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## **Antecedents of Risk and Uncertainty Management Capabilities: Insights from Multinational Enterprises in New Zealand**

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### **Abstract**

Risks and uncertainties of increasing severity and variety characterize the operating environments of most multinational enterprises (MNEs). Surprisingly limited attention has been given to understanding the antecedents and nature of risk and uncertainty management capabilities. In this study, we contribute to the organizational capability research, by examining the antecedents of risk and uncertainty management capabilities and theorizing how MNEs develop and transfer risk and uncertainty management capabilities across borders. By drawing on empirical evidence from MNEs operating in New Zealand, we conceptualize the role of environmental factors—including country risk profile and regulatory environment—in shaping firms' risk and uncertainty management capabilities. We also inductively theorize about the organizational factors that support the development of risk and uncertainty management capabilities in MNEs, and explain which factors influence their cross-border transferability. Finally, we discuss our study's limitations and offer future research directions.

### **Keywords**

Uncertainty, risk, organizational capabilities, risk and uncertainty management, multinational enterprises

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## Introduction

Multinational enterprises (MNEs) face a daunting variety of general environmental risks and uncertainties (Miller, 1992; World Economic Forum, 2021), rendering risk and uncertainty as increasingly salient topics in management (Alvarez et al., 2018; Bridge, 2021; Cavusgil et al., 2020; Packard & Clark, 2020; van der Vegt et al., 2015). While the concept of environmental uncertainty is not new (Duncan, 1972; Milliken, 1987), some of today's macro-environmental risks and uncertainties, such as global technological and ecological disruptions (e.g., cyberattacks and climate change), pandemics (Van Assche & Lundan, 2020), and extreme regulatory uncertainty (Cuervo-Cazurra et al., 2020), present new challenges and point to the interplay between risk, uncertainty, and organizational capabilities to manage them in international contexts (Lee & Klassen, 2016; Lessard & Lucea, 2009).

The resource-based view (Penrose, 1959; Wernerfelt, 1984) and the capability theory of the firm (Teece, 2019) together offer a useful foundation for theorizing the capabilities required to navigate risky and uncertain environments. International management (IM) researchers have theorized how MNEs manage both risk and uncertainty (Clegg et al., 2019; van Tulder et al., 2019). For example, previous IM studies have analysed risk and uncertainty in relation to the process of internationalization (Liesch et al., 2014), host markets (Song, 2013), and market entry (Müllner, 2016). However, risk and uncertainty management, which involves a focus on mitigation (Miller, 1992; Packard & Clark, 2020), has to be distinguished from *risk and uncertainty management capabilities*, which involve embracing risk and uncertainty as a core competence (Cuervo-Cazurra et al., 2018; Lessard & Lucea, 2009).

Moreover, research has tended to focus on specific forms of risk, or domains of uncertainty (Buckley et al., 2018; Figueira-de-Lemos et al., 2011; Fisch, 2008; Maitland & Sammartino, 2015; Oetzel & Miklian, 2017), rather than encompassing varied sources and forms of risk and uncertainty (Knight, 1921) within an integrated perspective (Miller, 1992; Packard & Clark,

2020). Knightian risk and uncertainty can be interpreted as a *risk–uncertainty continuum* (Rizzo & Dold, 2021). Many real-world threats are perceived by managers as mixed cases of risk *and* uncertainty (Vahlne et al., 2017). For MNEs, a variety of risks and uncertainties are experienced in their host and home countries. These are reflected in a country risk profile, a firm’s profile of perceived risks and uncertainties encompassing relevant general environmental-threat types for each of its countries of operation (Cavusgil et al., 2020; Lessard & Lucea, 2009; Miller, 1992). Regulatory uncertainty, a “critical non-market risk” defined as “the uncertainty associated with changes in regulation or public policy” (Kingsley et al., 2012, p. 52), is a particularly important threat category (Marcus et al., 2011). Regulatory uncertainty is related to, but distinct from, the “regulatory environment,” which reflects the existing laws and rules in a national environment that promote certain types of behaviours and restrict others (Kostova, 1999).

IM research on risk and uncertainty tends to focus on the implications for emerging-market MNEs (EMNEs), especially from institutionally turbulent contexts (Fathallah et al., 2018; Han, 2020). For example, Cuervo-Cazurra et al. (2018) theorized uncertainty management capability by analysing the impact of home-country uncertainty on the internationalization–performance relationship of EMNEs, arguing that home-country political risk and corruption drive the development of uncertainty management capability. More attention is therefore needed to integrate perspectives on risk and uncertainty management capabilities and their antecedents in MNEs from advanced economies (Vahlne et al., 2017).

Building on Cuervo-Cazurra et al. (2018), Lessard and Lucea (2009) and Mudambi and Swift (2011), we define risk and uncertainty management capabilities as transferring and leveraging knowledge, competencies, and other resources that form the basis of the capabilities of a firm, to better deal with risk and uncertainty. The paper studies how risk and uncertainty management capabilities are associated with macro-environmental and organizational-level

antecedents (Matysiak et al., 2018; Schilke et al., 2018). While both levels of antecedents are implicitly recognized by capability theory, their relationship with MNE risk and uncertainty management capabilities has not been sufficiently addressed. Moreover, we recognize a distinction between organizational capabilities in the face of market pressures (stressed in Teece, 2019), and risk and uncertainty in the face of exogenous non-market threats (Buckley et al., 2020; De Beule et al., 2014; Oh et al., 2021). We focus on the implications of the latter for how MNEs develop and transfer capabilities to manage risk and uncertainty. Considering these gaps, we ask: *Which factors influence the development, and cross-border transferability, of MNE risk and uncertainty management capabilities?*

To address our research question, we explored the antecedents of MNE risk and uncertainty management capabilities using an inductive approach based on thematic analysis (Gioia et al., 2013). We drew upon a unique qualitative dataset of New Zealand-based organizations. From our analysis we extend capability theory towards risk and uncertainty management capabilities in the face of exogenous non-market threats, and identify a range of novel factors that enable and/or hinder cross-border capability transfer (Luo, 2000), thus challenging the assumptions of Cuervo-Cazurra et al. (2018). We contribute to IM research by explaining how international human resource management (HRM) factors (e.g., training and selection) underpin MNE capabilities to manage global uncertainty (Caligiuri et al., 2020).

## **Review of Literature**

Uncertainty has been a part of IM research for some time. For example, Mascarenhas (1982) provided a framework for coping with uncertainty, Rivoli and Salorio (1996) analysed foreign direct investment (FDI) under uncertainty, and Fisch (2008) analysed investment in new foreign subsidiaries under a receding perception of uncertainty. More recent IM research has focused on home-country uncertainty (Luo & Bu, 2018) and building the uncertainty management capability (Cuervo-Cazurra et al., 2018) of EMNEs. De Beule et al. (2014)

distinguished endogenous uncertainty, due to the liability of origin, from exogenous uncertainty, such as that due to environmental turbulence. However, few IM studies offer an integrated, continuum perspective on risk and uncertainty (Rizzo & Dold, 2021) and a focus on how MNEs from advanced economies develop capabilities to manage risk and uncertainty (Vahlne et al., 2017).

Capability research has recognized uncertainty implicitly, through factors such as dynamically competitive environments (Grant, 1996; Schilke, 2014). Teece (2019) and Petricevic and Teece (2019) recognized uncertainty more explicitly, identifying deep uncertainty due to technological change, political factors, and unforeseen economic interactions, as key elements of capability theory. Teece (2019) defined deep uncertainty as “the open set of unknown unknowns about which no forecast can be made” (p. 5). However, the antecedents of risk and uncertainty management capabilities are understudied (Teece et al., 2016), especially in IM, where researchers have focused on specific types of capabilities such as political capability (Lawton et al., 2013) or asset-management capability (Fainshmidt et al., 2017), while not studying the cross-border transferability of risk and uncertainty management capabilities sufficiently. We summarize key concepts relating to risk and uncertainty management capabilities that appear in the literature in Table 1. Figure 1 integrates them in a continuum perspective on strategic management of risk and uncertainty.

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TABLE 1 AND FIGURE 1 HERE

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### *Antecedents of MNEs’ Risk and Uncertainty Management Capabilities*

While antecedents of risk and uncertainty management capabilities have been studied in the context of supply chains (Scholten & Fynes, 2017; Yang et al., 2020), their antecedents in the MNE are poorly understood. The IM literature recognizes that country risk profile might be

one of these antecedents, but cautions that commercial country risk measures are poor at predicting realized risks (Jensen & Zámbořský, 2020; Oetzel et al., 2001). Alon and Herbert (2009) have stressed the distinction between macro-risk (economic, society-related, and government-related factors) and micro-risk (home country, industry, firm, and project level). Scholars have also started to pay attention to country risk profile dimensions beyond financial and political risks and uncertainties (Aitsi-Selmi et al., 2015), although the explicit link between country risk profile and MNE risk and uncertainty management capabilities is not developed sufficiently (Smith & Fischbacher, 2009).

Other country-level factors such as the regulatory environment (Lawton et al., 2013) and country–firm interactions could also affect capabilities (Matysiak et al., 2018) for managing risk and uncertainty. Lastly, organizational resources such as market, technological, and political resources can affect organizational capabilities (Danneels, 2008; Schilke et al., 2018). Studies have unveiled several mechanisms that explain how antecedents such as regulatory environment and organizational resources underpin capabilities. For example, Lawton et al. (2013) recognized networks, structure, and HR as the mechanisms, while Fan et al. (2017) pointed to culture diffusion, team support, and strategy alignment.

Yet, research on the antecedents of MNEs' risk and uncertainty management capabilities has not sufficiently integrated insights from capability theory. IM research tends to focus on country risk and its mitigation (Cavusgil et al., 2020), with a lack of studies on factors that influence how MNEs develop integrated capabilities for managing both risk and uncertainty. Recognizing more fully the limits to mitigation of uncertainty is important (Packard & Clark, 2020). A deeper understanding of antecedents of risk and uncertainty management capabilities can lead to a more robust theory of capabilities for managing risk and uncertainty and contribute to the debate on risk and uncertainty management strategies (Bridge, 2021).

### *Risk and Uncertainty Management Capabilities Across Borders*

Developing risk and uncertainty management capabilities is important for all organizations, but especially for MNEs that need to manage risk and uncertainty in multiple countries. Lessard and Lucea (2009) suggested the need to embrace risk management as a core competence, stating that “to the extent that a firm is able to manage certain types of risks better than its competitors, it has the potential to outperform them by exploiting such capability” (p. 299). They highlighted the need to define the way firms think about, measure, and integrate risk into the formulation and implementation of their business strategies as key components of MNE risk management capability. We build on this insight but encompass both risk and uncertainty.

Uncertainty is becoming an increasingly salient concern for strategic managers (Teece & Leih, 2016) and organization scholars (Alvarez & Barney, 2005). In IM research, Cuervo-Cazurra et al. (2018) drew on organizational learning theory, the resilience literature, and the institutional perspective to argue that “being exposed to high uncertainty at home leads firms to learn and develop an uncertainty management capability that makes them more resilient and better at competing in different foreign markets” (pp. 210–211). They stressed the role of organizational knowledge underpinning routines and processes that form the basis of the MNE capability to better deal with uncertainty in its interactions with the external environment.

Even so, Cuervo-Cazurra et al. (2018) did not directly capture the capabilities for dealing with risk and uncertainty and focused specifically on political risks and uncertainties concerned with corruption. They suggested future studies could survey managers to get a sense of their ability to deal with uncertainty. Our study responds to their call for an enriched understanding of the nature of risk and uncertainty management capabilities by examining their antecedents and by thematically categorizing managers’ perceptions of their organizations’ capabilities to manage risk and uncertainty. In our study, we analysed a broader spectrum of uncertainties and risks, including natural hazards, terrorist attacks, pandemics, and regulations. Further, we



focused on MNEs from advanced economies to begin to address the gap in conceptualizations of risk and uncertainty management capabilities.

One limitation of Cuervo-Cazurra et al.'s (2018) study is that they did not sufficiently acknowledge how uncertainty and risk may differ across countries, and thus how transferable uncertainty management capabilities (and related knowledge and competencies) are across borders (Mudambi & Swift, 2011). Luo (2000) defined the transferability of capabilities as “the extent to which a parent firm is equipped with or controls distinctive capabilities that can be transferred to a foreign subunit, resulting in a competitive advantage” (p. 367). Cuervo-Cazurra et al. (2018) focused on leveraging the institutional disadvantages of EMNEs' home markets for internationalization. The extension of this concept in the context of developed home countries is largely missing. In addressing this gap, we also grounded the risk and uncertainty management capabilities concept in the organizational capability literature (Arndt, 2019; Schilke et al., 2018; Teece, 2018). Capability theory has embraced uncertainty (Teece, 2019), but further work is needed to better understand the antecedents and nature of risk and uncertainty management capabilities across borders.

## **Methodology**

We followed the Gioia et al. (2013) approach to generating rigorous and transparent inductive theorization from qualitative research data. Grounded-theory approaches are well suited to analysing poorly understood phenomena (Glaser & Strauss, 1967) and the dynamic and interactive processes that contribute to capability development. We therefore developed novel theorization about MNE capabilities directly from the first-hand perspectives, rationales, practices, and behaviours of senior managers involved in risk and uncertainty management.

### *Empirical Setting*

We chose New Zealand as the empirical setting for our study because prior research has recognized it as a country within which a variety of risks and uncertainties are encountered (Canlas, 2018; van der Vegt et al., 2015). For example, Stevenson et al. (2014) found that strong organizational networks aided business recovery after the 2010–11 New Zealand earthquakes. Tisch and Galbreath (2018) stressed the role of social relationships and community in organizational responses to extreme-weather events and climate change in New Zealand. New Zealand also has relatively stringent regulations (Ameer & Othman, 2020; Hernandez, 2018).

### *Sampling Strategy*

Consistent with Gioia et al. (2013), we used theoretical sampling to develop new theory that is systematically grounded in our qualitative data (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Theoretical sampling does not use a rigidly predetermined set of sampling criteria and instead is “carried out so that emerging theoretical considerations guide the selection of case and/or participants” (Bell et al., 2018, p. 719). It is a form of analytic induction which typically begins with a general research question and an open-minded approach to who or what might be relevant to a study and involves refining theoretical ideas through a process of constant comparison (Charmaz, 1983; Glaser & Strauss, 1967). Theoretical sampling is therefore appropriate when a study aims “to discover categories and their properties and to suggest the interrelationships into a theory” (Glaser & Strauss, 1967, p. 62).

Following our theoretical sampling logic, Phase 1 of the study resulted in a purposefully diverse range of New Zealand-based organizations across three broad categories – MNE, domestic business, and public organization. The aim in selecting our initial sample was to “obtain both retrospective and real-time accounts by those people experiencing the

phenomenon of theoretical interest” (Gioia et al., 2013, p. 19). This approach allowed for an open-minded and yet theoretically sensitive examination of the potential relationships between environmental factors, organizational factors, and risk and uncertainty management capabilities. It also allowed us to situate the MNEs in their social and economic context and acted as a point of comparison in our theory building (Charmaz, 1983). This approach was consistent with the definition of MNEs as “networked firms whose subsidiaries act as nodes embedded in a variety of local contexts” (Mudambi & Swift, 2011, p. 186). In Phase 2, we refined our theoretical ideas through group interviews. Finally, in Phase 3, we tested our “emerging theoretical ideas” (Bell et al., 2018, p. 442) through interviews with senior managers from MNEs. Our sample is summarized in Table 2.

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TABLE 2

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The total sample included 34 participants, three of whom participated in both the focus group and the individual interviews. Fifteen of these participants were from MNEs, including six participants who gave in-depth interviews. Each informant held a senior position, directly responsible for managing risk and uncertainty. In total, 33 organizations were included in the sample, including four organizations from which two or more informants were interviewed. MNEs were defined by revenue streams spanning two or more countries and included both the service and manufacturing sectors. Five organizations in our sample were MNEs. MNE 1 was headquartered in New Zealand and MNEs 2–5 were New Zealand subsidiaries of foreign MNEs. Table 3 provides information about the MNEs, including their geographic reach, revenues and risk/uncertainty management practices.

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TABLE 3

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### *Three-Phase Research Design*

A three-phase research design was used to collect data that moved from a “zoomed-out” view of risk and uncertainty management in New Zealand to a “zoomed-in” view of how specific organizations developed capabilities for responding to risk and uncertainties faced in their environments globally (Nicolini, 2012). To support this aim, we developed a three-stage research process (Figure 2) involving exploratory data collection through focus groups, theoretical refinement through group interviews, and testing of theoretical ideas through individual interviews. Data analysis was iterative, occurring after each phase of the research. It was completed when new codes were no longer emerging from the data and theoretical saturation had been achieved (Bell et al., 2018).

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FIGURE 2

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#### *Focus Groups*

In Phase 1, semi-structured focus groups were conducted with 20 senior managers in the private sector (65%, including nine MNE participants) and the public sector (35%). Focus groups were selected for this phase of the study, due to their capacity to generate data and insights about a nascent topic that would be inaccessible without group interaction (Morgan, 1997). This approach allows for “respondent triangulation,” whereby “the inferences drawn from a set of data sources will be checked by collecting data from others” (Hill & McGowan, 1999, p. 15). To enable detailed discussion, informants were divided into four groups (with at least one participant from an MNE). Each group was allocated a facilitator who, over 1.5–2 hours, guided the informants through theoretically informed questions. Although a semi-structured schedule was used, time was allowed for informants to engage with each other (Morgan, 1997), which in turn generated unexpected themes.

### *Group Interviews*

In Phase 2, group interviews were conducted with eight informants who were evenly sourced from the public and private sectors (including two MNE participants). A semi-structured schedule was developed from Phase 2 coding, which allowed for further investigation of established concepts (e.g., uncertainty and organizational capabilities) and emergent themes (e.g., MNEs' risk and uncertainty management capabilities and their antecedents and transferability). Informants were randomly allocated to one of three facilitated groups, to undertake a semi-structured group interview lasting 1.5 hours. Audio-recordings were professionally transcribed and analysed in NVivo. This phase of the study offered further confirmation of the impact of both country context and organizational factors on MNE risk and uncertainty management capabilities.

### *Individual Interviews*

In Phase 3, interviews were conducted with nine informants from MNEs (67%) and domestic organizations (33%). Three of the interviewees had previously participated in the focus groups. These interviews were specifically for testing our emerging theoretical ideas. Accordingly, a semi-structured-interview schedule was developed for the individual interviews, which focused on the relationship between (a) risk and uncertainty management capabilities and their cross-border transferability, and (b) antecedents of risk and uncertainty management capabilities. All interviewed organizations were located in Auckland, New Zealand, selected to maximize revelatory potential, richness of data and trustworthiness (Langley & Abdallah, 2011). Each interview lasted approximately 60 minutes and was audio-recorded.

### *Data Analysis*

Our analytical approach followed Gioia et al. (2013) and involved a general inductive strategy (Glaser & Strauss, 1967). Gioia et al.'s (2013) approach to demonstrating rigour in qualitative analysis includes identifying first-order concepts from respondent quotes, classifying second-

order themes that group together in vivo codes on the basis of the theoretical tendencies within the data, and generating aggregate dimensions that represent theoretical themes. Our data structure is presented in Figure 3.

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FIGURE 3

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To identify first-order concepts, data were initially explored by asking probing questions of the complete dataset, which enabled the authors to identify core thematic categories that would help to link the responses shared by the informants (Glaser & Strauss, 1967) to the concepts under investigation. Data were coded by multiple research-team members to ensure inter-rater reliability, and to guard against new discoveries being missed. To achieve parsimony, the first-order concepts were checked and, where appropriate, combined (Patton, 2002).

Next, we used axial coding principles (Strauss & Corbin, 1998) to relate first-order concepts to reveal central (i.e., axis) phenomena in our data, identifying a set of second-order themes. Finally, we combined the second-order themes into aggregate dimensions that represented our dataset. By using these processes, we were able to “develop a framework of the underlying structure of experiences and processes that are evident in the raw data” (Thomas, 2006, p. 238). This allowed us to identify the antecedents of risk and uncertainty management capabilities from our theoretical sample, and to analyse the factors involved in cross-border transfer. Representative quotes that support our data structure are provided in Tables 4 and 5.

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TABLES 4 & 5

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## **Findings**

Our data structure presents two final aggregate dimensions: country-level antecedents and cross-border capabilities. Prior to describing the detailed themes identified from our analysis, we highlight three overarching observations. First, we found evidence from all three phases of data collection to suggest that antecedents of MNE risk and uncertainty management capabilities involved a combination of macro-environmental factors and organizational-level factors. Second, we found evidence that country-level embeddedness (in social and economic context) was important because it appeared to form a link between the MNE (particularly when New Zealand was the host country) and its understanding of fit between macro-environmental (country risk profile and regulatory environment) and organizational-level antecedents (knowledge and network resources). For example, country-level embeddedness enabled MNEs to access external network resources (resources embedded in the firm's external networks) from public and domestic organizations. This is important because our theorization of MNE capability development emphasizes the links between the final dimensions in our data structure. We recognized that risk and uncertainty management capabilities developed in one country may be transferred to and leveraged in other host-country settings despite the likely national differences in risks, uncertainties, and institutions. Below, we explain our findings to demonstrate how we drew upon first-order concepts and second-order themes to identify the two aggregate dimensions in our data structure.

### ***Country-Level Antecedents of MNEs' Risk and Uncertainty Management Capabilities***

#### ***Country Risk Profile Defined by Types of Threat***

Our data revealed the importance of understanding the country risk profile. Respondents often characterized risks at a national level and this was the basis for risk and uncertainty management capability development for MNEs. Each country had a unique risk profile and an MNE's home-country risk profile was likely to affect its risk and uncertainty management

capabilities. New Zealand-based MNE 1's capabilities, for example, were affected by the distinct risk environment in New Zealand, with relatively low risk related to corruption, kidnapping, and terrorism. However, New Zealand's risk profile was skewed towards earthquake and other natural disasters (Table 6), potentially giving the country's MNEs stronger capabilities in managing these types of risks and uncertainties abroad.

Focus group participants were asked to categorize risks and uncertainties they perceived as important, and then discuss how they had arrived at their conclusions. The top two bullet points in the data structure (Figure 3) showed that the perceived risk type was commonly used to generalize about the types of threat:

*We create a profile for that country and then you have country-specific tools in place to avoid or to hedge that risk ... for high-risk countries like you have in Latin America ... you have the strategy that you say maybe you need a security manager ... in our office, we don't have a security manager because we don't see the need really.* (MNE Respondent 2)

Though it was evident that a country's risk profile is shaped by past extreme events, these were not always good predictors of future extreme events. For example, while 10 of our 34 informants mentioned pandemic disease as a possible risk (Table 6), their organizations did not seem to take this seriously. Respondents held the general perception that New Zealand was a low-risk country with low uncertainty, despite the probabilistic evidence that the country will be subject to volcanic activity and earthquakes. This finding was consistent with the conservative attitude towards uncertainty presented in other studies (e.g., Minkov & Hofstede, 2014), as MNE Respondent 3 noted: *"A very conservative culture will dictate a more conservative approach to risk, and that conservative approach to risk will have related conservative strategies."* The 2019 terrorist attack at mosques in Christchurch, New Zealand, was a further demonstration of uncertainty in preparing for extreme events—terrorist attacks were among the less likely types of risks identified in our 2018 dataset (Table 6).

Crucially, we found that there were links between the country risk profile and how risks and uncertainties were managed, as MNE Respondent 3 noted: *"I think if you were*



*considering a country where natural disasters were not as prominent as they are in our environment, they would deal with it differently.”* In turn, a subsidiary’s approach to developing risk and uncertainty management capabilities seemed to be driven by the host-country risk profile. For example, MNE Respondent 2 commented on this issue: *“Do we train for a terrorist attack or a bomb threat in New Zealand, do we need it? The packages are here but it’s our decision to customize it for the local market.”*

Additionally, MNE capability development appeared to be embedded in networks of local organizations (e.g., associations for risk professionals in New Zealand, city council and disaster management agencies). Government support for capability development was indirect. Public organizations seemed to provide more information related to deep uncertainty, longer time horizons and concomitant response scenarios. MNEs used this information and their own environmental scanning to engage in scenario planning, as this quote acknowledged:

*What became very evident was that our big chunky risks impacted many parts of the business, and we weren’t taking them in that manner ... it really drove home that we just do one thing better and just collaborate around doing better scenario planning, let’s say around these types of risks, we would make significant impact in the business. (MNE Respondent 1a)*

The country-level determinants of risk and uncertainty management capabilities not only included the type of threat (e.g., earthquake responses are different to extreme-weather responses), but were tempered by the variety of perceptions of risk and uncertainty (Lee & Klassen, 2016). For instance, MNE Respondent 1b stated: *“New Zealand is great at planning for earthquakes, they plan till their hearts’ content. Throw anything outside of an earthquake, then they suddenly go it’s in the too-hard basket.”* The “too-hard basket” metaphor shows that that disaster responses and preparedness vary according to both the perceived and actual danger. Hence, our findings confirm that perceptions of risk and uncertainty can be different from reality (Duncan, 1972).

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TABLE 6

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*Regulatory Environment Linked to Risk and Uncertainty*

Our data showed the importance of understanding the impact of the regulatory environment on risk and uncertainty management capabilities. For example, the following respondent noted:

*But we in New Zealand have an uncertain regulatory environment [in] which to compete. And so that business is locally focused because New Zealand is identified as among Canada and Australia and the UK, as leading regulation environment. What happens in those four countries will work across the world. And so that's why the focus is on regulatory risk ... in those markets. And then we build the capability team around that. (MNE Respondent 4)*

While most participants used the language of “risk” (many were “risk managers”), “uncertainty” was mentioned by MNE participants many times, often with respect to the regulatory and legislative environments. For example:

*We have a lot of uncertainty especially for us ... our current example of a disaster was earlier this year when we were charged with contravening [the] ... Act by the government... If you consider something like a natural disaster, the difference would be that it's not unexpected but it's a daily challenge to deal with ... it means that you're trying to manage something that's not unexpected but it's still uncertain. (MNE Respondent 4)*

The quote above shows that uncertainty is conceptually different from unexpected threats, a distinction related to what Packard and Clark (2020) called unknown (epistemic) uncertainty and unknowable (aleatory) uncertainty. This corresponds with the following statement from MNE Respondent 1b: “I’m not 100% sold on the all-hazards approach that Australia takes, there is something to learn from that, because even though they do all hazards, their plan can transcend different events.” To respond to the risks and uncertainties, MNEs employed predictive strategies such as hedging and insuring, and nonpredictive strategies such as scenario planning that were coordinated with disaster response services. However, there were legacy changes to regulations and privatization unique to each country. The extent to which risk and uncertainty management capabilities were coordinated by a joint MNE-industry/public effort was found to vary, as national laws and behavioural norms reflect institutions (Kostova & Hult, 2016). MNE Respondent 4 commented on this issue: “We have clients across many sectors,

*including property, dealing with the likes of Civil Defence, dealing with the New Zealand Defence Force. So, all those contact points would have been areas to learn from and to bring back.”*

Finally, regulatory threats to MNEs need to be considered in terms of their relative impact, such as their weighting in the portfolio and their exposure for each country. MNE Respondent 2 highlighted this point in relation to their diversification and hedging strategy:

*Right now, we have an economic crisis in Turkey, but in Turkey we have maybe 50 stores. In the big scheme of our store portfolio, it doesn't really have a big impact. But then you have other threats like import taxes in the US ... it's a very big market, in North America we have 500 stores. If there's an import tax from China to the US it has quite a big impact.*

In summary, the aggregate dimension “Country-level antecedents of risk and uncertainty management capabilities” shows that while the country risk profile objectively rests on historical events, MNE capability development is tempered by managerial perception that is underpinned by national culture, and embedded in a network of a country's domestic/public organizations and in the regulatory environment. In the next section, we present the organizational-level antecedents of risk and uncertainty management capabilities and their cross-border transferability.

### ***Cross-Border Risk and Uncertainty Management Capabilities***

#### ***Organizational Resources Enabling MNEs' Risk and Uncertainty Management Capabilities***

Organizational resources that enable risk and uncertainty management capabilities are related to a more general attribute of MNEs: they inherently seek the cross-border benefits of competencies and knowledge (Mudambi & Swift, 2011). MNE Respondent 5 noted the following, regarding the desire to leverage knowledge, competencies, and approaches to managing risk and uncertainty globally:

*We perform similar functions but they [HQ] just do it on a larger scale. So, we would sometimes potentially leverage off what risk profile, for example, and their retail banking space would look like. And run through it and say it will also apply here. Most of the time it*

*does depending on the functions being the same. We also adopt the framework for how we profile risk as a group policy.*

In terms of the influence of a parent company on subsidiary risk and uncertainty management practices, MNE Respondent 5 stated: *“Things like natural disasters ... we will obviously have a bigger focus on earthquakes in New Zealand. Whereas some of Australia ... would have a bigger focus on disasters such as fires and floods. But in terms of actual operational risks, that probably doesn't actually differ.”* MNE Respondent 1c made a point about the efforts to learn and share, across networks and borders, knowledge and competencies related to uncertainty and risk management: *“We get the benefit of that kind of fact base and experience, learning from actually going through particular events in other nations that can be shared across.”* The point was reinforced by MNE Respondent 1b, in a comment related to multinational (network) structure: *“Their heightened security has relevance to us ... because that makes us bring in these controls that we wouldn't necessarily consider without knowing that. And that all comes from that intelligence sharing.”*

The risk management policy of a group can also be more stringent than in the host country; this presents a challenge as to whether to apply the stricter group standards: *“Sometimes a policy is good enough for New Zealand but not good enough for our company,”* stated MNE Respondent 2. Several respondents noted that Australia has developed risk management capabilities further than New Zealand, using more advanced probabilistic tools and national risk registers. Respondents mentioned that while the differences between country risk profiles are important, the risk management tools are often broad enough to be applied across countries that are not too different (e.g., New Zealand and Australia). However, in culturally different countries, where MNEs often operate due their global value chains, caution is needed: *“Because one of the things there was particularly around bribes and corruption. And in South America of course you can't get anything done without a bribe it would seem. Certainly, we*

*don't engage in bribery, but it does your head in working in South America,"* stated MNE Respondent 1a.

Furthermore, participants stressed the role of network resources in managing uncertainty. MNE Participant 1a mentioned the role of the Risk Management Society's local (New Zealand) and global conferences for accessing knowledge and resources from other organizations. MNE Participant 3 further commented about the importance of maintaining networks to catalyse cooperation in times of crises: *"You would have put controls in place such as offsite data, backup, and such like; who you would rely on if something was to happen today; who do we call, where do we call, what networks do we have in place?"* Local networks were also stressed by public and domestic organizations. For example, Domestic Respondent 1 stated: *"You suddenly find yourself confronted with something, there's uncertainty. Your staff aren't trained and you don't have any networks to support you. You're in no-man's land before you start. So having networks will help."*

In summary, risk and uncertainty management capabilities can be extended through cross-border leveraging of not only competencies (Lessard & Lucea, 2009), but also of knowledge (Mudambi & Swift, 2011) and network resources (Gulati, 1999; Lai et al., 1998; Lavie, 2006). Knowledge about risk and uncertainty and related information collection and processing capabilities were stressed by Packard and Clark (2020) as key ingredients of a dynamic approach to judgement of decision logics in the face of multiple risks and uncertainties. Moreover, our findings suggest that both internal and external networks (Meyer et al., 2011) may be required for developing and leveraging capabilities to manage different types of threats. This is consistent with suggestions of Schilke et al. (2018) that we need to know more about how different types of networks may shape organizational capabilities.

### *Transferability of MNEs' Risk and Uncertainty Management Capabilities*

The transferability of cross-border risk and uncertainty management capabilities can be limited because the types of disasters are coupled with each country (Oh & Oetzel, 2011), and with the institutions in each country (Kostova, 1999). On the other hand, the transferability of risk and uncertainty management capabilities was identifiable as a trend among the MNEs, revealing their desire to disseminate knowledge and competencies to subsidiaries. MNE Respondent 3 commented in this respect: *“So, whether I was sitting here or whether I was in Mumbai or whether I was in London, if I had to go through the risk training and the conduct training it would have the same look and feel. That's the intention.”*

This point was reinforced by MNE Respondent 2, an expatriate subsidiary manager reassigned to New Zealand from Mexico, who noted that “old routines” from the MNE’s previous operations are recombined with “new routines” developed for risk management in a newly entered market, and then they continue to be reconfigured: *“You learn and then you adjust your routines.”* He noted that knowledge and competencies about markets with similar risks and uncertainties were transferred and leveraged to improve risk management practices: *“We had a couple of incidents when we opened in Mexico, just the corruption for example. You take the learnings and the mistakes we made as a company, when we opened in Colombia.”* On the other hand, MNE Respondent 1a noted the importance of considering cross-cultural differences and their influence on transferability of capabilities:

*Somewhere like China it is a bit culturally different. I know that when we rolled out our code of conduct, I actually made a point, it was at the request of the country manager who was from head office there. We went up and met with them in Shanghai and in Hong Kong to talk them through the code of conduct.”*

MNE Respondent 1b suggested that the transferability of risk and uncertainty management capabilities is also influenced by the national similarities/differences in the regulatory environment: *“We’ve tried to develop one approach that sort of meets the gold standard I guess, which is the European Union. While also perhaps in jurisdictions where there might be*

*some random outliers, [we are] dealing with those on an expert basis.*” The dissemination of knowledge regarding risk and uncertainty across borders hinges on the skills and experience of the managers who seek to cooperate and learn from their counterparts in other subsidiaries or relevant partnerships. The assessment of the relevance of risk and uncertainty management capabilities was continuously scrutinized to recognize both transfer barriers and discern opportunities for capability transfer, with the help of training:

*If we're concerned around any terrorism threats ... or pandemics, we may get that information and then bring it internally and then use it to package our training ... And quite often it's rolled out globally.* (MNE Respondent 3)

MNE Respondent 5 also commented on the importance of training for implementing risk management know-how and communicating best practices: *“Through training, communication, that's how we build that culture of risk and try to embed it into a position.”* Furthermore, risk management experts can be imported from diverse locations, resulting in a modified configuration of MNE internal network members' socio-economic profile. This can both facilitate the capability transfer (e.g., expatriates being better able to discern opportunities for transfer) and hinder it (if the expats are not trained to understand or are not embedded in the local context). As MNE Respondent 1b stated: *“A lot of the experience that we've brought in the risk has been brought from overseas. That could have an impact as well.”*

To conclude this section, we address links between the two aggregate dimensions. Risk and uncertainty management capabilities are unique to an MNE's international context yet embedded at the country level (in national culture, public–private coordination and external networks). Knowledge about risk and uncertainty is acquired by MNEs within a local network of public employees, consultants, and risk managers. This is consistent with the factors that influence risk and uncertainty management capabilities and their cross-border transferability (Luo, 2000) and limits to transferability (Carney et al., 2016), suggesting that country-level embeddedness can influence capability transfer (Kostova, 1999). Importantly, this means that

the development of capabilities and their cross-border transfer are likely to be also impacted by organizational-level factors (Schilke et al., 2018), including knowledge about risk and uncertainty and both internal and external network resources (Gölgeci et al., 2019; Scott-Kennel & Saittakari, 2020). We discuss these theoretical implications in the next section.

## **Discussion and Conclusions**

We discuss the theoretical implications of our research by introducing an inductive model of MNE risk and uncertainty management capabilities, their antecedents, and the factors that influence their transferability (Figure 4). We depart from Cuervo-Cazurra et al. (2018) by expanding the antecedents that may shape both risk and uncertainty management capabilities (Lessard & Lucea, 2009), and their cross-border transferability (Luo, 2000). Though Teece (2019) discussed Knightian “true uncertainty” (Knight, 1921) and Rosenbergian technological uncertainty (Rosenberg, 1976) in relation to capability theory, we present a broader understanding of uncertainty, which includes potentially interconnected threats beyond market-related technological change, political factors, and unforeseen economic interactions (Hynes et al., 2021). These are the traditional threats analysed in IM, and they have continued and evolving relevance (Cuervo-Cazurra et al., 2020). However, other sources of uncertainty and risk, such as climate change (Wohlgezogen et al., 2020), pandemics (Van Assche & Lundan, 2020) and non-market technological threats (Oh et al., 2021), are increasingly recognized and have been neglected in capability theory and its application to MNEs (Matysiak et al., 2018).

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### FIGURE 4

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We conceptualize MNE risk and uncertainty management capabilities as transferring and leveraging knowledge, competencies, and network resources across borders. The concept of resource leveraging (coordinating and deploying resources to create value) builds on Sirmon



et al. (2011) and Carnes et al. (2021). The distinction between leveraging knowledge (Gooderham, 2007) and competencies across borders builds on Mudambi and Swift (2011). They suggested that knowledge is distinct from competencies, and can help to create them and develop capabilities, such as those for managing uncertainty (Packard & Clark, 2020). We extend Mudambi and Swift (2011) by distinguishing leveraging knowledge (scanning for information about relevant threats and implementing know-how/intellectual property) and leveraging competencies (communicating routines/practices and reconfiguring routines) from leveraging network resources that firms derive from their embeddedness in networks (Gulati, 1999; Lai et al., 1998; Lavie, 2006). Leveraging network resources across borders involves accessing local and global network resources and maintaining networks to catalyse cooperation. Transferring capabilities across borders involves recognizing transfer barriers and discerning opportunities for capability transfer (Lessard et al., 2013), both of which can be enhanced through HRM, including training (Park, 2011; Zhao et al., 2005) and selection (Osman-Gani, 1999).

Our study considers a country risk profile, including general environmental uncertainties (Miller, 1992), and links this theoretically to the literature on capabilities for managing risk and uncertainty (Fredrich et al., 2022; Irwin et al., 2022; Teece et al., 2016). We argue that there are three inter-related sets of antecedents that influence the development of risk and uncertainty management capabilities. At the macro-environmental scale, we find that the country risk profile and the regulatory environment influence how MNEs develop risk and uncertainty management capabilities. We find that defined threats that are perceived as likely to occur based on prior experience (e.g., earthquake risk) are combined with contextual factors such as national culture. These factors together influence how MNEs transfer and leverage knowledge, competencies, and network resources towards risk and uncertainty management capabilities.

Additionally, we identify that the regulatory environment and public–private coordination frame the interpretation of country risk profile by indirectly influencing MNE risk attitudes and behaviours related to expected and unexpected threats. It is important to distinguish between regulatory environment (Kostova, 1999), country risk profile and regulatory uncertainty (Kingsley et al., 2012), which may require different management strategies—such as shaping strategies—from other threats such as natural hazards (Rindova & Courtney, 2020; Tashman & Rivera, 2016).

We also identify organizational-level factors that influence the development of risk and uncertainty management capabilities. These factors relate to knowledge about risk and uncertainty (Vahlne et al., 2017) and to internal and external network resources (Gölgeci et al., 2019; Meyer et al., 2011) to respond to risk and uncertainty. We build on Kraatz and Zajac (2001) who emphasize that organizational resources (including knowledge and network resources in our conceptualization) underlie competencies and are distinct from them. Together, the three antecedents (country risk profile, regulatory environment, and organizational resources) suggest an alternative to how MNEs from advanced economies develop risk and uncertainty management capabilities (compared to EMNEs). For example, they point to the potential to systematically embrace advancing regulation through proactive corporate strategy (Fremeth & Richter, 2011; Sakhel, 2017), as opposed to the suggestion to embrace poor institutional quality in emerging markets by developing a capability to manage and leverage it in similar markets (Cuervo-Cazurra & Genc, 2008).

It is also important to consider how the cross-border transferability of capabilities is driven by country- and organization-level factors and their interplay (Matysiak et al., 2018). While Luo (2000) acknowledged that some capabilities will be more difficult to transfer than others (e.g., organizational capabilities are less transferable than technological capabilities), and Carney et al. (2016) pointed to the limits of the transferability of institutional capabilities, they

did not explore the transferability of risk and uncertainty management capabilities. Overall, our study goes beyond the traditional emphasis in IM regarding capabilities for managing political risk and corruption (Cuervo-Cazurra et al., 2018) or political uncertainty (Henisz, 2016). Instead, it explores a broader array of antecedents of capabilities for thriving amid global uncertainty (Zámborský, 2021).

This paper makes several contributions. First, we contribute to the research on antecedents of capabilities by extending the environmental and organizational factors conceptualized by Schilke et al. (2018) towards risk and uncertainty management in MNEs. This study finds that MNE risk and uncertainty management capabilities are driven by country-level factors, including country risk profile and regulatory environment, and organizational resources. Second, our analysis reveals new insights into the concept of risk and uncertainty management capabilities by identifying their elements (transferring and leveraging knowledge, competencies, and network resources across borders) and organizational enablers (knowledge about risk and uncertainty, internal and external network resources). While leveraging knowledge and competencies across borders (Mudambi & Swift, 2011) is recognized as an element of risk management capabilities (Lessard & Lucea, 2009), extant research has not stressed the importance of network resources as an antecedent of risk and uncertainty management capabilities.

Third, we clarify why and how the cross-border transferability of risk and uncertainty management capabilities may be limited due to environmental and organizational/relational factors (Kostova, 1999). We extend the theorization of capability transfer by Luo (2000) and Carney et al. (2016) towards risk and uncertainty management, suggesting limits to cross-border transferability not fully recognized by Lessard and Lucea (2009) and Cuervo-Cazurra et al. (2018). Specifically, we find that national differences in country risk profile, regulatory

environment, and local embeddedness of the MNE–host country relationship in external networks influence the transferability of risk and uncertainty management capabilities.

Overall, we expand conceptualizations of risk and uncertainty management capabilities from the traditional to non-market sources of risk and uncertainty (Oetzel & Oh, 2015). In so doing, we have contributed to extending capability theory from a dominant concern with markets (Teece, 2019) and industry dynamism (Schilke, 2014; Shi & Wu, 2011), to embrace general environmental uncertainty (Miller, 1992) and its varied nature and “mitigability” (Packard & Clark, 2020). While recognizing, assessing, and addressing threats, including uncertainty, are acknowledged in capability theory in international contexts (Matysiak et al., 2018; Petricevic & Teece, 2019), we extend the capability research in IM by conceptualizing the elements and antecedents of MNEs’ risk and uncertainty management capabilities and identifying factors that influence their cross-border transferability.

Finally, our study provides three managerial takeaways. First, we suggest that if managers recognize all types of risk and uncertainty, they can legitimately engage in scenario planning, as a complement to risk management. Second, risk managers should view their role as strategic (as contributors to value-creating capabilities), rather than just contingency planning. Third, managers should promote the cross-border transfer of risk and uncertainty management capabilities. Organizations need to develop capabilities to recover quickly from both local and global crises, by cooperating with local stakeholders to become flexible and adaptive to uncertain contexts (Sullivan-Taylor & Branicki, 2011).

This study has some limitations. In common with other qualitative research on risk management (e.g., Sullivan-Taylor & Wilson, 2009), it is based on a relatively small sample of organizations in one country. The size and the composition of the sample therefore limits the statistical generalizability of the findings. However, the theoretical sampling strategy used

was aimed at the inductive theorization of under-developed conceptual relationships that are not yet easily amenable to quantitative enquiry.

We see several avenues for future research regarding risk and uncertainty management capabilities. Further research with methods such as qualitative comparative analysis could study how antecedents interact and influence the risk and uncertainty management capabilities through various configurations. Further survey research measuring the construct of risk and uncertainty management capabilities could improve our understanding of this concept, for example with respect to reconciling routine reconfiguration between headquarters and subsidiaries (Riviere et al., 2020) or knowledge management practices (Xiong et al., 2021). In closing, we encourage more interaction between organizational capability and IM scholars (Elsahn & Benson-Rea, 2018; Ingršt & Zámorský, 2021).

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**TABLE 1**

Key concepts relating to risk and uncertainty management capabilities

<b>Concept</b>	<b>Definitions from the extant literature</b>
<b><i>Risk and uncertainty</i></b>	<p>Knight (1921) distinguished between true uncertainty, “that higher form of uncertainty not susceptible to measurement and hence to elimination,” and other forms of uncertainty and risk (p. 232).</p> <p>Teece et al. (2016) distinguished between risk, “associated with known outcomes where the probability of reoccurrences is well calibrated,” and uncertainty, “unknown unknowns” (p. 14).</p> <p>Müllner (2016) distinguished between “(partially) manageable risk” and “unmanageable, true uncertainty” (p. 801).</p>
<b><i>Risk</i></b>	<p>Alon and Herbert (2009) distinguished between macro-risk, “the risk across industries or all businesses in entire countries or geographic regions,” and micro-risk, “the risk affecting a particular firm, project, or industry” (p. 127).</p> <p>Lessard and Lucea (2009) distinguished between operational risks, “related with the fundamental, recurring activities of the company”; competitive risks, “linked to the activities of direct competitors and other actors operating in one’s industry”; institutional risks, “unexpected changes to the legal, normative, or social rules of how a firm is allowed to operate”; country risks “more pervasive macroeconomic sources of uncertainty that are at work in a particular country”; and world market risks, “unexpected changes in global prices and worldwide availability of capital and basic commodities” (pp. 297–298).</p>
<b><i>Uncertainty</i></b>	<p>Miller (1992) distinguished between general environmental uncertainties, “political, government, policy, macroeconomic, social and natural uncertainties”; industry uncertainties, “input market, product market and competitive uncertainties”; and firm uncertainties, “operating, liability, R&amp;D, credit and behavioural uncertainties” (pp. 314-319).</p> <p>De Beule et al. (2014) distinguished between endogenous uncertainty, “related to the investment itself and can often be found as relationship-specific uncertainty,” and exogenous uncertainty, “might take the form of either environmental turbulence or technological newness” (p. 139).</p> <p>Teece (2019) defined deep uncertainty as “the open set of unknown unknowns about which no forecast can be made” (p. 5).</p> <p>Packard and Clark (2020) distinguished epistemic uncertainty, “mitigable ignorance of pertinent but knowable information,” from aleatory uncertainty, “immitigable indeterminacy” (p. 766).</p>
<b><i>Risk management capability</i></b>	<p>Lessard and Lucea (2009) defined risk management capability as “the extent that a firm is able to manage certain types of risks better than its competitors” (p. 299).</p>
<b><i>Uncertainty management capability</i></b>	<p>Cuervo-Cazurra et al. (2018) defined uncertainty management capability as “the routines, processes and strategic solutions that form the basis of the capability of a firm to better deal with uncertainty in its interactions with the external environment” (p. 211).</p>

**TABLE 2**  
Summary of sample

<b>Method</b>	<b>Sector/Informant</b>	<b>Organization</b>	<b>Informant's job title</b>
<b>Focus group</b>	<i>Multinational</i> MNE 1b	Insurance Airline (2 informants)	Chief risk officer Emergency response and security consultant
	MNE 1c	Airline	Senior business continuity management advisor
	MNE 5	Banking Manufacturing Audit, tax and advisory (2 informants)	Operational risk manager Head of business risk Risk engineer Risk and business continuity advisor
		Consulting Consulting	Managing director Managing director
	<i>Domestic</i> Domestic 1 Domestic 3	Consulting Utility Transport Consulting	Manager Head of risk and resilience Governance and risk manager Manager
	<i>Public</i>	Facilities Health (2 informants) Tourism  Defence Local government Local government	Risk manager Safety and security manager Risk manager Senior emergency management advisor Risk manager Risk manager Risk manager
<b>Group interviews</b>	<i>Multinational</i> MNE 4	Consumables (2 informants)	People and culture lead Manager (finance/planning)
	<i>Domestic</i>	Utility Publishing	Risk and resilience advisor Managing editor
	<i>Public</i>	Agriculture Local government Utility Transport	Risk manager Risk manager Group risk manager Risk manager
<b>Individual interviews</b>	MNE 1b	Airline (2 informants in individual interviews)	Emergency response and security consultant
	MNE 1a	Airline	Former risk manager
	MNE 2	Retail	Country sales manager
	MNE 3	Audit, tax and advisory	Associate director (risk advisory)
	MNE 4	Consumables	Manager (finance/planning)
	MNE 5	Banking	Operational risk manager
	Domestic 1 Domestic 2 Domestic 3	Utility Transport Transport	Head of risk and resilience Head of systems/governance Governance and risk manager

**TABLE 3**  
Summary information about the interviewed MNEs

<b>Firm/ industry</b>	<b>Home Country</b>	<b>Countries of operation (2019)</b>	<b>New Zealand (NZ) operations (2019)</b>	<b>Global revenues US\$ (2019)</b>	<b>Risk and uncertainty management practices, processes, routines and approaches</b>
MNE 1 Airline	New Zealand	10–20 (mostly Asia-Pacific)	HQ in NZ, founded in the 1940s, nationwide network. Over 10,000 staff in NZ.	US\$1–10 billion	Collaboration around scenario planning; Computer-based risk training; Risk champions; Intelligence sharing across borders; Global code of conduct; Global “gold standard” approach to risk management, with minor local adjustments; Selecting diverse risk management staff
MNE 2 Retail	Sweden	50–100	Entered NZ in 2010s, three stores and most of 100– 200 staff in Auckland.	US\$20–50 billion	A risk profile for a country, country-specific tools to avoid or to hedge that risk; A global diversification/portfolio approach to risk management; Global risk management policy; Expats recombine old risk management routines with newly developed routines, reconfigure via learning
MNE 3 Advisory	Netherlands/ UK	100–150	Seven locations across NZ, over 1,000 staff, in the market for several decades.	US\$20–50 billion	Global rollout of risk training based on information, know-how and IP sharing; Network-based approach to uncertainty management; Global standardization of practices/processes; Distinction and integration between strategic and operational risk management approaches
MNE 4 Consumables	Switzerland/ US	150–200	Established sales office with 50–100 people, a nationwide network.	US\$50–100 billion	Locally focused uncertainty management because of a unique regulatory environment in New Zealand; Network-based, learning approach to uncertainty management; Collaboration- and trust-based, agile approach; Cultural training to transform/prepare for an unsettled environment
MNE 5 Banking	Australia	10–20 (mostly Asia-Pacific)	NZ operations acquired in the 1990s, a nationwide network, about 5,000 staff.	US\$10–20 billion	Leveraging off HQ’s risk profile towards subsidiary risk management; A framework for how to profile risk as a group policy; Building and embedding a ‘culture of risk’ through training and communication; Integration between macro-environmental and operational risk management

Source: company websites and interviews conducted for this study



**TABLE 4**

Data supporting country-level antecedents of MNE risk and uncertainty management capabilities

First-order concepts	Second-order themes	Representative quotations
Focused on specific risks and uncertainties (NZ)	Country risk profile defined by types of threat	<i>New Zealand is great at planning for earthquakes, they plan till their hearts' content. Throw anything outside of an earthquake, then they suddenly go it's in the too-hard basket. (MNE 1b)</i>
Perceived as a low-risk country with low uncertainty (NZ)		<i>In our [NZ] office, we don't have a security manager because we don't see the need really. (MNE 2)</i>
Low risk appetite, conservative attitude to uncertainty (NZ)		<i>A very conservative culture will dictate a more conservative approach to risk. (MNE 3)</i>
MNEs focused on quantifying risk / planning for continuity (Global)		<i>One of the risks might be information. Our technology systems go down due to a natural disaster such as an earthquake. So, we'll have business continuity controls so we can ensure critical process. (MNE 5)</i>
Use of scenario planning for extreme events (Global)		<i>We've got subject matter experts assigned to a continuing group of evolving projects that can make us build resilience, and build these strategies and scenario planning. (MNE 4)</i>
Strict and uncertain legal environment (NZ)	Regulatory environment linked to risk and uncertainty	<i>But we in New Zealand have an uncertain regulatory environment [in] which to compete. And so that business is locally focused, because New Zealand is identified as ... a leading [industry] regulation environment. (MNE 4)</i>
		<i>They will have rules and regulations that dictate how they need to provide capital for risk. (MNE 3)</i>
Distinction between expected, unexpected, and uncertain threats (Global)		<i>Aside from our risk teams we have also got a compliant function, so if that's legislation based then we would have our legal team interpret, say for example for the Civil Defence legislation we'll have our legal teams interpret the obligations. (MNE 5)</i>
Portfolio approach to hedging risk common among MNEs (Global)		<i>I'm not 100% sold on the all-hazards approach that Australia takes ... there is something to learn from that, because even though they do all hazards, their plan can transcend different events. (MNE 1b)</i>
Public-private coordination of disaster response services (NZ)		<i>We have an economic crisis in Turkey, but in Turkey we have maybe 50 stores. In the big scheme of our store portfolio, it doesn't really have a big impact. But then you have other threats ... if there's an import tax from China to the US it has quite a big impact. (MNE 2)</i>
		<i>We have clients across many sectors, including property, dealing with the likes of Civil Defence, dealing with the New Zealand Defence Force. So, all those contact points would have been areas to learn from and to bring back. (MNE 4)</i>

**TABLE 5**

Data supporting cross-border risk and uncertainty management capabilities

<b>First-order concepts</b>	<b>Second-order themes</b>	<b>Representative quotations</b>
MNEs seek cross-border benefits of organizational capabilities	Organizational resources enabling risk and uncertainty management capabilities	<i>We will obviously have a bigger focus on earthquakes in NZ ... But in terms of actual operational risks, that probably doesn't actually differ. (MNE 5)</i>
Risk and uncertainty management is tied to MNE structure		<i>Sometimes a [risk and uncertainty management] policy is good enough for New Zealand but not good enough for our company. (MNE 2)</i>
Uncertainty increases when value chains involve more countries		<i>Because one of the things there [in South America] was particularly around bribes and corruption. (MNE 1a)</i>
Dissemination of knowledge about risk/uncertainty across borders		<i>Much would have been learnt after an event like 9/11, where a lot of case study around these businesses had a lot of resilience to that event. Where aside from the information that they managed and the data that they had, the staff and the IP they would have had and the know-how. So, it would be, what can we learn from that? (MNE 3)</i>
Networks facilitate responses and management under uncertainty		<i>There's something to be said about this organization having a much higher collaboration. By requiring the agility, you require the trust. (MNE 4)</i>
Transferability benefits from the similarity of risks/emergency services	Transferability of risk and uncertainty management capabilities	<i>There's not a lot of difference in relation to how we manage risk [across countries] ... more for an organization that has significant operations in offshore locations. (MNE 1a)</i>
Cross-cultural differences can hinder transferability of capabilities		<i>We've got a question at the moment where there's a big difference between the Australian culture and the New Zealand culture, and I think most of it is around the strength of the cultural transformation project that was undertaken here to ready ourselves for an unsettled environment, which hasn't been as easy to undertake in Australia. (MNE 4)</i>
Transferability relies on proactive cross-border cooperation		<i>You have the global leadership expectations for example, and it's a lot about communication and believing in people and giving people a chance. (MNE 2)</i>
Cross-cultural and other training can help with best-practice transfer		<i>If we're concerned around any terrorism threats ... or pandemics, we may get that information and then bring it internally and then use it to package our training. ... And quite often it's rolled out globally. (MNE 3)</i> <i>Through training, communications, that's how we build that culture of risk and try to embed it into a position. Rather than say, the responsibility of managing risk is within this team of the bank. But trying to build it into something you would do without thinking. (MNE 5)</i>
Hiring managers from overseas can aid in the accumulation of cross-border transferability of risk and uncertainty management		<i>A lot of the experience that we've brought in the risk has been bought from overseas. So, a lot of our subject matter experts on risk are from overseas ... That could have an impact [on cross-border transferability of risk/uncertainty management practices] as well. (MNE 1b)</i>


**TABLE 6**  
Dimensions of the country risk profile

<b>Category of general environmental threats</b>	<b>Main sub-categories of threats (general/global)</b>	<b>Main sub-categories of threats in New Zealand (frequency of informant responses)</b>	<b>Examples of specific threat types from the interviews/focus groups in this study</b>
Technological	IT breakdown Cybersecurity Digital divide	Technological disruption (19) Cyberattack/fraud (19)	Technology systems go down due to a natural disaster, data theft
Natural	Natural disaster Natural resource crisis Climate-action failure	Environmental disaster (12) Climate change (11)	Earthquakes, floods, fires, extreme-weather events, sea-level rise
Social	Infectious disease Terrorist attack Livelihood crisis	Pandemic disease (10) Terrorist attack (7)	Pandemics, terrorist attacks, security threats, kidnapping, corruption
Economic	Debt crisis Asset bubble burst Commodity shock	Economic/financial crisis (9) Fuel/other price shock (8)	Foreign exchange crisis, oil-price shock, change in terms of trade
Regulatory/ Other	Regulatory upheaval Trade policy shift Political shock	Policy shift/protectionism (6) Political/geopolitical (4)	Regulatory change, adverse legislation, new import tariffs

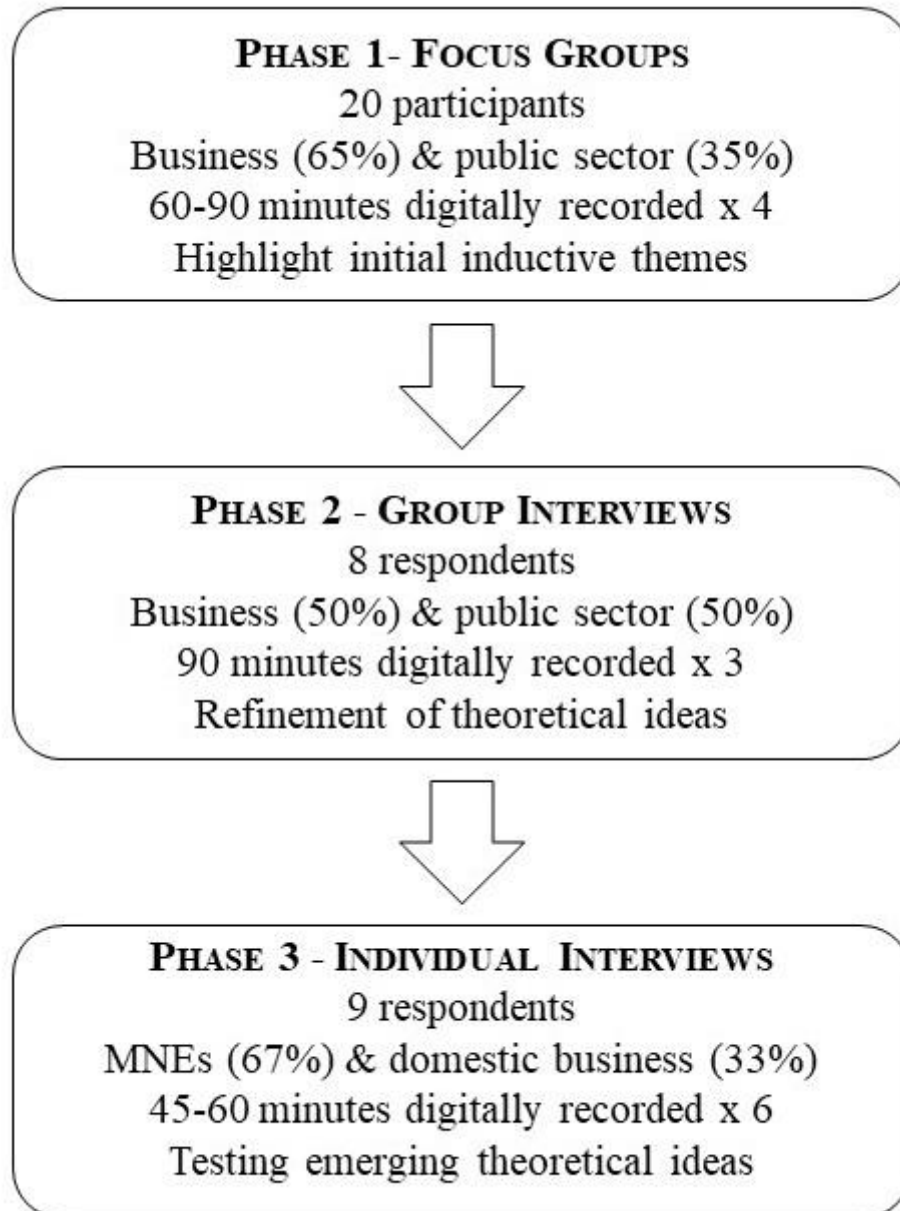
Note: We define the country risk profile as “a firm’s profile of risks and uncertainties encompassing relevant general environmental-threat types for each of its countries of operation.” The categories and sub-categories of the general environmental threats build on Cavusgil et al. (2020), Miller (1992), Lessard and Lucea (2009), Oetzel and Oh (2015) and World Economic Forum (2021). Column 3 (sub-categories of threats in New Zealand) is based on risks and uncertainties prioritized in organizations in this study (frequency of responses from our 34 participants/informants). Column 4 shows examples of specific types of threats.

**FIGURE 1**

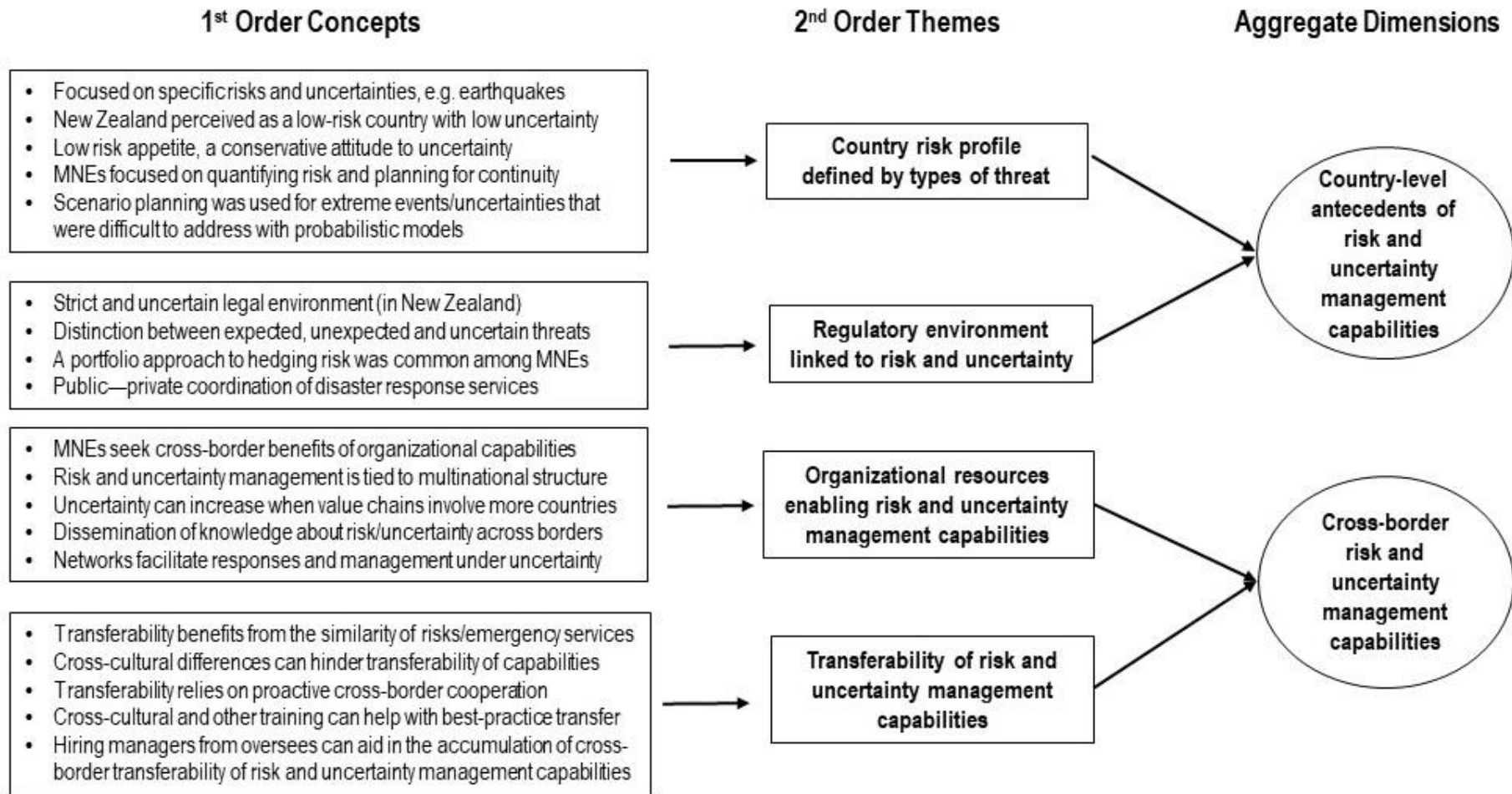
A continuum perspective on strategic management of risk and uncertainty

			Supporting studies
<b>Nature of risk and uncertainty</b>			
Extreme cases of risk	Mixed cases of risk and uncertainty	Extreme cases of uncertainty	Rizzo & Dold (2021)
Measurable	Partially measurable	Unmeasurable	Knight (1921)
Can be eliminated	Can be partially eliminated	Impossible to eliminate	Knight (1921)
Known outcomes with probability of reoccurrence well calibrated	Known unknowns with probability of reoccurrence not well calibrated	Unknown unknowns	Teece et al. (2016)
Manageable	Partially manageable	Unmanageable	Müllner (2016)
Mitigable	Partially mitigable	Unmitigable	Packard & Clark (2020)
<b>Risk and uncertainty management strategies and approaches</b>			
Predictive strategies/mitigation	“Toggling” between mitigation and navigation	Non-predictive/navigation/coping/capitalizing	Packard & Clark (2020)
Rational/intellective approach	Mix of rational and intuitive approaches	Intuitive/judgemental approach	Rizzo & Dold (2021)

**FIGURE 2**  
Three-phase research design

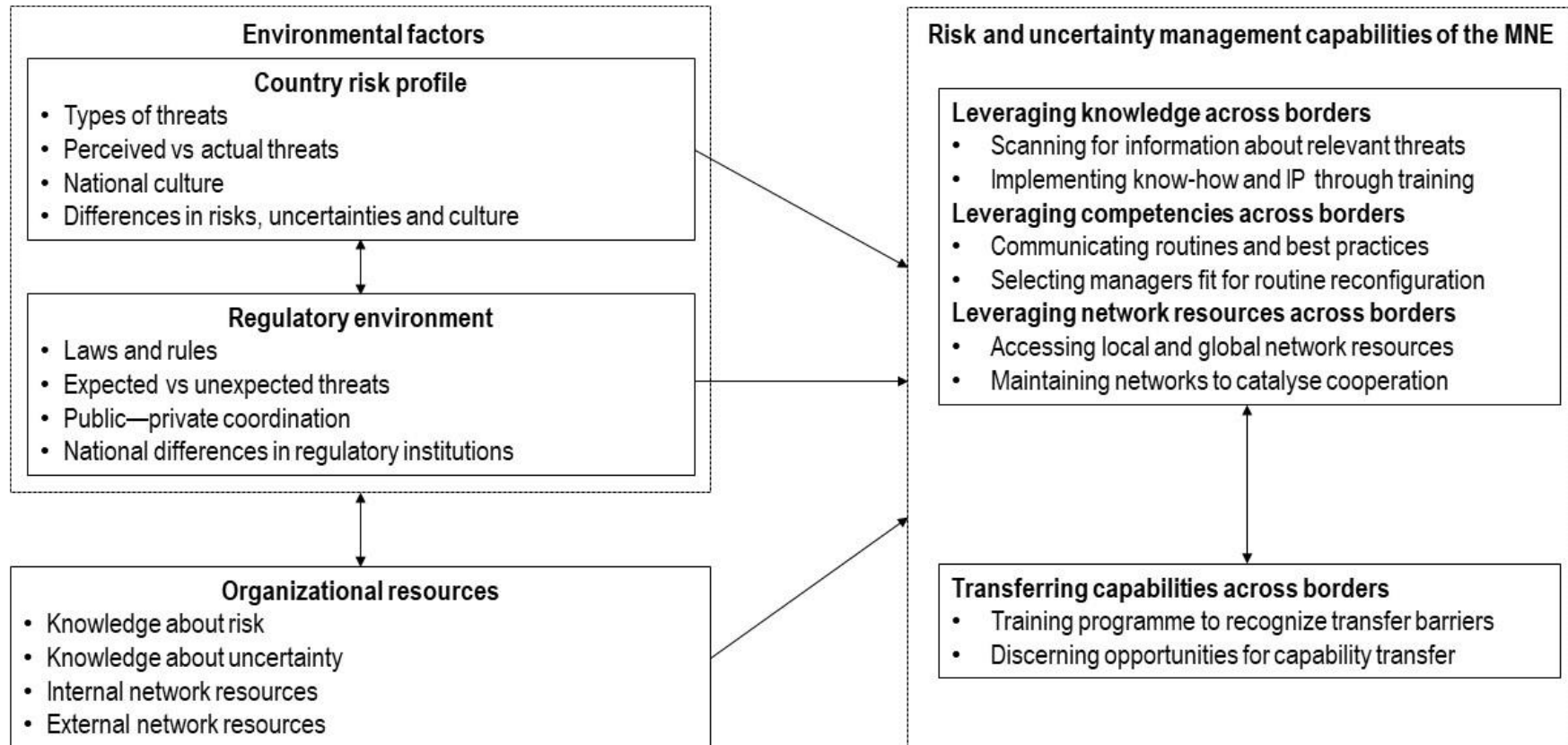


**FIGURE 3**  
Data structure



**FIGURE 4**

Model of antecedents of MNE risk and uncertainty management capabilities



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