view psychic distance as a positive rather than a negative aspect, given the benefits that geographic diversity can offer for the development of foreign knowledge. Developing processes, sharing best practices, and communicating internally (e.g., via an intranet) could make internally generated foreign knowledge widely available across the firm. Managers of TIFs should consider designing sales, promotion, and customer service processes that capture local knowledge residing in their multilevel business networks in specific countries. Their counterparts in EIFs might benefit from paying particular attention to standardizing such processes across countries to maximize coordination-related benefits.

Furthermore, managers would do well to recognize the connection between knowledge isolation and performance. Developing strong ties with business and institutional networks in the focal country that deliver local knowledge difficult for competitors to imitate helps TIFs enhance their financial performance through the knowledge isolation advantage of geography. Early internationalizing firms could strengthen financial performance by developing internationalization knowledge protected from competitors through rapid expansion to foreign countries and developing effective global go-to-market processes, thus offering them an isolation advantage of rapidness. Such knowledge supports profitable expansion into a large number of countries and could cover issues such as market entry, operation modes, scale advantages, learning curve effects, and other global synergies. Developing internationalization knowledge and leveraging the isolation advantage of rapidness can also offer first-mover advantages, such as capturing prime distribution channels and customer preferences, which can accelerate attaining market leader status.

6.3. Limitations and future research suggestions

As with all empirical work, our study is subject to limitations. Our sample comprises internationally engaged firms from a single SMOPEC territory. Further research should investigate other national contexts, including both large and small markets. Including transitional and emerging economies would enable researchers to test the generalizability of our findings. The cross-sectional nature of our study is also a limitation. Longitudinal perspectives would illuminate the process of knowledge generation, the effects of isolation over time, and also those related to achieving sustained performance. Qualitative studies that examine TIFs and EIFs separately, and explore the role of knowledge, could also advance our understanding. For instance, much remains to be uncovered about the mechanisms by which knowledge is translated into performance, including how the knowledge is integrated to improve performance through innovation.

CRediT authorship contribution statement

Mika Gabrielsson: Writing – review & editing, Writing – original draft, Project administration, Investigation, Data curation, Conceptualization. **Tomi Seppälä:** Writing – review & editing, Methodology, Formal analysis, Data curation. **Peter Gabrielsson:** Writing – original draft, Investigation, Data curation, Conceptualization. **Elizabeth L. Rose:** Writing – original draft, Formal analysis, Data curation,

Conceptualization. **Sylvie K. Chetty:** Writing – review & editing, Conceptualization.

Appendix A. Survey items related to dispersion

Indicate the total number of countries (including home country) where the following activities are performed by your firm internally or by utilizing an external party.

	No countries	1 country	2–3 countries	4–5 countries	6 or more countries
Production operations					
Sales activities					
Product promotion and advertising					
Product delivery and logistics					
Customer service					
Raw materials and parts procurement					
Product research and development					
HR and Administration					

Appendix B. Survey items related to coordination

There are firms that manage a particular functional activity within each country independently and without any coordination of similar activities with other countries. Alternatively, other firms may coordinate an activity across several countries. Indicate the extent to which your firm coordinates the following functional activities across countries. (1 = Not coordinated at all across countries; 7 = Coordinated to a great extent across countries**).**

	1	2	3	4	5	6	7
Production operations							
Sales activities							
Product promotion and advertising							
Product delivery and logistics							
Customer service							
Raw materials and parts procurement							
Product research and development							
HR and Administration							

Data availability

The data that has been used is confidential.

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