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The Interplay of Networking Activities and Internal Knowledge Activities for Subsidiary Influence within MNCs

Abstract

Knowledge-based and network-based activities are known determinants of foreign subsidiary influence. We demonstrate that the interaction between these factors is essential in understanding how subsidiaries gain influence within an MNC. We test this using data on 184 foreign-owned subsidiaries in the UK. The results indicate that the possession of strategic resources (knowledge or embedded relations) increases subsidiary influence only when the knowledge is transferred back to headquarters. Importantly, the impact of subsidiary-headquarters embeddedness, external embeddedness and knowledge development on influence is mediated by the extent of reverse knowledge transfer. This mediating role sheds new light on the antecedents to subsidiary influence.

Keywords: Influence, Reverse Knowledge Transfer (RKT), knowledge development, embeddedness, knowledge-intensive business services (KIBS)

1- Introduction

The contemporary multinational corporation (MNC) is frequently described as an integrated network where foreign subsidiaries have transcended being mere implementers of headquarters strategies and increasingly contribute knowledge that can improve the competitive advantage of the MNC as a whole (Bartlett & Ghoshal, 1989; Birkinshaw & Hood, 1998; Rugman & Verbeke, 2001). The implication of this is that the subsidiary is considered a potential strategic partner that can play an active role in the success of the MNC (Cantwell & Mudambi, 2005; Franko, 1989). Therefore, in modern MNCs the relationship between subsidiaries and headquarters has been described as more federative and less hierarchical (Andersson, Forsgren, & Holm, 2007; Ghoshal & Bartlett, 1990; Handy, 1992; Provan, 1983), with the main issues, compared to earlier depictions of MNCs, being influence, power and dependency.

Extant studies on subsidiary influence phenomena have stated that network characteristics, e.g. embeddedness (Andersson, Forsgren, & Holm, 2002; Andersson et al., 2007), explain subsidiary influence in the MNC without providing a clear picture of how the network (knowledge) resources are developed and made available to headquarters. Other studies (see e.g. Ciabuschi, Dellestrand, & Kappen, 2011; Mudambi & Navarra, 2004) have shown that the development of knowledge and its diffusion within the MNC is a pivotal characteristic in explaining subsidiary influence, without giving ample weight to how network particularities influence its usefulness and value for the headquarters.

This paper aims to expand our understanding of why some subsidiaries are more influential than others. Our aim is to provide a more holistic view of subsidiary influence by simultaneously investigating how both network- and knowledge-based activities can enable subsidiaries to exert influence on their MNCs. Therefore, our model utilizes both activities as a departure point. In our

research, network-based activities comprise external embeddedness and subsidiary-headquarters embeddedness, and knowledge-based activities consist of knowledge development and Reverse Knowledge Transfer (RKT). Because of the close association between the former and the latter (Andersson, Forsgren, & Holm, 2001; Birkinshaw, Hood, & Jonsson, 1998), we also examine the mediating role of knowledge-based activities on the relationship between network-based activities and influence.

Our study makes two main contributions. First, we examine the direct impacts of knowledge- and network-based activities on the extent to which a subsidiary can exert influence on the strategic decisions of its MNC. So far, from the literature we know that both of these factors can be strong predictors of subsidiary influence (Ambos, Andersson, & Birkinshaw, 2010; Andersson et al., 2007; Birkinshaw, Hood, & Young, 2005). However, our knowledge of how these two sets of activities interact in the context of subsidiary influence is limited. The present research addresses this limitation by focusing specifically on the relationship between network-based activities and internal knowledge-based activities. Our theoretical contribution is therefore to provide empirical evidence on the mediating role of knowledge-based activities. Moreover, a number of earlier studies suggest that subsidiary influence can be explained by its network-based activities; however, this has been investigated mainly in relation to external embeddedness (Andersson et al., 2007). While the literature suggests that it is important to look at subsidiary-headquarters relationships when investigating subsidiary influence (Birkinshaw et al., 2005), this association has not been empirically investigated. Our research contributes to an enhanced understanding of how network-based activities regarding headquarters and external environment help a subsidiary to increase its influence in the MNC.

The paper is organized as follows. After discussing the related theoretical background, we develop hypotheses regarding factors impacting on subsidiary influence. We then test our hypotheses using

structural equation modelling (SEM) via the use of LISREL. Our paper concludes with a discussion of key findings and implications for further research.

2- Theoretical background

The modern MNC has moved away from a headquarters focus towards an increasing role for individual subsidiaries (Buckley & Strange, 2011; Yamin & Andersson, 2011). The internalization theory suggests that firms establish overseas when they possess intangible assets and capabilities, but recent trends have highlighted the growing dispersal of knowledge creation within MNC networks with the rise of subsidiary-specific advantages (Mudambi & Navarra, 2004; Rugman & Verbeke, 2001). Thus, the role of subsidiaries has shifted from mere implementers to shapers of MNC strategies (Bartlett & Ghoshal, 1989; Cantwell & Mudambi, 2005; Rugman & Verbeke, 2001). This means that, on the one hand, sub-units become more capable of developing competencies and less dependent on the intangible resources of their headquarters (Andersson et al., 2007; Ranjay Gulati, 1998; McEvily & Zaheer, 1999), whilst on the other hand they remain highly embedded within their MNC network (Yamin & Andersson, 2011). Studies investigating subsidiary influence have often conceptualized the MNC as a federation where there is an ongoing power contest between headquarters and subsidiary (specifically established ones) (Ambos et al., 2010; Dörrenbächer & Gammelgaard, 2006; Mudambi & Navarra, 2004).

This drive for power within an organization can be explained by resource-dependency theory, which suggests that a focal company can enjoy resource-based power when it possesses or controls strategic resources that may make others dependent upon them (Pfeffer & Salancik, 1978). Within the context of the MNC network, managers of subsidiaries wish to raise their firm's influence in the MNC network because of rent-seeking behaviour (Ciabuschi et al., 2011) or control avoidance, so that they can gain more independence and autonomy in their strategic actions (Andersson et al., 2007, P: 803). We therefore suggest that subsidiaries have an interest in developing their influence

in the MNC network. For managers in headquarters, individual subsidiaries' influence matters, because it raises their potential for opportunistic behaviour. Indeed, differentiation assists subsidiaries to pursue objectives that are not necessarily in congruence with those of their headquarters (Dörrenbächer & Gammelgaard, 2006; Holm & Pedersen, 2000). From a resource-dependence perspective, headquarters cannot fully evade a degree of dependence on their subsidiaries, as the latter have become key knowledge harvesters in host environments.

In the international business literature, subsidiary relations have been consistently emphasized as a key source of power (Andersson et al., 2002; Birkinshaw & Hood, 1998). However, most of these contributions focus on the characteristics of subsidiary relations with the local environment (external embeddedness), and so far only limited consideration has been given to the characteristics of relationships between a subsidiary and its headquarters. From a knowledge-based perspective, studies have demonstrated that headquarters attention and recognition of the subsidiary's knowledge leads to enhanced influence (Ambos et al., 2010). However, within a differentiated network structure, relational aspects matter and headquarters' attention is related to internal embeddedness (Yamin & Andersson, 2011). This is because valuable knowledge is often tacit and difficult to transfer, recognize and absorb (Lane & Lubatkin, 1998; Rogers & Larsen, 1984; Szulanski, 1996). Hence, through facilitating the absorptive capacity of the headquarters, the closeness of the subsidiary-headquarters relationship has considerable impact on the extent to which subsidiary competencies (e.g. external embeddedness and knowledge development) can serve as platforms for influence.

Typically, studies have looked at subsidiary power and influence being dependent on resources either in terms of networking activities (e.g. external embeddedness in Andersson et al., 2002) or knowledge-based activities (e.g. transfer competence in Ciabuschi et al., 2011). However, in the extant literature on subsidiaries, there exists abundant evidence indicating a strong association between the former and latter (Andersson et al., 2001; Dhanaraj, Lyles, Steensma, & Tihanyi,

2004). Consequently, given that these two types of activities are increasingly interrelated, we argue that, in order to provide a holistic overview of subsidiary influence, they should be considered simultaneously.

There are two key novelties in the model we propose (see Figure 1). First, we integrate recent findings in the literature that emphasise the importance of dual embeddedness (Figueiredo, 2011) in leading to a subsidiary's innovativeness, as well as the complementary role of subsidiary-headquarters and external embeddedness when explaining knowledge development by subsidiaries and reverse knowledge transfer (Andersson et al., 2001; Håkanson & Nobel, 2001; Najafi-Tavani, Giroud, & Sinkovics, 2012a). For this reason, we propose that influence can best be explained when considering both types of embeddedness (external embeddedness as well as subsidiary-headquarters embeddedness).

Insert Figure 1 about here

Secondly, our model answers recent calls by scholars citing the need to provide a holistic view to explain subsidiary influence (Dörrenbächer & Gammelgaard, 2006). In our model, subsidiary influence is linked to both knowledge-based activities (knowledge development and reverse knowledge transfer) and network-based activities (external embeddedness and subsidiary-headquarters embeddedness), but we also propose a mediating effect of knowledge-based activities when linking embeddedness to influence. This is because, while external embeddedness and knowledge development represent strategic resources, subsidiary-headquarters embeddedness and reverse knowledge transfer (knowledge transfer from subsidiary to headquarters) represent micro-political bargaining power (Ciabuschi et al., 2011; Dörrenbächer & Gammelgaard, 2006). This means a subsidiary gains influence through lobbying its skills, engaging in issue-selling activities, or maintaining close relations with its headquarters (Ghoshal & Bartlett, 2005; Inkpen & Beamish, 1997).

It is noteworthy to mention that in addition to internal factors such as network- and knowledge-based activities, external factors such as national culture, host-country economic resources and location-specific advantages may impact on subsidiaries' influence (Hofstede & Hofstede, 2005; Rugman & Collinson, 2009). For instance, through impacting on a subsidiary's performance and its ability to integrate into internal and external environments (Ghemawat, 2001; Kessapidou & Varsakelis, 2002), national cultures can indirectly influence a subsidiary's power-base. It has also been argued that subsidiaries tend to have a hierarchical structure in countries where decision-making is centralized or managers tend to avoid uncertainty (Hofstede, 1980; Makino & Neupert, 2000). Moreover, prior studies find strong association between subsidiary influence and the strategic importance of its local environment (Bartlett & Ghoshal, 1986, 1989). Subsidiaries operating in strategic locations are more influential, since they are more capable of performing a full range of value-chain activities, while others may have specific roles such as sales or manufacturing (Blumentritt, 2003). While we acknowledge the potential importance of external factors, considering the current above theoretical limitations in networks analysis and given that the main aim of this research is to further our understanding of how internal factors (here knowledge- and network-based activities) and their interactions impact on a subsidiary's power-base, these external factors are excluded from our study.

3- Hypotheses

3.1. Networking activities

Networking activities comprise subsidiary-headquarters embeddedness and external embeddedness. Embeddedness refers to the mutual adaptation of activities between two firms (Andersson et al., 2001; Lane & Lubatkin, 1998). The literature has so far focused on the association between external embeddedness and influence (Andersson et al., 2002, 2007; Forsgren, Pedersen, & Foss, 1999). Subsidiaries with a high level of external embeddedness tend to have access to unique strategic

resources (Forsgren et al., 1999) on which headquarters may depend. Such competencies may represent unique knowledge resources, a major supplier, or an important customer that can be used by subsidiaries as a main source of bargaining power in political fights (Mudambi & Navarra, 2004). Furthermore, it has been argued that subsidiaries that are externally embedded generally perform better and thus are in a stronger position to negotiate their MNC's future investment (Andersson et al., 2001, 2002).

However, subsidiary influence exists not only in relation to external environment, but can also be observed in intra-firm activities. In particular, the impact of headquarters on subsidiary influence has been investigated from different perspectives: 'headquarters' network knowledge' (Andersson et al., 2007), 'headquarters' attention' (Ambos et al., 2010), and subsidiary-headquarters negotiation (Dörrenbächer & Gammelgaard, 2006). However, few studies, if any, precisely examine how subsidiary-headquarters embeddedness impacts on influence. Studies have found that subsidiaries exhibiting close relations with their headquarters are more powerful (Cook, Emerson, Gillmore, & Yamagishi, 1983). A high level of embeddedness can increase the ability of the headquarters to recognize the competencies residing in its subsidiary. Such recognisability can then be used by the subsidiary to gain more bargaining power (Mudambi & Navarra, 2004), to succeed in intra-corporation competition for organizational resources (Birkinshaw & Hood, 1998), or to augment its influence in the MNC's strategic decisions (Garcia-Pont, Canales, & Noboa, 2009; Yamin & Andersson, 2011). Therefore, a subsidiary's extent of network embeddedness with its headquarters and local environment can potentially serve as sources of power (Andersson & Forsgren, 2000; Andersson et al., 2007). Thus, we hypothesize that:

Hypothesis 1. A subsidiary's network-based activities (subsidiary-headquarters and external embeddedness) are positively related to influence.

3.2. Knowledge-based activities

There exists a broad consensus in the international business literature that a subsidiary's ability to exert influence is closely associated with knowledge-based activities (Ambos et al., 2010; Andersson et al., 2007; Mudambi & Navarra, 2004). Knowledge-based activities not only include a subsidiary's ability to develop new knowledge, but also refer to the extent to which it transfers knowledge to its headquarters (RKT). There is ample literature on the use of knowledge development for the strategic positioning of the subsidiary (for instance as a centre of excellence, Frost, Birkinshaw, & Ensign, 2002; Holm & Pedersen, 2000; Sumelius & Sarala, 2008). The rationale is that if a company brings critical competencies into a relationship, it will be more powerful (Pfeffer & Salancik, 1978). MNCs can strengthen competitive advantages by acquiring and integrating knowledge existing in different subsidiaries (Doz & Prahalad, 1984). This can lead to a situation of resource dependency, thereby increasing the influence of a subsidiary (Andersson et al., 2007; Mudambi & Navarra, 2004; Pfeffer & Salancik, 1978). While earlier studies (e.g. Andersson et al., 2007) assert that knowledge development can increase a subsidiary's power-base, some factors point to a potentially negative association. First, the subsidiary may develop highly context-specific knowledge that may not be usable by other units of the MNC (Geppert & Matten, 2006). In such circumstances, a subsidiary may lose bargaining power, because it has to engage in activities clarifying the usability of such knowledge for its headquarters and other units of the MNC (Forsgren, Johanson, & Sharma, 2000). Mudambi and Navarra (2004) assert that subsidiaries with large amounts of unusable knowledge have lower bargaining power, because the 'opportunity costs of marginalizing' such knowledge are low. Secondly, while a particular subsidiary may possess a competitive advantage that is also beneficial for the whole MNC, the value of such competencies may remain unrealized due to the nature of knowledge (e.g. tacitness and complexity) and/or the political structure of the corporation (Cantwell & Janne, 1999).

A subsidiary’s resources can thus contribute to its power-base only if they are recognizable and acknowledged by the headquarters (Prahalad & Doz, 1981). When the subsidiary frequently engages in RKT activities, its capabilities become more and more legitimate within the MNC,

which functions as a platform for the subsidiary's power (Schulz, 2001). RKT can also be used as a means of directing headquarters' attention to the subsidiary, which, again, leads to an increase in the subsidiary's influence (Ambos et al., 2010). Arguably, there exist factors that restrain subsidiaries from transferring all their knowledge to the headquarters. Firstly, the nature of knowledge itself (e.g. tacitness and complexity), which can considerably affect the process of cross-border knowledge transfer, and which explains why subsidiaries find it difficult to transfer completely their knowledge resources to headquarters (Tallman & Chacar, 2011). Secondly, subsidiaries may fear losing a monopoly position if they engage in RKT (Foss & Pedersen, 2002). Keeping these considerations in mind, existing evidence still finds a positive relationship between knowledge-based activities and influence. Thus, we hypothesize:

Hypothesis 2. A subsidiary's knowledge-based activities (knowledge development and RKT) are positively related to influence.

3.3. Mediating effects

Due to close association between knowledge-based and network-based activities, we argue that the relationship between networking activities and influence is mediated by knowledge-based activities within the MNC. Firstly, the literature has shown that the level of knowledge development is higher for those subsidiaries that have close embedded relationships with their headquarters and external business partners (Birkinshaw, 1996; Bresman, Birkinshaw, & Nobel, 2010; Buckley, Glaister, Klijn, & Tan, 2009; Dyer & Singh, 1998; Håkanson & Nobel, 2001). Embedded relationships serve as knowledge-gathering devices (Rogers & Larsen, 1984) that boost the ability of a subsidiary to develop new knowledge through increasing the accessibility of knowledge and new ideas, increasing firms' ability to identify and attain knowledge, and reducing the risk and costs associated with exchange of resources (Andersson et al., 2007; R. Gulati, 1999; Malmberg & Maskell, 2002). It should be noted that while knowledge resources existing in headquarters might not be as

influential as those of the local environment (Andersson et al., 2007), they can considerably augment the ability of subsidiaries to develop knowledge (Provan, 1983; Yamin, 1999). This is evidenced in Frost (2001), who demonstrates that subsidiaries with dual embeddedness are more capable of developing new knowledge than those with embedded relations only within their local environment.

Secondly, earlier studies demonstrate that network-based activities can impact on RKT. Both subsidiary-headquarters embeddedness and external embeddedness can increase RKT, albeit in different ways. Subsidiary-headquarters embeddedness facilitates RKT through reducing the effects of motivational and cognitive problems (Szulanski, 1996), increasing willingness and learning capabilities (Lane & Lubatkin, 1998; Najafi-Tavani, Giroud, & Sinkovics, 2012b), and decreasing costs (Håkanson & Nobel, 2001). External embeddedness, however, alleviates RKT through facilitating knowledge development. The main idea is that a subsidiary should first be capable of developing new knowledge to be able to contribute to the knowledge base of its headquarters (Gupta & Govindarajan, 2000).

For these reasons, we argue that network-based activities create the conditions for knowledge-based activities, and therefore we suggest that:

Hypothesis 3. The relationship between a subsidiary's network-based activities (subsidiary-headquarters and external embeddedness) and influence is mediated by knowledge-based activities (knowledge development and RKT).

In the next section, we provide details of the methodology adopted to test our hypotheses.

4. Methodology

4.1. Sample and data collection

We test our hypotheses on a sample of subsidiaries from the United Kingdom knowledge-intensive business services (KIBS) sector. According to Miles (2005, p.40), KIBS companies are "mainly concerned with providing knowledge-intensive inputs to the business processes of other organizations". Other scholars consider KIBS companies as 'bridges of innovation' between science and manufacturing (Czarnitzki & Spielkamp, 2003; Koch & Strotmann, 2008). The survey was conducted amongst 'computer services', 'research and development', 'economic services', 'technical services' and 'advertising' companies, as these sub-sectors qualify as the most knowledge-intensive business services (KIBS) (Simmie & Strambach, 2006).

Survey design and implementation were based on the tailored-design method (Dillman, 2000). To check its relevance and clarity, the survey was pre-tested on fifty subsidiaries, fifteen PhD students and selected academics. The FAME database (which provides company information for UK public and private companies) was used to draw up a random list of companies. Data were collected in early 2009 by online survey. In total, 523 managing directors, CEOs or general managers of subsidiaries were approached. After contacting respondents directly by phone, a personalized covering letter containing a link to the survey was emailed to them. In order to increase response rate, two follow-ups were done. 25 cases were removed for various reasons (e.g. more than 15% missing values or not having non-UK headquarters), leaving a sample size of 184, with a 35% response rate.

Subsidiary size and age in the sample was quite diverse, averaging 5000 employees and fifteen years respectively. Headquarters were mainly located in Europe (43%) or North America (40%) and the rest in Asia, Australia, South America and Africa. Non-respond bias was tested by examining whether respondents and non-respondents differed systematically in terms of age, number of employees and headquarters' nationality (Gerbing & Anderson, 1988). No significant differences were found between responding and non-responding firms. We also compared early respondents with late respondents in terms of influence, knowledge development and RKT (Gerbing &

Anderson, 1988). The comparisons yielded no significant differences for any of the aforementioned variables, indicating that the respondents were representative of the entire sample.

4.2. Construct Analysis

To test the hypothesised relations, we use structural equation modelling (SEM), since it allows simultaneous assessment of multiple relations amongst dependent and independent constructs. We adapt the two-stage process (Gerbing & Anderson, 1988) using LISREL 8.8. In the first stage, the measurements are assessed by means of Confirmatory Factor Analysis (CFA). CFA enables us to assess the independence and homogeneity of a construct and their discriminant and convergent validity. In the second stage, a structural model is used to examine the hypothesized relations. In order to test Hypotheses 1 and 2, we first investigate direct impacts of subsidiary-headquarters embeddedness, external embeddedness, knowledge development and RKT on influence. Indirect impacts of network-based activities on influence are then examined by testing the impacts of the former (subsidiary-headquarters embeddedness and external embeddedness) on knowledge-based activities (knowledge development and RKT). In other words, we test the association between subsidiary-headquarters embeddedness and knowledge development on one hand and RKT on the other. Similarly, the effects of external embeddedness on knowledge development and RKT will be tested. In what follows, we explain the operationalization of constructs. We then assess different types of validity.

4.2.1. Influence

The measures of influence are adapted from Andersson et al. (2007) and Ahituv and Carmi (2007). On a 7-point scale (anchored in 1, ‘no influence’, and 7 ‘extremely influential’), respondents were asked to assess the influence that their company has on the decision-making of their MNCs. The

focus was on three types of decisions: new products/services, determining and changing prices of services, and expanding/diminishing activities.

4.2.2. External embeddedness

External embeddedness was measured by scales adapted from Lane and Lubatkin (1998), Andersson, Björkman, & Forsgren (2005), and Andersson et al. (2001). Respondents were asked to estimate the extent to which the relationship between their subsidiary and local actors (customers, suppliers, universities and research institutes) had caused mutual adaptation concerning sales and marketing practices, distribution practices and management systems and practices. All measures were based on a 7-point Likert scale ranging from 'not at all' to 'to a very great extent'.

4.2.3. Subsidiary-headquarters embeddedness

Subsidiary-headquarters embeddedness was measured as the extent of mutual adoption of practices/activities (Andersson et al., 2005). Respondents were asked to indicate the extent to which the relationship between their subsidiary and headquarters had caused mutual adaptation over a range of activities: sales and marketing practices, distribution practices, and management systems and practices (Andersson et al., 2005). A 7-point Likert scale was used, anchored in 1, ‘no influence’, and 7, ‘extremely influential’.

4.2.4. Knowledge development

Knowledge development was measured by four items, based on Andersson et al. (2005). Respondents were asked to indicate the extent to which during the last three years their company

had developed knowledge superior to that of headquarters, sister companies or competitors. The focus was on four types of knowledge – sales and marketing know-how; distribution know-how; service production strategy know-how; and management systems and practices know-how. All the questions were based on 7-point scale anchored in 1, 'not at all', to 7, 'to a very great extent'.

4.2.5. Reverse knowledge transfer

The operationalization of this construct was adapted from Gupta and Govindarajan (2000) and Yang, Mudambi, & Meyer (2008). On a 7-point scale ranging from 1, 'not at all', to 7 'to a very great extent', the subsidiary's manager was asked to estimate the extent to which, over the last three years, their subsidiary had transferred knowledge to the headquarters. Several types of knowledge were used: sales and marketing know-how, strategy know-how (knowledge about customers, suppliers and competitors), distribution know-how, and management systems and practices know-how (Gupta & Govindarajan, 2000; Schulz, 2001).

4.2.6. Control variables

To assess the robustness of our proposed theoretical framework, we (a) include a control variable and (b) conduct a series of jack-knife tests for the binominal circumstances inherent in the data material (Chatfield, 1988). The extent to which a subsidiary's knowledge is tacit is likely to impact upon its ability to exert influence on the strategic decisions of its headquarters. The more knowledge is tacit, the harder it is for headquarters to recognize and appreciate the potential of such capabilities. Consequently, we control for tacitness. On a 7-point scale (ranging from 1, 'fully disagree', to 7, 'fully agree'), managers were asked to indicate the extent to which they agreed or disagreed with the following statement: 'our… knowledge can be easily documented in manuals and

reports'. The focus of the aforementioned questions was on four types of knowledge: sales and marketing; service production strategy; strategy; and management systems and practices.

To control for country effects (at headquarters level), subsidiary size and age, we conduct a jack-knife test. The natural logarithm of the subsidiaries' number of employees and year of establishment were used as indicators of a subsidiary's size and age.

4.3. Model testing

Confirmatory factor analysis was conducted to assess convergent and discriminant validity, using Fornell and Larcker's (1981) instructions. We assess convergent validity using t-values, factor loading and R^2 values. As can be seen in Table 1, all R^2 values (the linearity of relations between constructs and indicators) are strong and well above a cut-off point of 0.20 (Yamin & Andersson, 2011). Furthermore, all t-values (the significance of each relation between constructs and indicators) are highly significant (all above 8.78), and all the factor loadings are strong (all above 0.65). Moreover, we calculate the composite reliabilities (CRs) of all constructs, and all are above the threshold of 0.7 (ranging from 0.758 to 0.902) (Gerbing & Anderson, 1988). Therefore, it can be concluded that all the constructs have good convergent validity, i.e. they are homogenous constructs.

Discriminant validity was assessed through two different methods. First, we check whether the correlations and causal paths between the latent constructs are significantly different from 1 (Najafi-Tavani et al., 2012a). The results indicate that, at 99.9% confidence interval, none of the correlations and causal paths are close to 1. Second, discriminant validly can be evaluated by comparing the values of the square root of AVE with the corresponding inter-construct correlation estimates (SIC). Given that all the values of the square root of AVE were larger than the corresponding SICs (Table 2), discriminant validity is not a problem in this study. Table 1 also

represents some information on the fit indices of the overall model. The overall chi-square is significant (χ^2= 282.01 (df=174); p-value=0.00), which can be explained by the statistics' sensitivity to sample size (Bagozzi & Yi, 1988). However, other goodness-of-fit statistics (SRMR: 0.054, CFI= 0.96, NNFI= 0.96, IFI= 0.96, RMSEA= 0.058, ratio of chi-square to degree of freedom=1.62 [less than 3]) meet all requirements, providing further evidence of the validity of the complete model (Browne & Cudeck, 1993).

Although some precautions (e.g. ensuring anonymity, avoiding academic terms, providing explanations for ambiguous terms) were taken while designing and implementing the survey, collecting measures through the same instrument raises concerns about the influence of Common Method Variance (CMV) on the results. The likelihood of CMV was investigated using Harman's one-factor test (Konrad & Linnehan, 1995). The results of the principal components factor analysis yielded six factors with eigenvalues greater than 1.0, which accounted for 75% of the variance, and with the first factor accounting for 28.9% of that. Therefore, it can be concluded that CMV is not a serious problem in this research (Podsakoff & Organ, 1986). Moreover, as recommended by Podsakoff, Mackenzie, & Lee (2003) and following a number of contributions (i.e. Ambos et al., 2010; Iverson & Maguire, 2000), to test the possibility of CMV we also employed a more sophisticated method, the Confirmatory Factor Analysis (CFA) technique. This compares fit indices across models that vary in terms of complexity. If the fit indices of the simpler model are as good as the more complex model, it can be concluded that common method bias is a problem (Korsgaard & Roberson, 1995). Two models were developed, wherein the first model contained one construct and 21 items and the second model contained six constructs and 21 items. Since the chi-square improved significantly from 1377.3 with 189 degrees of freedom (first model) to 282.01 with 174 degrees of freedom in the second, it can be concluded that correlations across items are not driven purely by common method bias.

Insert Table 1 about here

Insert Table 2 about here

5. Results

Structural Equation Modelling (SEM) via the use of LISREL 8.8 was employed to test the proposed theoretical framework. Looking at Table 3, the results indicate that, in general, network-based activities have a positive impact on influence; however, neither external embeddedness nor subsidiary-headquarters embeddedness boost influence significantly (t-value= .59 and .8 respectively). Therefore, Hypothesis 1 is rejected.

Regarding Hypothesis 2, the first notable result relates to the significant positive impact of RKT on influence (t-value= 4.41), i.e. the subsidiary's ability to exert influence on its MNC's strategic decisions depends heavily on the extent to which it contributes to the knowledge base of the headquarters. However, contrary to our expectation, the results do not support the relationship between knowledge development and influence (t-value= -1. 58). Thus, Hypothesis 2 is only partially supported.

Given that knowledge development is theoretically linked to RKT, we further checked whether the former impacts on influence indirectly through the latter. As expected, the results indicate that the association between knowledge development and influence is significantly mediated by the extent of RKT (t-value= 5.24).

Following Hypothesis 3, we checked whether the relation between network-based activities and influence is mediated by knowledge-based activities. As can be seen in Table 3, the association between subsidiary-headquarters embeddedness and influence is mediated by RKT with t-value= 2.54 and knowledge development with t-value= 2.23. Furthermore, the relationship between

external embeddedness and influence is mediated by knowledge development with t-value= 4.92. Therefore, Hypothesis 3 is supported.

Insert Table 3 about here

To test the robustness of the proposed conceptual framework, we conducted a number of jack-knife tests (Ambos et al., 2010). The potential impact of headquarters' location was assessed by omitting all subsidiaries with US, French or German headquarters. In none of the analyses did the factor loading differ outside one standard error (Table 4). The same procedure was repeated for subsidiary size (large and small) and age (old and young). The top 15% of largest/smallest subsidiaries and the top 15% of oldest/youngest subsidiaries were removed. In none of the four runs of the model is there a change in factor loading outside one standard error. In addition, with regard to tacitness, we first checked the proposed theoretical model, and in the second stage we introduced tacitness as the control variable. The results indicate that tacitness does not significantly impact on influence. We also find no significant changes in the results of the hypothesis testing. Taken together, our proposed theoretical framework is very robust, and the causal relations remain significant even in different sub-samples.

Insert Table 4 about here

6. Conclusions and discussions

Our research offers important contributions. The main contribution is to show that within different knowledge-based activities, RKT is most important in explaining influence. This is the most interesting finding, since it indicates that developing new knowledge is not enough for subsidiaries to gain influence, which implies that subsidiaries should engage in showcasing and issue-selling

activities (RKT). Our second contribution is to confirm that explanatory factors cannot be studied in isolation (Dörrenbächer & Gammelgaard, 2006). We demonstrate that when including both knowledge- and network-based activities in the model simultaneously, the impact of the latter on influence fades away. However, following our analysis, networking activities are still very important in determining subsidiary power-base, as they may result in the creation of unique competencies which can function as sources of power. Particularly, we show that, through facilitating knowledge development and RKT, such activities indirectly but significantly enhance influence.

Insert Figure 2 about here

Our final contribution resides in providing insights for subsidiaries operating in the KIBS sector.

6.1. Specific findings related to subsidiaries' influence within the KIBS sector

Our results demonstrate that subsidiaries in the KIBS sector can augment their influence within MNCs, but only when engaging in RKT activities. RKT can be considered as *issue-selling* activities, wherein subsidiaries try to gain power through directing headquarters' attention to their unique sources of knowledge (Ghoshal & Bartlett, 2005). This result is also supported by findings from earlier studies (Forsgren & Pedersen, 2000; Mudambi & Navarra, 2004). The nature of knowledge existing in the KIBS sector hampers the ability of headquarters to fully appreciate the value of knowledge existing in their sub-units. This is why RKT plays an important role in this sector, as a means through which subsidiaries can augment their influence, since RKT leads to headquarters recognising and acknowledging the value of knowledge created and existing in their sub-units.

It has been asserted that subsidiaries possessing unique sources of knowledge are more influential (Mudambi & Navarra, 2004). However, our results not only disconfirm the link between knowledge development and influence, but also point to the possibility of a negative association between these two factors. The findings of a number of earlier studies also indicate that the development of a subsidiary's knowledge base can create tension (Asakawa, 2001). Increases in the knowledge base of a subsidiary can boost its influence on the strategic decisions of the MNC when applicable to other parts of the MNC (Forsgren & Pedersen, 2000). It has been shown that developing knowledge at the expense of transferring it to other parts of the MNC or assisting in utilizing it may weaken a subsidiary's position (Forsgren et al., 2000). Our results imply that the relationship between knowledge development and influence is strongly mediated by the extent of RKT. This finding is in some way mirrored in Ambos et al. (2010), where they demonstrate that through attracting headquarters' attention, a subsidiary's past initiatives can boost its influence.

In contrast to the results of Birkinshaw et al.'s (2005) case study on Canadian subsidiaries, which showed how subsidiaries may gain power through maintaining close relations with their headquarters, our analysis does not support this association. We find that subsidiary-headquarters embeddedness can result in the creation of unique knowledge that may then serve as a means to bargaining power if it is informed to and acknowledged by the headquarters (Prahalad & Doz, 1981). In addition, our results demonstrate that the existence of close relations between a subsidiary and its headquarters can considerably facilitate RKT. Therefore, close relations provide an opportunity for a subsidiary to showcase its capabilities, thereby enhancing its influence in the MNC.

Our findings show that knowledge-based activities mediate the impact of network-based activities on influence. In particular, while external embeddedness is a strategic resource that can result in creating competency at both subsidiary and MNC level, it can also be a source of conflict. This is mainly due to the fact that a high level of external embeddedness may divert a subsidiary from the

whole agenda of its corporation and lead to distrust and conflict between subsidiary and headquarters (Asakawa, 2001). Therefore, through engaging in knowledge development and RKT, subsidiaries can not only demonstrate to headquarters that their agenda is in line with that of the MNC, but also increase their influence through raising awareness of their competencies and attracting headquarters' attention. Our results confirm and add to those of Andersson et al. (2007), who demonstrate that external embeddedness can only affect influence positively if the subsidiary contributes to the MNC knowledge base. We provide more detail by showing that knowledge-based activities mediate the effect of external embeddedness.

6.2. Managerial Relevance

Our results have numerous practical implications for managers of MNCs. Subsidiary managers can increase their unit's influence within the MNC by paying more attention to RKT, thinking carefully about the type of knowledge that is both recognized and valued by the headquarters. Developing and maintaining external business relationships and developing own-knowledge do not constitute sufficient actions to boost a subsidiary's power-base. Due to the specific nature of the KIBS sector, the headquarters may not fully recognize the value of newly-created knowledge. Besides, such knowledge can only contribute to the MNC knowledge-base if it can be transferred, which may be tedious for tacit and localized knowledge. In this process, subsidiary managers need also to recognize and value internal embeddedness as a means to enhance their ability to develop knowledge that is more likely to be valued by and useful for the MNC. Managers in the services sector will more naturally acknowledge the central role of external embeddedness in strengthening their activities, whilst being less aware of ways in which internal embeddedness can also lead to influence. To conclude, relations with the headquarters are less important than those with local external business partners when it comes to developing new knowledge, but when facilitating RKT and enhancing visibility, they can indirectly contribute to a subsidiary's power-base.

6.3. Implications for theory

Our results contribute to the theoretical debate surrounding subsidiary influence in the context of the international management literature. We show that both a subsidiary's knowledge-based activities (RKT and knowledge development) and networking activities in the form of business relationships (internal and external embeddedness) must be considered to understand influence; and in particular, the role of these mechanisms cannot be considered in silos. Firstly, we demonstrate why not all knowledgeable subsidiaries exert influence within the MNC. For instance, the creation and possession of unique competencies do not necessarily lead to more influence. Both competencies and engagement in RKT are necessary conditions for subsidiaries to exert influence in the MNC. RKT activities provide an opportunity for subsidiaries to lobby headquarters for more influence by exercising a voice or engaging in issue-selling activities (Cantwell & Mudambi, 2005). In the KIBS sector, where activities are highly context-specific, subsidiaries ought to engage in knowledge transfer; otherwise it will be very hard, if not impossible, for headquarters to understand and appreciate the value of the knowledge existing in the sub-unit. The interaction between knowledge-based and networking activities therefore provides a more complete explanation for subsidiary influence.

6.4. Limitations and directions for future research

The results of our research also point to some limitations. First, to explain subsidiaries' influence, we focused on their business relations (both internal and external) and knowledge resources. Whilst knowledge creation or competencies are often used as proxy for subsidiary performance, such knowledge is not necessarily applicable or valuable to the MNC. Future research should consider types of knowledge in relation to the MNC knowledge base and explore further the complex issue

of influence and applicability of the knowledge transferred by a subsidiary. Second, the data was collected from subsidiaries' managers only because of the focus on subsidiary-related mechanisms. While collecting data from headquarters and sister subsidiaries is considerably more difficult, it would enable integration of considerations inherent to other units. Moreover, in this study we examine the impacts of internal factors (knowledge- and network-based activities) on subsidiaries' influence. However, the extent of subsidiary influence depends on the characteristics of both internal and external factors (e.g. national culture, location-specific resources, strategic importance of host country) (Ghemawat, 2001; Kessapidou & Varsakelis, 2002). Further research considering the impacts of external factors would provide deeper insights into subsidiary power-base. Finally, our data was collected during a period of economic turmoil in the UK. This may have affected subsidiary top managers' perceptions of their own ability to develop competencies and influence.

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Table 1: Constructs and their Indicators

Indicators	Mean	SD	λ	t-value	R^2-value
Knowledge development, adapted from Andersson et al. (2005), α= .836, AVE= .569, CR=.840					
➢ Development of sales and marketing know-how	4.55	1.61	.77	11.63	.59
➢ Development of distribution know-how	4.32	1.80	.73	10.75	.53
➢ Development of service production strategy know-how	4.99	1.53	.83	12.88	.69
➢ Development of management systems and practices know-how	4.35	1.79	.68	9.74	.46
Reverse knowledge transfer, taken from Gupta and Govindarajan (2000) and Yang et al. (2008), α= .899, AVE= .697, CR=.902					
➢ Transfer of Sales and Marketing know-how	4.58	1.71	.72	10.94	.52
➢ Transfer of Strategy know-how	3.74	1.79	.87	14.58	.76
➢ Transfer of Distribution know-how	4.52	1.87	.85	13.93	.72
➢ Transfer of Management Systems and Practices know-how	4.05	1.76	.89	15.08	.79
Influence, taken from Andersson et al.(2007) and Ahituv and Carmi (2007), α= .885, AVE= .723, CR=.887					
The relative level of influence of the subsidiary on headquarters or sister subsidiaries decision-making					
➢ Decisions on new products/services	3.24	1.22	.87	14.02	.76
➢ Determining and changing prices of services	3.20	1.21	.80	12.46	.64
➢ Expanding/diminishing activities	3.26	1.22	.88	14.26	.77
External embeddedness, adapted from Lane and Lubatkin (1998), Andersson et al. (2005), and Andersson et al. (2001), α= .754, AVE= .512, CR=.758					
Adaptation of the following practices from suppliers, customers, universities and competitors:					
➢ Adaptation in sales and marketing practices	4.81	1.49	.65	8.78	.42
➢ Adaptation in distribution practices	4.57	1.48	.70	9.55	.49
➢ Adaptation in management system and practices	4.56	1.46	.79	10.84	.62
Subsidiary-headquarter embeddedness, adapted from Lane and Lubatkin (1998), Andersson et al. (2005), and Andersson et al. (2001), α= 0.888, AVE= 0.729, CR=0.890					
Adaptation of the following practices from headquarter:					
➢ Adaptation in sales and marketing practices	4.54	1.65	.85	13.57	.72
➢ Adaptation in distribution practices	4.54	1.70	.89	14.56	.79
➢ Adaptation in management practices	4.73	1.58	.82	13.01	.67
Tacitness, adapted from Simonin (2004), α= .844, AVE= .578, CR=.846					
➢ Sales and marketing knowledge is easily codifiable (can be easily documented in manuals and reports)	4.31	1.89	.73	10.71	.53
➢ Strategy knowledge is easily codifiable (can be easily documented in manuals and reports)	4.69	1.85	.80	11.98	.64
➢ Service production strategy knowledge is easily codifiable (can be easily documented in manuals and reports)	4.11	1.85	.74	10.79	.55
➢ Management systems and practices knowledge is easily codifiable (can be easily documented in manuals and reports)	4.77	1.7	.77	11.43	.59

Fit Statistics: χ^2= 282.01 (df=174), SRMR: 0.054, CFI= 0.96, NNFI= 0.96, IFI= 0.96, RMSEA= 0.058

Table 2: Correlation Matrix

	Knowledge Development	Reverse Knowledge Transfer	Influence	External Embeddedness	Subsidiary-headquarter embeddedness	Tacitness
Knowledge Development	**.75**					
Reverse Knowledge Transfer	.60	**.83**				
Influence	.16	.42	**.85**			
External Embeddedness	.55	.32	.14	**.71**		
Subsidiary-headquarter embeddedness	.38	.39	.22	.41	**.85**	
Tacitness	.09	-.16	.01	.01	-.01	**.76**

Bold numbers on the diagonal show the AVE

Figure 1. Theoretical framework

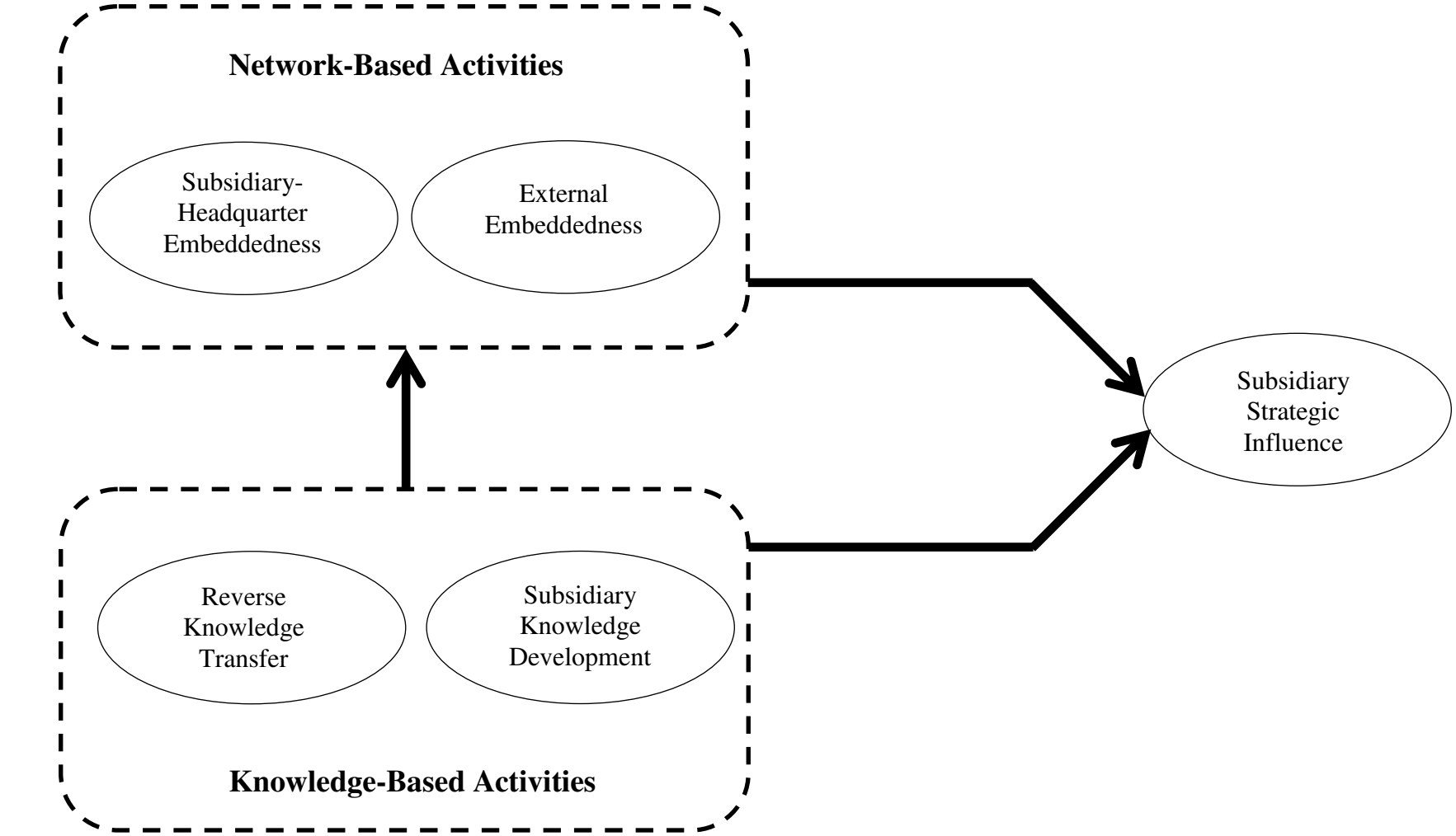

Table 3: Results of Hypothesis Testing

	Hypotheses	Paths	Estimates	t-value
Direct relations	H1	External embeddedness→Influence	.07	.59
		Subsidiary-headquarter embeddedness→Influence	.07	.8
	H2	RKT→Influence	.49	4.41**
		Knowledge development (KD)→Influence	-.20	-1.58
Mediating effects	H3	External embeddedness→ RKT	-.07	-.75
		External embeddedness→ KD	.47	4.92**
		Subsidiary-headquarter embeddedness→ RKT	.2	2.54**
		Subsidiary-headquarter embeddedness→ KD	.19	2.23**

Note: In line with earlier studies (e.g. Gupta & Govindarajan, 2000; Håkanson & Nobel, 2001), our model finds a positive significant relationship between knowledge development and RKT (.56, 5.24)

Table 4: Results from Jack-Knife Tests

.	Final model factor loadings (std errors)	Germany (n=160)	France (n=159)	USA (n=120)	Large (n=156)	Small (n=156)	Young (n=156)	Old (n=156)
External embeddedness→Influence	.07 (.11)	.09	.07	-.05	.06	.20	.08	.16
Subsidiary- headquarter embeddedness→Influence	.07 (.09)	.18	.13	.08	.05	.06	.11	-.01
RKT→Influence	.49 (.11)	.51	.48	.5	.47	.44	.56	.56
KD→Influence	-.2(.13)	-.26	-.23	-.14	-.2	-.21	-.31	-.24
External embeddedness→ RKT	-.07(.1)	-.05	-.16	-.02	-.13	-.05	-.11	-.08
External embeddedness→ KD	.47 (.1)	.49	.49	.45	.49	.45	.46	.48
Subsidiary-headquarter embeddedness→ RKT	.2 (.08)	.18	.26	.22	.22	.16	.2	.18
Subsidiary-headquarter embeddedness→ KD	.19 (.09)	.19	.17	.2	.21	.2	.24	.17
Tacitness	.06 (.08)	.09	.04	.07	.05	.01	.07	.04

Figure 2: Novel Conceptual Framework