Special track: Inter- and intra- organizational consequences of business relationships
Competitive paper

Inter- and Intra-Organizational Business Relationships – Complement or Conflict?

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AbstractIn this paper we examine whether MNEs are, or can be, embedded in both inter-organizational and intra-organizational business relationships.As part of our research, we also examine the antecedents of this'dual organizational embeddedness', namely thelocal institutional environmentand absorptive capacity. Finally, we examine whether foreign MNEs or solely domestic companies are more dually embedded in inter- and intra-organizational businessrelationships. The context of our study is the small, open economy. We used a survey instrument tocollect data from the largest 500 firms operating in Finland and in New Zealand, receiving a total of 264 responses.Our findings suggest dual embeddedness is difficult to achieve and, hence, units are likely to be more embedded ineither inter- or intra-organizational business relationships. We also find that the antecedents vary for inter- and intra-organizational business relationships, and only local suppliers arerelated with dual organizational embeddedness New Zealand.Most importantly, MNE units with high R&D spending are more likely to be embedded in inter-organizational business relationships in both countries. Comparison of solely domestic companies and MNEs indicates no difference in terms of being embedded inter-organizational networks. Hence, despite MNE's superior capacity to manage and transfer knowledge, we do not find evidence of MNEs being superior sources of resources to local actors.

Key words: Dual embeddedness, multinational enterprises, business relationships

INTRODUCTION

In order to take advantage of globalization, multinational enterprises (MNEs) have relationships with local actors in the host countries as well as other units of the corporation. As such, they have capacity to combine firm-specific knowledge with expertise retrieved through relationships with host country actors, which allows MNE units to act as 'bridges' between host country industry and other units of the MNE (Castellani and Zanfei, 2006; Scott-Kennel, 2007). Hence, MNE units manage bothinter- and intra- organizational business relationships butto what extent arethey capable of beingembedded in both networks simultaneously? Research by Forsgren, Holm and Johanson (2005) suggests a trade-off between inter- and intra- organizational network embeddedness. In other words, the more the MNE unit is embedded in inter- organizational relationships, the less it will be embedded in the intra- organizational relationships (and vice versa).

Yet, the interplay between internal organization and inter-organizational interaction has become increasingly important as specialized companies are more dependent on their external networks for innovation, competitiveness and capability (Bocconcelli and Håkansson, 2008). From MNEs' perspective, this dual embeddedness in both networks requires operational challenges to manage both inter- andintra-organizational relationships spanning international boundaries and be sufficiently embedded in both (Meyer et al. 2011). MNEs aim to absorb localized knowledge via access to local skills and resources (Veugelers and Cassiman, 2004) and the level of absorption rises as the level of MNE embeddedness in the local knowledge production network rises (Gassler and Nones 2008). On the other hand, the dual embeddedness has important implications also for the development of firm-specific advantage for host economy firms (Forsgren et al. 2005) and therefore local companies should take advantage of the MNE embeddedness.

This notion of MNE unit dual embeddedness in inter- and intra- organizational business relationships is the focus of this paper and is examined from three different perspectives.First, we study to what extent MNE units are capable of being embedded in inter- and intra- organizational business relationshipssimultaneously. Second, we focus on the antecedents of dual embeddedness by examininghow host country institutional factors, and absorptive capacity of both host country firms and the MNE unit. Along with Scott (2001) and Figuieredo (2011), we argue that MNE unit's response to the local institutional framework may reflect to its engagement in dual embeddedness. We also examine the absorptive capacity of the host country (Criscuolo and Narula, 2008) and the focal MNE unit(Cohen and Levinthal, 1990) in order to examinewhether absorptive capacity is positively related to dual embeddedness. Third, we evaluate whethermultinationality (versus solely domestic companies) enforces embeddedness in inter-organizational business relationships. We define dual embeddedness as resource exchange between the focal unit and actors in inter- and intra-organizational business relationships. More specifically, we examine R&D related resources because we argue that they are most likely the building blocks for new knowledge creation and innovations.

Our focus is on small open economies (SMOPEC). Despite the disadvantages due to market size, SMOPECs are often stable environments to conduct business in. Yet,inter- and intra-organizationalrelationships and outcomes, resource transfer and firm development have received insufficient attention within the small open economy context (Scott-Kennel 2008). This is apparent despite the potential for mutual learning through foreign-local firm interaction (Benito et al. 2002). Local and global firms characteristically possess complementary resources since innovative (and often small) local companies frequently lack reputation and resources relating to size and scope, which are typically strengths of MNEs so combining them can facilitate innovatory and commercialization success (King et al. 2003). Therefore, the mutual embeddedness of MNEs and

local industry actors determine how much they potentially benefit from each other. Since there has been minimal cross-country comparison of the role of MNEs in small advanced economies (Scott-Kennel 2008), we compare MNEs' dual embeddedness in two small open economies (SMOPEC), Finland and New Zealand.

Our results support the findings of previous studies which suggest that dual embeddedness is difficult to achieve (Forsgren et. al., 2005; Asmussen, Foss & Pedersen, 2011). Instead of being strongly embedded in both networks and acting as strong "bridges" between local environment and company's internal hierarchies, the MNE units examined were likely to be embedded either ininter- or intra- organizational business relationships. In terms of host country's absorptive capacity, our empirical analysis indicates that thefavorable presence of local suppliers increases the likelihood that MNEs are more embedded in inter- and intra- organizational business relationships in New Zealand. We also found that the MNE unit's absorptive capacity measured by R&D spending is positively related to inter- organizational business relationships but not to intra- organizational ones. Finally, we examine the differences in embeddedness in inter- organizational networks of solely domestic companies and MNEs. Despite MNEs' superior capacity to manage and transfer knowledge, we do not find evidence of MNEs being more embedded in inter-organizational networks than solely domestic companies.

Our research aimsto contribute to the discussion of dual embeddedness.The paper is unique in terms of approach (inclusion of both inter and intra-organizational business relationships) and coverage (the majority of research is single country or focused on large developed or emerging economies, e.g. US and China), and thus, addresses calls for more contextual-specific research in the literature (Michailova& Mustaffa, 2011). The paper is set out as follows.The analytical framework for the study, leading to the hypotheses is presented in the following discussion.Then the methodology used for the empirical data collection and analysis is presented.Results, discussion and conclusions follow.

ANALYTICAL FRAMEWORK

The focus of research on the multinational enterprises has evolved from centrally controlled organizations in which firm-specific advantages were created in headquarters and disseminated to subsidiaries, to decentralized structures where firm-specific advantages can originatefrom any innovative units worldwide (Andersson and Forsgren, 2000).In the latter approach,MNE unitsare not onlyembeddedinternally within the global corporate network but also externally viarelationships withlocal actornetworks, including customers, suppliers, and regulators (Ghoshal and Bartlett, 1990). Both intra and inter-organizational business relationshipscan act as drivers to local innovation subsequently adapted, adopted and advanced at global levels by the MNE.

We define inter-organizational embeddedness as intentional resource exchange via business relationships between the focal firm and its customers, suppliers and other partners (e.g. alliances). Resource exchange can take place as arm's length (market) transactions or long-term collaboration with non-affiliated partners (Giroud and Scott-Kennel, 2009). While arm's length transactions don't require intensive involvement from the organizations, collaboration requires active involvement from both parties. The importance of including relationships with different intensities has been emphasized by Gadde and Snehota (2000), since "company can be highly involved with only a limited number of suppliers and needs a variety or relationships – each providing its different benefits" (pp. 305). Intra-organizational embeddedness, on the other hand, is defined in this paper

as intentional resource transfer via business relationshipsbetween the focal unit and other units of the corporation, including headquarters and subsidiaries.

We utilize the theoretical framework developed by Figueiredo (2011) in our analysis (see Figure 1). He examined "the nature of MNE [intra- and inter-firm] embeddedness as a strategic asset-seeking strategy and its role in the subsidiary's competitive performance" (p. 418). We divide our research in three sections. First, we examine whether MNE units are indeed dually embedded. Second. weconcentrate on the antecedentsofinter- and intra-organizationalbusiness relationships, which was not the focus of Figueiredo but one which he identified as an avenue for future research. Third, we examine whether multinationality has as an impact on embeddedness in inter-organizational business relationships.

<center>**Figure 1 goes about here**</center>

<center>**MNE units as bridges**</center>

Figueiredo's model (see Figure 1) aims to examine whether inter- and intra- organizational business relationships are developed simultaneously so that the unit is dually embedded (Figueiredo, 2011). He found that subsidiaries that developed knowledge-intensive intra- and inter-organizationalrelationships simultaneously achieved higher levels of innovation performance. Also increased frequency and improved quality of relationshps over time had a positive effect (*ibid*). However, as Figueiredo stated, inter-and intra-organizationalrelationships are difficult to obtain simultaneously and hence in line with Forsgren et al. (2005) we argue that units are likely to be more embedded in either inter or intra-organizational business relationships.We aim to test this proposition with the following hypothesis:

Hypothesis 1. *MNE units are likely to be more embedded either in inter-organizational or intra-organizational business relationships, not both.*

<center>**Antecedents of Inter- and Intra-Organizational Business Relationships**</center>

This section discusses the antecedents of the inter- and intra-organizational business relationships that Figuereido (2011) briefly outlines. First, institutional factors are examined in order to explore how appropriate the macro-level host country environment is for conducting business and creating linkages. Second, the host country's absorptive capacity examines the industrial infrastructure and local companies' capabilities in meso level. Third, the MNE unit's absorptive capacity examines the unit in micro level. These three elements are examined in this section followed by hypotheses.

Institutional environment
Institutional environments, for the purposes of this paper, can be broadly defined by "the rules and belief systems as well as the relational networks that arise in the broader societal context" (Scott and Meyer, 1983 (p. 14); North, 1990; Powell & DiMaggio, 1991). The institutional environment sets the conditions for innovative activity in networks by defining the formal rules and informal constraints that guide human, and also company, behavior (North, 2005).

In recent years, institutional theory has emerged as an important approach in the field of international business (Devinney et al. 2011). Institutional theory in general is useful in the study on relationships because collaborations do not occur in a vacuum but instead, institutional fields

<center>4</center>

provide the rules and resources that control collaboration, while on the other hand collaboration is a source of innovation that shapes the ongoing structuration of the institutional fields of the participants (Phillips et al. 2000). The legal, social, economic, and political factors help us to understand how the bargaining power between collaborators is distributed and who has control over resources (Aguilera, 2011). Still, the connection between inter-organizational relationships and the dynamics of institutional context remains largely unconsidered in existing literature (Cantwell et al. 2010).

Vital ingredients of institutions are regulative systems, normative systems and cultural-cognitive systems (Scott, 2001). The author explains that institutions constrain and regularize behavior by setting rules, monitoring and having sanctions, while normative rules include values and norms of behavior. The cultural-cognitive elements, on the other hand, are shared understandings that constitute social reality and the frames though which meaning is made (Scott, 2001). The author emphasizes that, although laws are regulative, they also have normative and cognitive dimensions because there may be ambiguous and controversial codes of conduct. For instance, giving and accepting bribes are universally illegal, but still corruption is acceptable and a norm in many countries. Therefore, government related factors have a strong impact on the business activities in the host country. Especially compliance costs reduce efficiency, and may increase the burden of costs of working with external network partners.

Drawing on Scott's (2001) research on local institutional frameworks and other studies in the area, we set out of the first hypothesis to test the relationship between institutional factors and dual embeddedness of the MNE.

Hypothesis 2. *Favorable compliance costs are positively associated with embeddedness in inter- and intra-organizational business relationships.*

In all our hypotheses we propose that if the antecedents of business relationships are favorable, MNE units are likely to be more embedded not only in the inter-organizational but also in intra-organizational business relationships. This is because the MNE units create new knowledge and assets by combining resources accessedthrough inter- and intra-organizational business relationships, and then leverage them to the MNE level (Forsgren et al. 2005). Hence, our hypotheses consider dual embeddedness.

In order to balance our institutional view we also incorporate the absorptive capacity of the environment and MNE unit to our analysis of dual embeddedness.

Host country's absorptive capacity
MNE unit's engagement in dual embeddedness may also be a result of host country's absorptive capacity (Figuereido, 2011) which consists of elements that determine the country's ability to efficiently absorb and internalize knowledge available at leading sources (Criscuolo and Narula, 2008). These elements can include human and financial capital, and physical and knowledge-based infrastructure.

Typically absorptive capacity is examined at firm-level (Cohen and Levinthal, 1990) and little research has examined the absorptive capacity at country level (Criscuolo and Narula, 2008). However, Criscuolo and Narula (2008) point out that international technology transfer literature has associated national absorptive capacity with national technological capabilities. The primary determinant behind both of them is human capital (ibid). Qualified human resources are essential in monitoring and evaluating the relevance of external knowledge, as well as integrating these

technologies into productive activities (ibid). In addition to skilled people, capable local suppliers are important contributors to host country's absorptive capacity. Especially industrial marketing and purchasing (IMP) research has focused on supplier relationships and according to Gadde and Snehota (2000), the supplier relationships represent one of the most important assets that the company can utilize. The impact of specific supplier relationship depends on how it fits the focal company's operations and strategy (ibid). Along their argument, we contend that capable suppliers have a highertechnological capabilities and absorptive capacity, which leads to more intensive inter- and intra-organizational business relationships.

Physical and knowledge infrastructure also support country-level technological accumulation by supplementing and supporting company-specific innovation (Criscuolo and Narula, 2008). Physical infrastructure includes basic structures such as ports, roads and telecom. Knowledge infrastructure, on the other hand, refers to public research institutes, universities, intellectual property protection and other organizations that promote science (Criscuolo and Narula, 2008).

Local skills and competencies in terms of labor and suppliers supported by solid educational and physical infrastructure enable MNEs to tap existing innovatory networks rather than rely solely in-house employees, particularly where such labor may be scarce in the context of the SMOPECs. Along with Criscuolo and Narula (2008) we propose that dual embeddedness is conditioned by the host country's absorptive capacity, hence:

Hypothesis 3.*Skilled labor, local suppliers as well as physical and knowledge infrastructure is positively associated with embeddedness in inter- and intra-organizational business relationships.*

In addition, a country's financial system has an impact for local entrepreneurship and innovation (Bowen & De Clercq, 2008). Adequate financing for new companies creates dynamic innovation environments in which information and ideas are exchanged (Hautamäki, 2010). In other words, local players are more able to invest in activities such as R&D, which increases their ability to accumulate knowledge. Thus, we propose:

Hypothesis 4. *Access to capital in the host country financial environment is positively associated with embeddedness in inter- and intra-organizational business relationships.*

MNE unit's absorptive capacity
The third condition for the MNE unit's engagement in dual embeddedness may be its previously accumulated capabilities (Figuereido, 2011). Absorptive capacity at the firm level indicates firms' ability to recognize the value of new external information, assimilate it and commercially apply it (Cohen &Levinthal, 1990).

Criscuolo and Narula (2008) point out that the absorptive capacity, as defined by Cohen and Levinthal (1990), refers to the ability to absorb available knowledge. It declines as a firm approaches the frontier because even though the capacity would be higher, there is no new knowledge (in theory) to absorb (ibid). Capability to absorb, on the other hand, increases constantly as a firm reaches the frontier because a firm is more capable to absorb new knowledge even though, in theory, there is no new knowledge they are able to absorb (Criscuolo and Narula, 2008). Hence, according to Cohen and Levinthal (1990) the stock of knowledge is finite (Criscuolo and Narula, 2008) so as the MNE unit approaches to frontier firms, the absorptive capacity would decline. However, MNEs are in superior position to be exposed to new knowledge, ideas and opportunities available via local and corporate network linkages (Andersson, 2002), so even though they and their partnering firms would be frontier, we argue that they are still able to absorb new knowledge.

According to Criscuolo and Narula (2008), firms are better able to use externally available information if they conduct their own R&D because firms can increase their ability to absorb by increasing R&D efforts. Thus, we propose

Hypothesis 5. R&D spending is positively associated with embeddedness in inter- and intra-organizational business relationships.

The Influence of Multinationality

In this paper we also argue that MNEs act as 'bridges', sharing resources between their corporate and local networks (Andersson, Forsgren and Holm, 2002; Scott-Kennel, 2007). This suggests that, compared to solely local companies, internationally and locally embedded MNEs have access to a much wider pool of resources. Therefore, they have the potential to share more resources with local companies.

However, resource availability does not necessary mean resource sharing as MNEs seek to protect proprietary advantages (Dunning, 1988).Domestic companies are also much more likely to conduct all value chain activities locally, and in the absence of connections with offshore units will thus rely much more heavily on local networks.This makesinter-organizational resource sharing more likely by domestic firms.Thus, we put forward the following hypothesis for testing:

Hypothesis 6. MNEs are more embedded in inter-organizational business relationships than solely domestic companies.

METHODOLOGY

Country profile and demographics

Finland and New Zealand, with populations of 5.3 million and 4.3 million, respectively (CIA World Fact Book, accessed 8.12.2011) and open trading regimes are both considered to be small open economies. Both countries, although located somewhat in the periphery of global commerce, are increasingly advanced and play an active role in innovation and global trade. Both Finland and New Zealand shared the title of the least corrupted country in the world with Singapore in 2010 by scoring 9.3 on scale 0-10 (Transparency International 2010). According to the International Country Risk Guide, Finland was the least risky country in the world, followed by Luxembourg, Norway, Austria and New Zealand (PRS Group, retrieved 8.12.2011). All these five countries are SMOPECs so any of them could have been selected to this study. However, a comparison of countries in two different regions provides more differences in terms of business environment. Since the first four countries are in Europe, New Zealand is the most suitable country to compare with Finland. Since Finland and New Zealand have very different legal, cultural and political histories, they are a good pair to examine location-specific differences.

Finland experienced a structural change from previously strong metal, engineering and paper manufacturing industries towards R&D based high tech products during the late 20th century (Pentikäinen and Luukkainen, 2000). ICT, forest, metal and chemical industries are the key clusters in Finland and all of them have in common that they are technology driven and strong in R&D (Steinbock 2006). During the past 20 years, New Zealand has transformed from an agrarian to an

industrialized economy with technological capabilities (CIA World Fact Book, accessed 8.12.2011). It remains a natural resource based economy whose primary exports are agricultural products (particularly dairy), tourism and education. Both location-specific (a temperate climate in a stable, English-speaking country) and technological developments (refrigeration, dairying and other agricultural technology) have contributed to success in these industries. R&D, innovation and technologically-based industry is of crucial importance to the future growth and development of both countries, hence the focus of this research.

Sample and data collection

We used a survey instrument for collecting data. The questionnaire was developed in English and thisoriginal version was used in New Zealand.Both English and Finnish versions were made available to respondents in Finland.The data was collected between September 2008 and April 2009 in Finland and between August 2008 and July 2009 in New Zealand. The sample population consisted of the largest 500 firms operating in Finland and in New Zealand, respectively. The respondents were selected based on their annual revenues in 2007. Respondents were the chief executive officer (CEO) or another top level manager. In Finland, of the 500 surveys sent, we received 81 fully completed surveys and three partial responses,giving a response rate of 17.2 percent. In New Zealand, of the 500 companies surveyed, 174full responses and 6 partial responses were received, giving a response rate of 36 percent.

Table 1 shows the respondent profile. We divided the respondents in three groups based on their level of internationalization and ownership: (1) domestic firms (solely Finnish/New Zealand firms that operate only in their home country); (2) national (Finnish/ New Zealand) MNEswith less than 50 percent of foreign ownership, typically main or divisional headquarters; (3) foreign MNEswith more than 50 percent of foreign ownership,typically subsidiaries or affiliated companies located in Finland/ New Zealand.While international business research traditionally examines MNE subsidiaries, the unit of analysis in our study is the MNE unit, which can be either a headquarters or a subsidiary. We do not adopt the traditional headquarters-subsidiary polarization of most studies in the field of international business research, because our interest does not lie in the power relations between headquarters and subsidiaries but rather on the external institutional environments' influences on the MNE unit, whether it is a subsidiary or headquarters. In this regard, we also include all MNE units within the local institutional context, in other words, both foreign MNE subsidiaries and national MNE headquarters. Solely domestic companies (also in the top 500 largest companies) are also included by way of comparison with the MNEs.

Table 1 goes about here

Variables

Dependent variables
Inter- and intra-organizational networks were measured by 'technical know-how, R&D and innovation' resources exchanged by the focal company. Table 2 lists the variables used in our analysis. We measure MNE units' embeddedness in inter-organizational and intra-organizational business relationshipsby asking respondents, "to what extent does the unit contribute/ receive technical know-how, R&D and innovation resources to/from your local partners and other units of the company".The responses were given on a 7-point Likert scale, with an option to select "not applicable" if needed. Likert scales are superior to lesser point scales and widely accepted as an

appropriate survey instrument. They are itemized rating scales that are commonly used in profile analysis where mean values are calculated and compared with statistical analyses (Malhotra and Birks 2007).It should be emphasized that the resources received and contributed by the focal unit were calculated separately in order to understand the direction of the resource flow.

Inter-organizational embeddedness was constructed as a mean value of resources received/contributed to local suppliers; customers; and other business partners. Only the responses that had linkages with all these three types of partners were included. On the other words, if a respondent indicated that linkages with e.g. customers are "not applicable", they were excluded from the analysis. The intra-organizational embeddedness is measured by the resources received/contributed to other units of the focal company worldwide. As a result, we have four dependent variables (RECEIVE INTER-ORG, CONTRIBUTE INTER-ORG, RECEIVE INTRA-ORG, CONTRIBUTE INTRA-ORG) per country. We analyze the dependent variables by usingpaired t-tests and ordinary least squares (OLS) regression.

Table 2 goes about here

Independent variables
Our model consists of seven independent variables explaining dual embeddedness. As Table 2 illustrates, the independent variables measuring the macro and meso environment (COMPLIANCE COSTS; SKILLED LABOR; LOCAL SUPPLIERS; PHYSICAL INFRA; KNOWLEDGE INFRA; CAPITAL ACCESS) were also measured by 7-point Likert scales indicating how favorable these aspects of Finland/ New Zealand business environment are for the firm. The seventh independent variable, lnR&D SPENDING, is the natural log value of the percentage of the total sales that the unit spends in R&D (see Table 2).

Control variables
Control variables are lnSIZE; HQ LOCATION; STRATEGY; AUTONOMY; and company type (DOMESTIC; NATIONAL_MNE; and FOREIGN_MNE). LnSIZE is a natural log value of the number of employees in the local unit. HQ LOCATION measures whether the unit is in the same country that HQ (or is HQ), or in the same region (Europe / Australia) or outside this region. We make the division based on the country of the HQs because the extant literature reveals that MNEs tend to keep important activities, such as R&D and innovation, close to their headquarters (Dachs et al. 2007; Castellani and Zanfei, 2006). Therefore, it is meaningful to examine the distance between the unit and HQ.

STRATEGY variables comprise factor scores based on the responses to three questions oriented towards local strategy (local markets, competition and adaptation) and three towards global strategy (global economies of scale, competitive position and interconnected operations) (adapted from (Harzing, 2001). Before running factor analysis for strategy, the variables testing local strategy had to be counter coded so that they were in line with the first three questions that measure global strategy. Since the answers for local orientation were counter-coded, the coefficient of STRATEGY1 (local strategy) has to be interpreted so that the positive relationship refers to more global orientation. In case of Finland, the Cronbach's alphas were 0.7441 for STRATEGY1 and 0.6725 for STRATEGY2. In case of New Zealand, STRATEGY1 was explained by all three local strategy questions, with a Cronbach's alpha of 0.7123. However, STRATEGY2 variable was explained only by the first global question regarding the 'economies of scale'.

AUTONOMY is based on factor analysis of the unit's autonomy in (1) R&D, product (service) design, (2) production, service delivery, production processes; (3) procurement, choice of suppliers; (4) marketing, distribution and sales. In the cases of both Finland and New Zealand, the factor analysis resulted in one combined factor with Cronbach's alphas 0.8947 and 0.8435, respectively.

We control for the company type based on whether solely domestic companies (DOMESTC) differ from national (Finnish or New Zealand) MNEs (NATIONAL_MNE) and foreign MNEs (FOREIGN_MNE)s.

RESULTS

Hypothesis 1 states that MNE units are likely to be more embedded either in inter-organizational or intra-organizationalbusiness relationships, not both.We utilize paired t-tests to examine the differences in means of inter-organizational and intra- organizational embeddedness in order to determine whether MNE units are likely to be embedded either internally in their corporate networksor externally within local business networks, or both. Table 3 indicates that in Finland, we are 99% confident that national MNEs contribute significantly more R&D related resources via intra-organizationalthan inter-organizational business relationships(means 5.12 and 4.05, respectively) and 90% confident that foreign MNEs contribute significantly more R&D related resources via intra-organizational than inter-organizational business relationships(means 5.00 and 3.48, respectively).

In terms of business relationshipsformed by the New Zealand sample, we are 99.9% confident that national MNEs contribute significantly more R&D related resources via inter-organizational than intra-organizational business relationships (means 5.13 and 4.22, respectively). In contrast, we are we are 99.9% confident that foreign MNEs receive significantly more R&D related resources via intra-organizationalthan inter-organizational business relationships (means 5.33 and 3.27, respectively). The results support Hypothesis 1 that MNEs (national and foreign) are not likely to be strongly dually embedded.

Table 3 goes about here

Institutional antecedents

Hypothesis 2 states that favorable compliance costs are positively associated with embeddedness in inter- and intra-organizational business relationships. Table 4 shows the estimated ordinary least squares (OLS) regression coefficients for the inter- and intra-organizational business relationships of the surveyed units. Models 1-4 apply to respondents in Finland and Models 5-8 to New Zealand. Model 6 shows that the coefficient for COMPLIANCE COSTS is negatively ($p<0.01$) related with CONTRIBUTE INTER-ORG in New Zealand. Since COMPLIANCE COSTS measures the favorability of the regulatory compliance costs in Finland/ New Zealand, the results indicate that the more favorable the compliance costs are, the less the companies are contributing R&D related resources to their local partners in New Zealand. Thus, this result does not lend any support to Hypothesis 2.

Hypothesis 3 states that host country absorptive capacity in terms of skilled labor, local suppliers as well as physical and knowledge infrastructure is positively associated with embeddedness in inter- and intra-organizational business relationships.Model 4, shows the coefficient associated with SKILLED LABOR is negative (p<0.05) in relation to CONTRIBUTE INTRA-ORG, indicating that the availability of skilled labor in Finland has a negative relationship with resources contributed to the other units of the company. Coefficients associated with LOCAL SUPPLIERS are positively related with CONTRIBUTE INTER-ORG (p<0.01) in Finland, and RECEIVE INTER-ORG (p<0.01) and RECEIVE INTRA-ORG (p<0.01) in New Zealand. Hence, the more favorable the suppliers are, the more dually embedded the MNE units are. Models 5 and 6 also show that PHYSICAL INFRA is negatively related with RECEIVE INTER-ORG (p<0.001), CONTRIBUTE INTER-ORG (p<0.05) and RECEIVE INTRA-ORG (p<0.1) in New Zealand. This indicates that physical infrastructure (e.g. ports, roads, telecom) have a negative relationship with dual embeddedness in New Zealand. Contrarily, in Models 5 and 6, the coefficient associated with KNOWLEDGE INFRA is positively related with RECEIVE INTER-ORG (p<0.001) and CONTRIBUTE INTER-ORG (p<0.05). Hence, knowledge infrastructure (e.g. universities) has a positive relationship with inter-organizational embeddedness in New Zealand. We find only partial support for the thirdhypothesis since only the presence of local suppliers is related to MNE unit's inter- and intra-organizational business relationships.

The fourth hypothesis argues that host country absorptive capacity in terms of access to capital is positively associated with inter- and intra-organizational business relationships. We find no support for this hypothesis since CAPITAL ACCESS is not significant (p>0.10) in any of the eight models, indicating that access to capital is not related to inter-organizational relationships.

The fifth hypothesis states that the host country absorptive capacity in terms of R&D spending is positively associated with embeddedness in inter- and intra-organizational business relationships.Models 1-2 and 5-6 provide support for this hypothesis since the coefficients associated with lnR&D SPENDING are positively related with RECEIVE INTER-ORG (p<0.05) and CONTRIBUTE INTER-ORG (p<0.10) in both countries. This supports Hypothesis 5 only partially since we do not find a relationship between R&D spending and intra-organizational relationships.

Size. The coefficients associated with lnSIZE are positively related to RECEIVE INTER-ORG (p<0.01) in New Zealand and with RECEIVE INTRA-ORG (p<0.05) in Finland. Larger units in Finland receive more resources via intra-organizational business relationships, while New Zealand counterparts receive more resources from via inter-organizational relationships. The results suggest that the larger the MNE unit, the greater its resources and also its capacity to take advantage of dual embeddedness.

Headquarters' location. Table 3 illustrates that in Finland the coefficient associated with HQ LOCATION (Model 1) is negatively related with RECEIVE INTER-ORG (p<0.10). Hence, the further from Finland the HQ is located, the less the MNE units receive resources via inter-organizational relationships. This may suggest that greater distance between MNE HQs and units increases the difficulties associated with global integration and therefore they are more controlled by HQs. Due to strong correlations with control variables, we had to omit HQ LOCATION from the New Zealand models.

Strategy. Models 2-4 (Finland), indicate that the coefficients of STRATEGY2 are positively related to CONTRIBUTE INTER-ORG (p<0.05), RECEIVE INTRA-ORG (p<0.001) and CONTRIBUTE INTRA-ORG (p<0.001). The results suggest that companies oriented towards global economies of scale, competitive position and interconnected operations are strongly dually embedded. Furthermore, Models 6 and 8 show that the coefficient for STRATEGY1 is negatively related with CONTRIBUTE INTER-ORG (p<0.05) and CONTRIBUTE INTRA-ORG (p<0.05) in New Zealand. Since this variable is counter-coded, this suggests that in New Zealand, those units that do not follow local strategy (local markets, local competition and adaptation) are less likely to be dually embedded. The two strategy variables suggest that for the most part, global strategy is positively related with dual embeddedness in Finland but negatively related with dual embeddedness in New Zealand.

Autonomy. Models 7 and 8 indicate that the coefficient of AUTONOMY is negatively related to RECEIVE INTRA-ORG (p<0.001) and positively related to CONTRIBUTE INTRA-ORG (p<0.001). Thus, autonomous units in New Zealand tend to contribute rather than receive resources from their corporate network. We find no significant results for Finland. Hence, as decentralized MNEs grant autonomy to their subsidiaries, the units contribute more to the intra-organizational relationshipseven though they receive fewer resourcesvia these same relationships.

Hypothesis 6 states that MNEs contribute more knowledge via local business relationshipsthan solely domestic companies. Table 4 indicates that foreign MNEs in New Zealand receive fewer resources from inter-organizational relationships. Furthermore, both national and foreign MNEs contribute more intra-organizational resources than solely domestic companies that were used as a baseline for all eight models. This could be because some solely domestic companies in New Zealand are dominated by the headquarters and smaller, less influential branches, therefore intra-organizational resource flows are not as important. Our results also show that MNEs are not superior to solely domestic companies in terms of contributing to the inter-organizational networks and hence, hypothesis 6 is not supported.

DISCUSSION

This paper examines whether MNE units are dually embedded in inter- and intra-organizational business relationships, which antecedents have an impact on them, as well as whether foreign MNEs are more likely to be embedded in inter-organizational relationships than solely domestic companiesin two small open economies, Finland and New Zealand.

Our findings confirm existing studies (Forsgren et al. 2005; Figuereido 2011) that dual embeddedness is difficult to achieve. Instead of being strongly dually embedded, and acting as strong "bridges" between local environment and company's internal hierarchies, the units examined were likely to be embedded in either inter-organizational *or* intra-organizational business relationships.

We did not find support that the institutional antecedents, measured by the favorability of compliance costs, would reflect positively to dual embeddedness.Furthermore, our findings show thatlocal suppliers are a positive antecedent, and physical infrastructure a negative antecedent on dual embeddedness in New Zealand. The former supports the importance of supplier relationships emphasized by the IMP literature. The latter indicates that the physical infrastructure does not support inter- and intra-organizational business relationships in New Zealand.

Otherwise, the antecedents of inter- and intra-organizational business relationshipsin terms of host country absorptive capacity vary significantly.Knowledge infrastructure seems to be the most important influencing factor for inter-organizational business relationships in New Zealand. Among the respondents in Finland, the presence of local suppliers was positively associated with inter-organizational business relationships and skilled labor a negative antecedent for intra-organizational business relationships.The results strongly suggest that inter-organizational embeddedness has different antecedents than intra-organizational embeddedness, and that these two types of embeddedness are not related. Hence, this confirms our first hypothesis that the MNEs units' dual embeddedness is difficult to achieve. Based on these findings, one can argue that there are differences in how the macro-institutional environments, host country's absorptive capacity as well as company unit's absorptive capacity influence dual embeddedness in Finland and New Zealand. However, these aspects still warrant future research in order to make conclusions about the determinants of inter- and intra-organizational business relationships.

The most significant result of our study is that MNE unit's absorptive capacity, measured by R&D spending, has a positive impact on inter-organizational business relationshipsin Finland and New Zealand. However, R&D spending does not to have an impact on intra-organizational business relationships. This suggests thatR&D spending, thus innovative capacity, encourages inter-organizational embeddedness so the MNE units collaborate with local partners in terms of R&D rather than within intra-organizational business relationships.

In addition, we used solely domestic companies as a comparison, and although international business research has appraised MNE's superior capacity to manage and transfer knowledge, we do not find evidence of MNEs contributing more resources externally than solely domestic companies.

Limitations and future research
We identify three limitations of the study. First, the overall response rates of the survey in Finland and New Zealand were 16.2 and 36.0 percent, respectively. According to Malhotra and Birks (2003), a response rate less than 15 percent might lead to serious bias so the results in case of Finland are barely sufficient for academically relevant study. However, such response rates are considered very reasonable in the context of the international business literature, especially when considering the sample was the largest 500 firms from each country.

The second limitation is that the questionnaire draws from the interval scale-based questions. Most of the responses are based on each respondent's own assumption of the extent that their company benefits/ contributes resources. Attitudinal scales suffer from subjectivity and thus lack direct comparability between respondents (e.g. what one respondent might consider being a 'great extent', may be different for another). However, the Likert-scale technique used in this survey is a widely accepted survey instrument particularly as it uses a 7-point scale (see Malhotra and Birks 2003). Also, since a top management executive in each company answered the questionnaire, the answers are assumed to be as reliable and valid for that firm as they can be. The survey was also translated into Finnish in order to reduce confusion and misunderstandings that respondents may face due to language barrier.

Third, the questionnaire was delivered only for the focal organizations' executives, not for their inter- and intra-organizational business partners. Therefore it only measures focal organization manager's assumption of the extent and types of resources that they exchange with their counterparts. We suggest that the future studies will include the inter- and intra-organizational counterparts in order to understand the dyadic nature of the linkages.

Since our results suggest that inter-organizational and intra-organizational embeddedness have different antecedents, we encourage future researchers to examine the correlations of MNE unit's engagement in inter-organizational and intra- organizational linkages (vertical arrow in Figure 1). This would enlighten our knowledge about how MNE units function as a bridge between inter-organizational and intra-organizational networks.

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FIGURES AND TABLES

Figure 1. Theoretical framework(adapted from Figueiredo, 2011)
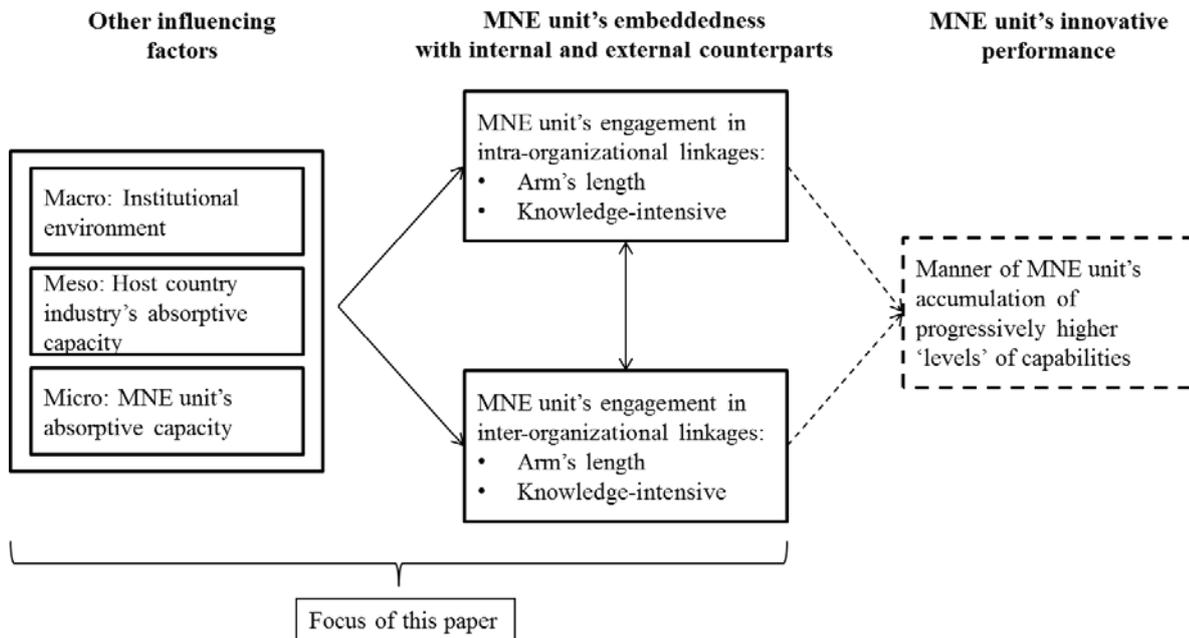
Adopted from: Figueiredo 2011

Table 1. Respondent demographics by type of unit, employees and ownership

			Employees locally (in Fin/ NZ)	Employees total	Foreign ownership
Finland	Purely domestic company (n=23)	Minimum	3	3	-
		Maximum	3 000	3 000	15.0
		Mean	639	639	5.6
	National MNE (n=44)	Minimum	24	88	-
		Maximum	11 000	100 300	50.0
		Mean	1 802	9 548	11.3
	Foreign MNE subsidiary (n=18)	Minimum	100	345	61.0
		Maximum	10 800	391 000	100.0
		Mean	1 874	53 022	642.4
New Zealand	Purely domestic company (n=56)	Minimum	1	1	-
		Maximum	5 500	5 500	-
		Mean	661	661	-
	National MNE (n=50)	Minimum	36	49	-
		Maximum	8 000	30 700	20.0
		Mean	1 109	2 840	0.9
	Foreign MNE subsidiary (n=74)	Minimum	1	86	51.0
		Maximum	8 000	553 500	100.0
		Mean	766	75 810	98.4

Table 2. Measurement scales for variables

Variable	Type	Measurement scale
Dependent variables		
RECEIVE_ INTER-FIRM	Ordinal	To what extent does your firm benefit from technical know-how, R&D and innovation resources received from inter-organizational networks? (=1), not at all (=7), very much
CONTRIBUTE_INTER-FIRM	Ordinal	To what extent does your firm contribute technical know-how, R&D and innovation resources to inter-organizational networks? (=1), not at all (=7), very much
RECEIVE_ INTRA-FIRM	Ordinal	To what extent does your firm benefit from technical know-how, R&D and innovation resources received from intra-organizational networks? (=1), not at all (=7), very much
CONTRIBUTE_INTRA-FIRM	Ordinal	To what extent does your firm contribute technical know-how, R&D and innovation resources resources to intra-organizational networks? (=1), not at all (=7), very much
Independent variables- Locational Antecedents		
CAPITAL ACCESS	Ordinal	
SKILLED LABOR	Ordinal	
KNOWLEDGE INFRA	Ordinal	How favourable is this aspect of Finland/ New Zealand business environment for your firm? (=1), not at all favourable (=7), very favourable
PHYSICAL INFRA	Ordinal	
LOCAL SUPPLIERS	Ordinal	
COMPLIENCE COSTS	Ordinal	
Independent variables- Corporate Antecedents		
lnR&D SPENDING	Continuous, natural log	Natural log of the percentage of the total sales that the firm spends in R&D
lnLOCAL EMPLOYEES	Continuous, natural log	Natural log of the number of employees in the local unit
HQ LOCATION	Ordinal	(=1), in the same country as the unit analyzed (Finland or New Zealand) (=2), in the same region as the unit analyzed (Europe or Australia) (=3), elsewhere
STRATEGY (LOCAL) and STRATEGY (GLOBAL)	Ordinal	Factor analysis of six variables than measure strategy (=1), local strategy (=7), global strategy
AUTONOMY	Continuous, natural log	Factor analysis of four variables than measure autonomy (=1), no autonomy (=7), full autonomy
Control variables - Ownership		
DOMESTIC	Dummy	(=1), solely domestic company, omitted from the regression analysis because treated as "baseline"
NATIONAL_MNE	Dummy	(=1), national (Finnish / NZ owned) MNE
FOREIGN_MNE	Dummy	(=1), foreign owned MNE

Table 3. Paired t-tests between inter-firm and intra-firm linkages

Finland	DOMESTIC		NATIONAL MNE			FOREIGN MNE		
	Mean	St. dev.		Mean	St. dev.		Mean	St. dev.
CONTRIBUTE INTER-FIRM	3,67	1,48		4,05	1,37		3,84	0,25
CONTRIBUTE INTRA-FIRM	3,31	2,36		5,12	1,74		5,00	0,52
Difference	0,35		-	1,07		-	1,16	
T	0,75		-	3,60		-	2,02	
p	0,465			0.001***			0.062^	
df	15			33			14	

Finland	DOMESTIC		NATIONAL MNE			FOREIGN MNE		
	Mean	St. dev.		Mean	St. dev.		Mean	St. dev.
RECEIVE INTER-FIRM	4,49	0,96		4,43	0,89		4,00	3,28
RECEIVE INTRA-FIRM	3,13	2,10		4,33	1,82		4,93	3,86
Difference	1,36			0,09		-	0,93	
T	2,43			0,34		-	1,55	
Significance	0.029*			0,736			0,143	
N	14			35			14	

New Zealand	DOMESTIC		NATIONAL MNE			FOREIGN MNE		
	Mean	St. dev.		Mean	St. dev.		Mean	St. dev.
CONTRIBUTE INTER-FIRM	2,84	1,14		4,22	1,46		3,93	1,50
CONTRIBUTE INTRA-FIRM	2,21	1,51		5,13	1,93		3,73	1,81
Difference	0,63		-	0,91			0,20	
T	1,51		-	3,91			0,76	
Significance	0,149			0.001***			0,452	
N	18			30			43	

New Zealand	DOMESTIC		NATIONAL MNE			FOREIGN MNE		
	Mean	St. dev.		Mean	St. dev.		Mean	St. dev.
RECEIVE INTER-FIRM	3,68	1,24		3,92	1,51		3,27	1,35
RECEIVE INTRA-FIRM	2,79	1,78		4,16	1,87		5,33	1,62
Difference	0,89		-	0,24		-	2,06	
T	1,94		-	0,76		-	6,80	
Significance	0.069^			0,453			0.000***	
N	18			31			44	

Significance shown by ^=0.1 *=0.05, **=0.01, ***=0.001 level

Note: Resource transfer is measured on a Likert-scale ranging from 1 (no transfer) to 7 (very much resource transfer)

Table 4. OLS models

FINLAND	Model 1 RECEIVE INTER-FIRM	Model 2 CONTRIBUTE INTER-FIRM	Model 3 RECEIVE INTRA-FIRM	Model 4 CONTRIBUTE INTRA-FIRM
Dependent				
Constant	5,59 *** (0,94)	2,83 *** (0,81)	1,89 (1,21)	4,69 * (1,88)
CAPITAL ACCESS	-		-0,10 (0,14)	0,17 (0,17)
SKILLED LABOUR	-0,19 (0,12)			-0,44 * (0,18)
KNOWLEDGE INFRA	-			-
PHYSICAL INFRA	-	-0,11 (0,13)		-
LOCAL SUPPLIERS	0,15 (0,10)	0,37 ** (0,13)		-
COMPLIENCE COSTS	-		0,15 (0,20)	-
lnR&D SPENDING	0,08 * (0,04)	0,12 ^ (0,06)	0,12 (0,09)	-
lnLOCAL EMPLOYEES	-		0,32 * (0,14)	0,15 (0,16)
HQ LOCATION	-0,75 ^ (0,40)			-0,56 (0,66)
STRATEGY (LOCAL)	-	-0,45 *** (0,12)		-
STRATEGY (GLOBAL)	-	0,40 * (0,16)	0,77 *** (0,21)	0,87 *** (0,21)
AUTONOMY	0,17 (0,11)			-
DOMESTIC	(omitted)	(omitted)	(omitted)	(omitted)
NATIONAL_MNE	-0,27 (0,28)	-0,20 (0,35)	0,14 (0,56)	1,25 ^ (0,71)
FOREIGN_MNE	0,20 (0,46)	-0,39 (0,42)	0,12 (0,71)	1,52 (1,04)
R^2	0,2344	0,3511	0,3198	0,3660
n	70	57	67	69

NEW ZEALAND	Model 5 RECEIVE INTER-FIRM	Model 6 CONTRIBUTE INTER-FIRM	Model 7 RECEIVE INTRA-FIRM	Model 8 CONTRIBUTE INTRA-FIRM
Dependent				
Constant	1,81 ** (0,82)	4,37 *** (0,81)	3,23 *** (0,97)	3,31 *** (0,81)
CAPITAL ACCESS			-0,11 (0,11)	-0,08 (0,12)
SKILLED LABOUR			-	-0,05 (0,13)
KNOWLEDGE INFRA	0,33 *** (0,10)	0,27 * (0,12)	-	-
PHYSICAL INFRA	-0,35 *** (0,09)	-0,30 * (0,12)	-0,24 ^ (0,14)	-
LOCAL SUPPLIERS	0,30 ** (0,11)	0,16 (0,11)	0,40 ** (0,14)	-0,10 (0,15)
COMPLIENCE COSTS		-0,34 ** (0,11)	-	-
lnR&D SPENDING	0,10 * (0,04)	0,09 ^ (0,04)	-	-
lnLOCAL EMPLOYEES	0,23 ** (0,07)		-	-
HQ LOCATION	-			
STRATEGY (LOCAL)	-	-0,48 ** (0,16)	-0,42 (0,27)	-0,44 * (0,22)
STRATEGY (GLOBAL)	-		-	
AUTONOMY	-		-0,60 *** (0,17)	1,03 *** (0,16)
DOMESTIC	(omitted)	(omitted)	(omitted)	(omitted)
NATIONAL_MNE	-0,26 (0,31)	-0,04 (0,39)	0,78 (0,62)	2,62 *** (0,54)
FOREIGN_MNE	-0,63 * (0,27)	0,10 (0,39)	1,04 (0,65)	2,09 *** (0,56)
R^2	0,3211	0,2648	0,3394	0,4681
n	113	101	95	98

*Significance shown by ^=0.1 *=0.05. **=0.01. ***=0.001 level*

Note: Standard errors are in parenthesis; tests are two-tailed