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**Knowledge flows, strategic motives, and innovation performance:**

**Insights from Australian and New Zealand investment in Europe**

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**ABSTRACT**

We study the international innovation strategies of Australian and New Zealand (ANZ) firms in the European context, to explain their investment motives, knowledge flows, and innovation performance. Our thematic analysis of seven case studies suggests that ANZ investors' motives for innovation in Europe are often both market- and knowledge-seeking and that some are also motivated by diversification and cooperation. While the strategic intent is often for the knowledge to flow in multiple directions among subsidiaries and headquarters (HQ), distance poses challenges to the efficiency of the process. European subsidiaries are often seen as potentially playing a key role in firms' global innovation systems, particularly with regard to radical innovation. However, because of distance and communication bottlenecks (e.g., time zone differences), HQ does not always recognise this potential. We develop a model proposing that HQ-subsidiary trust and strategic motives are moderators in the process of international knowledge connectivity and knowledge creation.

## INTRODUCTION

The internationalisation of innovation and knowledge flows in multinational enterprises (MNEs) are important and evolving areas of management and international business research (Gaur, Ma, & Ge, 2019; Papanastassiou, Pearce, & Zanfei, 2019). However, only recently scholars have begun to explore the joint influence of strategic orientations (Jean, Kim, Chiou, & Calantone, 2018) and international knowledge connectivity (Andersson, Dasí, Mudambi, & Pedersen, 2016) on various types of innovation—including radical innovation (Azar & Ciabuschi, 2017)—and its performance implications (Han, Jo, & Kang, 2018). Scholars have also begun to discern a trend towards a wider diversity of countries and firms engaged in innovation across borders and its implications for the relationship between strategic motives, knowledge flows, and innovation outcomes (Dachs, Stehrer, & Zahradnik, 2014).

While recent attempts to extend the traditional models of research and development (R&D) internationalisation have considered R&D investment motives (Di Minin, Zhang, & Gammeltoft, 2012) and knowledge flows between HQ, subsidiary and host country (Achcaoucaou, Miravittles, & León-Darder, 2014; Giuliani, Gorgoni, Günther, & Rabelloti, 2014), they did not consider in depth the contextual factors (such as the roles of various types of distance) potentially impeding knowledge flows in MNEs (Gaur et al., 2019) and did not investigate the link to innovation outcomes in respect to radical innovation (Zhou & Li, 2012). Various theoretical approaches have been proposed to underpin the R&D internationalisation models, among which the knowledge-based view (Grant, 1996a) remains under-utilised (Papanastassiou et al., 2019) and has recently gained prominence (Vrontis & Christofi, 2019).

Our study's setting is the European Union (EU), which remains an attractive destination for international R&D firm investments (Laurens, Le Bas, Schoen, Villard, & Larédo, 2015; EY, 2019). Firms from non-traditional investor countries outside of Europe, North America and Japan are increasingly conducting innovation in the EU (Montout & Sami, 2016). The strategic motivation and innovation behaviour of these new players may not be explained by the existing models of R&D internationalisation developed by scholars who focus on firms from developed countries in the Northern Hemisphere (Håkanson & Nobel, 1993; Ambos & Ambos, 2011). The main aim of this study is to explain the innovation FDI motives, outcomes and knowledge flows of European subsidiaries of Australian and New Zealand (ANZ) multinationals, and potentially uncover strategic motives, knowledge flows and processes inconsistent with the current models of R&D and innovation internationalisation.

The national innovation system of New Zealand has been studied before (Crawford, Fabling, Grimes, & Bonner, 2007) and innovation is promoted as a new motor of economic growth for Australia (Bond-Smith, Cassells, Duncan, Kiely, & Tarverdi, 2016). However, the international innovation activities of ANZ firms remain under-studied, especially in the European context. Studies have examined the strategic motives and knowledge flows related to innovation investment in Europe from emerging economies (Di Minin et al. 2012, Giuliani et al. 2014). However, these studies focus on comparing advanced and emerging MNEs rather than examining the potential diversity of motives and behaviours within advanced economies. Some studies have included ANZ firms within the population of advanced-economy firms investing in innovation in Europe (Giuliani et al. 2014). Others have treated Australia and New Zealand as part of the Asia-Pacific region (Driffield, Love, & Yang, 2014).

There are reasons to treat ANZ firms as a separate group. Because of their relative isolation (distance from major economic centres), location in the Southern Hemisphere, proximity to emerging economies, and large geographic and time zone distance from Europe, they are a special case to consider as these factors lead to distinct national innovation systems and strategies (Martin & Johnston, 1999). Other factors characterising these economies are an industrial structure that is biased towards primary industries and the relatively small size of firms and the economy (Crawford et al., 2007). Moreover, the historical ties and the relatively low cultural distance (compared with Asian countries) between ANZ and the UK and Europe are also important. All these differences may affect innovation strategies and behaviour.

Driffield et al. (2014) suggest that firms from the Asia- Pacific region may behave differently from European and North American firms in their global and regional innovation strategies. Asian firms effectively engage in knowledge sourcing in Europe and North America, but little technology sourcing occurs by Asian firms seeking knowledge within Asia (Driffield et al., 2014). By contrast, European firms tend to effectively source knowledge within Europe and North American firms within North America. This literature has not fully considered the distinct characteristics of regions such as Australasia, South America, Africa and the Middle East. These regions are not defined as part of the 'broad' triad (the three major world regions of North America, the EU and Asia defined by Rugman & Verbeke, 2004) or are included in a region along with very different countries (Driffield et al., 2014).

This paper defines innovation as the implementation of a new or significantly improved product or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations (OECD and Eurostat, 2005). We acknowledge that some innovation might be disruptive, and consider innovation performance of foreign subsidiaries

in terms of both radical and incremental innovation (Silva, Styles, & Lages, 2017). The results of the Community Innovation Survey of innovation activities of firms in Europe (Table 1) reveals that ANZ firms exhibit roughly the same propensity to introduce new products to the market as firms in the other groups (57%). However, they do R&D (54%) and cooperate in innovation projects (40%) more frequently than other firms, particularly with regard to cooperation within the group.

The main research questions we ask are as follows:

1. Why and how do ANZ MNEs conduct innovation in Europe and how does distance from the EU affect it?
- 2a. How do the innovation motives and knowledge flows of European subsidiaries of ANZ firms align with one another and how do they affect innovation performance (especially radical vs. incremental innovation)?
- 2b. How do they differ from the motives and knowledge flows of European subsidiaries of other MNEs?

To investigate these questions, we organise the rest of the paper as follows. First, we review relevant literature and present our theoretical framework. Then, we specify our method, present the data, analyse the cases, discuss the findings and develop propositions. Finally, we conclude.

## **REVIEW OF LITERATURE**

Models explaining the internationalisation of R&D and innovation generally first consider motives for locating innovation abroad (Zedtwitz & Gassmann, 2002; Di Minin et al., 2012). Second, they explain knowledge flows, both within the MNE (in particular between the HQ and the subsidiary)

and between the foreign subsidiary and the host economy (Achcaoucaou et al., 2014; Giuliani et al., 2014). We anchor our literature review around these two building blocks. Then in the theory section we develop a framework focusing on the under-explored types of innovation motives and knowledge flows. Finally, we extend the extant models' focus on R&D motives and knowledge flows to factors affecting these flows (Gaur et al., 2019), and the joint impact of knowledge flows and strategic motives on innovation performance, including radical innovation, embedding our approach in the knowledge-based view of the firm (Kogut & Zander, 1993; Grant, 1996a).

### **Innovation motives**

One of the main aims of this study is to understand the European subsidiaries of ANZ firms and to explain how their innovation investment motivation and behaviour differ from those of the subsidiaries of MNEs from other countries. The unique characteristics of ANZ firms (including large geographic and time zone distance between HQ and subsidiary) may shed new light on the role of these characteristics in international innovation processes and outcomes. Studies of developed-country MNEs, such as Ambos and Ambos (2011), highlight technology exploration vs. exploitation motives, market vs. technology-driven motives and push vs. pull factors as the main motives for R&D internationalisation.

Zedtwitz and Gassmann (2002) identify two principal driving forces of R&D internationalisation:

- 1) Access to local markets: MNEs create development units abroad to adapt their product range according to market and customer needs.
- 2) Access to local knowledge: MNEs create research units abroad to capture scarce technological and other (managerial) knowledge.

There are thus two associated core motives: the market-seeking motive, i.e., technological exploitation of firm-specific advantages abroad by adopting to local circumstances to gain access to foreign markets, and the knowledge-seeking motive, i.e., exploration of firm technologies through access to overseas knowledge and know-how (Kuemmerle, 1999).

The activities of foreign innovation establishments are usually driven by multiple motives (Håkanson & Nobel, 1993). In addition to the market-oriented units, there are also production support units for foreign innovation, whose primary aim is to support local production, and politically motivated units, created to underpin the MNE's political position and access to the foreign market (Birkinshaw & Hood, 1998). Knowledge-seeking firms look for R&D epicentres in the area of their strategic interest to catch up with competitors' innovation levels, broaden their knowledge portfolio and search for the technical diversity of different regional market needs (Chung & Alcacer, 2002).

Firms have other motives for international (innovation) investments; these include efficiency-seeking, cooperation-seeking and diversification-seeking motives (Dunning, 1993; Demirbag & Glaister, 2010; Meyer, 2015). Efficiency-seeking investors are predominantly interested in reducing the costs of innovation activities by conducting activities in countries with a lower price/productivity ratio for innovation inputs, particularly human capital (Schmiele, 2012). Cooperation-seeking innovation ventures tap into alliances, networks and other interfirm agreements that involve the pooling of capital, employees, technology, or other expertise and assets of participating firms or institutions (such as universities) in an undertaking that combines elements of market-based and intra-firm organisation (Mowery, Oxley, & Silverman, 1998). Cooperation refers to a set of interdependent business relationships centered on value creation, innovation and knowledge sharing. In some cases, MNEs can expand or develop cooperation

networks internationally to fulfil their strategic goals (Chen & Huang, 2004) and reach outside knowledge that they would not normally access (Yeoh, 2000). Another reason for internationalising is to diversify a company's risks through diversification-seeking investments (Dunning, 2001; Deng, 2004). Diversification across unrelated products or geographically unconnected markets may reduce risk and affect performance of foreign subsidiaries (Jiao, Liu, Wu, & Xia, 2019). A company may therefore choose to enter other business fields to hedge risks (Cantwell, 2009; Yeung & Liu, 2008). International diversification may offer more benefits than costs and thus improves firm performance (Delios & Beamish, 1999).

### **Knowledge flows**

For MNEs, knowledge is distributed internationally among a network of dispersed subsidiary units. The literature examines the consequences of knowledge creation and transfer within such networks (Gupta & Govindarajan, 2010; Jensen & Szulanski, 2004; Minbaeva, Pedersen, Björkman, Fey, & Park, 2003; Wang, Tong, & Koh, 2004). Studies have emphasised how knowledge transfer relates not only to the sending of knowledge from a source to a recipient unit but also the integration, understanding and application of knowledge (Cohen & Levinthal, 1990; Hansen, 1999; Szulanski, 1996).

MNE subsidiaries can be classified along two key dimensions (Giuliani et al., 2014):

- (1) the degree to which MNEs transfer knowledge to and/or receive knowledge from their HQ and other subsidiaries (intra-corporate knowledge transfer) and
- (2) the level of locally embedded innovative activities (generated value for the MNE and the local context), including the formation of local innovative ties (collaborations) and innovation activity developed locally by the subsidiary (internally and independently of the HQ and sister firms).



The typology proposed by Giuliani et al. (2014) includes four main types of subsidiaries. Predatory subsidiaries combine bottom-up knowledge transfer (Rasmussen, 1983) and low local embeddedness. Dual subsidiaries combine bottom-up knowledge transfer and high local embeddedness. Locally embedded subsidiaries combine top-down knowledge transfer and high local embeddedness (Almeida & Phene, 2004; Cantwell & Mudambi, 2005). Passive subsidiaries combine top-down knowledge transfer and low local embeddedness.

While this framework is helpful, it focuses on the local embeddedness of innovation activities without considering in-depth internal cooperation and knowledge flows within the MNE group. Moreover, it does not explicitly take into account the possibility of high knowledge flows in both directions (between HQ and the subsidiary/subsidiaries and vice versa). Mudambi and Navarra (2004) address this issue by identifying four basic knowledge flows within MNEs: (a) flows from the subsidiary to the parent (knowledge transfer that helps HQ exploit local knowledge); (b) flows from the subsidiary to the location (spillovers – flows to local customer, suppliers, universities etc.); (c) flows from the location to the subsidiary (reverse spillovers – subsidiary's learning and knowledge sourcing – Záborský & Jacobs, 2016) and (d) flows from HQ or another subsidiary (subsidiary exploits home base knowledge advantage).

## **THEORY**

Building on extant models of the internationalisation of innovation, we start with a framework that highlights the main types of motives for innovation investment and the knowledge flows aligned with them (Table 2). We characterise subsidiary behaviour based on their connections to local markets and group. Our aim is to extend existing theoretical frameworks (Ghoshal and Bartlett, 1988; Achcaoucaou et al., 2014; Giuliani et al., 2014), root our model within the knowledge-based

view (Grant, 1996a), and to uncover under-explored factors related to the strategic motives and knowledge flows underlying international innovation investment and performance.

We use four main motives for R&D and innovation FDI. The market-seeking motive is related to exploiting, sustaining or protecting market share in the host country (Håkanson & Nobel, 1993). The second is knowledge seeking, which we define as augmenting firm-specific advantages by tapping into the knowledge generated by other firms or non-market institutions in host countries (Ivarsson & Jonsson, 2003). Other definitions of this concept include firms acquiring strategic capabilities to offset their competitive weakness (Rui & Yip, 2008) and to acquire the strategic assets needed to compete more efficiently against global rivals and to avoid the institutional and market constraints faced at home (Luo & Tung, 2007).

The third innovation investment motive is cooperation-seeking, which is related to an organisation's capability of external and internal cooperation. External cooperation refers to innovative ties and collaborations with local players and internal cooperation in the group refers to knowledge transfer in both directions between the HQ and subsidiary/other subsidiaries. Relationships between MNEs and their partners, customers, suppliers and research institutions are included in the term relational capital, which represents goodwill and trust (Chen, Chen, & Ku, 2004). Creating a competitive advantage using a cooperation network requires the development of external links (Lavie, 2006).

Diversification also plays a key role in driving FDI in R&D (Cantwell & Piscitello, 2000; Cantwell & Vertova, 2004; Dunning & Lundan, 2009) and innovation, especially diversification of product and innovation portfolios to contain risk (Luedi, 2008). Firm learning dynamics has been represented through the process of expansion of a firm's technological competencies

(including processes such as technical change), and knowledge and skills linkages have been also called technological diversification (Pisticello, 2004). The patterns of MNEs' activities are driven by their technological competencies, but at the same time, diversification into new markets pushes MNEs to increase the diversification of their technological competencies, which results in interactions between several dimensions of their technology and product base (Chen, 1996).

It is important to note that because of implementation bottlenecks (e.g. communication problems between HQ and subsidiary derived from a large distance between them), theorised alignment of knowledge flows with strategic motives may not actually be in line with the observed reality in organisations (Ciabuschi, Holm, & Martín, 2012). Subsidiaries can be organised in complex structures to accelerate knowledge flows within the firm and to use cooperation and diversification to improve innovation performance (Narula, 2014). It is important to consider not only the alignment between knowledge flows and innovation motives, but also the roles of factors affecting knowledge flow in MNEs, including country level distance factors such as spatial geography and institutional differences, and firm level factors such as MNE strategy and HQ-subsidiary relationship (Gaur et al., 2019).

Finally, consistent with the knowledge-based theory of organisational capability (Grant, 1996b), strategic innovation motives will affect the relationship between knowledge flows in MNEs and innovation performance, including generation of radical vs. incremental innovations (Zhou & Li, 2012). Innovation performance can be defined objectively (e.g. patent citations of the acquirer—Han et al., 2018) or subjectively (e.g. subsidiary manager's perceptions of the extent to which the innovation in the subsidiary had affected its business performance—Ciabuschi et al., 2014). We focus on subsidiary's innovation performance, especially its role in generating radical innovation that advances the price/performance frontier by much more than the existing rate of

progress (Gatignon, Tushman, Smith, & Anderson, 2002). To integrate our theoretical discussion, we present a conceptual framework (see Figure 1) outlining core concepts and relationships we further investigate, extend and develop into specific propositions and model.

## **METHOD**

The “why” question of motives for international innovation investment is related to the “how” question of (alignment with) knowledge flows between the foreign subsidiaries, HQ, other subsidiaries and various other actors, especially in the host country. While some preliminary conceptual structure has been imposed on the motives and their alignment with knowledge flows (Table 2), the motives for ANZ innovation investment require additional investigation and will be subject to qualitative inquiry. Similarly, while the previous section has reviewed the known aspects of theory of knowledge flows in relation to foreign subsidiaries, the “how” questions of knowledge flows of ANZ multinationals’ innovation investment in Europe and their alignment with the strategic motives (and their joint impact on innovation performance) are still open to research. The current knowledge in the field provides only a starting point for an inquiry guided by a qualitative research design and open-ended research questions.

### **Qualitative research**

Qualitative research is uniquely suited to “open the black box” of organisational processes, including the “how”, “who” and “why” of individual and collective coordinated action as it unfolds over time in a context (Yin, 1994). The case study is a research strategy that focuses on understanding the dynamics present within a single setting. Birkinshaw, Brannen, and Tung (2011) and Doz (2011) argue that qualitative research can play a significant role in international business and management literature since it can bring deeper insight into the complex constructs and contexts.

Case studies offer the opportunity for a holistic view of a process (Yin, 1994). While examining a single case can suggest a general conceptual category or property, examining a few more can confirm it (Glaser & Strauss, 1967). Multiple-case studies offer a potentially stronger base for theory building (Yin, 1994). Interviews, as a means of qualitative research, provide the possibility to describe the ideas, knowledge and experiences of interviewees (Alvesson, 2003). While recognising that there are several potential risks in using interviews in international business research, Macdonald and Hellgren (1999) inspire researchers to use them if they devote appropriate attention to addressing interviewees who are higher in the firm's information hierarchy.

We use Eisenhardt's (1989) process of building theory from case study research. A multiple-case study method approach is required to look "under the hood" of new phenomena (Ghauri, 2004), such as the key questions we answer in this study. In the first step, we have identified ANZ firms that conduct innovation in Europe from publicly available sources such as business press, trade promotion agencies and business intelligence websites. We have considered different types of participants based on their position, location and nationality, as these possibly affect their views on innovation:

- Managers of subsidiaries in Europe (usually not nationals of Australia and New Zealand)
- Global (HQ) innovation and R&D managers (usually Australian or New Zealand nationals)

Identified managers were contacted by telephone, email or LinkedIn. The interviews were based on a semi-structured guide that was piloted in three interviews. Although this study pursues a consistent line of inquiry, it also allows for the stream of questions to be fluid rather than rigid (Rubin & Rubin, 2011). Confirmed participants received the questions prior to the interview. We

used a triangulation of different approaches to the same task by (1) conducting interviews with European subsidiary innovation managers, (2) conducting interviews with innovation managers in the HQ, and (3) fact checking the provided information through the EU innovation databases, [www.factiva.com](http://www.factiva.com), and MNEs' official websites. In qualitative research, instruments are typically derived from the properties of the setting and its actors' views of them. The researcher is essentially the main 'instrument' in the study (Miles, Huberman, & Saldana, 2013). Lee and Lings (2008) suggest that having a framework allows researchers to structure their subsequent analysis more easily as they have a good idea of what concepts and categories are likely going to be there.

### **Data collection and analysis**

Based on the discussion above, we identified over 20 ANZ firms and investigated five New Zealand and two Australian firms with innovation-intensive subsidiaries in Europe. The industries range from finance to mechanical engineering, white goods and precision instruments (Table 3). The reason for investigating MNEs from a multiple-industry perspective is that given the nascent nature of the phenomenon (ANZ innovation investment in Europe), it would be impossible to have all cases operate in a single industry. Six of our cases are from similar sectors, machinery and appliances. We analysed our qualitative data through thematic analysis, a method that searches for themes or patterns in relation to different epistemological and ontological positions and identifies, analyses and reports themes in data (Braun & Clarke, 2006). Coding of themes, a crucial process in many qualitative data analysis strategies, informed our analysis (Bryman & Bell, 2015).

### **CASES**

NZ1: This firm is a family business. A majority of its products are exported to the USA, Australia and Europe. It is a mature business, with its key invention dating back to 1938. Its

R&D staff exceeds 100. The firm is a global leader in the innovation and marketing of animal management, security, fuel systems and contract manufacturing solutions. The EU has a secondary role in the firm's global innovation system, as there are different rules for many EU member states. The company maintains an open-door policy for its employees and supports innovative solutions. The motivation for locating their innovative activities was to create sophisticated products that would be the best in every direction. As the company has created innovative products used by agricultural businesses, it has expanded around the world. It has a strong sales network with a large number of partnerships, some of which have lasted more than 35 years.

NZ2: This company was initially formed in the 1980s to create solutions for handling produce in the fruit industry. It subsequently expanded internationally and is now a global market leader present in over 40 countries. It produces sorters, sorting systems, software and peripherals. The firm formerly had a joint venture in Italy. After some bad experience linked to the lack of control over Italian operations, it acquired a Spanish firm, where the firm experienced some difficulties related to cultural differences with "Southern Europe". The firm's strategic plan is to grow its Spanish subsidiary from 7% to 20% of R&D and to 40% of global turnover while keeping its innovation HQ in New Zealand.

NZ3: Founded in 1967, this is a global high-technology company that designs and manufactures world-leading frequency control in infrastructure, space satellites, and navigation devices. It has six manufacturing plants, including three joint venture plants and eight R&D centres. Its core strength is the intellectual knowledge in its R&D centres, located in NZ, France and the UK. Whereas its European subsidiaries operate in low-volume, sophisticated high-tech products for government clients, the NZ operations produce high-volume products for the telecoms industry.

NZ4: This company, which dates back to 1934, engages in the design, manufacture, distribution, and marketing of household appliances in New Zealand, Australia, North America, and Europe. It operates in over 50 countries. In 2012, it was acquired by a major emerging market competitor and industry leader. The new owner retained most of the NZ4's operations and R&D in NZ. The NZ company acquired the Italian unit in 2006, and the combined effort and skills of the two R&D departments led to the development of more advanced and styled products.

NZ5: This major NZ corporation is a manufacturer, designer and marketer of products and systems for use in respiratory/acute care. It sells its products in 120 countries but focuses on the USA as a major source of revenue (it is primarily an export company). It has over 2000 staff members in NZ, about half of whom are from abroad (often experienced managers). Europe does not play a major role in the firm's global innovation system, while the USA plays an important role. Its manufacturing plants are in New Zealand and Mexico. Product development and clinical research are critical to the firm's success as it continues to expand the range of innovative medical devices. New and improved products and processes, along with the development of new medical applications for new technologies, are critical drivers of its growth.

AU1: Based in Australia, this is a focused, innovative company founded in 1982. It produces technology that improves hearing for a wide range of people. It acquired a Swedish firm in a related line of business in 2005 to expand its range of product offerings and customer base. It also acquired a Belgian firm in 2000, which enabled access to digital design capabilities that complemented the company's existing technology and allowed it to improve the time-to-market of its product plans. Overall, the firm has about 300 R&D staff, and its R&D expenditure has been 12-16% of its revenue over the past 10 years. Belgium accounts for about 25% of the firm's global R&D, and Europe overall plays a crucial role in innovation.



AU2: This Australia-based global financial services provider has offices in 28 countries and four innovation hubs in Hong Kong, New York, Sydney and London. Each hub has several centres of excellence specialised in specific product categories, and created knowledge is transferred to other hubs and subsidiaries within the firm. Its expertise includes finance, research and retail financial services. The diversity of its operations, combined with a strong capital position and robust risk management framework, has contributed to almost 50 years of unbroken profitability. London is responsible for 14 of the group's 50 products, comprising about 35-40% of total innovation and 40% of profit.

## **FINDINGS**

### **Characteristics of ANZ firms**

The interviewed firms characterised ANZ innovation staff as more open-minded, relaxed, challenging of authority (but following the rules afterwards), and untrusting of unknown people. One of the interviewees (AU2) noted: *“They (Australians) prefer to send their own staff overseas. ANZ staff is seen as collaborative, with a global approach”*. NZ5 noted: *“It is not perfect for Europe because we have not made it for Europe; we have made it as perfect as it can be for the world”*. Another aspect of the ANZ approach is that they are communicative but culturally distant in some cases. For example, an NZ2 interviewee commented on the firm's Southern European subsidiary: *“Europeans just did not do what we wanted”*. Another related comment (NZ4) was that *“they [Europeans] have great experience with the market, but their innovation skills and transformation to the practice skills are a bit limited”*. ANZ innovation staff often have a stronger focus on theory application than Europeans.

A distinguishing factor is that ANZ firms operate in a small, isolated market. NZ5 noted: *“In New Zealand, we are at the bottom of the world. We have this mindset that you can do anything...you just have to figure it out”*. They also find difficulties with the complicated law system and high costs in Europe. In contrast, non-ANZ interviewees noted that ANZ staff had an “island mentality” and were less immersed/interested in developments in the rest of the world than Europeans. In general, transparency (clear rules, no “grey zones”), diversity (immigrant society), the importance of human factors, isolation and distance from Europe and other major economic centres (both geographic and time zone distance) were mentioned as distinguishing characteristics. This is illustrated by the following comment by the AU1 manager: *“...this is another reason why you need the kind of European arm of the organisation. If you run that from Australia this is extremely difficult, because of distance and time difference.”*<sup>1</sup> The findings suggest that both cultural (Peltokorpi & Yamao, 2017) and geographic distance (including time zone difference) hinder knowledge flows by reducing the quality of communication channels (Gaur et al., 2019).

Hence:

Proposition 1: Distance (cultural and geographic including time zones) between an MNE HQ and its foreign subsidiary negatively affects the quality of communication channels and thereby hampers the knowledge flows from the HQ to its subsidiary and vice versa.

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<sup>1</sup> The AU1 participant noted: “Suppose that we would do a project, which happens sometimes whereas you have some people working on it in Australia, some people in Sweden, some people in Belgium, some people in the USA- this is extremely difficult. Because if you want to do a day-to-day coordination with these people, this is even impossible to do that. And to make it efficient... you need to set it up in such a way that you don’t need to have daily interactions with the others.”

## Strategic motives

The companies cited market- and knowledge-seeking as their motives for innovation. While some saw the market-seeking motive as dominant, in line with the conventional wisdom for advanced MNEs (NZ1, NZ5), most ANZ firms (NZ2, NZ3, NZ4, AU1, AU2) used asset-augmentation strategies akin to those mostly ascribed to emerging multinationals (Buckley, Munjal, Enderwick, & Forsans, 2016), i.e., acquiring troubled European companies with considerable knowledge and experience with potential to grow (if managed properly) and gaining access to the firm's product in the European market.

Developed-country multinationals also use more traditional strategies, such as seeking complementary knowledge (Blanc & Sierra, 1999). Overall, dual subsidiaries with both knowledge- and market-seeking motives prevailed. AU1 said, *"HQ needed to have an R&D centre in Europe to be close to their customers, clusters and universities. We get perspective from the market, proposition validation, competitive analysis, trends, pricing and legal regulation this way. Acquisition of a company with new knowledge and products that was converted into an R&D centre was a great solution"*. NZ4 said: *"The acquisition of an Italian firm helped us with product adaptation and brand building and provided us with the platform to achieve strategic growth"*. The CEO of the firm at the time also stated that the acquisition would provide further geographical diversification for them. Cooperation-seeking motives (Reuer & Lahiri, 2014; Cuervo-Cazurra & Narula, 2015) were also present but were often seen as part of a diversified knowledge- or market-seeking strategy. Access to local clusters, universities, government financing and opportunities for knowledge transfer and cross-learning within the group were important motives (Arant, Fornahl, Grashof, Hesse, & Söllner, 2019).

*“We preferred global coordination before. In these days of permanent evolution, we have to be really close to customers, universities and knowledge clusters. We grow through acquisitions, and our main motive is diversification of risks”*, said AU2. Innovation in Europe is seen as a key aspect of a strategy for diversifying innovation portfolios (Garcia-Vega, 2006; Qiu & Cantwell, 2019). AU2 stressed diversification-seeking as the main motive, and NZ3 and NZ4 stressed it as an important motive. A key aspect of this strategy are centres of excellence responsible for a specific product range to diversify access to sources of knowledge around the globe (Cantwell & Janne, 1999). AU2 manager said, *“Our understanding of innovation is as follows: acquisition of R&D firms for our purposes, innovation of our own products and innovation in acquired firms for their purposes”*. AU1 said: *“We use different development teams for each product category, like Lego boxes. Each box is a basic technology block that can be used by any other subsidiary. This kind of diversified innovation creation is more effective for us”*. NZ3 and NZ4 managers stressed that acquired firms (subsidiaries) conduct R&D of specialised products and in different locations independently, and then, they spread the created information around the MNE. Diversification was seen as geographical diversification (*“balancing exposures to ANZ and American markets”*), product and segment diversification and diversification of risk in portfolios of innovation initiatives. See Table 4 for a summary of findings in terms of ANZ difference, strategic motives and knowledge flows (discussed next).

### **Knowledge flows**

The knowledge flows underlying the motives pointed to a view of innovation as cooperation among a number of stakeholders and knowledge flows in multiple directions (Andersson et al., 2016; Parker, Tippmann, & Kratochvil, 2018). The geographic isolation (*“We are living on an island”*) of many of the firms (NZ1, NZ2, NZ5) lead to a high concentration of knowledge in their

HQ (Belderbos, Leten, & Suzuki, 2013). However, a large number of them also recognised the drawbacks of this isolation and centralisation, and they considered cooperation and knowledge transfer from the European subsidiaries and partners to the rest of group (NZ3, NZ4, AU1, AU2). This was often more planned than executed, and created an implementation challenge. NZ2, for example, planned to increase the share of its European R&D within global R&D from 7% to 20% but admitted that “*at the moment, there is little knowledge sharing between the HQ and Spain*”.

AU1 generated 25% of its global R&D in Belgium and a significant share in Sweden, but there was significant tension between the HQ and the Belgian subsidiary: “*Belgium needs more autonomy and wants to conduct more radical innovation; the HQ are a bit afraid and busy with incremental innovation. There is high interaction between subsidiary and HQ in the beginning and end of research process. During the research, everybody has got clear rules what to do.*” The manager also noted that they needed to build up more trust with the HQ to reduce the negative impact of the high geographic and time zone distance on communication and knowledge flows. The AU1 manager linked the geographic distance factor to the potentially moderating role of trust in reducing the negative impact of distance on HQ-subsidary knowledge flows: “*The most important factor is trust. Because I’m heading an operation which is on the other side of the world so it’s an entire day to travel, currently 10 hours’ time difference. If you don’t trust someone then it just doesn’t work.*”

Knowledge flows between Belgium and Sweden were also limited despite their relative proximity. AU2, in contrast, generates 35-40% of its global innovation from London, which is its most important innovation hub. The firm does not have an innovation HQ but has four independent R&D centres, and it lets knowledge flow within the group in many areas, including radical

innovation, facilitated by centres of excellence. Most of the projects are created or at least approved by HQ and are executed locally.

ANZ firms need the physical presence of R&D in Europe to be closer to their customers, universities, advisors, innovation experts and local government organisations. Centres of excellence with accumulated knowledge, best practice and global product managers are important for internal knowledge transfer (Andersson & Forsgren, 2000; Criscuolo & Narula, 2007). *“Today, R&D is coordinated from NZ with the help of regions (adaptation for the market, information from customers and exchanging of ideas/concepts) and driven by an understanding of the market, product management, marketing, cross-functional cooperation, regulatory standards, procurement and innovative suppliers”*, said NZ1.

To sum up, the most salient finding of our research related to factors affecting knowledge flows in MNEs was the moderating role of trust in reducing the negative effect of distance on HQ-subsidary knowledge flows in both directions. Isaac, Borini, Raziq, and Benito (2019) suggested that subsidiary’s external relational embeddedness, based on trust and adaptation, is positively associated with the foreign subsidiary’s local innovations. Subsidiaries with quality relationships, characterised by high trust levels with the external local network, tend to be associated with higher knowledge flows among the network actors and facilitate the emergence of local innovations (Isaac et al., 2019). We argue that a subsidiary’s quality relationship and high trust levels with the HQ will improve the quality of communication channels (Aichhorn & Puck, 2017) and reduce the negative impact of (HQ-subsidary) national distance on knowledge flows in the group (Smaliukienė, Bekešienė, Chlivickas, & Magyla, 2017).

Hence:

Proposition 2: HQ-subsidary trust positively affects the quality of communication channels and thereby moderates (reduces) the negative relationship between (geographic and cultural) distance and HQ-subsidary knowledge flows in both directions.

### **Innovation performance**

While firms use various metrics to evaluate the success of their innovation strategies (profitability, return on innovation investment, patents generated by subsidiaries and the group), a number of organisations (NZ1, AU1, AU2) mentioned radical innovation as a key issue in measuring and maximising innovation performance (Kristiansen & Ritala, 2018).<sup>2</sup> AU1 emphasised that its Belgian subsidiary is more successful in and places more emphasis on radical innovation than the HQ, which creates tension with the HQ. The interviewed manager responsible for the European and American R&D operations noted that the firm needed to persuade the CEO that radically new innovation was crucial. *“There is a permanent struggle with the HQ. They want more centralisation, we want autonomy”*, he said. Currently, innovation is largely managed from Australia and executed regionally, with knowledge flows most intense in the beginning and end of the innovation process. The predominantly “market-seeking” and “knowledge-seeking” motives of AU1—with only minor elements of “cooperation-seeking” and “diversification-seeking” motives—are restricting its ability to foster knowledge flows between HQ and subsidiaries and enhance the group’s overall potential for radical innovation, knowledge creation and innovation performance (Castaldi, Frenken, & Los, 2015; Arant et al., 2019).

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<sup>2</sup> Kristiansen and Ritala (2018) show that process-based innovation performance metrics work better for radical innovation projects than metrics based on expected outcomes.

All firms found R&D and innovation very important for the future performance (Figueiredo, 2011; Ciabuschi et al., 2014; Thakur-Wernz & Samant, 2019). NZ3 noted: *“It must be kept at the current level of 10-15% of the revenue. Product development is very costly and time consuming (design, theory, documentation, prototype testing, HQ approval, trial testing takes 3-4 years)”*. AU2 said, *“The cycle of product innovation is 5-15 years, with changes every year, but when customers refuse it, the R&D hub has to develop a new one (every third project is successful)”*. AU2 was the only company that had diversification as its main innovation motive. AU2 manager suggested that their four independent innovation hubs—an organisational structure linked to the diversification-seeking motive—and knowledge flows from their centres of excellence to the group are behind their superior knowledge creation capability, radical innovations and innovation performance. According to the manager, the diversity of AU2’s innovation operations, combined with a robust risk management framework, have contributed to over 45 years of profitability.

To integrate the findings related to the impact of knowledge flows on innovation performance, we develop two propositions. The first one establishes a link between subsidiary’s internal and external knowledge flows and the resulting superior knowledge creation capability (Smith, Collins, & Clark, 2005; Arikan, 2009; Su, Peng, & Xie, 2016) and (radical) innovation performance through internal and external knowledge integration (Zhou & Li, 2012). Subsidiaries that are able to develop knowledge-intensive linkages with internal and external actors simultaneously and with increased frequency and improved quality over time achieve relatively higher levels of innovative performance (Figueiredo, 2011). Arant et al. (2019) hypothesised that the greater the number of geographically and cognitively distant linkages a firm has, the higher the probability to generate radical innovations. Building on these arguments, we propose:



Proposition 3: High-quality, frequent MNE subsidiary's knowledge flows (internal within the MNE and external with stakeholders in distant knowledge-rich host economies) have a potential to increase the chance of radical innovation and thus are likely to lead to better innovation performance of the subsidiary.

The final proposition suggests that MNEs with diversification-seeking motives are relatively better positioned to reap the benefits of innovation (especially radical) in their foreign subsidiaries because of having organisational structures and processes enhancing value-creating potential of knowledge flows from multiple hubs (Criscuolo & Narula, 2007), through centres of excellence (Chiesa, 1995) and organisational capability of knowledge integration (Grant, 1996b; Zhou, Zhou, Feng, & Jiang, 2019). Gupta and Govindarajan (2000) suggested that the motivational disposition of a subsidiary to share its knowledge with other units can be expected to be positively associated with outflows of knowledge from that subsidiary, and the motivational disposition of a subsidiary to seek/accept knowledge from other units can be expected to be positively associated with inflows of knowledge into that subsidiary. Consequently, organisations' motivational disposition to diversify their innovation sourcing and portfolio through locally embedded, independent and properly incentivised innovation hubs will positively moderate how an MNE subsidiary's knowledge flows affect its innovation performance. This will occur through extending existing knowledge creation capability (Smith et al., 2005) to encompass new knowledge (Grant, 1996b) and encouraging (radical) innovation in foreign subsidiaries in knowledge-rich host economies (Zhou & Li, 2012; Arant et al., 2019).

We conclude:

Proposition 4: The motivational disposition of the MNE (HQ and subsidiaries) to strategically diversify their innovation sourcing and portfolio of knowledge creation will moderate (enhance) the positive relationship between an MNE subsidiary's knowledge flows (internal and external) and its innovation performance.

## **DISCUSSION**

ANZ firms' innovation strategies in Europe tend to be less dominated by market-seeking motives than strategies of MNEs from the USA and Japan. ANZ firms often have “dual subsidiaries” with both market- and knowledge-seeking motives. Cooperation- and diversification-seeking motives are important extra dimensions that characterise their strategies, distinguishing our findings from those of extant literature (see Table 5). While R&D internationalisation of non-traditional investor countries such as China have been studied (Di Minin et al., 2012) in the European context – with findings pointing towards unique motives and their dynamics – our study has dug deeper into the characteristics of these motives and underlying knowledge flows. Building on Achcaoucaou et al. (2014), our framework acknowledges the role of the internal and external cooperation-seeking motive, but extends their dual embeddedness framework by considering the “diversification-seeking” motive (diversification of innovation sourcing from different locations and R&D diversification within the group). Figures 2 and 3 integrate our propositions into a model linking knowledge flows in MNEs to innovation performance, outlining the impact of factors affecting knowledge flows (geographic and cultural distance and HQ-subsidiary trust) and pointing to the moderating role of the diversification-seeking motive in the relationship between knowledge flows and innovation performance. The model is rooted in the knowledge-based theory of organisational capability (Grant, 1996b), assuming that knowledge is the principal productive resource of the firm and suggesting that knowledge

creation capability is the key determinant of innovation (Smith et al., 2005) and performance (Su et al., 2016a). Furthermore, the model acknowledges that knowledge flow bottlenecks hinder knowledge creation (Gaur et al., 2019) and that increasing (international) knowledge connectivity (Andersson et al., 2016) may enable knowledge creation (Nonaka, 1994) and knowledge creation capability (Arikan, 2009), rather than mere transfer (Cano-Kollmann, Cantwell, Hannigan, Mudambi, & Song, 2016).

Our study makes two key contributions to the research on R&D and innovation internationalisation. First, by uncovering the moderating role of under-explored diversification-seeking innovation investment motive in the process of international knowledge creation, this research provides additional insights to the knowledge-based view (Grant, 1996a). According to the knowledge-based theory of organisational capability, “sustaining competitive advantage under conditions of dynamic competition requires continuous innovation which requires flexible integration through either (a) extending existing capabilities to encompass new knowledge, or (b) reconfiguring existing knowledge within new patterns of integration” (Grant, 1996b: 385). Our research implies that extending existing capabilities to encompass new knowledge can be achieved through encouraging radical innovation in foreign subsidiaries with high local embeddedness, and building trust and improving knowledge flows and communication between the HQ and subsidiaries in a diversified innovation portfolio. Our model acknowledges the difficulties in knowledge transfer within firms (Uygur, 2013) and the importance of factors related to the transfer of (tacit) know-how within versus across firms (Eapen & Krishnan, 2019). We extend this research by linking MNE subsidiary knowledge flows (Michailova and Mustafa, 2012) to knowledge creation capability (Arikan, 2009) and innovation performance (Han et al., 2018).

Second, this research contributes to the international business and management research on the internationalisation of innovation by extending previous studies that have addressed the dual embeddedness of foreign subsidiaries (Meyer, Mudambi, & Narula, 2011; Achcaoucaou et al., 2014; Ciabuschi et al., 2014). This research develops a framework to link dual embeddedness (connections with the local market and within the group) to strategic motives behind them, and knowledge flows underlying them. By considering diversification-seeking motive, we also move beyond embeddedness toward a strategic diversification perspective on innovation (Hagedoorn, Lohshin, & Zobel, 2018) and knowledge connectedness (Scalera, Perri, & Hannigan, 2018). We respond to the call for deeper insights into understanding the nuances of knowledge flows in MNEs (Gaur et al., 2019) by adjusting their systematic framework to develop a better understanding of the challenges associated with knowledge transfer in MNEs. While our frameworks and model build on Gaur et al. (2019) in identifying factors affecting knowledge flow in MNEs, we highlight the distinct roles of geographic distance, isolation, time zone differences and trust, and link to the concept of “knowledge connectivity” (Andersson et al., 2016). Finally, we extend the Gaur et al. (2019) framework to include strategic motives behind knowledge flows and their joint impact on innovation performance including generation of radical innovations, which are increasingly critical to sustainable competitive advantage (Arant et al., 2019).

## **CONCLUSIONS**

Our paper responds to Cano-Kollmann et al.’s (2016) call for studies that improve our understanding of knowledge connectivity including the nuanced conditions that either facilitate or reduce the transfer of knowledge across international innovation networks. We also contribute to the debates on the performance implications of knowledge creation capabilities (Su et al., 2016a) with a focus on the moderating effects of trust and investment motives on the innovation

process and its outcomes. Finally, we respond to Estrin and Meyer's (2013) call for studies on industrialised and emerging-economy MNE strategies considering each country of origin with its unique features, rather than assuming a bimodal separation between emerging and industrialised economies.

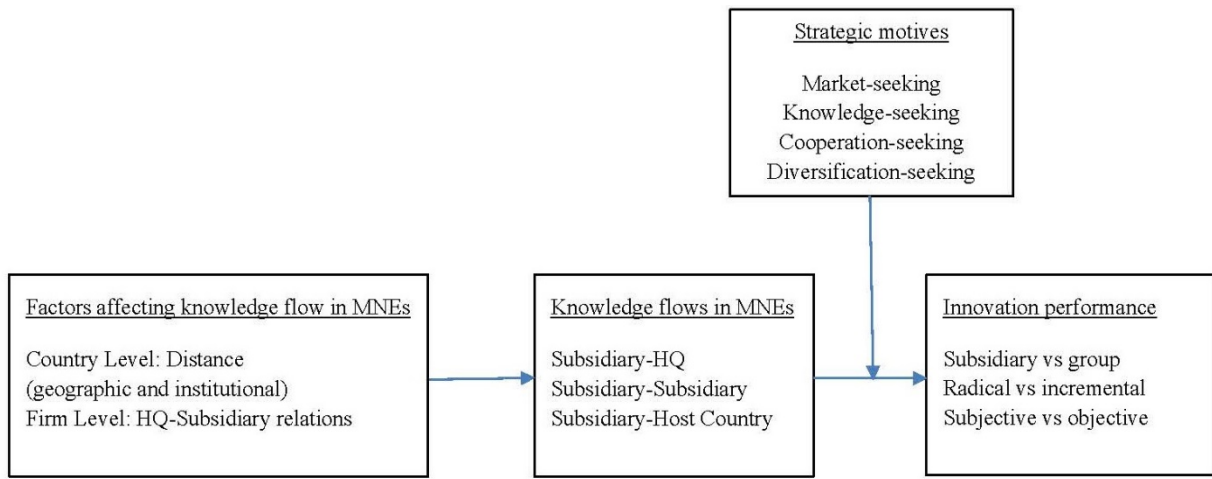
Future research on international innovation can account for this diversity and heterogeneity of source countries and explain the complementarity of multiple motives behind different types of innovation investments. We would like to encourage more research on “diversification-seeking” (Patel, Fernhaber, McDougall-Covin, van der Have, 2014; Zámorský & Turner, 2017) and “cooperation-seeking” innovation strategies (Reuer & Lahiri, 2014; Un & Rodríguez, 2018). This could lead us to a deeper understanding of internal and external innovation cooperation strategies of ANZ and other investors, as ANZ investors seem to be more prone to diversification and (internal) cooperation than other investors in Europe. Future research could also explore cross-border market and knowledge co-creation capabilities (Pitelis & Teece, 2010; Su, Lin, & Chen, 2016; Kazadi, Lievens, & Mahr, 2016).

The tensions between HQ and innovative subsidiaries with regard to radical innovation are also an interesting area for further study. While foreign subsidiaries often have the potential to create more radically new innovation than MNEs' HQ, our findings suggest that the distant HQ is often reluctant to recognise this. It is thus crucial to understand and diagnose this home bias and create innovation management strategies that allow high-performing foreign subsidiaries to take a leadership role in their area of competence without being stifled by tendencies to centralise and control innovation from the HQ (Belderbos et al., 2013). This centralisation may make sense for MNEs from major economic centres (the USA, Europe and Japan) but may have pitfalls for MNEs from peripheral or emerging markets. While

communication barriers related to time zone differences and distance are here to stay, organisations can create solutions to reduce these obstacles and build trust (Abrams, Cross, Lesser, & Levin, 2003) and global knowledge-sharing systems that improve innovation performance.

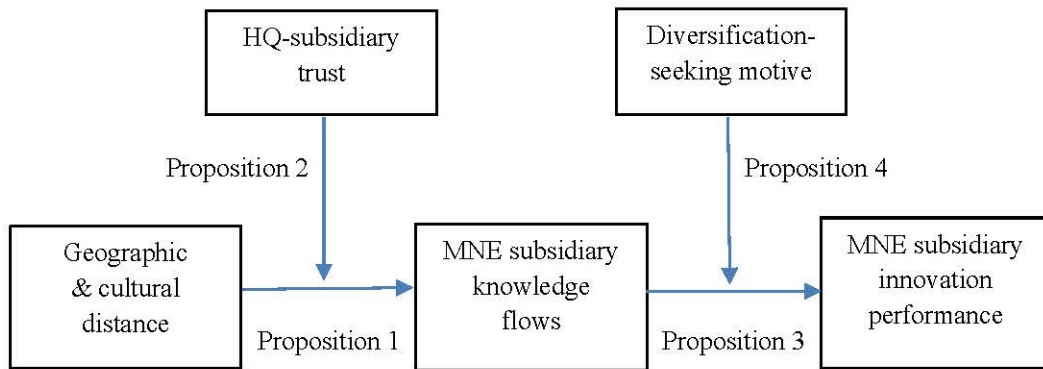
The limitations of our research include the small sample and that we did not incorporate a comparison group into the analysis. We also did not delve deeper into the nature of knowledge transferred (Hadjimichael & Tsoukas, 2019) and into risks of external knowledge sharing (Ritala, Husted, Olander, & Michailova, 2018). Our research has implications for policy and business. Policy makers can benefit from a deeper understanding of the motives of investors from the Asia-Pacific region (Verbeke et al., 2019) and other countries outside of North America and Europe that are becoming more prominent in global innovation. Improving connectivity remains a key challenge for (innovation) policy in New Zealand and other nations (MBIE, 2019; EEAS, 2019). Business leaders from non-traditional investor countries can benefit from understanding the experience of innovative ANZ investors in the EU and how they prioritise various motives including diversification and cooperation. The innovation internationalisation paths of antipodean MNEs often have a different global footprint than those of traditional multinationals, which presents challenges of global coordination and knowledge sharing.

## APPENDIX



**FIGURE 1.**

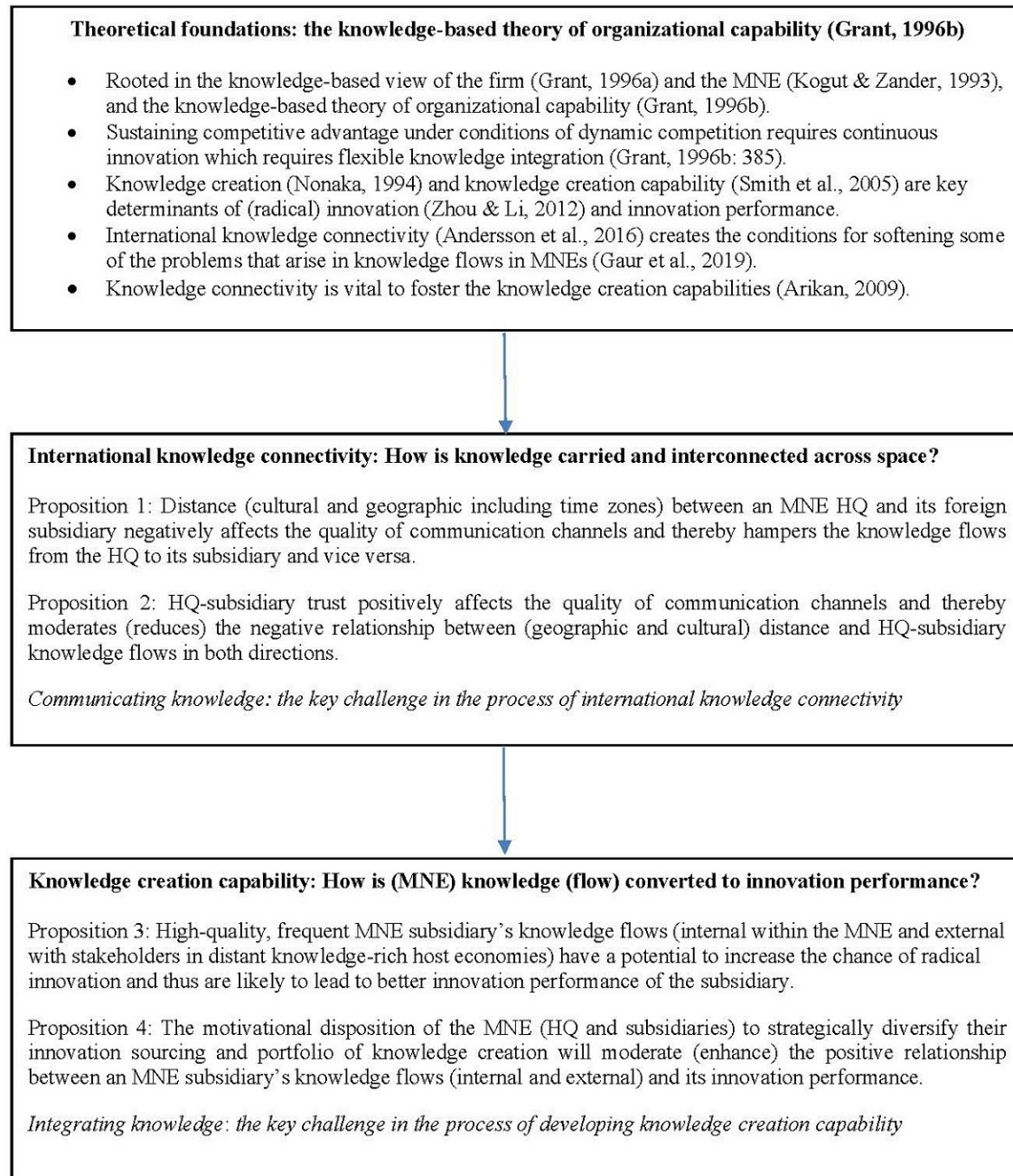
### FACTORS AFFECTING MNE KNOWLEDGE FLOWS AND INNOVATION PERFORMANCE



*International knowledge connectivity → Knowledge creation capability*

**FIGURE 2.**

### THE MODEL OF INTERNATIONAL KNOWLEDGE CONNECTIVITY AND KNOWLEDGE CREATION CAPABILITY



**FIGURE 3. SUMMARY: THE MODEL OF INTERNATIONAL KNOWLEDGE CONNECTIVITY AND KNOWLEDGE CREATION CAPABILITY**



**TABLE 1. FOREIGN FIRMS INNOVATING IN THE EUROPEAN UNION**

Home country/region	ANZ	USA	Japan	Emerging
Number of firms	126	5,290	778	439
Average number of staff	283	400	379	380
Did the firm introduce an innovation?	57%	58%	57%	57%
Innovation expenditure as % of turnover	4.1%	6.2%	4.1%	5%
Did the firm conduct R&D?	54%	48%	41%	41%
Did the firm receive innovation funding from the government?	10%	12%	11%	13%
Did the firm engage in innovation cooperation?	40%	36%	31%	32%
Cooperation with suppliers in the host country	17%	17%	14%	15%
Cooperation with clients in the host country	18%	17%	10%	12%
Cooperation with domestic universities in the host country	18%	18%	10%	15%
Internal cooperation in the enterprise group	36%	31%	27%	25%
Turnover from market novelties	13%	12%	12%	10%
Turnover from firm novelties	5%	7%	7%	8%
Turnover from new products total	12%	14%	14%	13%
Oriented towards international markets	73%	73%	76%	74%

Source: adapted and calculated from Eurostat and Community Innovation Survey data for 2008-10.

Note: We only show data for firms from Australia and New Zealand (ANZ), the USA, Japan, and emerging markets.

**TABLE 2. STRATEGIC MOTIVES FOR INTERNATIONAL INNOVATION INVESTMENT**

Strategic orientation/ type of motive	Characteristics of typical subsidiary innovation behaviour and knowledge flows	
	Connections with the local market	Connections within the group
Market-seeking	Local <i>adaptation-driven</i> innovation	<i>HQ-subsidiary</i> knowledge transfer
Knowledge-seeking	<i>Acquiring</i> local knowledge assets	<i>Subsidiary-HQ</i> knowledge transfer
Cooperation-seeking	High <i>external cooperation</i> with locals  (high local embeddedness – innovative ties/linkages/collaborations with locals)	High <i>internal cooperation</i> in the group  (significant knowledge transfer in all directions between HQ/subsidiaries)
Diversification-seeking	<i>Diversification of innovation sourcing</i> from different locations and product ranges, spreading risk in the international portfolio of innovation activities	<i>Innovation diversification in the group</i> between HQ and subsidiaries  (knowledge developed both in HQ and subsidiaries, some knowledge transfer)

**TABLE 3. DESCRIPTION OF CASES**

Case firm/ country of origin	Main industry	Countries of innovation in the EU	Other global innovation locations	Entry mode in Europe	Interviewee position and nationality
NZ1 New Zealand	Electric fences/animal building management	Netherlands UK	Australia USA	Sales subsidiaries in Europe	NZ-based R&D manager (NZ national)
NZ2 New Zealand	Sorting equipment	Spain Italy (formerly)	USA Uruguay (marginally)	Acquisition in Spain, joint venture in Italy	NZ-based R&D director (NZ national)
NZ3 New Zealand	Oscillators/ frequency control solutions	UK France	Asia (formerly)	Both EU units acquired	NZ-based innovation staff/senior engineer (EU national)
NZ4 New Zealand	Home appliances	Italy	USA Mexico, Thailand (both marginally)	Italian unit acquired NZ4 later itself acquired by an emerging MNE	NZ-based innovation staff (Latin American national)
NZ5 New Zealand	Medical appliances	France, UK, Germany (mainly distribution)	USA	Sales subsidiaries in Europe	NZ-based general manager (NZ national)
AU1 Australia	Medical appliances	Sweden Belgium	USA	Both EU units acquired	EU-based innovation manager responsible for Europe and USA (EU national)
AU2 Australia	Financial services	UK	Hong Kong USA	The London subsidiary is one of their four global innovation hubs	EU-based Senior Managing Director for Central/Eastern Europe (EU national)

**TABLE 4. FINDINGS**

Case firm	ANZ difference	Strategic motives	Knowledge flows
NZ 1	Family business Inventor ethos “EU market specifics too complicated”	<b>Market-seeking</b> (growth in the EU market)	EU mostly does product adaptation; innovation done in NZ; “NZ best place for innovation”.
NZ 2	Transparent (clear rules) Open/flexible attitude Similar to the USA “EU rules too complicated”	<b>Market-seeking</b> (be closer to the market that is different) <b>Knowledge-seeking</b> (access specialist knowledge in the acquired Spanish & Italian firms) <b>Cooperation-seeking</b> (access to EU funding/universities)	Auckland accounts for about 85% of the firm’s global R&D; Spain 7% of global R&D, goal to hike up to 20%. Currently little R&D knowledge sharing between HQ and Spain.
NZ 3	Open-minded Relaxed culture Better focus on theory application	<b>Knowledge-seeking</b> (acquired firms with considerable knowledge and experience) <b>Market-seeking</b> (EU a new market) <b>Diversification-seeking</b> (new product/customer segments)	NZ has 7 R&D staff, UK 4 R&D staff, France 4. Since EU subsidiaries focus on a different segment than NZ, the knowledge flows between EU and NZ are limited, but there are still cost-sharing effects.
NZ 4	Open-minded and challenging Low power distance	<b>Market-seeking</b> (main motive – EU a big market) <b>Knowledge-seeking</b> (wide and complementary product range) <b>Diversification-seeking</b> (balancing exposures to USA/Australian/NZ markets)	R&D mostly concentrated in Auckland; some projects are run by Italy, but the HQ view is that “their innovation skills are limited”. Some knowledge flows from the EU subsidiary to HQ and from NZ HQ to the EMNE parent in their areas of expertise.
NZ 5	Diversity/global view 50% of 2,000+ staff are not from NZ Isolation	<b>Market-seeking</b> (important to understand the customer in Europe to grow)	Little innovation done in Europe, mostly adaptation. Highly skilled EU staff brought to work in NZ HQ.
AU 1	“Very British” Strict on rules “Island mentality” Open-mindedness Time zone difference Geographic distance	<b>Market-seeking</b> (to grow in Europe) <b>Knowledge-seeking</b> (know-how in the acquired firms) <b>Cooperation-seeking</b> (universities, clusters) <b>Diversification-seeking</b> (opening new product segments)	Belgium 25% of global R&D, a lot of interaction between Belgium and HQ, growing interaction with Sweden. High interaction between HQ and subsidiaries, especially in the beginning and end of the research process.
AU 2	Time zone difference Culture Isolation Geographic distance Creativity	<b>Diversification-seeking</b> (of risks) <b>Market-seeking</b> (grow in the EU) <b>Knowledge-seeking</b> (innovation know-how in the acquired firms) <b>Cooperation-seeking</b> (both external and internal)	Centres of excellence, best practice transfer of knowledge to other subsidiaries, global specialisation and substantial knowledge transfer.

**TABLE 5. COMPARISON OF FINDINGS FOR ANZ FIRMS AND EXTANT LITERATURE**

Home country of innovation investment	Developed (US, Japan) <i>Extant literature</i>	Emerging market firms <i>Extant literature</i>	ANZ firms <i>Our findings</i>
Strategic motives	<b>Market-seeking</b> Dominant strategy (Giuliani et al., 2014).	<b>Knowledge-seeking</b> Dominant strategy (Di Minin et al., 2012).	<b>Dual subsidiary</b> Dominant strategy NZ2, NZ3, NZ4, AU1, AU2
	<b>Dual subsidiary</b> Co-existence of market-seeking and knowledge-seeking. Some evidence for this (Giuliani, et al. 2014).	<b>Dual subsidiary</b> Co-existence of market-seeking and knowledge-seeking. Some evidence (Di Minin et al., 2012; Giuliani et al., 2014).	<b>Collaboration-seeking</b> NZ2, AU1, AU2  <b>Diversification-seeking</b> NZ3, AU1, AU2
	<b>Knowledge-seeking</b> Some evidence for this (Giuliani et al., 2014).	<b>Market-seeking</b> Weak evidence for this (Di Minin et al. 2012)	<b>Market-seeking</b> NZ1, NZ5
Knowledge flows	<b>Market-seeking</b> Low level of innovative activity at the subsidiary level, mostly adaptation. Strong central coordination. Few formal or informal local collaborations.	<b>Knowledge-seeking</b> Subsidiaries' autonomy in decision-making. Pro-active and entrepreneurial subsidiaries. Acquiring local knowledge assets. No formal or informal local collaborations.	<b>Cooperation-seeking</b> Investing in innovation abroad in order to increase internal knowledge flows in various directions between subsidiaries/HQ <i>and</i> external knowledge flows via frequent local collaborations. NZ2, AU1, AU2
	<b>Dual subsidiary</b> Subsidiaries' autonomy in decision-making. Pro-active and entrepreneurial subsidiaries. Some formal and informal collaborations with host economy stakeholders.	<b>Dual subsidiary</b> Subsidiaries' autonomy in decision-making. Pro-active and entrepreneurial subsidiaries. Some formal and informal collaborations with host economy stakeholders.	<b>Diversification-seeking</b> Diversified, independent innovation hubs create and source knowledge, and distribute some of it within the group, often through centres of excellence. HQ is both knowledge creator and facilitator of knowledge flows. NZ3, AU1, AU2

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