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Fostering integration through HRM practices: An empirical examination of absorptive capacity and knowledge transfer in cross-border M&As

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ABSTRACT

Transfer of knowledge-based resources from acquirers to the acquired units has been ubiquitously emphasized as an important driver of post-acquisition integration. Equally emphasized is the importance of recipient unit's absorptive capacity for the success of knowledge transfer and the facilitating role of HRM practices in developing absorptive capacity. In this paper, we integrate different streams of research on post-acquisition integration, knowledge transfer, absorptive capacity and HRM practices. Different from most past research, we pay attention theoretically and empirically to the multi-dimensional nature of *both* knowledge transfer and absorptive capacity. We test our hypotheses on a sample of acquired Chinese subsidiaries of 181 multinational corporations from seven countries. We find that successful inflow and implementation of knowledge require the acquired unit to have distinct types of capabilities each of which can be developed by a specific HRM practice. These results contribute literature by recognizing absorptive capacity as a manageable capability and identifying how different components of this capability could be developed by specific HRM practices. Furthermore, our results shed light on human side of M&As by examining how companies can foster post-acquisition integration by fine-tuning the absorptive capacity of acquired units.

1. Introduction

Mergers and acquisitions (M&As) have been one of the dominant modes of growth during the past few decades. However, cross-border M&As are risky and the majority of these deals fail to meet expectations (e.g. Gomes, Angwin, Weber, & Tarba, 2013; King, Dalton, Daily, & Covin, 2004; Moeller & Schlingemann, 2005; Weber, Tarba, & Oberg, 2013). A meta-analysis of the M&A literature revealed that none of the strategic and financial variables studied were significant in explaining variance in post-acquisition performance, thus suggested it might be fruitful to look to other types of variables to explain what differentiates successful and unsuccessful M&As (King et al., 2004). Lack of effective post-merger integration has been suggested as a key reason for poor performance of M&As, which could be resolved by successful transfer between acquirers and acquired units (Bresman, Birkinshaw, & Nobel, 1999). In their seminal work, Haspeslagh and Jemison (1991, p. 28) emphasize this point by noting that "acquisitions create value when the competitive advantage of one firm is improved through the transfer of strategic capabilities". This argument is also echoed by Zollo and Meier (2008) who identify transfer of capabilities between acquiring and target firm as one of the main pillars of integration process, which in turn is argued to have direct and indirect effects on other aspects of post-acquisition performance. Other studies (e.g. Ahammad, Tarba, Liu, & Glaister, 2016; Björkman, Stahl, & Vaara, 2007; Junni, Sarala, & Vaara, 2012; Ranft, 2006; Sarala, Junni, Cooper, & Tarba, 2016) similarly single out knowledge transfer as an important goal and pillar of post-acquisition success in M&As (for an interesting counterpoint, also see Reus, Lamont, & Ellis, 2016). However, due to its tacit and socially-complex nature, transfer of knowledge across organizational boundaries is not an easy task.

In this regard, absorptive capacity plays a crucial role since it is widely identified as the main precursor of knowledge transfer (Cohen & Levinthal, 1990; Kostopoulos, Papalexandris, Papachroni, & Ioannou, 2011; Schleimer & Pedersen, 2013; Zahra & George, 2002). Compared to organic growth trajectories of multinational corporations (MNCs), development of absorptive capacity is especially important in M&As to facilitate successful transfer of knowledge-based assets to acquired units (Junni et al., 2012) and, thereby, harmonize their processes and practices with those of acquirers (Lakshman, 2011). The role of absorptive capacity is thus paramount in M&As where knowledge transfer involves

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previously separate companies, multi-layered cultural differences and power shifts, all of which would give rise to resistance, ambivalence, confusion and uncertainty at both ends of the transfer process (Reus, 2012). Therefore, acquired unit's willingness and ability to learn is important to not only better realize their advantage as a knowledge creating and diffusing entity (Ghoshal & Bartlett, 1990; Kogut & Zander, 1993), but also sustain long-term growth by fostering post-acquisition integration in cross-border M&A deals (Bauer & Matzler, 2014; Bresman et al., 1999). Indeed, the strategic role of absorptive capacity during post-acquisition phase has been acknowledged and examined by earlier M&A studies (Björkman et al., 2007; Deng, 2010; Junni & Sarala, 2013; Liu & Woywode, 2013). However, there is still a lack of research that treats absorptive capacity as a dynamic *and* multi-dimensional capability that can be controlled and fostered via managerial actions at the organizational level. More specifically, there is limited explanation of how organizations can use different practices to build and develop specific dimensions of absorptive capacity. Our aim in this paper is to extend this burgeoning literature and shed further light on the human side of post-acquisition integration. To that end, we will zero in on the role of human resource management (HRM) practices as a way of developing distinct dimensions of acquired units' absorptive capacity, which in turn can facilitate sequential stages of knowledge transfer during post-acquisition integration. As recently noted by Sarala, Vaara, and Junni (2017, p. 7) "while prior M&A studies point to the importance of HRM tools and practices, we still lack a comprehensive understanding of why, how, and when various actors use specific HRM practices and tools and of their implications." Guided by these remarks and others alike (see Weber & Fried, 2011), we seek answer to two main research questions: (1) What are the roles of different dimensions of absorptive capacity in transferring knowledge via different stages of the process? (2) How can acquiring firms utilize different HRM practices to increase different dimension of absorptive capacity of acquired units and, thereby, increase the overall efficiency of knowledge transfer process? In seeking answers to these questions, we focus on M&As in the relatively under-represented emerging economy context of China (see Lebedev, Peng, Xie, & Stevens, 2015), and collect multiple-respondent primary survey data from 181 acquired firms in China. China was chosen as the setting for this study since its comparatively cheap labor cost and huge market potential have made China the world's largest destination for inward FDI (World Investment Report, 2017). In addition, given the large cultural distances between China and the home countries of firms in our study, knowledge transfer is especially challenging (Ambos, Ambos, & Schlegelmilch, 2006). We focus on knowledge transfer from developed country based acquiring firms to emerging-country based acquired subsidiaries. This deliberate choice is in line with the observation by Wang, Tong, and Koh (2004) who suggest that the knowledge base of most MNC subsidiaries in emerging economies is weak and needs to be strengthened by knowledge transfer from MNC headquarters to build up their knowledge base and capabilities to survive tough competition.

Conceptually, we differ from previous studies in two main ways. First, we make an explicit distinction between sequential steps of knowledge transfer within a unified framework. Earlier studies within MNCs (e.g. Gupta & Govindarajan, 2000; Harzing & Noorderhaven, 2006; Minbaeva, 2007; Minbaeva, Pedersen, Björkman, Fey, & Park, 2003; Szulanski, 1996) and M&As (e.g. Ahammad et al., 2016; Junni & Sarala, 2013) have often conceptualized knowledge transfer as a singular phenomenon that comprises of either *knowledge flows*, or the extent of *knowledge implementation* at the recipient unit. Here, we consider inflow and implementation not as alternative ways of conceptualizing knowledge transfer, but as different stages of the same transfer process and include them in the same model. We believe that focusing on distinct stages of knowledge transfer is important since, as we show, different dimensions of absorptive capacity drive different stages of knowledge transfer. This way, our framework provides a holistic yet nuanced explanation as to how HRM and absorptive capacity plays a role in knowledge transfer in cross-border M&As

Second, we offer a better understanding of how absorptive capacity can be developed or enhanced by implementing HRM practices. To the best of our knowledge, limited systematic research exists on the role of HRM practices in developing absorptive capacity of acquired units (e.g. Junni & Sarala, 2013).[1] Compared to these studies, the novel aspect of our paper is that we see absorptive capacity as a *multi-dimensional construct* (c.f., Volberda, Foss, & Lyles, 2010), and identify specific HRM practices that are conducive to the development of each dimension of absorptive capacity. In this regard, we share the same intuition and ambition with Minbaeva et al. (2003) and argue that the management of human capital plays a critical role in an organizations' ability to learn. Nevertheless, different from their conceptualization of absorptive capacity as combination of ability and motivation of the recipient unit, we adopt a more nuanced perspective and examine the four dimensions (i.e., acquisition, assimilation, transformation, and exploitation) of absorptive capacity identified by Zahra and George (2002) and prevalently used and confirmed by subsequent studies (e.g. Daspit & D'Souza, 2013; Jansen, Van Den Bosch, & Volberda, 2005). Using this fine-tuned approach in the specific context of acquisitions, we not only regard absorptive capacity as a manageable capability but also examine how different dimensions of this capability could be developed by specific HRM practices.

In addition, we focus on four key HRM practices (i.e., internal communication, training, performance-based compensation, and performance appraisal) as managerial antecedents of the corresponding absorptive capacity dimensions. These HRM practices have been identified as most widely used in extant research (e.g. Fey, Morgulis-Yakushev, Park, & Björkman, 2009), and they closely relate to the development of employees' ability and willingness to understand and use external knowledge (e.g. Minbaeva et al., 2003). By examining the influence of HRM practices on distinct dimensions of absorptive capacity, our model provides insights on how multinational corporations can manage, support, develop, and incentivize human resources to develop their absorptive capacity and, therefore, enhance their ability to obtain *and* utilize useful external knowledge. Here, we also want to emphasize the focus of our paper is not the degree of cumulative knowledge transfer into an acquired unit in the aftermath of acquisition, but the acquired unit's ability and behavior in obtaining and utilizing transferred knowledge.[2] In this vein, we see absorptive capacity as an important precursor for not only the knowledge inflows to an acquired unit but also for the effective use of external knowledge by the acquired unit. To date, only a handful of empirical studies have probed into this multifaceted nature of absorptive capacity and examined its role in multiple stages of the knowledge transfer process (Jansen et al., 2005; Minbaeva et al., 2003) and we are not aware of any study looking at the effect of different HRM practices on different dimensions of absorptive capacity in M&As. Given our particular focus on the human side of post-acquisition integration, complexities of which have not been sufficiently understood yet (Gomes et al., 2013; Sarala et al., 2017), our framework and empirical findings contribute to extant cross-border M&A research. This way, we empirically show that effective management of human resources can help post-acquisition integration by developing specific capabilities of acquired units and, thereby, fostering successful exchange of resources between acquirers and acquired units. It is worthwhile to add that our model linking HRM practices to different dimensions of absorptive capacity and knowledge transfer is not only

[1] We fully acknowledge that knowledge transfer could be reciprocal and could be bi-directional – i.e., from the acquiring unit to the acquired unit and vice versa (Bresman, Birkinshaw, & Nobel, 1999). However, in this paper, we will only focus on a specific direction of knowledge transfer where acquiring unit is the sender and the acquired unit is the recipient. Our choice is primarily driven by the characteristics of our empirical context. To be more specific, most of the Western companies make investment in China to render their subsidiary units' operations more efficient by sending some of their own knowledge-based assets (e.g. Buckley, Clegg, & Tan, 2006; Inkpen & Pien, 2006).

[2] We would like to thank one of the anonymous reviewers for bringing this issue to our attention.

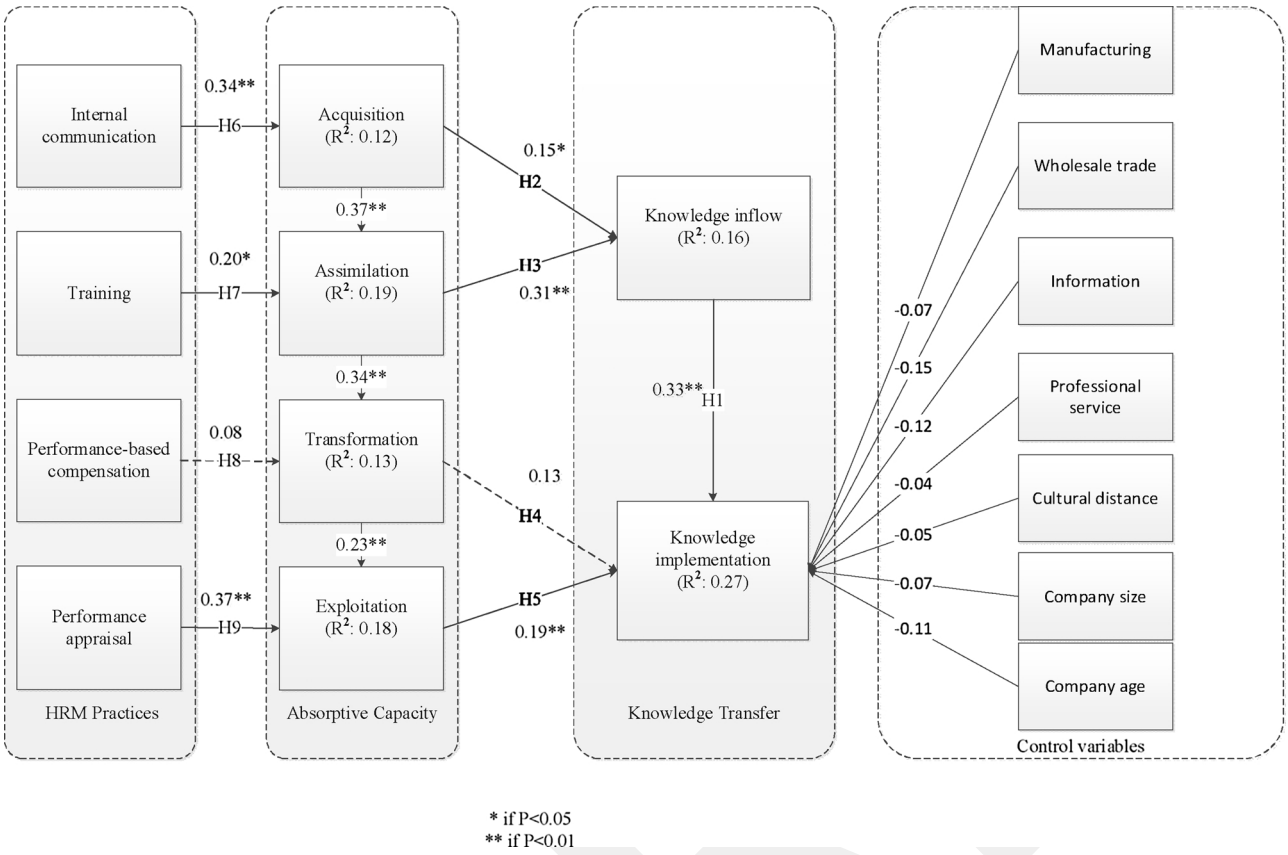

Fig. 1. Theoretical Framework and Results.

relevant for M&As, but also for greenfield subsidiaries in MNCs. Yet, we suggest that the issues we explore here are more salient in M&As, where performance of acquired units largely depends on the extent to which it can learn from its environment and upgrade necessary capabilities accordingly. Thus, acquisitions present a good empirical setting to study the respective roles of practices and capabilities in realizing successful knowledge transfer.

In the following section we discuss theory and develop our hypotheses. We then explain the paper's methodology, present our findings, and discuss the study's results, contributions, and limitations.

2. Theoretical background and hypotheses development

2.1. Knowledge transfer stages

In this paper we focus on the transfer of management practices, which is a specific form of knowledge, from acquirers to acquired subsidiaries. Knowledge transfer can be defined as "a process that covers several stages starting from identifying the knowledge to the process of transferring the knowledge to its final utilization by the receiving unit" (Minbaeva et al., 2003, p. 587). This working definition of knowledge transfer suggests that knowledge transfer is both about the flow of useful knowledge into the recipient unit *and* the actual implementation/utilization of the knowledge. Accordingly, we suggest that the process of knowledge transfer consists of two key stages, i.e., knowledge inflow and knowledge implementation (see Fig. 1).[3]

Knowledge inflow refers to the initiation of receiving knowledge, which includes both codified and tacit knowledge, via informal and formal mechanisms of learning. Research has shown that the success of knowledge transfer depends on the extent of efforts to make knowledge flow and the degree of knowledge overlap between the knowledge senders and recipients (Najafi-Tavani, Giroud, & Sinkovics, 2012; Zahra & George, 2002). In this first phase, firms may receive the incoming knowledge, but this does not necessarily ensure that the knowledge is fully understood, believed in, or used. This is especially relevant in M&As, wherein the initial phases of post-acquisition integration could often be imbued with employee resistance and fear of exploitation (Empson, 2001; Junni, 2011) and greater need for unlearning old practices (Yildiz & Fey, 2010). Lack of trust and personalized relationships in this initial stage can therefore cause acquired unit employees to exert stronger bias for status quo and stick to their old routines (Tsang, 2008), which would inhibit successful transfer of knowledge from acquirer to the acquired unit (Bresman et al., 1999). Again, this points out to the need for differentiating between exposure to new knowledge and its successful transfer to the acquired unit.

Unlike the inflow of knowledge, *knowledge implementation* refers to the effective application of the received knowledge. We argue that more interaction with the acquirer would help the acquired unit better understand new knowledge and appreciate the value of effectively putting it into practice. In other words, aforementioned problems related to employee resistance and lack of relationship depth could be alleviated by increasing the extent and scope of communication and points of contact between acquirer and acquired unit (Björkman et al., 2007; Junni, 2011). This is in line with the *two-factor theory* proposed by Stang (1975), which suggests that repeated exposure to new ideas and stimuli is positively associated with positive affect towards these ideas/stimuli. In addition to this, it is shown that individuals can process and comprehend new ideas at greater speed and ease as the frequency of interaction with these ideas increase (Bornstein & D'Agostino, 1992). Such effects, in turn, are found to be conducive to first- and second-order learning (Gordon & Holyoak, 1983).

[3] We should point out that while our model depicted in Fig. 1 ends with knowledge transfer, like Lakshman (2011) we believe that knowledge transfer is important because it facilities successful post-merger integration. However, as our model is already rather complicated we leave empirical exploration of this point for future research.

In sum, we argue that mid-stages of post-acquisition process involve repeated communication with the acquirer and cumulative exposure to new knowledge sent by the acquirer (Bresman et al., 1999; Sarala & Vaara, 2010). Therefore, we postulate that increased communication and exposure in the form of higher knowledge inflow would positively affect acquired units' comprehension of and attitude towards new knowledge and its source (i.e., acquirer), which would in turn positively affect acquired unit employees' willingness to and likelihood of implementing the practices. Based on this, we propose the following hypothesis:

Hypothesis 1. Knowledge inflow is positively related to knowledge implementation.

2.2. Absorptive capacity

Absorptive capacity is a firm's ability "to recognize the value of new, external knowledge, assimilate it and apply it to commercial ends" (Cohen & Levinthal, 1990, p. 128). It is challenging to achieve inter-unit learning because of the conflicts between different organizational values and practices in acquisitions (Nahavandi & Malekzadeh, 1988; Schweiger, 2002). Especially in cross-border acquisitions, which occur between companies based in different countries, such problems may be exacerbated. Therefore, absorptive capacity is especially important in acquisitions due to inherent inter-firm differences (Reus, 2012), negative effects of which could be alleviated by fostering acquired units' ability to and interest in learning from the acquirer.

Absorptive capacity is a capability, but it may or may not be used. Thus, absorptive capacity should be considered as a distinct phenomenon and separated from knowledge transfer, which is the extent that this capability is actually used and leads to effective transfer of knowledge. Zahra and George (2002) conceptualize absorptive capacity as a set of organizational routines and processes, by which firms acquire, assimilate, transform, and exploit knowledge to produce a dynamic organizational capability. Dynamic capabilities are essential for firm to maintain success (Eisenhardt & Martin, 2000) and thus it is important to understand how such capabilities can help firms configure their resources to sustain their competitive advantage, and how these capabilities can be developed or enhanced by organizational practices. In terms of resource configuration, viewing absorptive capacity as a dynamic capability can enable scholars to analyze the stocks and flows of a firm's knowledge and relate these them to the creation and sustainability of its competitive advantage (Zahra & George, 2002). Concerning the development of absorptive capacity in M&As, in this article we discuss specific HRM practices as levers which can develop different dimensions of absorptive capacity of acquired units (e.g. Minbaeva et al., 2003) providing suggestions for explicit actions that managers can take to improve different aspects of the knowledge transfer process depending on where the firm is weaker.

Extant literature largely talks about the determinants of absorptive capacity via identifying antecedents such as organizational structure (e.g. Lane & Lubatkin, 1998), socialization capabilities (e.g. Jansen et al., 2005), and network position (e.g. Tsai, 2001). Past research suggests that absorptive capacity facilitates knowledge transfer between subsidiaries and headquarters (e.g. Minbaeva et al., 2003), as well as between acquirers and acquired units (e.g. Junni & Sarala, 2013). However, to the best of our knowledge, past M&A research often consider absorptive capacity as a unitary phenomenon without paying due attention to multiple dimensions of the construct (for an exception, see Deng, 2010). Following Zahra and George (2002), we think it is important to distinguish between different dimensions of absorptive capacity and their corresponding effects on different stages of knowledge transfer. Of these dimensions, *acquisition* is a recipient unit's ability to identify and access new knowledge and *assimilation* pertains to analyzing, interpreting, and understanding the obtained knowledge (Kim, 1998; Zahra & George, 2002).

The combination of acquisition and assimilation constitutes a firm's *potential absorptive capacity*. Strong acquisition and assimilation capabilities, thus, enable the recipient unit to be more open and receptive to external knowledge (Fosfuri & Tribó, 2008). More importantly, higher degree of potential absorptive capacity gives the firm a better sense of direction and guidance while searching for new knowledge. The need for direction is especially pronounced in cross-border M&As where acquired units need to deal with and respond to changes during the initial phases of post-acquisition process. In other words, a subsidiary with strong acquisition and assimilation capabilities would be more likely to engage in a targeted search of knowledge, knows which units to interact with (e.g. headquarters) and expose themselves to new ideas and knowledge (see Fig. 1). In this regard, our key premise corresponds to the line of reasoning adopted by Monteiro, Arvidsson, and Birkinshaw (2008, p. 91) who argue that recipients of knowledge flows "engage in a process of problemistic search within the context of an MNC in which there is very limited awareness of where its useful knowledge resides". Based on a complementary reasoning, here we argue that strong potential absorptive capacity will be associated with more intense and targeted environmental scanning and boundary spanning activities (Ben-Menahem, Kwee, Volberda, & Van Den Bosch, 2013), which would result in a higher degree of knowledge inflow into the acquired unit. Therefore, we propose the following hypotheses:

Hypothesis 2. The stronger the knowledge acquisition capabilities of the acquired unit, the greater will be the knowledge inflow.

Hypothesis 3. The stronger the knowledge assimilation capabilities of the acquired unit, the greater will be the knowledge inflow.

In addition to identifying and understanding new external knowledge, absorptive capacity also refers to a firms' ability to modify new knowledge, combine it with existing knowledge, and efficiently apply it to commercial ends (Zahra & George, 2002). In this regard, *transformation* refers to a firms' ability to develop, refine, and integrate new practices with its existing knowledge base. In this sense, transformation is mainly about making changes to the existing *and* new knowledge so that they could be effectively combined. *Exploitation* relates to those skills and capabilities that are required to effectively adopt new knowledge and apply it towards commercial ends (Lane & Lubatkin, 1998; Zahra & George, 2002). The combination of transformation and exploitation represents *realized absorptive capacity*, which enables firms to use and to leverage the new knowledge once it arrives (i.e., flows) to the frontiers of their organizational boundaries. Hence, realized absorptive capacity determines the extent to which a recipient unit can efficiently leverage and utilize external knowledge and apply it towards commercial ends (Zahra & George, 2002). It stands to reason that transformation and exploitation are specifically needed for the overall success of the knowledge transfer process in international acquisitions, where specific capabilities are required to reconcile and manage pre-acquisition differences in terms of organizational culture, systems, processes and practices. In other words, unlike greenfield subsidiaries that receive new knowledge on a clean slate, acquired units need to be able to integrate new knowledge with their existing practices and processes. This underscores the importance of realized absorptive capacity, which would help acquired units better understand, modify (whenever needed) and utilize transferred knowledge (see Fig. 1). Therefore, we predict that:

Hypothesis 4. The stronger the knowledge transformation capabilities of acquired unit, the greater will be the extent of knowledge implementation.

Hypothesis 5. The stronger the knowledge exploitation capabilities of the acquired unit, the greater will be the extent of knowledge implementation.

2.3. HRM practices

Human resources are critical to the competitive advantage of a firm (Huselid, 1995). Extant literature has shown that fostering absorptive capacity largely depends on the extent to which organizations can develop, motivate and guide their human capital (Minbaeva, Pedersen, Björkman, & Fey, 2014). To that end, HRM practices play an important role in helping firms to build absorptive capacity and to enhance knowledge transfer (e.g. Minbaeva, 2005, 2008; Minbaeva et al., 2003; Theriou & Chatzoglou, 2008). The role of HRM practices in socio-cultural integration has also been a central topic of interest in a recently growing stream of M&A literature (for a review, see Sarala et al., 2016). Over and above building trust, effectuating shared identity and fostering communication/coordination between acquirer and acquired unit, HRM practices are also argued to influence intra-organizational knowledge transfer in M&As (Aklamanu, Degbey, & Tarba, 2016).

Although HRM has been identified as a key facilitator for both absorptive capacity and knowledge transfer in M&As, it is interesting to observe that these two streams of research has not been sufficiently integrated in a systematic way. One rare exception is Junni and Sarala (2013), which identifies knowledge transfer as an important outcome for the success of acquisition integration, positions absorptive capacity as the key antecedent of knowledge transfer in acquisitions, and looks at individual (i.e., employee withdrawal), organizational (i.e., HRM and knowledge processing systems) and contextual (i.e., national cultural differences) antecedents of absorptive capacity. The empirical results confirm that absorptive capacity is indeed an important precursor of knowledge transfer, and the knowledge-processing and communication systems are significant organizational antecedents of this capacity.

In the present investigation, we extend Junni and Sarala (2013) study in three main ways. First, we look at absorptive capacity as a multidimensional construct, which is a point theoretically and empirically well-established in past absorptive capacity research (e.g. Daspit & D'Souza, 2013; Jansen, Van Den Bosch, & Volberda, 2005; Zahra & George, 2002). Second, we do not consider knowledge transfer as a single-phase phenomenon. Instead, we examine knowledge transfer as a multi-stage phenomenon, which entails both knowledge flows and implementation. This way, we aim to disentangle both absorptive capacity and knowledge transfer, and examine unique links across different dimensions of these two concepts. Last, but not the least, we have an explicit focus on a set of HRM practices to identify their respective effect on the development of each dimension of absorptive capacity. To that end, we focus on high-performance work practices which are used to develop employees' knowledge, skills, and abilities as well as empower and motivate employees to leverage their skill and abilities (Becker & Huselid, 1998). We consider four specific HRM practices (i.e., internal communication, training, performance-based compensation and performance appraisal) as drivers for building various dimensions of absorptive capacity in this paper (see Fig. 1). According to Fey et al. (2009), these four practices are those that have been most frequently studied in the HRM literature.

Internal communication is aimed at achieving systematic analysis and efficient distribution of information and coordination at all levels (Tkalac Verčič, Verčič, & Sriramesh, 2012). Scholars (e.g. Weber, Rachman-Moore, & Tarba, 2012) have suggested that communication plays a crucial role in developing knowledge and capabilities and that it is especially important in the international M&A context. At the beginning of knowledge transfer process, acquired units may have limited awareness about the acquirer and the nature/quality of knowledge it sends. This is particularly the case in the initial stages of post-acquisition phase, which can aptly be characterized as a process that entails ambiguity concerning the respective roles of different units, cultural conflicts and misunderstandings (Vaara, 2003). Earlier stages of knowledge transfer process are also similarly uncertain and ambiguous due to limited awareness and understanding concerning the value and use of new knowledge (Levin & Cross, 2004; Szulanski, 1996, 2000). Therefore, practices fostering international communication can help employees to resolve ambiguity, verify interpretations, and facilitate understanding (Peltokorpi, 2015), which is especially needed in the initial phases of knowledge transfer in M&As (Angwin, Mellahi, Gomes, & Peter, 2016). Internal communication can thereby help MNCs create rich information exchange channels and initiate formal or informal relationships and interactions among employees. Having lateral and vertical flow of information is useful to ensure that employees become aware of external knowledge and capabilities available within the acquiring unit (Jansen et al., 2005; Welch, 2012). In other words, internal communication encourages acquired subsidiary employees to look for new knowledge. As noted by Weber and Tarba (2010, p. 207), transfer of knowledge between acquirer and acquired unit "requires coordination across units of both companies [which] largely depends on communication between managers and employees of the acquiring company, and between these managers and those of the acquired company". Internal communication practices at the acquired unit, ceteris paribus, would thus help acquired unit employees increase their awareness of acquirer's knowledge base, and facilitate necessary coordination mechanisms to access it. Hence, we suggest:

Hypothesis 6. The greater the use of internal communication mechanisms at the acquired unit, the stronger would be its knowledge acquisition capabilities.

While internal communication can increase acquired unit employees' awareness of new knowledge and provides additional means for coordination to acquire it, training programs can help employees improve their job skills and abilities (Brewer, 2014). Training has been commonly used to help employees understand and grasp new knowledge (e.g. Becker, 1964; Fey & Furu, 2008; Guest, 1997; Minbaeva et al., 2003). Training could be beneficial to the development of assimilation skills in several ways. First, training builds and improves employees' meta-skills to understand new concepts, forms, and models of knowledge (Chen & Huang, 2009). Indeed, earlier studies lend empirical support for the contention that training programs have positive effects on individuals' and groups' capabilities to grasp different and novel ideas (Jerez Gómez, Céspedes Lorente, & Valle Cabrera, 2004). Second, training programs can improve employees' organization-specific skills such as understanding of the organizational culture, which help them perform their work better (Jiang, Lepak, Hu, & Baer, 2012). Moreover, training can help employees to gain a better grasp of their organization's existing knowledge base and develop meta-cognitive skills through which they can make better sense of new knowledge. Further, it makes sense for training to be considered in an early stage of the knowledge transfer process given that skill development (i.e., 'can do') often precedes motivation (i.e., 'will do') when it comes to learning. As emphasized by Nikandrou and Papalexandris (2007), training is an essential HRM practice to improve necessary skills of employees so that they can be ready for and effectively deal with the new demands surrounding the change process during post-acquisition phase. This suggests that intense training programs during this phase would be oriented towards those skills and knowledge that would be most needed in the aftermath of acquisition. As a result, training can enhance acquired unit employees' ability to interpret, understand, and learn new practices more efficiently (Fey et al., 2009; Minbaeva et al., 2003; Zahra & George, 2002). Based on this, we hypothesize that:

Hypothesis 7. The greater the use of training programs at the acquired unit, the stronger would be its knowledge assimilation capabilities.

Aklamanu et al. (2016) highlight that, in order to have a positive bearing on social aspects of post-acquisition integration, HRM practices should not only increase employees' ability but also stimulate their motivation to engage in knowledge transfer. Paralleling this, ability and motivation are also identified as two main pillars of recipient units' absorptive capacity (Minbaeva et al., 2003). Above, we identify communication and training as key HRM practices that can help acquired

unit employees increase their *ability* to respond to the demands of post-acquisition environment. Compensation policies and performance evaluation systems, on the other hand, are important HRM practices to *motivate* human resources for adapting their behavior to the new environment and for conducting the specific kind of behaviors to sustain post-acquisition changes.

Performance-based compensation is a commonly used HRM practice that deals with rewards employees receive in exchange for their performance (Brewer, 2014). In performance-based compensation systems, employees receive additional bonuses and payments when they fulfill their tasks in accordance with specified quality standards (Minbaeva, 2008). Learning new work-related methods and procedures is important for increasing work efficiency and performance. An essential prerequisite in this learning process is the ability *and* willingness to integrate new ideas with existing knowledge, and make due changes at both ends in order to ensure consistent and smooth combination of new and old ways (Todorova & Durisin, 2007). In this regard, performance-based compensation can incentivize employees to further develop and combine the transferred practices with existing knowledge in the acquired units. This way, compensation policies can guide employees' efforts to make better use of newly transferred practices so that they can individuals can accomplish the organizational goals of productivity, innovation, and profitability (e.g. Fey & Furu, 2008; Gupta & Singhal, 1993). This is also in line with the *expectancy theory*, which suggests that performance-based compensation can motivate individuals to exert greater efforts to receive associated payments and bonuses (Minbaeva et al., 2003). Thus, extrinsic motives and rewards would encourage employees to better realize the potential of newly transferred knowledge (Yahya & Goh, 2002). Put differently, performance-based compensation would induce employees to engage in knowledge transfer not only for the sake of learning new things, but also to increase their work performance and thus becoming entitled for bonuses tied to their individual achievement. Thus, we propose:

Hypothesis 8. The greater the use of performance-based compensation systems at the acquired unit, the stronger would be its knowledge transformation capabilities.

Performance appraisal is defined as a way of evaluating the extent to which employees perform their work effectively (Brewer, 2014). As noted by Townley (1993), performance appraisal is a managerial activity through which employees are provided with feedback regarding their performance including whether or not resources are efficiently used for the realization of organizational objectives. Thus, performance appraisal would motivate employees to use new knowledge to increase organizational effectiveness and guide them with respect to the kind of behaviors that would have positive outcomes for the organization. It can also provide opportunities, guidelines, and feedback on competency development of participants in completing knowledge transfer (Lopez-Cabrales, Pérez-Luño, & Cabrera, 2009; Minbaeva, 2005; Simonin & Özsomer, 2009). Thus, performance evaluation systems not only push employees to better utilize the new knowledge in ways that add value and improve firm performance, but also give explicit and measurable direction to employees' efforts. Accordingly, we propose:

Hypothesis 9. The greater the use of performance appraisal systems at the acquired unit, the stronger would be its knowledge exploitation capabilities.

3. Methodology

3.1. Survey design and data collection

Thanks to its comparatively cheap labor cost and huge market potential, China receives more inward FDI than any other country (World Investment Report, 2017). International M&As are key to many firms' international strategy, and this is particularly the case for entry into China. Home to 18% of the world's population, many Western firms view China as a prime target market. However, the knowledge base of these acquired subsidiaries in China is relatively weak in contrast to their parent firms from Western countries (Lyles & Salk, 1996). Thus, without successful knowledge transfer from their MNC parents, these acquired units in China might face challenges in building up knowledge base, improving capabilities, accelerating management experiences, and surviving intense competition to generate good returns of acquisitions (Wang et al., 2004). Therefore, knowledge transfer is critical for both the parent firms and the acquired units to achieve their competitive advantage and to sustain superior performance in this context. The Chinese government has also specifically highlighted knowledge transfer as an articulated target since the opening of its vast domestic market (Buckley et al., 2006). The economic, institutional, and cultural differences between China and other (Western) countries make transfer of knowledge between them especially difficult (Ambos et al., 2006), and thus make this an interesting context to look at international knowledge transfer. Despite its empirical relevance and theoretical value, less empirical research has been conducted in China historically than it is due. This is mainly because conducting empirical research in emerging economies like China is prone to challenges and difficulties due to firms' traditional secrecy, and other logistical difficulties of conducting surveys (Peng, Moffett, & McAdam, 2010). More research is thus needed on knowledge transfer in cross-border M&As within the specific context of emerging economies like China (Brewer, 2014; Lebedev et al., 2015; Welch, 2012). For these reasons, China was chosen as the setting for this study.

This study took acquired units as its main focus and unit of analysis. While it would be ideal to incorporate views from both the parent firm and the acquired unit, collecting data from a sample of matched-pair respondents poses additional challenges. Therefore, in order to obtain a large enough sample size, we focused on collecting data from acquired units only. Furthermore, given that absorptive capacity was a key construct in our model, it made more sense to focus on the acquired unit side. In addition to that, as far as acquisitions/targets in transforming economies (e.g., China) are concerned, knowledge transfer often follows primarily a unidirectional route (i.e., from the acquirer to the target) in order to improve the effectiveness and operational efficiency of the acquired firms (Wang et al., 2004). Therefore, our empirical design is aimed to capture the dynamics of absorptive capacity and HRM practices in acquired units as the recipient units of incoming knowledge.

To minimize the problems of common method bias (CMB), we asked two respondents (one general manager/senior manager and one HR manager/employee) from each firm to participate in the survey and use responses from these different respondents to separately measure our independent and dependent variables. In addition, we paid special attention to ensure that the general/senior manager respondent from each firm have been working in the company before the acquisition to have an informed perspective to compare pre- and post-acquisition phases. This was one of the reasons that we had to adopt some latitude in the exact position of the person. There were two versions of the questionnaire, one was for the general/senior manager and the other one was for the HR manager or deputy thereof.[4] Many of the questions were the same in both versions whereas some others were unique to each version of questionnaire. Some questions were about transferring a specific practice that both general/senior manager and HR employee/manager were familiar with. However, for those questions answered by both respondents, we asked them to refer to the same transferred practice and answer the related questions accordingly. For that

[4] We specifically targeted respondents who had worked for the acquired firm both before and after the acquisition. When the HR manager did not fulfill this requirement, we approached someone in a deputy position at the HR department who also has the required experience with acquisition. Eventually, we collected data from 137 HR managers, and 44 HR deputies/mid-level managers.

purpose, we requested the general/senior manager to write down the name of the specific transferred practice that s/he was referring to. After the questionnaire of the general/senior manager was completed, we asked the HR employee/manager to fill in his/her version of the questionnaire by referring to the same transferred practice identified by general/senior manager. Exemplary practices identified by general/senior managers include systems for evaluating clients' satisfaction and relating it to employee bonuses, new customer order management systems, new shipping systems, etc. We collected data on multiple knowledge transfer stages (i.e., knowledge inflow and knowledge implementation) and different HRM practices (i.e., internal communication, training, performance-based compensation, and performance appraisal) came from answers provided by HR employees/managers. On the other hand, the data on four dimensions of absorptive capacity (i.e., acquisition, assimilation, transformation and exploitation) are based on the answers from general/senior managers. We have also conducted the Harman's single-factor test to statistically check for CMB. Our results reveal that the single method factor does not account for a majority of the covariance between the measures (11.5%) and this indicates CMB is not a pervasive issue in this research (Podsakoff & Organ, 1986).

Once a draft questionnaire was developed, we got feedback from three different academic experts. In addition, the two versions of questionnaire were each pre-tested on five different managers who were not included in the final sample. Feedback from these academic and managerial experts was then incorporated into the final version of the questionnaire. The questionnaire was originally developed in English. However, since many respondents could only speak Chinese, the questionnaire was translated into Chinese using a typical translation/back translation process to ensure consistency. Due to the difficulties of collecting data in an empirical context like China, we hired two market research firms to collect data for us. The companies on the master sample list (described below) were divided between these two firms. One firm was hired to do just a small part of the work with the intent of crosschecking the work of the main firm. Both firms were aware that a second firm was involved. In the end, our dummy firm collected questionnaires from 20 firms and the main market research firm collected questionnaires from 161 firms. The data from two firms appeared similar, as were the response rates, which increased our confidence in the reliability of the collected data. In order to further ensure data quality, we trained the interviewers prior to the survey and we also kept regular extensive contacts with the market research firms throughout the data collection process. Survey progress, status reports, and data entry were checked informally two to three times a week and formally once a week throughout the project. After the survey was completed, we did further quality control via checking some information we could verify, such as looking the information on the official websites of these interviewed companies, comparing different parts of the sample, and conducting face-to-face interviews with a few randomly selected firms.

The surveys were administered between 2012 and 2013. We specifically targeted those Chinese companies that had been fully acquired by foreign MNCs between 2006 and 2011. We restricted our time frame this way because we wanted respondents to be able to remember about the knowledge flows and the issues influencing them. Acquisitions were required to be at least one year old to ensure enough time has passed for possible post-acquisition changes to get implemented. To develop a list of firms to take part in the study, we obtained and reviewed lists of foreign firms that made acquisitions in China's 10 largest cities and their surrounding areas (Beijing, Shanghai, Guangzhou, etc.). We then combined this information and compiled a master list based on the following criteria for sampling. First, the Chinese firms had to be acquired by foreign firms coming from one of the following seven countries: Germany, France, South Korea, US, Sweden, Singapore, or the UK. We cross compared the list of foreign investors in China (data from National Bureau of Statistics of China) and countries' scores of different cultural dimensions to select the appropriate countries (Hofstede, Hofstede, & Minkov, 1997; House, Hanges, Javidan, Dorfman, & Gupta, 2004; Trompenaars & Hampden-Turner, 1998). These seven countries were chosen because they were the major investors in China. Meanwhile, these countries had diverse national cultures. In addition, the acquired company needed to have 20 or more employees as with even smaller acquisitions we believe the issues involved are rather different. Based on these sampling criteria, we ended up with a list of 512 firms. These firms were contacted in written form and in person to ask if they would be willing to take part in this study. The total response rate was 37% and 193 firms completed questionnaires.[5] 12 of the firms only completed one questionnaire and were thus excluded from the analysis. In the end, we reached out a final sample of 181 firms with two respondents per firm. Among these 181 firms, the smallest company had 30 employees and the largest employed 2000 individuals (the average = 353). The oldest company was founded in 1987 and the youngest company was founded in 2008, and the average firm age is around 13 years. Regarding the industries of the acquired firms, the top three industries of the acquired firms participated in this survey are manufacturing, wholesale trade, and information.

3.2. Measurement

We used standard questionnaires to collect the data. The majority of measurement scales were adopted from previous studies, and some were adjusted based on feedback from pilot study. Due to the differences in economic and educational levels, Chinese managers' ability to understand academic questionnaires and willingness to complete long questionnaires might be lower than their Western counterparts (Peng et al., 2010). Therefore, we have revised and simplified some measurement items to avoid confusion and respondent fatigue. Below we explain how we measured each construct. All HRM practices (internal communication, training, performance-based compensation, and performance appraisal) were measured by making reference to their application/use in the aftermath of acquisition. Unless specified otherwise, all of the variables were measured using five – point Likert-type scales ranging from 1 = "strongly disagree" to 5 = "strongly agree.

3.2.1. Knowledge inflow

We developed our own measure for knowledge inflow, which was composed of the following items: (1) 'Our unit has been frequently receiving written documents (such as memos, e-mails, and letters) and other forms of instructions from headquarters related to the practice'; (2) "Our unit has frequent face-to-face interaction (such as personal visits, teleconferencing) with headquarters to get more information about the practice"; (3) "Our unit frequently asks questions to headquarters when we don't have a clear idea about the practice"; (4) "Our unit used formal and informal mechanisms to learn more about the practice". All questions were answered by HR employees/managers.

3.2.2. Knowledge implementation

We adopted the knowledge implementation scale from Kostova and

[5] To ensure methodological rigor, we reviewed data quality as it had been collected in five waves of approximately equal size (checking for similar means, completeness of questionnaires, reasonableness of responses, etc.). Unfortunately, we do not have any information about non-responding firms, but our response rate (37%) compares favorably vis-à-vis earlier M&A. More importantly, since we periodically reviewed data quality throughout the data collection, we know which of five chronological groups each observation belongs to. Thus, we are able to compare the responses of the 41 respondents in the first wave and the 33 respondents in the last wave suggesting that the last wave approximates non-respondents (Hutchinson, Tollefson, & Wigington, 1987; Johnson, Beaton, Murphy, & Pike, 2000). We compared the means between these two groups for the 10 key constructs used in our study. 9 of the 10 of them had no statistically significant difference at P value < 0.05. Thus, this provides evidence that respondents and non-respondents are likely similar. To test for retrospective bias we compared the means of key constructs used in the model for acquisitions made in 2006 and 2007 to those made in 2010 and 2011. None of them showed significant differences. Results for both of these tests are available from the authors upon request.

Roth (2002), comprised of the following four-items: (1) "Our employees are willing to put great deal of effort beyond that normally expected in order to help implement the new organizational practice"; (2) "Our employees talk up the new organizational practice to their friends as a great way to reorganize business"; (3) "The new organizational practice really seems to inspire the very best in our employees in the way of involvement at the workplace"; (4) "Our employees are extremely glad that they are involved in the new organizational practice". All questions were answered by HR employees/managers during the survey.

3.2.3. Absorptive capacity

All of our measures for different dimensions of absorptive capacity were fully adopted from Flatten, Engelen, Zahra, and Brettel (2011) and answered by general/senior managers. The scale for *acquisition* consists of seven items regarding the use of external sources to obtain information including: (1) the search for information concerning our industry is every-day business in our company; (2) our management motivates the employees to use information sources within our industry; (3) our management expects that the employees deal with information beyond our industry; (4) our unit has frequent interactions with corporate headquarters to acquire new knowledge; (5) employees of our unit regularly visit other branches; (6) other divisions of our company are hardly visited (reverse scored); (7) our unit periodically organizes special meetings with customers or third parties to acquire new knowledge. The scale for *assimilation* inquired respondents regarding the structure of information flow among departments and consisted of four items: (1) in our company ideas and concepts are communicated cross-departmental; (2) our management emphasizes cross-department support to solve problems; (3) in our company there is a quick information flow, e.g. if a business unit obtains important information, it communicates this information promptly to all other business units or departments; (4) our management demands periodical cross-departmental meetings to interchange new developments, problems, and achievements. We used four items for the *transformation* dimension, which captured the methods of knowledge processing within the responding company and comprised of the following items: (1) our employees have the ability to structure and to use collected knowledge; (2) our employees are used to absorb new knowledge as well as to prepare it for further purposes and to make it available; (3) our employees successfully link existing knowledge with new insights; (4) our employees are able to apply new knowledge in their practical work. Lastly, the *exploitation* dimension aimed at the commercialization routines and measured via following items: (1) our management supports the development of prototypes/test new practices; (2) our company regularly reconsiders technologies/practices and adapts them accordant to new knowledge; (3) our company has the ability to work more effective by adopting new technologies/practices. Unlike reflective measures where a change in the construct affects the underlying measure, formative indicators determine a construct (Jarvis, MacKenzie, & Podsakoff, 2003; Petter, Straub, & Rai, 2007). According to the criteria for identifying formative constructs, the indicators of absorptive capacity fully define and represent the constructs of four dimensions, and there are covariations among the indicators of each construct (Jarvis et al., 2003). Hence, the constructs of four dimensions of absorptive capacity are duly treated as formative constructs in this research.

3.2.4. Internal communication

We adopted three items from Minbaeva et al. (2003), to measure the construct of internal communication. These three items included: (1) communication in different departments after acquisition; (2) communication between non-managerial and managerial employees after acquisition (3) communication between the HR department and the top management team. All questions were answered by HR employees/managers during the survey.

3.2.5. Training

Two items, as suggested by Minbaeva et al. (2003), were used to measure training. We asked the question of "on average, how many days of formal training do you receive annually since acquisition" to managerial and non-managerial employees respectively. Moreover, we added one more Likert-type item to examine coaching-based training by asking: "in our organization most managers have received training in coaching or mentoring". All questions were answered by HR employees/managers during the survey. We converted the data via standardization before analysis.

3.2.6. Performance appraisal

To measure performance appraisal, we adopted three items from Minbaeva et al. (2003): (1) proportion of employees who regularly (at least once a year) receive a formal performance evaluation after acquisition; (2) importance of performance appraisal practice; (3) employees' seriousness about performance appraisal practice. The first item was measured as a number from 1 to 100 and we used Likert-type scales to measure the other two items. All questions were answered by HR employees/managers during the survey. We converted the proportional data via standardization before analysis.

3.2.7. Performance – based compensation

Three items from Minbaeva et al. (2003) were implemented to measure performance-based compensation. These items included: (1) since acquisition, what proportion of employees had the opportunity to earn individual, group, or company – wide bonuses for productivity, performance, or other individual performance outcomes; (2) since acquisition, whether compensation system has been closely connected with the financial results of the company; (3) since acquisition, the extent to which the company has been using performance − based compensation. The first item was a percentage ranging from 0 to 100 and the other two items were measured using Likert-type scales. All questions were answered by HR employees/managers during the survey. We also converted the proportional data via normalization before analysis.

3.2.8. Control variables

Even though we have restricted time frame (i.e., sampled deals were aged 1 to 6 years at the time of data collection) we expected that knowledge flows from headquarters would be more intense during period immediately following the acquisition. Therefore, we controlled for *deal age* in number of years. Since larger subsidiaries are more likely to have additional resources for knowledge transfer, we controlled for *subsidiary size* in terms of number of employees. We also controlled the primary *industry* of subsidiaries. We offered 20 specific options of industries by following the United States Industry Classification System. We selected the most popular four industrial sectors of respondents and categorized industries into five main groups of manufacturing, wholesale trade, information, professional, scientific, and technical services, and other industries. The national *cultural distance* between the home country of acquiring MNCs and the home country of acquired subsidiaries may also affect the effectiveness of HRM practices and knowledge transfer (Björkman et al., 2007). Therefore, we controlled cultural distance by using the Kogut and Singh (1988) index and the six of the seven home country dummies. As all of the home country dummies were non-significant we omitted these control variables from our final analysis to preserve degrees of freedom. Likewise, we controlled for Hofstede's (2015) six dimensions of national culture for acquirers' home country. As all of the cultural variables were non-significant, we omitted these to preserve degrees of freedom.

4. Results

We used PLS (partial least squares)-SEM as our multivariate statistical technique as it allowed us to analyze multiple variables and

Table 1
Data Results.

Constructs	AVE	Composite reliability	R^2
Internal Communication	0.52	0.65	–
Training	0.49	0.74	–
Performance-based Compensation	0.59	0.72	–
Performance Appraisal	0.57	0.72	–
Acquisition	–	–	0.12
Assimilation	–	–	0.19
Transformation	–	–	0.13
Exploitation	–	–	0.18
Knowledge inflow	0.60	0.74	0.16
Knowledge implementation	0.50	0.75	0.27

multiple equations simultaneously. PLS is most appropriate when the assumptions of multivariate normality and interval scaled data do not hold, and sample sizes are relatively small (Fornell & Bookstein, 1982). In addition, PLS does not have identification problems of handling and analyzing single-item constructs, reflective and formative measurement models, and therefore it can be applied in a wide variety of research situations (Hair, Ringle, & Sarstedt, 2013). Due to our relatively moderate sample size and complex model we needed to use PLS (Hair, Ringle, & Sarstedt, 2011). We conducted our analysis following the guidelines suggested by Hair et al. (2013). The results are presented in two steps. First, in order to ensure the measurement validity and reliability of our theoretical framework, criteria on internal consistency, indicator reliability, convergent validity, and discriminant validity have been evaluated for our constructs. All of the composite reliability values were higher than 0.7, except one (see Table 1). Composite reliability vales of 0.60–0.70 are considered acceptable in exploratory research like ours (Nunally & Bernstein, 1994; Hair et al., 2013). We use composite reliability (which takes into account different outer loadings) rather than Cronbach's alpha (an average measure of inter-correlations) as an estimate of reliability because PLS prioritizes the indicators based on an indicator's individual reliability.

Several indicators with loadings lower than 0.5 were deleted to achieve increase in both composite reliability and average variance extracted (AVE) following the advice of Hair et al. (2013). In terms of convergent validity, all AVE scores were above 0.5 except one, which nearly missed the threshold at 0.49. All reflective constructs have good discriminant validity since the indicators' outer loadings on their own constructs were all higher than their cross-loadings with other constructs. The square root of the AVE of each construct was higher than its highest correlation with any other construct in the model, and this also established discriminant validity (Fornell & Larcker, 1981). The correlations are presented in Table 2.

We also evaluated the measurements of formative constructs by examining multi-collinearity issues and assessing the significance and relevance of the formative indicators. All indicators' tolerance (VIF) values were lower than 1 which suggest that multi-collinearity is not an issue since they are all less than the limit of 5 suggested by Hair et al. (2013). In terms of the significance and relevance of the formative indicators, we examined each indicator's outer weight (relative importance), outer loadings (absolute important) and used bootstrapping to assess their significance. Most of the indicators' outer weights and outer loadings were significant while two indicators were removed by heeding the advice of Hair et al. (2013). To evaluate the structural model of our theoretical framework, we examined construct collinearity, the coefficient of determination (R^2), the significance of path coefficients, and direct and mediation effects (Hair et al., 2013). All of the R^2 scores were above 0.1, the R^2 score for the final dependent variable (i.e., knowledge implementation) was 0.25. In addition, the previous model has been expanded to examine construct collinearity and the results were satisfactory (all of the VIF values were far below 5) which further shows that multi-collinearity is not an issue for our model/data (Hair et al., 2013) .

Second, using Bootstrapping Algorithm, we calculated significance of path coefficients with 5000 subsamples for two-tailed test. Hypothesis 1, which was about the positive relationship between the stages of knowledge inflow stage and knowledge implementation, was strongly supported ($p < 0.01$). Regarding Hypotheses 2 and 3, which respectively predict positive relationships between acquisition and knowledge inflow, and assimilation and knowledge inflow, were both supported ($p < 0.05$; $p < 0.01$). However, we did not find any support for Hypothesis 4 about the positive relationship between transformation and knowledge implementation. In contrast, we detect significant and positive relationship between exploitation and knowledge implementation was highly significant ($p < 0.01$), which lends support for Hypothesis 5. In terms of HRM practices, Hypothesis 6 and 7, which conjectured positive relationships between internal communication and acquisition, training and assimilation respectively, were both supported ($p < 0.01$; $p < 0.05$). However, Hypothesis 8, which was the path from performance-based compensation to transformation, was not significant. Lastly, Hypothesis 9 about the positive relationship between performance appraisal and exploitation was strongly supported ($p < 0.01$). To summarize, most of the hypotheses were strongly supported except the flow path from performance compensation to transformation and from transformation to knowledge implementation. The sequential paths from acquisition to assimilation, transformation and exploitation were not hypothesized for, but were all significant. None of the control variables were significant.[6] The results of path coefficients and hypothesis testing are shown in Fig. 1.

In terms of the mediation effects in this model, we examined four flow paths: (1) from internal communication to acquisition and then knowledge inflow; (2) from training to assimilation and then knowledge inflow; (3) from performance based compensation to transformation and then knowledge implementation; (4) from performance appraisal to exploitation and then knowledge implementation. Flow path 1, 2, and 4 showed significant mediation effects, whereas 3 failed to achieve significance.

In order to test for the relationships that we did not hypothesized about and explore if including such paths would result in a model with better explanatory power we also estimated an alternative model and compared it with our theorized model. In this alternative model we linked each HRM practice with all dimensions of absorptive capacity respectively. The primary evaluation criteria for the structural model are the R^2 measures and the level and significance of the path coefficients (Hair et al., 2011). Results for this 'fully linked' model were not as good as our main model. Although R^2 score of the alternative model was similar with that of current model, the coefficients of 12 flows paths (there are 16 in total) from different HRM practices to all dimensions of absorptive capacity were not significant. This provides post-hoc statistical support for our choice of model.[7]

5. Discussion

This paper examines different HRM practices as drivers of building specific dimensions of absorptive capacity which in turn foster successful cross-border knowledge transfer in post-acquisition integration. To address the shortcomings of previous research, we propose and test a multi-stage model of knowledge transfer wherein we differentiate between knowledge inflow and knowledge implementation. In this regard, by developing and testing our first hypothesis, we differ from the majority of empirical (Ahammad et al., 2016; Bresman et al., 1999; Capron & Mitchell, 1998) and conceptual (Björkman et al., 2007; Sarala et al., 2016) studies in that we did not treat knowledge transfer as a

[6] We also checked the potential unobserved heterogeneity issue by using FIMIX-PLS. The results suggest that sample heterogeneity is not prevalent in this study.

[7] Results for alternative model estimations are available from authors upon request.

Table 2
Latent Variable Correlation from PLS.

	Information (industry)	Internal communication	Manufacturing	Performance compensation	Professional service	Wholesale trade	Acquisition	Age
Information (industry)	1.000							
Internal communication	0.066	0.72						
Manufacturing (industry)	−0.310	0.040	1.000					
Performance compensation	0.012	0.087	−0.196	0.77				
Professional service (industry)	−0.107	−0.025	−0.341	0.046	1.000			
Wholesale trade (industry)	−0.136	0.050	−0.434	0.027	−0.150	1.000		
Acquisition	0.057	0.343	0.014	0.055	−0.041	−0.041	/	
Age	−0.096	0.011	0.115	−0.043	0.102	−0.050	−0.051	1.000
Assimilation	0.181	0.134	−0.195	0.138	0.049	−0.001	0.389	−0.063
Cultural distance	0.196	0.112	0.027	−0.055	0.025	−0.122	0.038	−0.026
Exploitation	0.080	0.201	−0.079	0.269	0.008	−0.056	0.193	0.008
Knowledge implementation	−0.041	0.075	−0.036	0.307	−0.015	−0.083	0.193	−0.094
Knowledge inflow	0.034	0.141	−0.078	0.211	−0.078	−0.030	0.277	−0.077
Performance appraisal	0.027	0.063	−0.113	0.321	0.114	−0.128	0.147	−0.097
Size	0.021	0.062	0.307	−0.260	−0.171	−0.170	−0.004	0.103
Training	0.066	0.035	−0.137	0.489	−0.054	0.037	0.106	−0.133
Transformation	0.068	0.205	−0.032	0.136	−0.091	0.059	0.289	0.017

	Assimilation	Cultural distance	Exploitation	Knowledge implementation	Knowledge exposure	Performance appraisal	Size	Training	Transformation
Information (industry)									
Internal communication									
Manufacturing (industry)									
Performance compensation									
Professional service (industry)									
Wholesale trade (industry)									
Acquisition									
Age									
Assimilation	/								
Cultural distance	0.078	1.000							
Exploitation	0.172	0.050	/						
Knowledge implementation	0.220	−0.057	0.284	0.71					
Knowledge inflow	0.374	−0.019	0.183	0.423	0.77				
Performance appraisal	0.066	0.062	0.353	0.121	0.067	0.75			
Size	−0.081	0.070	−0.011	−0.117	−0.041	−0.110	1.000		
Training	0.238	−0.077	0.205	0.210	0.172	0.086	−0.124	0.70	
Transformation	0.348	−0.092	0.208	0.254	0.296	−0.069	0.047	0.235	/

The diagonal elements in this matrix show the square root of the average variance extracted. The four dimensions of absorptive capacity do not have the AVE scores because these are formative constructs.

unified phenomenon nor did we explore only one part of the process. Our empirical results show that knowledge transfer occurs in multiple stages and we hope that future studies will follow our multiple-stage approach to modeling knowledge transfer, which should facilitate a deeper understanding of the phenomena. Drawing on the resource-based view and the dynamic capabilities perspective, we considered absorptive capacity a multidimensional construct that could be controlled and fostered by managerial action and levers in cross-border M&As. Therefore, we build on extant literature on the role of HRM practices in developing absorptive capacity of recipient units (Minbaeva et al., 2003), and identify specific HRM practices that can be adopted to develop different dimensions of absorptive capacity in acquisitions.

All of our hypotheses were strongly supported except the flow path from performance-based compensation to transformation (Hypothesis 8), and the path from the transformation dimension of absorptive capacity to knowledge implementation (Hypothesis 4). These non-significant results can be partially explained by the fact that transformation requires a high degree of creativity from employees since it entails making changes and adjustments in both new and existing knowledge (Zahra & George, 2002). Thus, the extensive use of performance-based compensation can only offer strong extrinsic motivators to the employees. Past studies on creativity and innovation have reported a negative relationship between extrinsic motivation and performance in creative/creativity related tasks (Amabile, 1993; Rigolizzo & Amabile, 2015) and suggested that intrinsic motivation is needed. This is also echoed by scholars of Self-Determination Theory (e.g. Ryan & Deci, 2000) who have suggested and empirically shown that reduced autonomy and increased use of extrinsic incentives could crowd-out intrinsic interest and motivation, especially when the tasks require higher degrees of creativity. Thus, performance-based compensation may have little effect on transformation capabilities since it might crowd-out employees' intrinsic motivation for finding creative ways to adjust new and existing knowledge, combine these two in novel ways, and eventually use/implement them in their daily work.

The insignificant effect of performance-based compensation on transformation may also affect the link between transformation and knowledge implementation. Concerning this, past studies have argued that when there is a lack of fit of knowledge between senders and receivers, transformation shall be seen as an alternative to the process of assimilation (Todorova & Durisin, 2007). In other words, transformation may not function as a sequential capacity that follows assimilation. Instead, in our case, it is possible to argue that transformation was replaced by assimilation as a result of difficulties associated with reconciling the differences between knowledge sent by the acquirer and acquired unit's existing knowledge base developed prior to the acquisition. In other words, rather than combining new and old knowledge, acquired units might have discarded old routines in order to create room for the effective implementation of new knowledge. This is in line with past M&A studies that stress the need for and importance of unlearning as an important condition for knowledge transfer (e.g. Yildiz & Fey, 2010).

This study makes three key contributions to extant research on knowledge transfer, international acquisitions, and post-acquisition integration. First, we contribute to the knowledge transfer literature by showing that knowledge transfer takes place via two stages and not all at once. Although a considerable number of articles have studied knowledge transfer, they have often treated it as a singular phenomenon (e.g. Simonin, 1999; Wang et al., 2004). Our model is especially important and valuable to identify the factors affecting the *efficiency* of knowledge transfer by differentiating between the degree to which a recipient/acquired subsidiary gets exposed to the knowledge from headquarter/acquirer and the degree to which that knowledge is effectively used by the subsidiary.

Second, we contribute to the existing literature on absorptive capacity. We identify and test the role of different dimensions of absorptive capacity in facilitating sequential stages of knowledge transfer. Put differently, by examining both knowledge transfer and absorptive capacity as multidimensional constructs, our model develops and tests causal links between corresponding dimensions of these two key constructs that play central role in M&As. In addition, drawing on the resourced-based view and the dynamic capabilities perspective, we treat absorptive capacity as a manageable asset and we consider a specific set of HRM practices as an important organizational tool that could cultivate learning capacities of organizational units (e.g. Daspit & D'Souza, 2013; Jansen et al., 2005; Minbaeva et al., 2003). In this regard, our approach differs from the majority of extant studies that tend to consider absorptive capacity either as an exogenous capability or a unidimensional construct (see Jansen et al., 2005 as one notable exception). Our study also explicitly measures these different dimensions of absorptive capacity unlike most past studies which just use absorptive capacity as a hypothesized explanation for results, but do not actually empirically measure absorptive capacity.

Third, our study is also important for extant M&A literature. Despite the increasing popularity of M&A, earlier research has shown that the majority of M&A result in unsatisfactory performance (Gomes et al., 2013; Hitt, Hoskisson, Ireland, & Harrison, 1991; Hitt, Hoskisson, Johnson, & Moesel, 1996, Weber et al., 2013). Therefore, understanding the antecedents of acquired units' ability to receive and exploit new knowledge is an important research objective. To that end, casting light on different dimensions of absorptive capacity and the role of HRM practices in the development of these dimensions is crucial.

Accordingly, a key goal of this paper is to show how specific HRM practices can enhance the effectiveness of different dimensions of absorptive capacity of an acquired subsidiary and in turn drive different stages of knowledge transfer. This follows Sarala et al.'s (2016, p. 1231) call for more work on the role of HR in M&A noting that: "…although HR issues are critical in M&As, they remain neglected in the M&A literature". HRM is also one of the seven promising research areas that Sarala et al. (2017) identify in their recent review article. Thus, our study responds to these calls and advances extant research by looking in detail theoretically and empirically at how specific HRM practices influence different dimensions of absorptive capacity and in turn different dimensions of knowledge transfer. Previous work has largely been only conceptual and dealing with one part of the process (e.g. Aklamanu et al., 2016; Reus, 2012; Sarala et al., 2016) or dealing with effects of HRM in M&As, but not specifically focused on how HRM practices facilitate knowledge transfer (e.g., Ahammad et al., 2016; Weber et al., 2013). Developing strong assimilation capabilities (Hypothesis 3) is of utmost importance for firms to be able to achieve their objectives with an acquisition. In this vein, our findings suggest that acquirers need to pay special attention to and invest time and effort in training programs that are found to facilitate assimilation (Hypothesis 7). First of all, training is shown to be an essential strategic HRM practice that can create the right social climate that can help employees keep their knowledge and capabilities on par with recent trends, which is particularly important in dynamic knowledge-intensive industries (Collins & Smith, 2006). Moreover, training is an effective means through which organizations can show their commitment, trust, and care for their employees (Pfeffer, 1995). This, in turn, can be instrumental in retaining key talent and moderating employee turnover (Shaw, Delery, Jenkins, & Gupta, 1998), both of which are critical factors for continued innovativeness of acquired subsidiaries and the eventual success of technology acquisitions.

In addition to training, our results also reveal that internal communication is conducive to the acquisition dimension of absorptive capacity (Hypothesis 6). Certainly, this is in line with earlier literature in organizational behavior (e.g. Oldham & Cummings, 1996), leadership (Carmeli & Schaubroeck, 2007), and labor economics (e.g. Addison, 2005) where positive effects of employee involvement on innovation and creativity have been repeatedly emphasized. Internal communication also signals that top-management trusts lower level employees and takes their opinion and voice into consideration (Zatzick

& Iverson, 2011), which would foster intrinsic task motivation, prompt employees to go beyond the call of their duty, widen their search zone and come up with more diverse set of solutions and ideas.

We also found that effective use of performance appraisal systems helps increase the level of exploitation capabilities (Hypothesis 9). It is shown that the effective implementation of new external knowledge is driven by exploitation and is especially relevant for our empirical context (i.e., acquisitions in China) where the majority of the deals are aimed at taking advantage of rapid market growth as well as benefitting from relatively lower costs of production. As noted by Meyer and Lieb Dóczy (2003) acquisitions in emerging and transforming economies require a notable degree of organizational change in which existing processes and practices of the acquired units normally go through a series of restructurings and reconfigurations (Meyer, 2003). The role of structural changes and transitions in the restructuring activities notwithstanding, in the present investigation we focused on the additional effects of high-performance HRM practices on the acquired unit employees' ability to utilize and exploit new knowledge in this process.

6. Managerial implications

Our study highlights specific levers (i.e., HRM practices) that managers can use to facilitate the 'manageable' side of absorptive capacity. This, in turn, helps management increase the effectiveness of different dimensions of absorptive capacity and, in turn, foster knowledge transfer depending on which dimensions of absorptive capacity or knowledge transfer a manager observes to be sub-standard in his/her firm. The effects of different HRM practices on different dimensions of absorptive capacity indicate that there is a need to allocate different resources to conducting certain HRM practices to maximize the potential benefits in fostering cross-border knowledge transfer. For example, at the earlier stages of knowledge transfer in post-acquisition integration, managers need to focus their efforts and resources on developing internal communication mechanisms and offering training opportunities to help employees build their knowledge acquisition and assimilation capabilities. On the other hand, in the later stages of knowledge transfer, firms should focus more on using outcome-oriented practices such as performance appraisal to stimulate employees' capabilities in transforming and further exploiting the received knowledge. The study also shows that knowledge transfer occurs via multiple stages, and it shows that managers need to pay attention to all stages in the knowledge transfer process as a firm is only as strong as one's weakest link in the knowledge transfer process. Firms can also reflect on what stage of the knowledge transfer process they are at during an important knowledge transfer in an effort to understand what HRM practice will serve as the best lever to push them forward-. In sum, this study results in a model which managers can use to identify where they need to focus effort in the knowledge transfer process, and it helps them identify drivers which can improve weaker links in the knowledge transfer process.

7. Limitations and future research

Although our study provides some unique and useful insights regarding the relationship between high-performance HRM practices and different absorptive capacity dimensions within the context of M&As in an emerging economy, it has certain limitations. First, our empirical design is static in nature. In this paper, the model we develop and test conceives one-to-one correspondence between each HRM practice and the respective dimension of absorptive capacity. However, the nature of these relationships could change over successive stages of post-acquisition integration and evolve into a more complex picture wherein there might be multiple cross-linkages across HRM practices and absorptive capacity dimensions. Due to our static empirical setting, this study did not enable us to capture the dynamic development of the relationships proposed in our model. Indeed, the need for more dynamic models has been recently emphasized in both the absorptive capacity (Volberda et al., 2010) and M&A (Calipha, Tarba, & Brock, 2010) literatures. Therefore, it would be valuable if future studies adopt a more dynamic framework by measuring absorptive capacity at multiple points of time and phases (e.g. pre-merger and post-merger). Dynamic frameworks could also be used to test if the effect of a specific HRM practice on a respective absorptive capacity dimension changes over time. This would shed light on the effects of specific strategic decisions and organizational changes in a more precise manner than has been the case to date as well as facilitating investigating causality more fully and realistically. In addition, future studies may also further explore the actual practices of knowledge transfer in acquisitions with more robust large-scale qualitative studies (e.g. Schweizer, 2005).

Second, it is important to remember that this paper focuses on the specific context of China, wherein we zero in on advanced economy acquirers as knowledge senders and acquired emerging economy subsidiaries as knowledge receivers. There are often some gaps in knowledge base between the acquirers from advanced economies and the acquired subsidiaries in China. Thus, our findings may not fully apply in some cases when both acquirers and the acquired units are located in the advanced economies or when a firm intentionally pursues loose post-acquisition integration. For example, our results suggest that training is critical for employees in the acquired units to develop their assimilation capacity at the early stage of knowledge transfer. This kind of implication may not come up as importantly in an acquisition between two advanced economy firms if their knowledge gap is not that significant.

Third, the present investigation took acquired units as its main focus and unit of analysis. The extent of knowledge transfer relies on the efforts of both knowledge senders and the recipients, but we only collected data from knowledge receivers (i.e., acquired subsidiaries) because of difficulties in collecting data from both sides. In our analyses, data unavailability also precluded us from examining the role of parent firms in sending knowledge and helping the acquired units in obtaining and implementing knowledge. In order to obtain a fuller understanding of how knowledge transfer works, we would encourage future studies to focus on collecting dyadic-level data which could provide deeper insights into the contribution from knowledge senders (acquirers) as well as the knowledge receivers. In line with the perspective of knowledge transfer as an interactive process, future research should also examine reverse knowledge transfer including the effects of reverse transfer on forward transfer or vice versa. Moreover, the recent decades have also witnessed the dramatic rise of emerging MNCs' involvement in acquiring firms located in advanced economies. Increasingly, Chinese MNCs are also expanding abroad and acquisition of knowledge is often one important motive for such emerging Chinese firms for this international expansion. Future studies are also urged to explore the topics of internationalization of MNCs from emerging markets and knowledge transfer's role in such activities.

Fourth, due to the limited data and information on acquisition strategy, we were unable to perform specific analyses of acquirers' willingness and commitment to transfer their knowledge to the acquired units. Our study assumes that the acquirer wants to integrate the acquisition to a certain extent and transfer some knowledge to the acquired unit. We believe this is a plausible assumption to some extent for most acquisitions, especially those taking place in emerging economies like China. However, we acknowledge that MNCs have different goals and strategies as to the extent they seek to integrate their acquisitions and that knowledge transfer will be more or less important/relevant depending on the integration goal. Thus, it is a weakness that this study does not control for integration strategy pursued by the acquiring firm. Future M&A research should collect data on the specific strategic rationale behind each M&A deal, which would make it possible to control for desired level of integration when studying the role of HRM practices and absorptive capacity in knowledge transfer. Further, a weakness of the current study is that it implicitly treats all knowledge as being

equally important for the acquired unit. In reality, this may not be the case. Thus, future studies are suggested to take this into account.

We should also acknowledge that not all communication which takes place in an organization is a result of HR practices aiming to facilitate communication. Future studies should work to develop a more detailed way of separating out what communication is due to communication HRM practices and what communication is due to other factors. Related to that, future research can also relax the assumption that, all knowledge is equally important for the acquired unit. In reality, this assumption may not always hold true. Lastly, research by Yildiz and Fey (2016) and others (e.g., Junni, 2011; Nahavandi & Malekzadeh, 1988) has shown that acquirers' and acquired firms' relative status and reputation affect the willingness to accept knowledge. Given the above, our study does not control for status. Controlling for status and exploring its role in more detail would be an excellent topic for future M&A studies to explore.

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