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Knowledge flows in the emerging market MNC: The role of subsidiary HRM practices in Korean MNCs

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ABSTRACT

We develop and test a new model of knowledge flows in the emerging market multinational corporation (MNC) based on the way people are managed in its foreign subsidiaries. Extant literature argues that, to facilitate effective intra-MNC knowledge transfer, subsidiaries need to (a) possess human capital, (b) encourage inter-unit socialization of human capital. However, the impact that a subsidiary's human resource management (HRM) practices have on these relationships remains under-researched, especially for MNCs from emerging markets. Using questionnaire survey data from senior managers of 86 Korean MNC subsidiaries in the UK, France and Germany, we find that different aspects of subsidiary HRM practices exhibit different direct and indirect effects. HRM practices based on formalized procedures weaken the effect of socialization, but strengthen that of human capital, while empowering practices within the subsidiary weaken the effect of human capital, but strengthen the effect of socialization. Overall, establishing a participative climate *within* the subsidiary enhances both knowledge in- and outflows at the level of the subsidiary in the emerging market MNC.

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1. Introduction

One of the most critical strategic resources available to multinational corporations (MNCs) is the dispersed knowledge of the organization's workforce. The MNC's effectiveness in transferring knowledge internally is a key determinant of competitive advantage and performance (e.g., Björkman, Barner-Rasmussen, & Li, 2004; Gupta & Govindarajan, 2000; Minbaeva, Foss, & Snell, 2009; Minbaeva, Pedersen, Björkman, Fey, & Park, 2003). Knowledge transfer within MNCs, however, is no mean feat. Scholars have pointed out that a subsidiary's ability to learn (absorptive capacity), its willingness to share (disseminative capacity) and the nature of inter-unit relationships (corporate socialization) can all act as impediments to knowledge transfer (Björkman et al., 2004; Gupta & Govindarajan, 2000; Minbaeva et al., 2003; Wang, Tong, & Koh, 2004). Knowledge residing within MNCs is also notoriously 'sticky' (Szulanski, 1996).

An emerging stream of literature addresses the issue of intra-MNC knowledge flows from a 'subsidiary capital' perspective. This suggests that various forms of intangible capital, including human and social capital individuals' motivational disposition to send and receive knowledge (Mäkelä, Björkman, & Ehrnrooth, 2009; Morris, Snell, & Wright, 2006; Wright, Dunford, & Snell, 2001). The arguments for human and social capital are well-established. Subsidiaries those are high in human capital act as providers of knowledge to the rest of the MNC (e.g., Frost, Birkinshaw, & Ensign, 2002). Where subsidiary employees are well-educated and skilled, they are also more able to recognize the value of knowledge and to assimilate and apply it (Minbaeva et al., 2003). From a social capital perspective, intra-corporate socialization and tight coupling between units can boost internal knowledge transfer within the MNC (Gooderham, Minbaeva, & Pedersen, 2011; Gupta & Govindarajan, 2000; Minbaeva et al., 2003). In contrast to human and social capital, a third focus in the literature has been on the organization's human resource management (HRM) practices (Pfeffer, 1994, 1998a), including employment security, selective hiring, decentralization, performance-based compensation, job-related training, reduction of status differences and sharing of corporate information (Pfeffer & Veiga, 1999; Evans & Davis, 2005). These practices engender commitment in employees, reduce employee turnover and boost productivity (Huselid, 1995). Such

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practices have been shown to stimulate knowledge flows within the MNC by improving disseminative and absorptive capacity in overseas subsidiaries (Minbaeva et al., 2003).

Despite these insights, there remains a gap in our understanding of how these various forms of subsidiary capital interact in enabling knowledge to flow into and out of subsidiaries of emerging market MNCs. Firstly, HRM studies of knowledge transfer in developed country MNCs have largely focussed on either knowledge inflows or knowledge outflows, but not both (e.g., Simonin & Özsoy, 2009; Yamao, de Cieri, & Hutchings, 2009). Secondly, the literature also shows a lack of clarity in terms of the principal effect of practices vis-à-vis formalized practices that develop employees vs. empowering practices. Few have examined the effect of a range of HRM practices on knowledge-related phenomenon (Minbaeva, 2005). Thirdly, scholars have shown how knowledge-seeking and 'reverse' knowledge transfer to headquarters are key motives for MNCs from emerging markets to enter developed countries (Hoskisson, Kim, White, & Tihanyi, 2004). Indeed, collecting market information and proximity to customers are principal motives for latecomer Asian MNC investment in western markets (e.g., Poon, Hsu, & Suh, 2006; Wright, Filatotchev, Hoskisson, & Peng, 2005). Nevertheless, there are few studies that provide insight into subsidiary-level determinants of knowledge flows in emerging market MNCs.

We address these gaps in this paper. Firstly, we examine the relationship between human capital in the subsidiary, socialization between subsidiaries, HRM practices and both knowledge inflows and outflows. Secondly, we investigate the direct and moderating effects of two different types HRM practices (formalized practices vs. empowering practices) on knowledge inflows and outflows (Huselid, 1995; Pfeffer, 1994, 1998a,b; Pfeffer & Veiga, 1999). Thirdly, we test our model using a questionnaire survey of senior managers in 86 subsidiaries of Korean MNCs located in the United Kingdom, France, and Germany.

The main findings are as follows. Firstly, we observe that human capital, socialization and HRM practices do not have a uniform influence on both knowledge inflows and knowledge outflows. Both human capital and socialization in the subsidiary have a strong direct influence on knowledge outflows only when subsidiary HRM factors are not included in the model. The results for knowledge inflows are less clear. Secondly, the strongest models with the greatest explanatory power are when HRM factors are included. We find that the empowering aspect of a subsidiary's HRM (practices that encourage employee participation and commitment) have the strongest direct impact on knowledge flows. The moderating effect of HRM practices, however, appears to be differentiated. In the presence of formal practices designed to enhance individual task performance, the impact of human capital on both knowledge in- and outflows is enhanced. In the presence of empowering practices designed to engender commitment of individuals, the relationships are reversed: human capital has a negative impact on knowledge outflows while socialization has a positive impact on knowledge outflows.

Our contribution to the literature is threefold. Firstly, we extend models of knowledge flows in the emerging market MNC beyond human capital and social capital logic, exposing the differentiated direct and indirect effects of the subsidiary HRM. This approach lends strong support to those proposing an integrated subsidiary capital view for explaining knowledge dynamics within the MNC and highlights the importance of interaction effects amongst different forms of intangible subsidiary capital. Secondly, we provide insight into the contingencies under which knowledge inflows and knowledge outflows are facilitated in emerging market MNC subsidiaries. Thirdly, we extend theorizing on the MNC as a knowledge network. Our findings suggest that, by encouraging a participative environment locally, the subsidiary organization

becomes more integrated into the knowledge repositories of the wider MNC. This augments MNC theory by emphasizing local intervention by HR and subsidiary managers as a way of activating the MNC knowledge network and mobilizing knowledge throughout the MNC.

2. Theory and model development

2.1. Knowledge flows in the MNC

The knowledge-based view treats the firm as a social community in which knowledge is stored and transferred more efficiently on an internal basis than through the external market (Kogut, 2000; Kogut & Zander, 1992). The stock of knowledge developed by a firm acts as its principal source of competitive advantage and the efficiency by which firm knowledge is created and transferred internally can determine the success of the firm vis-à-vis competitors (Gupta & Govindarajan, 2000; Kogut, 2000; Kogut & Zander, 1992; Kostova, 1999). For the MNC, knowledge is distributed internationally amongst a network of dispersed subsidiary units. A growing body of literature has emerged examining the antecedents and consequences of knowledge creation and transfer within such networks (e.g., Jensen & Szulanski, 2004; Minbaeva et al., 2003; Wang et al., 2004). This literature has emphasized how knowledge transfer relates not only to the sending of knowledge from a source to a recipient unit, but also its integration, understanding and application (Cohen & Levinthal, 1990; Hansen, 1999; Szulanski, 1996).

Szulanski (1996) described knowledge transfer as the "exchange of organizational knowledge between a source and a recipient" (Szulanski, 1996: 28) and identified four stages of knowledge transfer: initiation, implementation, ramp-up, and integration. The initiation and implementation stages comprise antecedents leading to a transfer decision and actual knowledge flow to a recipient. Ramp-up and integration relate to knowledge modification and exploitation. Similarly, Davenport and Prusak (1998) defined transfer as "Transmission + Absorption (and Use)". Hansen (1999) also referred to knowledge transfer as "(moving and incorporating) knowledge across organization subunits" (Hansen, 1999: 83). In this view, knowledge has not been transferred unless it has been absorbed. The common notion in these definitions of knowledge transfer is that successful transfer has taken place once the knowledge is utilized by the recipient.

2.2. Baseline hypotheses

Human capital within a subsidiary organization is likely to facilitate knowledge flows for two principal reasons. Firstly, levels of knowledge held by subsidiary employees determine the degree to which they are able to internalize and integrate transferred knowledge (Minbaeva et al., 2003). Subsidiary employees' ability to recognize the value of knowledge and to assimilate and apply it relies heavily on educational background and job related skills, i.e., the level of human capital within the subsidiary (Minbaeva et al., 2003: 589). Secondly, levels of skills and expertise within a subsidiary are associated with knowledge outflows from the subsidiary. A principal reason for this is the need for a developed subsidiary's knowledge by other units of the MNC. Some of the most important types of subsidiaries in terms of human capital are Centres of Excellence (CoEs), highly developed in a specialized area and providing important knowledge to the rest of the MNC (Frost et al., 2002). Specialized subsidiaries, such as those in R&D, also foster their own evolution and development by sharing knowledge with other parts of the MNC (Asakawa, 2001; Frost et al., 2002). Bartlett and Ghoshal (1989) depicted certain subsidiaries as strategic leaders within the MNC, generating new knowledge for

the wider MNC not only because of the importance of the host country in which they reside, but also because of their human capital (Bartlett & Ghoshal, 1989). Hence,

Hypothesis 1. The overall level of human capital in an overseas subsidiary is positively related to knowledge flows into and out of the subsidiary.

The relationship between social capital within the MNC and internal knowledge flows hinges on the effects of socialization between individuals (Gooderham et al., 2011; Simonin & Özsomer, 2009). Socialization mechanisms within MNCs act to “build interpersonal familiarity, personal affinity, and convergence in cognitive maps among personnel from different subsidiaries” (Gupta & Govindarajan, 2000: 479). As Ghoshal, Korine, and Szulanski (1994) noted: “lateral interpersonal networking is considered to be one of the most important elements in managing information flows within MNCs” (Ghoshal et al., 1994: 101). Socialization within the MNC supports goal sharing (Gupta, Govindarajan, & Malhotra, 1999) and willingness to share knowledge (Björkman et al., 2004; Gupta & Govindarajan, 2000). As noted by Hansen (1999) “efficient knowledge sharing is typically characterized by tight coupling between people from different organization subunits” (Hansen, 1999: 82). Lengnick-Hall and Lengnick-Hall (2006) defined social capital in an international context as: “the intangible resource of structural connections, interpersonal interactions and cognitive understanding that enables a firm to (a) capitalize on diversity and (b) reconcile differences” (Lengnick-Hall & Lengnick-Hall, 2006: 477). Importantly, social interaction and trust have a positive effect on resource exchanges across units of international firms (Tsai & Ghoshal, 1998). By building good quality relationships, practices are more easily transferred amongst units of the MNC (Kostova & Roth, 2002). Hence,

Hypothesis 2. The extent to which employees of an overseas subsidiary socialize with other MNC units is positively related to knowledge flows into and out of the subsidiary.

2.3. *Subsidiary HRM practices: direct and indirect effects*

Scholars have described the collection of organizational practices aimed at encouraging performance and commitment in employees as comprising the organization’s High Performance Work System (HPWS) (Evans & Davis, 2005; Pfeffer, 1994; Pfeffer & Veiga, 1999). This should not be seen as a globally-uniform architecture or cloned arrangement across the countries in which an MNC operates. Successful MNCs adopt flexible policies and practices around the world (Stroh & Caligiuri, 1998).

We distinguish between (1) formalized practices aimed at enhancing employee performance in which procedures have been designed, engrained in the organization and become well-established, and (2) empowering practices, which are more informal in nature and are aimed at engendering commitment among employees. Firstly, the subsidiary may use formal, codified procedures, systems and databases to reduce inefficiency (Morris et al., 2006) and “to encourage the continuous development of employees’ skills and abilities, their motivation and the effective utilization of their labour through progressive and adaptive workplace operations” (Barton & Delbridge, 2004: 333). Formal practices are not limited to a single aspect of HR management (Barton & Delbridge, 2004; Laursen & Foss, 2003). Guest (1997) suggested that formally designed HRM practices apply in areas such as appraisal, rewards, and job design. Extrinsic motivation through rewards has been shown to have a positive impact on an individual’s propensity to engage in knowledge sharing across boundaries (Minbaeva, Mäkelä, & Rabbiosi, 2012). Well-designed procedures signal the seriousness of the HRM activity in addition

to the importance of the applicant’s prior knowledge and experience (Pfeffer, 1998a: 69–74). Stocks of related prior knowledge in a subsidiary are maintained through rigorous procedures. Likewise, barriers to intra-unit knowledge flows can be removed with explicit procedures that provide incentives for employees to engage in inter-unit knowledge sharing. Hence,

Hypothesis 3. The greater the formalization of HRM practices within a subsidiary, the higher will be the knowledge flows into and out of the subsidiary.

Secondly, practices that empower employees within an organization will have a positive impact on the individual’s propensity to share and receive knowledge. Empowerment is a “motivational process of an individual’s experience of feeling enabled” (Corsun & Enz, 1999: 207). Scholars advocating progressive HRM practices emphasize high commitment work practices (Barton & Delbridge, 2004; Delaney & Huselid, 1996; Pfeffer, 1998a,b; Riordan, Vandenberg, & Richardson, 2005) that provide a number of sources of high performance, including encouraging people to work smarter, and saving overhead (Pfeffer, 1998a: 33). Such approaches encourage employees to use their initiative and allow decisions to be made at a lower, more decentralized, level (Pfeffer, 1998a: 74–79). With this type of arrangement in the MNC, subsidiary employees require appropriate knowledge to make decisions, and are willing to share knowledge regarding their activities and initiatives.

There are a number of informal mechanisms that engender commitment. Information sharing regarding corporate performance and strategy allows employees to become aware of overall corporate vision, goal, strategy and performance (Pfeffer, 1998a: 93–96; Stroh & Caligiuri, 1998). Employees receive a clearer picture of the firm’s business situation and reasons for any change in strategy. Employees of a subsidiary in the MNC are more likely to cooperate with changes in corporate strategy when they perceive they have been given a full set of facts and a clear justification and rationale for decisions. These have been argued as key employee involvement practices (Riordan et al., 2005). By reducing status distinctions, barriers between potential participants in a knowledge exchange can be removed and participants can be brought closer together: there exists a mutual perception of equality and equity (Pfeffer, 1998a: 90–93). Reducing status distinctions removes cognitive barriers and encourage dispersed employees to share and accept knowledge freely and effectively with each other. Providing training programmes for employees to improve job-related skills can also ensure that the local organization has higher absorptive ability (Minbaeva et al., 2003; Pfeffer, 1998a: 85–90; Wang et al., 2004) and enable employees to become involved (Riordan et al., 2005). Allocating decision rights to lower level employees within the subsidiary will encourage commitment and participation (Riordan et al., 2005). According to management control theory (Eisenhardt, 1985; Merchant & Van der Stede, 2003), benefits of decentralization to lower level staff include motivation for employees, more effective use of local knowledge, and less overhead for senior managers (Williams & van Triest, 2009). Since motivation is a prime antecedent of knowledge transfer within the MNC (Gupta & Govindarajan, 2000; Minbaeva et al., 2003) we may expect these types of empowering HRM practices within the overseas subsidiary to stimulate knowledge inflows and outflows at the level of the subsidiary. Hence,

Hypothesis 4. The more empowering the HRM practices within a subsidiary, the higher will be the knowledge flows into and out of the subsidiary.

The first four hypotheses utilize logic that can be applied to both developed and emerging market MNCs. We now turn our attention

to the role played by subsidiary HRM practices in emerging market MNCs.

It is vital for MNCs from emerging markets that seek sales growth in new developed markets to encourage knowledge in- and outflows of their subsidiaries. Many of these so-called 'late-comer' MNCs are under pressure to develop innovative capabilities as their home country economy seeks to 'catch-up' and compete with firms from developed economies (Kumaraswamy, Mudambi, Saranga, & Tripathy, 2012; Luo & Tung, 2007). Scholars have noted how emerging market firms are faced with a number of conditions that challenge their ability to catch-up. Firstly, they more likely to start from a position of technological backwardness than developed economy firms and will at some point need to utilize a strategy of emulation and development of flexible routines aimed at developing sustained competitive advantage through innovation (Li & Kozhikode, 2008). This draws attention to their internal resource constraints (Bruton, Ahlstrom, & Obloj, 2008) and the lack of complementary assets that could enable them to utilize new knowledge effectively (Li & Kozhikode, 2008). Secondly, these firms often face a range of economic hazards in their home countries. Indeed, their home countries are characterized as undergoing institutional transition (Peng, 2003) as well as having weak capital market structures, poorly specified property rights, and high environmental uncertainty (Li, 2013). Increasingly, firms from emerging markets have pursued outward foreign direct investment (FDI) in order to achieve both sales growth and strategic learning.

Subsidiary HRM practices in these types of MNCs can be used to deal with these sources of internal and external uncertainty. Firstly, formalized HRM practices in the subsidiary will provide more certainty over the control of subsidiary resources and will give guidance to subsidiary employees in terms of utilization of knowledge assets in the subsidiary. Subsidiary employees will be clear about what they need to do in order to enhance performance. Formalized practices will have a potent effect on how human capital is utilized in inter-unit knowledge sharing. As this form of asset will be well understood (and less uncertain) in terms of levels of skills and ability in the subsidiary, formalized practices will be conducive to how human capital is applied in knowledge sharing. We argue that the opposite will be the case for socialization, which is inherently uncertain and less straightforward for subsidiary managers to control. Formalization may be seen as a transaction-based governance mechanism, the use of which has been associated with knowledge sharing hostility (Husted, Michailova,

Minbaeva, & Pedersen, 2012). In this sense, there will be a tension between formalized HRM practices and socialization involving a subsidiary of an emerging market MNC resulting in subsidiary employees becoming confused about how best to share knowledge in order to overcome the company's inherent resource constraints and challenges in its home country. Hence, for emerging market MNCs,

Hypothesis 5. The greater the formalization of HRM practices within a subsidiary, the stronger will be the effect of human capital on knowledge flows into and out of the subsidiary and the weaker will be the effect of socialization on knowledge flows into and out of the subsidiary.

Empowering HRM practices, on the other hand, will result in more control in the hands of subsidiary employees. There will be more local decisions made at lower levels in the subsidiary, decisions that will be able to handle the sources of uncertainty that emanate from the MNC's status as an emerging market firm. In this situation, it will be usual for subsidiary employees to utilize socialization with other units of the MNC in order to continually clarify and understand the context behind local decisions made. This will inevitably result in greater knowledge flowing into and out of the subsidiary as employees explain what decisions they are taking and seek additional inputs from the wider MNC into how their decisions will enable the MNC to fulfil its mission towards strategic learning and 'catching-up'. However, in this instance we also expect lower level decisions to come into conflict with established sources of skills and ability within the subsidiary when it comes to assessing how learning in the host country can be utilized by the corporation at large and by the parent company in the emerging home market. The subsidiary's pre-existing human capital will matter less to other units of the MNC wanting to interact and exchange knowledge with the focal subsidiary, while those who have been empowered will be the focus of greater connectivity with the rest of the MNC as it attempts to learn and develop as a corporation. Hence, for emerging market MNCs,

Hypothesis 6. The more empowering the HRM practices within a subsidiary, the weaker will be the effect of human capital on knowledge flows into and out of the subsidiary and the stronger will be the effect of socialization on knowledge flows into and out of the subsidiary.

Our conceptual model is shown in Fig. 1.

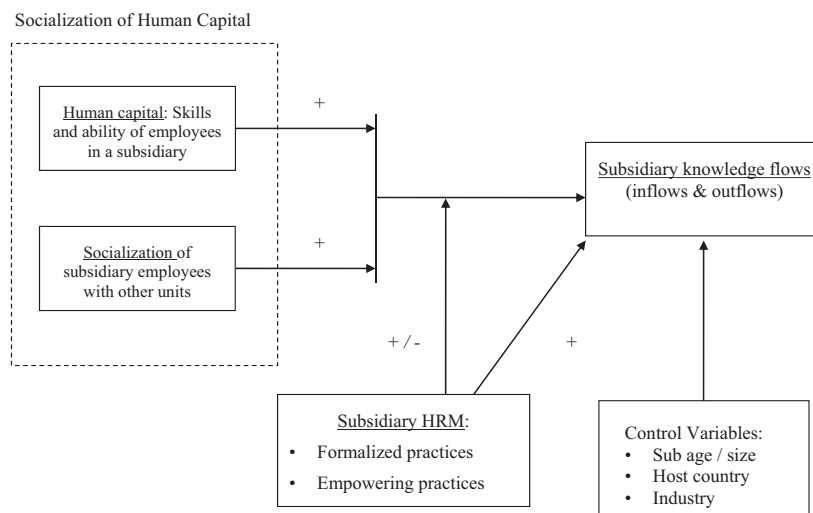


Fig. 1. Conceptual model of subsidiary knowledge flows in the emerging market MNC.

3. Methodology

3.1. Data collection

We tested this model through a questionnaire survey of senior subsidiary managers in fully-owned subsidiaries of Korean MNCs located in the United Kingdom, France and Germany. These three host countries were chosen because they are major locations of outward investment by Korean MNCs to Europe and also because they represent different cultures, management styles and national institutions. We identified 227 subsidiaries of Korean firms located in the UK, Germany and France through the directories of the Korean Chamber of Commerce in each of the three countries. The Korean Chamber of Commerce compiles a list of foreign subsidiaries of Korean MNCs. Among these, 68 were not listed on the main Korean Stock Exchange (KSE) and were not included in our study, reducing the target frame to 159 subsidiaries. Following prior studies of knowledge inflows and outflows involving MNC subsidiaries (Gupta & Govindarajan, 2000; Yamao et al., 2009), our questionnaire was aimed at an experienced senior manager in the subsidiary. We required the respondent to have insight into employee ability, employee coupling with other units and HRM practices applied within the subsidiary. We sent the questionnaire by email with a personalized cover letter explaining the purpose of the survey and to assure the recipients of confidentiality. After one week we sent a follow-up email to non-respondents, with a telephone follow-up after a two week interval. In this round we received 75 usable returns. In order to conduct inter-rater reliability tests we elicited a further 21 returns from managers in 11 subsidiaries of the initial target frame that did not respond to the first mailing (results of inter-rater reliability tests are reported below). The final sample of 86 subsidiaries represented various industries with a large proportion in electronics, IT and telecommunications, reflecting the competitiveness of Korean firms in these industries. We received 41 responses (66.1%) from the United Kingdom, 18 responses (42.9%) from France and 27 responses (49.1%) from Germany. The overall response rate was 54.1% (Table 1).

In terms of characteristics of respondents, we note the following. Firstly, 67 respondents (77.9%) were Korean expatriates. Secondly, 73 respondents (84.9%) had had work experience within the headquarters or other subsidiaries of their MNC. Thirdly, the vast majority were male ($n = 79, 91.9\%$). Finally, the mean tenure of the respondent was 3.01 years (s.d. 2.11 years). In terms of job function, 29 of the respondents (33.7%) were HR managers, 31 (36.0%) reported their role as general manager/managing director/deputy general manager or director. The remainder reported their role as finance manager/research manager/sales and marketing director/administration manager and the like. Overall, this profile gave us confidence that the respondents had the experience and position to be able to assess aspects of human and social capital, and HRM practices within the subsidiary, as well as knowledge inflows and outflows to and from the subsidiary.

3.2. Dependent variables

We used two dependant variables to indicate knowledge flows: *knowledge inflow* to the subsidiary and *knowledge outflow* from

the subsidiary. Knowledge inflow was defined as the usefulness of knowledge transferred from other MNC units to the focal subsidiary (Davenport & Prusak, 1998; Szulanski, 1996). This approach has been used widely in studies of knowledge transfer within MNCs (Björkman et al., 2004; Gupta & Govindarajan, 2000; Minbaeva et al., 2003). Respondents rated the usefulness of different types of knowledge from other MNC units, including marketing, product and management knowledge ($\alpha = 0.87$). The questions used a five-point Likert scale, where 1 indicated “not at all useful” to 5 indicated “very useful”. Similarly, knowledge outflow was defined as the perception of usefulness of knowledge transferred from the focal subsidiary to other MNC units ($\alpha = 0.87$).

3.3. Independent variables

A scale for subsidiary *human capital* was built from three items capturing employees’ overall ability in the subsidiary, the level of their job related skills, and their educational level (Minbaeva et al., 2003). All of these were captured on a five point scale (centred) ($\alpha = 0.86$). A scale for subsidiary *socialization* was built from four items relating to structural and interpersonal interactions through which subsidiary employees socialize with other units of the MNC (Lengnick-Hall & Lengnick-Hall, 2006; Morris et al., 2006). We included the frequency of using e-mail, participation in joint workshops, frequency of use of conference calls, and participation in corporate-wide committees ($\alpha = 0.71$).

We used two items to capture *formalized HRM practices* in the subsidiary. These correspond directly to two of Pfeffer’s seven high-performance work practices (Evans & Davis, 2005; Pfeffer, 1998a,b), namely the presence of well-designed procedures for employee performance evaluation and a well-designed programme for performance-related incentives (Guest, 1997; Pfeffer, 1998a) ($\alpha = 0.77$). Four further items were used to capture *empowering HRM practices* in the subsidiary. These are based on the degree to which employees were encouraged to participate in organizational activity through empowerment and informal control mechanisms (Batt, 2002; Riordan et al., 2005). Here we used job-related training, the degree to which status distinctions were minimized, the extent to which subsidiary employees were informed about company performance, and the degree of autonomy given to subsidiary employees (Pfeffer, 1998a,b; Riordan et al., 2005) ($\alpha = 0.88$). Table 2 shows the scale construction.

We ran a factor analysis using Varimax rotation to understand the properties of the established scales (knowledge inflows, knowledge outflows, human capital and socialization). Following recent studies in the field of HRM and knowledge processes (e.g., Simonin & Özsoy, 2009) we treat HRM practices as a system of practices that is formative by nature (Diamantopoulos, Riefler, & Roth, 2008). The HRM literature recognizes how bundles of HR practices may be used for different purposes (Lepak & Snell, 2002). We therefore exclude them from the factor analysis of reflective scales. We note that all knowledge flow items (inflows and outflows) load on a single component, the human capital items load on a single component, and the socialization items load on a third component. While it would have been feasible to run our models with a single construct for knowledge in- and outflows (a potential measure of overall knowledge integration of the subsidiary), we retained them as separate constructs in empirical testing in order to test for potential differences in how knowledge in- and outflows are influenced by subsidiary HRM practices.

3.4. Control variables

We incorporated five control variables into our empirical analysis. First, we used subsidiary size (natural log of the number of employees). Subsidiary size may explain communication

Table 1
Sample and response rate.

	Subsidiaries targeted	Usable returns	Response rate (within country)
United Kingdom	62	41	66.1%
France	42	18	42.9%
Germany	55	27	49.1%
Total	159	86	54.1%

Table 2
Scale construction.

Questionnaire items (5 point)	Alpha
Knowledge inflows (4 items) 1. To what extent does knowledge from your headquarters and other subsidiaries flow into your subsidiary? 2. Do you find the marketing know-how from your headquarters and other subsidiaries useful? 3. Do you find the product know-how from your headquarters and other subsidiaries useful? 4. Do you find the management practices from your headquarters and other subsidiaries useful? Anchors: 1 = not at all, 5 = very much	0.87
Knowledge outflows (4 items) 1. To what extent does knowledge from your subsidiary flow into your headquarters and other subsidiaries? 2. Has your own marketing know-how been used by your headquarters and other subsidiaries? 3. Has your own product know-how been used by your headquarters and other subsidiaries? 4. Has your own management practice been used by your headquarters and other subsidiaries? Anchors: 1 = not at all, 5 = very much	0.87
Subsidiary human capital (3 items) 1. Compared to your local competitors, the employees' overall ability in this subsidiary are... 2. Compared to your local competitors, the employees' job-related skills in this subsidiary are... 3. Compared to your local competitors, the employees' educational level in this subsidiary are... Anchors: 1 = far below average, 5 = far above average	0.86
Subsidiary socialization (4 items) 1. Employees in this subsidiary frequently use email to communicate with other unit members. 2. Employees in this subsidiary frequently join workshops with other unit members. 3. Employees in this subsidiary frequently use conference calls with other unit members. 4. Employees in this subsidiary frequently join corporation wide committees. Anchors: 1 = strongly disagree, 5 = strongly agree	0.71
Formalized HRM practices (2 items) 1. This subsidiary has well-designed employee performance evaluation procedures. 2. This subsidiary has a well-designed performance-related incentive programme. Anchors: 1 = strongly disagree, 5 = strongly agree	0.77
Empowering HRM practices (4 items) 1. Decision making in this subsidiary is highly decentralized. 2. Employees in this subsidiary are well informed about the company's performance. 3. The status distinction between managers and employees is not high in this subsidiary. 4. This subsidiary has extensive job-related training programmes for current employees. Anchors: 1 = strongly disagree, 5 = strongly agree	0.88

frequency and knowledge flows through scale effects. Second, we controlled for subsidiary age (in years, using natural log). Frost and Zhou (2005) showed how “older subsidiaries are more likely to act as the source of knowledge utilized by headquarters organizations” (Frost & Zhou, 2005: 684–685). The third and fourth control variables controlled for the host country of the subsidiary. We used dichotomous variables for the French and German subsidiaries (i.e., UK as the base case) to account for variations in institutional environments that could explain differences in knowledge flows. The final control variable was a dichotomous variable for industry (1 = electronics, informational technology, pharmaceuticals, chemicals; 0 = automobiles, shipping, logistics, energy) in order to account for level of dynamism in the industry of the MNC (Brown &

Eisenhardt, 1997). Descriptive statistics for all variables are shown in Table 3. All variables are normally distributed. Table 3 also shows bi-variable correlations between variables.

3.5. Data quality and analysis

Firstly, we took a number of steps to deal with the potential issue of common method variance. Common method variance creates “an apparent correlation among variables generated by their common source” (Chang, van Witteloostuijn, & Eden, 2010: 178). This is a concern in our study as we used a self-reported questionnaire in which independent and dependent variables were captured at the same time (Podsakoff & Organ, 1986). A preferred

Table 3
Correlation matrix.

	Mean/std. dev	1	2	3	4	5	6	7	8	9	10	11
Knowledge inflows 1	3.55/0.87											
Knowledge outflows 2	3.41/0.89	0.75***										
Human capital 3	3.58/0.78	0.15	0.47***									
Socialization 4	2.90/0.88	0.33**	0.46***	0.29**								
Formalized practices 5	3.45/0.94	-0.18	-0.17	-0.08	-0.40***							
Empowering practices 6	3.35/0.95	0.71***	0.78***	0.53***	0.50***	-0.19						
Ln (sub age) 7	2.33/0.89	0.07	0.004	-0.13	-0.001	0.11	0.08					
Ln (sub employees) 8	3.55/1.16	0.31**	0.07	-0.11	0.08	0.05	0.12	0.13				
UK dummy 9	0.48/0.50	-0.24*	-0.29**	-0.07	-0.17	-0.04	-0.19	-0.07	-0.14			
France dummy 10	0.21/0.41	0.04	0.19	-0.06	0.11	0.05	0.06	0.05	-0.06	-0.49***		
Germany dummy 11	0.31/0.47	0.22*	0.15	0.12	0.09	0.004	0.16	0.03	0.21	-0.65***	-0.35***	
Industry = Knowledge intensive 12	0.41/0.49	-0.12	-0.12	-0.18	-0.17	0.32**	-0.20	-0.09	0.20	-0.08	0.04	0.05

* p < 0.05.
** p < 0.01.
*** p < 0.001.

way of dealing with common method variance is to capture dependent variable(s) from a separate source (Chang et al., 2010; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). For reasons of practicality and concerns about the reliability and comparability of company sources containing information representing internal knowledge flows, we were not able to do this. We followed the approach taken by Minbaeva et al. (2003) by targeting senior subsidiary managers as respondents. These respondents were able to distinguish between inflows and outflows as they completed the questionnaire. They had substantial experience within the MNC (the vast majority had worked in headquarters as well as in the subsidiary) and were capable of understanding the difference between the concepts of knowledge in- and outflows to a foreign subsidiary. The questionnaire items were very clearly expressed and we did not receive any questions from respondents relating to their meaning as we administered the questionnaire. Following Minbaeva et al. (2003), we also took the following steps. We ran a Harmon's single factor test (Podsakoff & Organ, 1986) to check if items loaded significantly on one factor. This revealed five factors with eigenvalues ranging from 1.66 to 6.24, with the first factor explaining 41.6%, i.e., less than 50% of the total variance. We also used a complex model specification that was unlikely to have been anticipated by respondents when using their cognitive map to fill out the questionnaire (Chang et al., 2010). In our case, the complexity of the model was attributed to the interaction effect of types of HRM practices. We also encouraged managers to respond to questionnaire items as honestly as possible (Chang et al., 2010).

Secondly, we examined inter-correlations between the independent variables and variance inflation factors in subsequent regression models in order to check for multicollinearity (reported below). We do not expect multicollinearity to influence our interpretation of the results. Thirdly, we ran inter-rater reliability tests on the subsidiaries where we received additional survey responses. Using the within-group technique for each scale (James, Demaree, & Wolf, 1984) we found the median r_{wg} ranges between 0.89 and 0.92, providing strong support for agreement between raters within the same subsidiary. Fourthly, we checked for the possibility of respondent bias by examining differences between the following: early vs. late respondents, expatriate vs. non-expatriate respondents, and tenure (greater and less than 2 years).

There were no statistically significant differences on any of our variables of interest. Fifthly, we examined the residual plots for evidence of heteroscedasticity in both regression models (k-inflows and k-outflows). We note that the distribution of residuals is normal in each case (full model) and the scatterplots of predictor and dependent variable residuals show a wide distribution.

Finally, multiple regression models for testing the hypotheses were run. Four models were tested for both knowledge inflows as the dependent variable, as well as for knowledge outflows as the dependent variable. In each case, these models were: (a) a control variables model, (b) control variables + human capital + socialization, (c) control variables + human capital + socialization + formalized HRM practices + empowering HRM practices, (d) a full model including the interaction effects.

4. Results

We observe positive and significant correlations between some independent variables (Table 3). However, these are somewhat large – albeit not excessively ($r > 0.8$) – for the correlations between empowering practices and knowledge in- and outflows, as well as between knowledge in- and outflows. The correlation between knowledge in- and outflows does not concern us as these variables are not included in the same regression model. Nevertheless, we examined variance inflation factors in subsequent direct effects regression models and note that these are all < 2 , i.e., at an acceptable level (Hair, Anderson, Tatham, & Black, 1998). This suggests that, despite the high correlations involving empowering practices, multicollinearity will not effect our interpretation of the results. We note both knowledge inflows and knowledge outflows are associated with socialization ($r = 0.33$, $p < 0.01$ and $r = 0.46$, $p < 0.001$ respectively). Human capital has a strong association with knowledge outflows ($r = 0.47$, $p < 0.001$) but not knowledge inflows. This provides some support to our core argument that effective knowledge transfer is related to various forms of capital within the overseas subsidiary in an emerging market MNC and indicates potential differences in determinants of knowledge inflows vs. knowledge outflows.

Table 4 shows the OLS regression results for knowledge inflows and outflows respectively. As far as the control variables are

Table 4
OLS regression results ($n = 86$).

Hypothesis	Knowledge inflows				Knowledge outflows				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	
Ln (sub age)	-0.01	0.02	-0.07	-0.11	-0.04	0.03	-0.04	-0.10	
Ln (sub employees)	0.32**	0.30**	0.19*	0.25**	0.07	0.07	-0.02	0.05	
France dummy	0.15	0.11	0.05	0.06	0.29**	0.23**	0.18**	0.20**	
Germany dummy	0.22	0.17	0.11	0.13	0.25*	0.14	0.10	0.10	
Knowledge intensive	-0.20	-0.14	-0.05	-0.08	-0.16	-0.03	0.04	-0.02	
Human Capital (HC)	+	0.07	-0.29**	-0.24**		0.39***	0.08	0.09	
Socialization (SOC)	+		0.23*	-0.07	-0.09		0.30**	0.06	
Subsidiary HRM									
Formalized practices	+		-0.06	-0.04			-0.02	0.03	
Empowering practices	+		0.83***	0.81***			0.70***	0.69***	
Interaction effects									
Formalized practices × HC	+			0.19*				0.26***	
Formalized practices × SOC	-			-0.06				-0.08	
Empowering practices × HC	-			-0.05				-0.23**	
Empowering practices × SOC	+			0.06				0.23**	
Max. VIF	1.19	1.22	1.83	1.90	1.19	1.22	1.83	1.90	
F	3.43**	3.51**	14.02***	10.85***	2.07	7.09***	16.16***	17.92***	
Adj. R-square	0.13	0.17	0.58	0.60	0.06	0.33	0.62	0.72	
Change		0.06*	0.29***	0.04		0.27***	0.27***	0.11***	

* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

concerned (models 1 and 5), we see that subsidiary size has a consistently positive influence across all models for knowledge inflows, and the French subsidiaries are associated with knowledge outflows. In models 2 and 6 we see: (1) that human capital has no statistically significant effect on knowledge inflows but does have a significant effect on knowledge outflows ($p < 0.001$); and (2) that socialization has a positive impact on both knowledge inflows and outflows.

Next we examine the direct and moderating effects of formalized and empowering subsidiary HRM practices. In models 3 and 7 we see a large change in adjusted R -squared, indicating that subsidiary HRM accounts for a greater variance in knowledge in- and outflows than human capital and socialization. The aforementioned positive direct effects of human capital and socialization disappear when subsidiary HRM is included; indeed, the coefficient for human capital becomes negative and significant. However, formalized practices have no significant direct effect. Empowering practices, on the other hand, has a strong positive direct effect on knowledge in- and outflows. The full models (models 4 and 8) are the best fitting models and show that formalized practices interact positively with human capital in influencing knowledge in- and outflows. The signs for formalized practices \times socialization are negative but not significant. These models also show that empowering practices has a negative influence on the relationship between human capital and knowledge outflows and a positive influence on the relationship between socialization and knowledge outflows (model 8). In model 4 (knowledge inflows) the coefficients for the moderating effects of empowering practices are not significant although their signs are as predicted. In summary, these results provide support for [Hypothesis 4](#), and partial support for [Hypotheses 5 and 6](#). [Figs. 2–5](#) show the plots for the four significant interactions involving subsidiary HRM variables, human capital and socialization.

5. Discussion

We contribute to the growing literature on international strategy and management of firms from emerging economies entering developed economies ([Wright et al., 2005](#)). Our study contributes to the literature on knowledge transfer within emerging market MNCs in three ways. Firstly, we expose the differentiated indirect effects of the subsidiary HRM practices. We show how the presence of human capital and inter-unit socialization of human capital are alone not fully responsible for knowledge flows: how local managers organize and treat

employees locally has a critical role ([Figs. 2–5](#)). This approach lends strong support to those proposing an integrated subsidiary capital view for explaining organizational dynamics within the MNC ([Morris et al., 2006](#); [Wright et al., 2001](#)) and highlights in particular the importance of interaction effects amongst different forms of 'subsidiary capital' when examining determinants of subsidiary behaviour in emerging market MNCs. Secondly, we provide insight into competing contingencies under which knowledge inflows and knowledge outflows are facilitated. These differences are important to both theory and practice, but have often been overlooked by researchers. We find different forms of subsidiary capital influence knowledge inflows and outflows in different ways. This suggests that a more refined approach is needed for understanding knowledge dynamics within emerging market MNCs than has been offered to date. Thirdly, we extend theorizing on the MNC as a knowledge network. Our findings relating to empowering practices suggest that, by encouraging a participative environment locally, the subsidiary organization becomes more integrated into the knowledge repositories of the wider MNC. This augments MNC theory relating to integration of subsidiaries by emphasizing local HR intervention as a way of activating the global MNC knowledge network and mobilizing knowledge throughout the MNC.

The results underline the importance of including subsidiary HRM practices in studies of emerging market MNC knowledge flows. While individuals' ability, skills and socialization clearly matter, the organizational approach for utilizing human resources is a critical third leg. However, this is a more complex construct than those derived from human capital or social capital logics. Our results suggest that MNC scholars should exercise great care in how they analyze the decisions that impact the relationship between employees and the functioning of the firm. We focussed specifically on the subsidiary HRM practices, and found a strong impact of local encouragement for employee participation through job-related training, decentralization, sharing of corporate information and reduction in status distinctions on subsidiary knowledge flows. The differentiated results for knowledge inflows and outflows reinforce the importance of treating HPWS not as a 'black-box' but as a formative system comprising sub-sets of variables over which local managers have discretion.

The insignificant result for human capital in the knowledge inflows model (model 2) and the negative coefficients on human capital in models 3 and 4 are rather surprising. However, there are some reasonable explanations for these results. Firstly, where a subsidiary is high in human capital, the local workforce is viewed

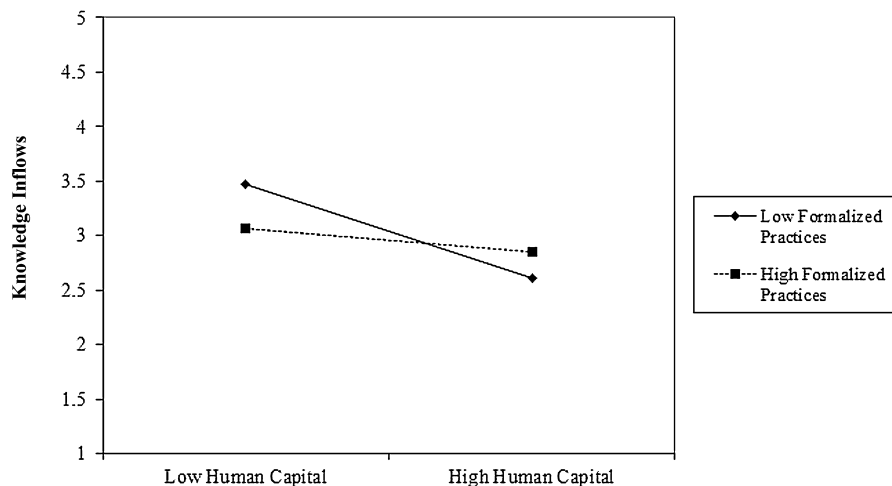


Fig. 2. Moderating effect of formalized HRM practices on the relationship between human capital and knowledge inflows.

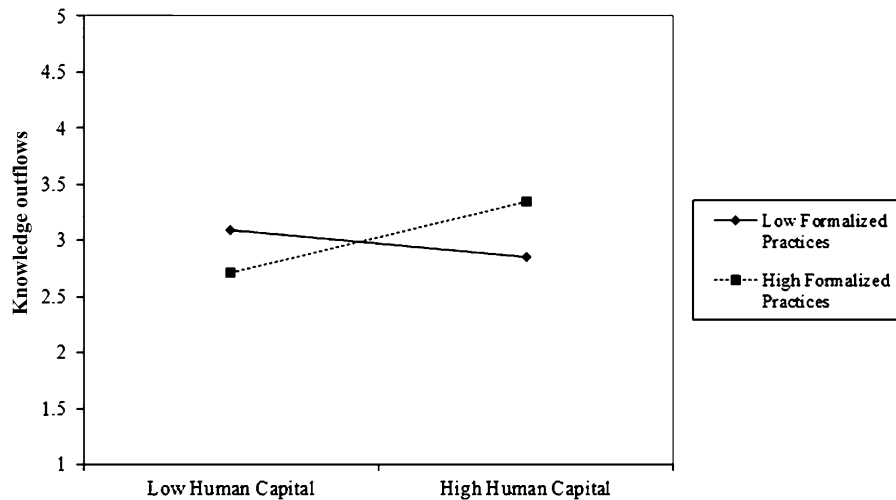


Fig. 3. Moderating effect of formalized HRM practices on the relationship between human capital and knowledge outflows.

as better trained and more capable than local competitors. In this situation, the need for knowledge from the MNC headquarters or other units of the MNC is reduced. The highly competitive local workforce is, in this situation, performing well, and local managers may reject or resent knowledge from other units to be received and used within the subsidiary. Secondly, our findings suggest that, where employees of an overseas subsidiary enjoy high social connectivity with employees in other units of the MNC, we should not always expect knowledge to flow into and out of the subsidiary in a uniform way. Certain local practices may act to dampen this effect. In this sense, the argument that socialization can also constrain organizational effectiveness applies (Lengnick-Hall & Lengnick-Hall, 2006; Portes, 1998). This relies on in-group-out-group dynamics: while some subsidiary employees are well socially-connected within the MNC, others are inevitably less so. This is especially relevant given the conceptualization of a social network as a private, as well as a public good (Kostova & Roth, 2002). The out-group, if left out of the social interactions that led to the opportunity for knowledge flows, may be less likely to internalize and apply new knowledge from other units of the MNC (inflows) or provide new knowledge to other units of the MNC (outflows). Another reason is that too much time spent in social interactions with other units of the MNC may come at a cost: not enough time to actually share new knowledge with other

employees of the subsidiary, and not enough time to see new knowledge applied.

The results of this study suggest that subsidiary managers need to pay particular attention to the HRM practices within the subsidiary if they want to integrate the subsidiary within the internal MNC network. This is especially true for subsidiaries of MNCs from emerging markets that have been established in developed markets. This requires a local philosophy of high commitment HR practices and devolvement of decision-making to lower levels within the subsidiary. In particular, reducing status distinctions and sharing corporate knowledge act to motivate employees to apply external knowledge in productive ways, as well as offer their knowledge to other units of the MNC. Creating involvement within the subsidiary ultimately results in the involvement of the subsidiary within the MNC. This provides some support to recent research that highlights the benefits of commitment-based practices over transaction-based practices when it comes to overcoming individual level participation in knowledge sharing (Husted et al., 2012).

For headquarters managers in emerging markets wishing to create a network of well-integrated subsidiaries in their MNC, our results have two interesting implications. Firstly, there is a potentially detrimental effect of subsidiary human capital on knowledge inflows. Local skill levels and competitiveness of the

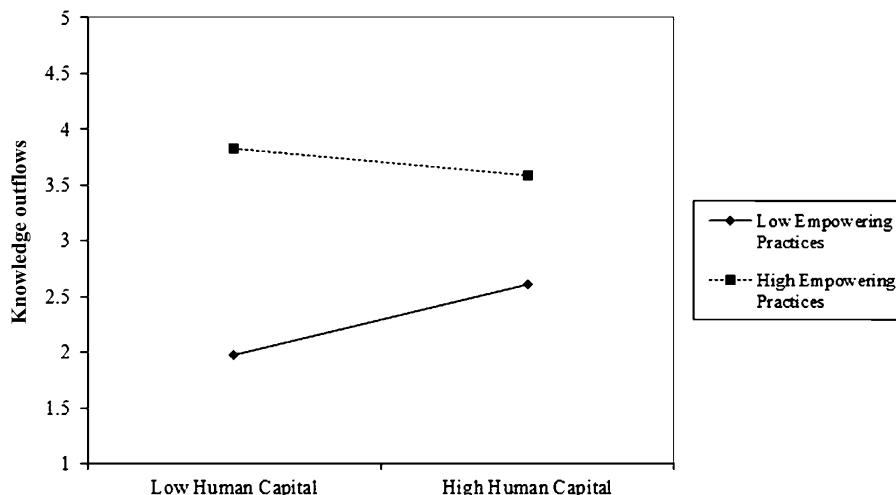


Fig. 4. Moderating effect of empowering HRM practices on the relationship between human capital and knowledge outflows.

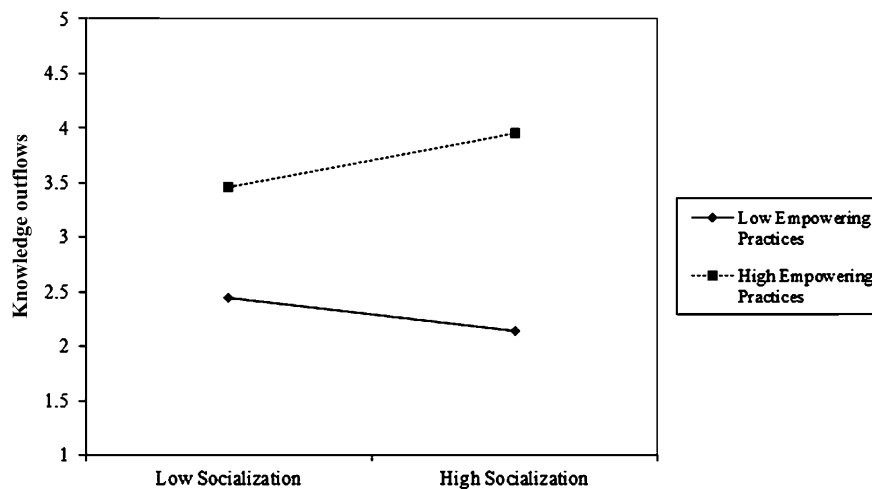


Fig. 5. Moderating effect of empowering HRM practices on the relationship between socialization and knowledge outflows.

local workforce matter in this respect. Managers need to understand whether knowledge is required and to assess the need for knowledge flows. Secondly, headquarters managers may encourage the development of specific HRM practices within a subsidiary (or group of subsidiaries). Global HR functions can provide guidelines to subsidiary managers for empowering the local workforce and encouraging high commitment locally. Headquarters managers can ensure that subsidiaries themselves receive autonomy where appropriate, and that a corporate culture is developed in which status distinctions are reduced and access to corporate information is made possible for all employees.

The current study has a number of limitations that should be addressed in future work. Firstly, our operationalization of human capital, socialization and components of the subsidiary HRM practice relied on a limited number indicators captured by questionnaire. A wider range of items can be used to represent broader relational aspects of social capital such as trust, and cognitive dimensions (Kostova & Roth, 2002). Secondly, financial capital and the financial performance of the subsidiary were not accounted for, and these may explain the extent of useful knowledge in- and outflows involving subsidiaries. Thirdly, our sample design and size prevents generalization to a wider range of MNCs and subsidiaries, including those from developed countries. Future work should address these limitations and extend our understanding of the relationships between HRM practices, different forms of subsidiary capital and knowledge flows within emerging market MNCs. This could involve extending subsidiary capital logic by paying careful attention to context-specific moderating influence of HRM practices in emerging market MNCs. We hope researchers can build on this study to develop insight into the interaction between human capital, socialization and HRM practices and how these impact knowledge flows in emerging market MNCs.

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