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Offshoring Innovation to Emerging Countries: The Effects of IP Protection and Cultural Differences on Firms' Decision to Augment Versus Exploit Home-Base-Knowledge

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Abstract

Developed-country multinationals (DMNEs) have increasingly engaged in the practice of offshoring innovation to emerging countries. In this article, we leverage and extend the institution-based view to further our understanding of this phenomenon. Specifically, we examine the differential effects of formal and informal institutions on DMNEs' strategic decision to offshore innovation activities aimed at augmenting (versus exploiting) home-base-knowledge to emerging countries. Concerning formal institutions, we argue that the stronger the emerging host country's IP protection, the higher the likelihood that a DMNE offshores innovation activities aimed at augmenting home-base-knowledge. Regarding informal institutions, we argue that the greater the cultural differences between the developed home country and the emerging host country, the higher the likelihood that a DMNE offshores innovation activities aimed at augmenting home-base-knowledge. Additionally, we propose a key contingency that attenuates the relationship involving IP protection while strengthening the one involving cultural differences: the DMNE's experience with offshoring innovation. Analysis of 128 offshoring innovation implementations by 78 DMNEs in ten emerging countries provides support for all our hypotheses except for the one focused on the moderation effect of experience on the relationship involving cultural differences.

Keywords Offshoring · Offshore outsourcing · Innovation · Emerging countries · IP protection · Cultural distance

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1 Introduction

Developed-country multinational enterprises (DMNEs) have increasingly relocated innovation activities to foreign locations, thus engaging in the commonly termed practice of offshoring innovation (Cantwell and Mudambi 2005; Castellani et al. 2013; Granstrand 1999; Santangelo et al. 2016; Thomson 2013; UNCTAD 2005). Whereas initially offshoring innovation has almost exclusively interested other developed countries as host-country recipients, in the recent past DMNEs have increasingly offshored innovation to emerging countries (Bertrand and Mol 2013; Sartor and Beamish 2014; Thomson 2013). For instance, Unilever and Intel have created large research and development (R&D) centers in China and India. Similarly, the German automotive engineering firm MoTec has offshored some of its design activities to Romania and Hungary (Manning et al. 2013; Reddy 2011). This growing phenomenon has turned into a relevant aspect of today's global economy and a central theme in international business (IB) research (Aulakh et al. 2016; Lahiri 2010; Pisani and Ricart 2016; Siedschlag et al. 2013).¹

Despite the surge of scholarly works focused on DMNEs' offshoring innovation, our understanding of this practice in the context of emerging countries remains underdeveloped for two main reasons. First, IB studies have traditionally considered DMNEs offshoring innovation to other developed countries as this has been the predominant practice until relatively recently (Ambos 2005; Ambos and Ambos 2011; Bartlett and Ghoshal 1990; Cantwell 1989; Kuemmerle 1999; Le Bas and Sierra 2002; Patel and Vega 1999; Rugman 1981; UNCTAD 2005; Vernon 1966). While some studies have broadened the scope of their analyses to include emerging host countries, these works have either maintained their primary focus on developed countries as the key recipients of offshoring innovation activities (e.g., Siedschlag et al. 2013) or mainly focused on emerging host countries but examined the offshoring of a wide range of activities beyond the ones related to innovation (e.g., Doh et al. 2009). This has limited our understanding of the many idiosyncrasies at play when DMNEs offshore innovation to emerging countries. Second, extensive research has corroborated the notion that competing within emerging countries requires DMNEs to take choices that differ from those prescribed in traditional

¹ We note that the term 'emerging' is not always consistently used in the IB literature and this leads to the identification of slightly different categorizations of countries. For instance, Boddewyn and Doh (2011, p. 345) refer to emerging countries as "fast-growing lower income or middle-income countries that have undertaken substantial policy reform (e.g., trade and investment liberalization, and the privatization of state-owned enterprises) (Hoskisson et al. 2013; Khanna et al. 2005; Peng 2003)", and Meyer and Peng (2016, p. 3) as a "flourishing group of countries that we now call 'emerging economies'". While some researchers, such as Ramamurti (2004), stress the need to distinguish between developing countries and the relatively few emerging countries with real growth potential, others use the terms developing and emerging economies interchangeably or do not further differentiate between them (Aulakh et al. 2016). In this study, we use the World Bank's classification based on the gross national income (GNI) per capita as it is broadly considered a high-quality and rigorous grouping and we build on prior works that have termed low- and middle-income countries as emerging (Boddewyn and Doh 2011; Jamali and Karam 2016). Thus, we consider emerging countries all the ones that are not categorized by the World Bank as high-income, i.e., their GNI per capita is lower than \$12,746.

IB models (Aulakh and Kotabe 2008; Aulakh et al. 2016; Contractor et al. 2007; Hoskisson et al. 2013; Luo and Tung 2007; Meyer et al. 2009). Yet, Aulakh et al. (2016, p. 655) have recently concluded that “how firms learn and manage knowledge as they compete in and out of emerging markets is yet to gain serious scrutiny in the contemporary IB research” and thus called for more scholarship that develops new theory and promotes novel empirical insights on knowledge-related issues in the particular context of emerging countries. In light of the above, we recognize the need for an in-depth assessment of DMNEs’ practice of offshoring innovation to emerging countries that specifically focuses on their idiosyncratic traits.

In this paper, we build on previous research (Ambos 2005; Ambos and Ambos 2011; Kuemmerle 1999; Le Bas and Sierra 2002) showing that offshoring innovation can be of two types—either home-base-knowledge augmenting (HBKA), when the main purpose is to increase the pool of knowledge already possessed at home,² or home-base-knowledge exploiting (HBKE), when the primary purpose is to adapt products and services to the specific requirements of the local host market³—and examine how host-country contextual factors influence DMNEs’ strategic decision to undertake a HBKA (versus HBKE) implementation when offshoring innovation to an emerging country. To do so, we leverage and extend the institution-based view, which has become the dominant theoretical framework to explain emerging economy business phenomena (Meyer and Peng 2016). Its application in the context of emerging countries is particularly valuable in view of the greater variation in institutions in such countries which makes them far more pertinent than in developed economies (Meyer and Peng 2005; Peng 2003; Peng et al. 2008, 2009). Specifically, we focus on the distinction between formal and informal institutions (Dikova et al. 2010; Liou et al. 2016; Meyer and Peng 2016; North 1990) and examine their differential effects on DMNEs’ likelihood to undertake a HBKA implementation. With respect to formal institutions—which refer to the regulatory environment, e.g., a country’s political and judicial regulations, economic rules, and third-party enforcement (Liou et al. 2016)—we examine the role of intellectual property (IP) protection because of its salience in emerging countries (Zhao 2006). In relation to informal institutions—which instead refer to the normative and cultural-cognitive environments and are generally contextualized as the unwritten rules and norms of behavior

² Based on prior research corroborating a marked home-bias in firms’ generation of knowledge (Belderbos et al. 2013; Di Minin and Bianchi 2011), we can reasonably assume that, for most DMNEs, home-base-knowledge strictly refers to knowledge that is generated and possessed in the home country. This implies that, whereas some DMNEs may generate and/or possess most of their knowledge outside their home country, this does not occur often.

³ The HBKE thus refers to knowledge that is generated at home and is adapted abroad in order to maximize its exploitation abroad. This construct corresponds to the home-base-exploiting (HBE) construct developed by Kuemmerle (1999) in the same way as the HBKA driver introduced before corresponds to the home-base-augmenting (HBA) construct developed in the same study. We opted to add the word *knowledge* to further clarify that home-base refers to knowledge generated at home that is either exploited abroad (HBKE) or augmented abroad (HBKA). As Kuemmerle (1999) noted in his work in relation to HBE and HBA, it is important to underline that our distinction between HBKE and HBKA is instrumental for the larger purpose of advancing our understanding of DMNEs’ offshoring innovation practice in the specific context of emerging countries.

(Dikova et al. 2010)—we examine the role of cultural differences between the developed home country and the emerging host country because of their relevance when studying business phenomena in emerging countries (Meyer and Peng 2016).⁴

Our first expectation is that the stronger the emerging host country's IP protection, the higher the likelihood that a DMNE undertakes a HBKA implementation in such country. This is because the weaker the IP protection, the more inadequate the institutional safeguards a DMNE can count on to protect the proprietary knowledge held in the host environment, increasing the risk of appropriation by rival firms (Acemoglu and Johnson 2005; Berry 2006, 2017; Henisz 2000). Given that a HBKA implementation aims at creating new knowledge, a DMNE is less likely to be willing to generate new knowledge in an emerging host country characterized by a weak IP protection. Our second expectation is that the greater the cultural differences between the developed home country and the emerging host country, the more likely a DMNE undertakes a HBKA implementation. This is because cultural differences promote creativity and stimulate learning opportunities (Lisak et al. 2016; Nurmi and Hinds 2016; Stahl et al. 2010; Stahl and Tung 2015) and can therefore trigger the exploratory activities and the generation of new knowledge that are the key objectives of a HBKA implementation. Additionally, we focus on a key firm-level contingency—a DMNE's experience in offshoring innovation—and argue that it attenuates the positive effect of IP protection on the likelihood to undertake a HBKA implementation. With growing experience, a DMNE is more likely to have created organizational practices that can provide important internal safeguards to the risks associated with the country-level institutional deficits related to a weak IP protection. Finally, we argue that a DMNE's experience strengthens the positive effect of cultural differences on the likelihood to undertake a HBKA implementation. With growing experience, a DMNE is more likely to have created organizational practices that can enhance the positive effects associated with cultural differences in its off-shore innovation sites, thus further facilitating the generation of new knowledge in an emerging host country characterized by greater cultural differences.

We tested our hypotheses on a fine-grained sample of 128 offshoring innovation implementations undertaken by 78 DMNEs (based in the US and Western Europe) in ten emerging countries. Our empirical analysis provided support for the positive relationship between IP protection in the emerging host country and the likelihood to undertake a HBKA implementation. We also found support for our second hypothesis according to which cultural differences are positively related to the likelihood to undertake a HBKA implementation. While we found evidence that a

⁴ Whereas there is a general consensus on the notion that a country's IP protection properly reflects its formal institutions in the context of innovation, we note here that IB scholars have debated whether informal institutions and culture can be treated as synonymous. Culture is generally defined as "the collective programming of the human mind that distinguishes the members of one human group from those of another. Culture in this sense is a system of collectively held values" (Hofstede 1984, p. 51). Informal institutions generally refer to the unwritten norms of behavior which emerge as a result of the dominating cultural footprint. While not treating these two terms as strict synonyms, in view of their clear overlap in our paper we build on the several works that have used a given country's cultural dimensions to characterize and measure its informal institutions (e.g., Dikova et al. 2010; Liou et al. 2016).

DMNE's experience with offshoring innovation weakens the positive effect of IP protection, we failed to empirically validate the positive moderation effect on the relationship involving cultural differences. Building on the notion that the psychic distance construct identifies a broad array of factors related to culture (Dow and Karunaratna 2006; Johanson and Vahlne 1977), we also offered a nuanced assessment of the effects of psychic distance stimuli closely associated with cultural differences and of particular salience in emerging countries and thus tested the individual effects of language distance and religion distance. Our results showed that while the former is positively related to the likelihood of a HBKA implementation, the latter is negatively related. Further model specifications and a number of other robustness tests lend additional support to our conclusions.

In so doing, this study makes three important contributions to IB scholarship. First, we leverage and extend the institution-based view to add novel insights to our understanding of the recent phenomenon of offshoring innovation to emerging countries. By arguing and empirically showing that both IP protection and cultural differences increase the likelihood of a HBKA implementation, we explicate the differential effects of formal and informal institutions on DMNEs' strategic decision to offshore innovation activities aimed at generating new knowledge in the specific context of emerging countries. Second, we showed that a DMNE's experience in offshoring innovation attenuates the positive effect of IP protection on the likelihood to undertake a HBKA implementation, thus shedding light on the role of this important firm-level contingency in assuaging the risks associated with country-level institutional deficits in the context of emerging countries. Third, our study responds to the pressing call for more research that theorizes and produces new insights on knowledge-related issues in emerging countries. Specifically, our exclusive focus on these countries as recipients of offshoring innovation implementations adds much needed nuance to our understanding of the heterogeneity that characterizes them and how such heterogeneity impacts knowledge-related strategies of DMNEs when investing in these countries. Our fine-grained assessment of the distinctive effects of religion and language distances also provides interesting insights to the discussion on how to measure cultural differences in IB research.

We structure the remainder of the paper as follows: First, we review the relevant literature and develop our hypotheses. Then, the methods section describes the data collection, the variables we operationalized, and the analysis we undertook to test our hypotheses. Finally, we discuss our findings and offer concluding remarks.

2 Literature Review

2.1 Offshoring Innovation

A combination of external factors, including the relatively recent advances in information, communication, and operations technology, have contributed to DMNEs' increasing usage of the offshoring practice—the foreign relocation of individual activities of their value chain to countries where they can be best and most efficiently executed (Contractor et al. 2007; Lewin et al. 2009; Manning et al. 2008). This trend

has interested all functions, ranging from production activities to after-sales contact centers. In this study, we restrict our attention to the growing practice of offshoring innovation, generally defined as the foreign relocation of knowledge-intensive activities that are critical to innovate firms' products and services (Cantwell and Santangelo 2000; Castellani et al. 2013; Granstrand 1999; Santangelo et al. 2016; UNCTAD 2005).

The literature centered on offshoring innovation has focused on several topics at distinct levels of analysis. At the firm level, studies have investigated the type of innovation activities and the drivers triggering their offshoring (Ambos 2005; Ambos and Ambos 2011; Cantwell and Mudambi 2005; Kuemmerle 1999; Le Bas and Sierra 2002; Patel and Vega 1999), the antecedents of such relocations (Bertrand and Mol 2013; Manning et al. 2008; Martínez-Noya and García-Canal 2011), the role of experience (Martínez-Noya and García-Canal 2011), as well as the overall effect on firm performance (Belderbos et al. 2015; Bertrand and Mol 2013; Lahiri 2010; Mihalache et al. 2012; Nieto and Rodríguez 2011). Still at the firm level, scholars have also examined the relationship with local suppliers in cases of contractual arrangements (Martínez-Noya et al. 2013), the creation of appropriate supply networks for the management of knowledge-intensive activities that are geographically scattered (Lampel and Bhalla 2011; Mason and Leek 2008), the allocation of R&D decision rights (Ecker et al. 2013) and responsibilities (Feinberg and Gupta 2004) within the multinational firm, the colocation of foreign R&D units and manufacturing plants (Ivarsson et al. 2017), as well as the strategic interaction with host-country firms (Qu et al. 2013). At the country level, studies have considered the dynamics that shape the migration of innovation activities (Castellani and Pieri 2013) and, in particular, identified relevant 'push' (e.g., home-country technological advantage) and 'pull' (e.g., host-country knowledge infrastructure and national scientific capacity) factors that respectively trigger and attract offshoring innovation (Ambos and Ambos 2011; Le Bas and Sierra 2002; Siedschlag et al. 2013; Thomson 2013).

While the offshoring innovation phenomenon has been practically confined to relocations from developed to other developed countries until relatively recently, in the recent past DMNEs have increasingly engaged in the practice of offshoring innovation to emerging countries (Bertrand and Mol 2013; Sartor and Beamish 2014; Thomson 2013). As a result, the above-mentioned research has mostly examined offshoring innovation from developed to other developed countries. The relatively few studies considering offshoring innovation to not only developed but also emerging countries have importantly broadened the scope of this stream of research and investigated relevant aspects of the offshoring innovation practice. For instance, IB scholars have considered the overall effect of offshoring innovation to both developed and emerging countries on DMNEs' capability to generate new knowledge at home (D'Agostino et al. 2013; D'Agostino and Santangelo 2012), the specific role of firm- and country-level factors on the engagement of this practice (e.g., firm-level technological resources and organizational control, country-level institutional and regulatory differences) (Ambos 2005; Ambos and Ambos 2011; Demirbag and Glaister 2010; Martínez-Noya et al. 2012; Sartor and Beamish 2014; Veliyath and Sambharya 2011), as well as the related formation of knowledge service clusters in

emerging countries such as India and Mexico (Manning 2013; Manning et al. 2010). Having said that, these studies have tended to consider a broad array of primarily developed host countries in their analyses, thus offering a limited understanding of the many idiosyncrasies at play when DMNEs offshore their innovation activities to emerging countries.⁵ While some works pertaining to the broader offshoring literature (Pisani and Ricart 2016) have instead predominantly focused on emerging host countries, they have examined the offshoring of a wide range of activities beyond the ones related to innovation (e.g., Doh et al. 2009; Lewin et al. 2009). Thus, while the received literature has generated important insights, we still have a limited understanding of the offshoring innovation phenomenon in the specific context of emerging countries.

2.2 HBKA versus HBKE

An important strand of offshoring innovation research has examined the nature of innovation activities that are offshored and essentially identified two types. Specifically, DMNEs establish innovation units offshore to either exploit firm-specific knowledge possessed at home or augment it through the search and acquisition of new knowledge in the host environment (Ambos and Ambos 2011; Cantwell and Mudambi 2005; Dunning 1993; Kuemmerle 1999; Le Bas and Sierra 2002; Lewin et al. 2009; Rilla and Squicciarini 2011). As mentioned in the introduction, we refer to these two types of offshoring innovation implementations respectively as HBKE and HBKA.

IB scholars have argued that HBKE offshoring innovation is carried out essentially to adapt products and services to local markets (Bartlett and Ghoshal 1990; Dunning 1993; Hakanson and Nobel 1993; Howells 1990; Hymer 1976; Ivarsson et al. 2017; Kuemmerle 1999; Le Bas and Sierra 2002; Patel and Vega 1999; Rugman 1981; Vernon 1966). In Kuemmerle's words (1999, p. 3) "as local demand grows increasingly sophisticated, local R&D facilities are useful in helping a firm to adapt existing products better to local needs". HBKE thus involves the set-up of innovation premises in offshore locations that are devoted to exploit knowledge that is already possessed by the DMNE. Stated otherwise, DMNEs decide to undertake a HBKE implementation in order to support the transfer of knowledge from the home country to the host country, therefore enabling its exploitation abroad. For example, in 2013 Audi opened an R&D center in China whose primary purpose is to identify the specific needs of its customers in the region so that it can act quickly and include the required features in its cars (Volkswagen 2013).

The other type of offshoring innovation, HBKA, involves instead the relocation of innovation activities aimed to augment the firm's knowledge base (Ambos 2005; Ambos and Ambos 2011; Cantwell and Mudambi 2005; Chung and Alcacer

⁵ To the best of our knowledge, one of the very few studies that focused on innovation activities offshored exclusively to emerging countries is the work by D'agostino and Santangelo that examined the extent to which overseas R&D laboratories in emerging markets contribute to home knowledge creation and appeared in *Management International Review* in 2012.

2002; Florida 1997; Le Bas and Sierra 2002). HBKA therefore involves the offshore establishment of innovation units whose main objective is to develop knowledge-intensive ties with local resources that contribute to enhance the pool of knowledge already possessed at home. Stated otherwise, DMNEs decide to undertake a HBKA implementation in order to tap into local reservoirs of knowledge that can contribute to the acquisition and development of new knowledge resources (Ambos and Ambos 2011; Chung and Alcacer 2002; Kuemmerle 1999). For example, in 1998 Intel opened its first R&D center in China with the aim of focusing on advanced technology research for its global products (Reddy 2011). Thus, ever since its inception, this center has had a clear HBKA objective to augment the pool of knowledge already possessed by the firm.

Building on the above, we recognize the need for an in-depth assessment of DMNEs' offshoring innovation to emerging countries. Specifically, we note that prior IB research has overlooked how institutional factors, both formal and informal, influence a DMNE's strategic decision to undertake a HBKA (versus HBKE) implementation when offshoring innovation to a given emerging country. In the following section, we leverage and extend the institution-based view to develop our hypotheses on the differential effects of formal and informal institutions on such decision.

3 Hypotheses Development

3.1 HBKA and IP Protection in Emerging Countries

According to North (1990, p. 3), societal institutions are “humanly devised constraints that shape human interaction”. Institutions have thus been conceptualized as ‘rules of the game’ that are outside the control of economic agents who therefore act trying to maximize their utility within such rules (North 1990). As discussed by Meyer and Peng (2016, p. 9), the institution-based view builds and expands on such premise, “bringing together several distinct lines of research with shared interest in the interaction between economic actors and institutional environments at different levels of analysis (Meyer and Peng 2005; Peng et al. 2008, 2009)”. Its application has been particularly extensive in studies aimed at explaining business phenomena in emerging countries in light of the greater variation in their institutions and relative development (Meyer and Peng 2005, 2016; Peng 2003; Peng et al. 2008, 2009). Based on the distinction between formal and informal institutions (Dikova et al. 2010; Liou et al. 2016; Meyer and Peng 2016; North 1990), we examine here the role of formal institutions—defined as the laws and regulations in force in a given country and thus broadly referring to its regulatory environment, e.g., a country's political and judicial regulations, economic rules, and third-party enforcement (Dikova et al. 2010; Liou et al. 2016)—and specifically focus on IP protection.

The IP protection of a given host country relates to the existence and quality of institutional safeguards that can help firms protect their proprietary knowledge. To examine IP protection in the context of our study is of particular salience for two reasons. First, both HBKA and HBKE implementations involve knowledge-intensive activities. Previous research has suggested that the transfer of knowledge

across countries exposes firms to several risks (Alcacer and Zhao 2012; Berry 2017; Teece 1977, 1996). One of the main hazards faced is the appropriation of proprietary knowledge by rival firms specifically as a result of inadequate safeguards provided by host-country institutions (Acemoglu and Johnson 2005; Berry 2006, 2017; Henisz 2000). Thus, it is particularly relevant to focus on the level of IP protection in a given host country when restricting the focus to offshoring innovation and precisely examining the role of host-country contextual factors that can influence DMNEs' strategic decision to opt for a HBKA (versus HBKE) implementation. Second, to focus on the effect of IP protection is even more salient when considering emerging host countries as they tend to be characterized by greater differences in IP protection with some of them reporting a markedly weak level (Zhao 2006). Thus, as the variation in formal institutions, and specifically IP protection, is larger in emerging economies (Meyer and Peng 2016), it becomes even more pertinent to examine the role of IP protection in driving DMNEs' decision to undertake a HBKA (versus HBKE) implementation in these countries.

Previous research has shown that political institutions (Henisz 2000) and differences between *de jure* regulation and *de facto* rule of law (Jandhyala 2013) can raise the risk of appropriations by competing firms and governments in the host country (Berry 2017). The risk of appropriation is therefore highest when institutional constraints are weak and so is the quality of contract enforcement (Acemoglu and Johnson 2005; Berry 2017; Henisz 2000). Conversely, stronger formal institutions offer firms more safeguards in the forms of judicial regulations and third-party enforcement including IP (Berry 2006, 2017). Hence, the weaker the IP protection in the host country, the more inadequate the institutional safeguards DMNEs can count on to protect the proprietary knowledge held in the host environment.

In the context of our study, we examine DMNEs' decision to undertake a HBKA versus HBKE implementation. Whereas both types of offshoring innovation involve the transfer and management of knowledge in the host environment, as discussed in the previous section their aim is very different. A HBKA implementation has as its primary objective to create new knowledge that will augment the pool of knowledge already possessed at home; conversely, a HBKE implementation aims at exploiting existing proprietary knowledge assets already owned at home. Based on this fundamental distinction, we expect that a DMNE is less likely to be willing to generate new knowledge via a HBKA implementation in an emerging host country characterized by a weak IP protection because of the greater risk associated with creating new knowledge in an environment where the institutional safeguards to protect it from rivals barely exist or are ineffectively enforced (Zhao 2006). A HBKA implementation would in fact expose the DMNE to greater costs in case of appropriation of the new knowledge by competing firms and governments as a result of inadequate institutional safeguards. We therefore expect that, in the presence of a weak IP protection in the host-country environment, a DMNE is more likely to undertake a HBKE implementation that involves a relatively lower risk because it does not involve the creation of new knowledge and the proprietary knowledge assets to be transferred from the home country to the offshore site can be controlled, and limited if deemed necessary, relatively better. Moreover, the knowledge created in the host environment following a HBKA implementation is likely to be relatively less codified and

more tacit (Kogut and Zander 1993) than the one transferred from the home country to an offshore site whose primary focus is HBKE. This exposes the DMNE to further challenges related to its transfer to other parts of the organization outside the emerging host country and, consequently, the relatively greater likelihood that this newly generated knowledge remains localized in the host environment. This further increases the risks of undertaking a HBKA implementation in an emerging host country characterized by weak institutional safeguards. Building on the above, our expectation is therefore that, all else equal, a DMNE is less likely to undertake a HBKA implementation in an emerging host country characterized by a weak IP protection. Accordingly, we hypothesize:

Hypothesis 1: The stronger the IP protection in the emerging host country, the higher the likelihood for a DMNE to undertake a HBKA implementation.

3.2 HBKA and Cultural Differences in Emerging Countries

Informal institutions refer to the conventions, codes of conduct, and norms of behavior characterizing a given national environment (Dikova et al. 2010). Such norms of behavior, also generally termed as the unwritten rules of the game, emerge as a result of the dominating cultural footprint. Several works have therefore used a given country's cultural dimensions to characterize its informal institutions (e.g., Dikova et al. 2010; Liou et al. 2016). In the IB domain, particular emphasis has been given to examine the effect of cultural differences—the extent to which two national cultures differ in terms of beliefs and values—on firms' international activities (Lew et al. 2016; Peeters et al. 2015; Shenkar 2001; Stahl and Tung 2015). Empirical studies pertaining to this extensive body of research have primarily used proxies based on Hofstede's (1980) dimensions of national culture—masculinity, individualism, power distance, and uncertainty avoidance—to examine the impact of cultural differences on firms' internationalization.

An established argument in this literature is that cultural differences between home and host countries increase the level of risk and uncertainty faced by internationalizing firms, pose organizational challenges, and often turn into higher costs and lower performance levels.⁶ Questioning this stream of studies, Stahl and Tung (2015, p. 391) have argued that the tendency to emphasize the negative outcomes associated with cultural differences in IB research represents an inaccurate reflection of the reality and “has hindered our understanding of the processes and conditions

⁶ For instance, IB studies have suggested that a higher cultural distance is associated with greater perceived risk in internationalization decisions (Kraus et al. 2015), prompts firms to first internationalize in culturally close countries and thus gradually expand to more culturally distant ones only at later stages (Barkema et al. 1996), creates personal coordination and other communications problems (Ambos and Ambos 2009; Kumar et al. 2009), and represents the source of hidden costs (Stringfellow et al. 2008) and delayed service levels (Hutzschenreuter et al. 2011b). Prior IB research has also suggested that these challenges may be particularly salient when the activities relocated to high culturally distant countries require close interaction with the home country due to their complexity and high knowledge intensity (Medcof 2001). Liu et al. (2011, p. 563) have noted for example that “non-routine, complex and interactive services will be outsourced relatively more to countries with closer cultural proximity”.

that help organizations leverage the benefits of cultural differences in a wide range of context". In particular, the authors have suggested that cultural differences are likely to be an asset instead of a liability precisely in those activities requiring exploration and aimed at new capability building in which different perspectives, knowledge bases, and approaches stemming from cultural differences can represent a stimulus for creativity and learning.

Aligned with Stahl and Tung's (2015) perspective, a smaller but growing body of research has shown that cultural differences are associated with positive effects in a multitude of IB contexts—e.g., multicultural teams (Stahl et al. 2010), IB negotiations (Liu et al. 2010), and cross-border mergers and acquisitions (Sarala and Vaara 2010). For instance, Peeters et al. (2015) have found that cultural differences provide an attention stimulus for decision-makers to thoroughly gather and process information that has a positive effect on performance in the context of global sourcing. Focusing on innovation activities, prior works have shown that cultural differences create learning opportunities (Nurmi and Hinds 2016), stimulate creativity (Granstrand 1999), and thus contribute to the improvement of innovation productivity (Lisak et al. 2016), while having an adverse effect on innovation activities whose primary focus is capability-exploiting (Ambos and Schlegelmilch 2008). Building on this stream of studies, in view of the fact that in the specific context of offshoring innovation HBKA implementations have as their main objective to generate new knowledge through activities requiring exploration and involving creativity, we expect that the greater the cultural differences between the developed home country and the emerging host country, the more likely a DMNE undertakes a HBKA implementation in such country.

Our expectation goes against Ambos and Ambos' (2011) earlier work that built on the stream of research focusing on the negative effects associated with cultural difficulties and showed that the greater the cultural distance between the home country and the host country, the less likely firms are to establish a knowledge-seeking (versus knowledge-exploiting) R&D laboratory. As discussed in the previous paragraph, our argument is based on the different premise that cultural differences can have positive effects, especially in the context of activities aimed at creating new knowledge such as the ones involved in HBKA implementations. Additionally, whereas Ambos and Ambos (2011) focused on DMNEs primarily relocating R&D laboratories to other developed countries, our exclusive focus on emerging host countries adds important distinctions to our expectation. First, cultural differences are likely to be more marked when focusing on emerging host countries, thus offering the opportunity to test the effect of institutional variations associated with the cultural dimension in the context in which they are most pertinent (Meyer and Peng 2016). Second, as stated by Govindarajan and Ramamurti (2011, p. 191), "emerging markets no longer just borrow innovations from developed countries; from time to time they also contribute innovations to the rest of the world, including developed countries". The authors refer to this growing phenomenon as reverse innovation and discuss the changing locus of innovation in the global economy as DMNEs increasingly look for highly creative and innovative solutions in emerging countries. Building on these observations, we therefore expect that, especially in the context of emerging countries, a DMNE is even more likely to look for sites characterized by

greater cultural differences that can stimulate creativity and trigger learning opportunities when deciding to undertake a HBKA offshoring innovation implementation. Accordingly, we hypothesize as follows:

Hypothesis 2: The greater the cultural differences between the emerging host country and the developed home country, the higher the likelihood for a DMNE to undertake a HBKA implementation.

3.3 The Moderating Effect of DMNEs' Offshoring Innovation Experience

Prior research has suggested that a firm's experience has an effect on its internationalization of innovation activities. Demirbag and Glaister (2010) have corroborated the notion that prior innovation experience in a given region increases the probability of this region being chosen by the focal firm for additional innovation projects. Building on the process school of internationalization (Johanson and Vahlne 1977; Johanson and Wiedersheim-Paul 1975; Welch and Luostarinen 1988) (for a recent assessment of the so-called Uppsala model see also the recent contributions by Vahlne and Johanson (2017), Coviello et al. (2017) and Santangelo and Meyer (2017)), Penner-Hahn (1998) has suggested that firms tend to follow a sequence of increasing intensity when internationalizing their R&D activities. In the context of offshoring innovation, Ambos and Ambos (2011) have shown that firms tend to first establish knowledge-exploiting units before they establish knowledge-seeking units in offshore sites located in primarily developed host countries.

In this article, we extend the received literature on the role of experience in the internationalization of innovation by examining the moderating role of this important firm-level contingency on the two relationships postulated in hypotheses 1 and 2. Specifically, in relation to the positive effect of IP protection on the likelihood to undertake a HBKA implementation (hypothesis 1), we argue that as the number of offshoring innovation implementations grows, a DMNE is likely to have had greater opportunities and therefore greater experience at creating organizational routines, structures, and procedures that can alleviate the risks associated with a weak IP protection (Zhao 2006). These organizational practices can range from ad-hoc monitoring systems to specific human resource policies guiding the selection and training of offshore personnel. With staff turnover being recognized as one of the most prevalent causes of unintended knowledge leakages, especially in countries with a weak IP protection (Schotter and Teagarden 2014), such organizational practices can also involve a more extensive usage of home-country expatriates that, with growing experience, are better trained to select offshore personnel and choose with whom to share critical proprietary knowledge of the firm in the host environment (Berry 2017). The adoption of such practices can therefore provide important internal safeguards to the institutional deficits that a DMNE may encounter in an emerging host-country environment. Thus, our expectation is that as a DMNE's offshoring innovation experience grows, the positive effect of IP protection on the likelihood to undertake a HBKA implementation in a given emerging host country is attenuated due to the creation of internal safeguard mechanisms that can, at least partially,

substitute for the inadequate institutional safeguards that may characterize the host-country environment.

In a similar vein, we posit that as the number of offshoring innovation implementations grows, a DMNE is likely to have created organizational routines, structures, and procedures that can better leverage cultural differences in its increasingly international network of offshore innovation sites to promote creativity within the organization. These organizational practices can vary from systems to improve the connectivity across offshore innovation sites to specific policies that facilitate the exchange of personnel across the increasing number of geographically-scattered locations in which the firm undertakes innovation activities. Stated otherwise, as the offshoring innovation experience grows, a DMNE is more likely to have developed those 'soft' elements such as relationships between the different parties of the international network (Johanson and Vahlne 2009; Vahlne and Johanson 2017) that facilitate the creation of the above-mentioned organizational routines. Such procedures can therefore be instrumental to enhance the positive effects associated with cultural differences, thus further promoting creativity, stimulating learning opportunities, and facilitating the generation of new knowledge across the DMNE's increasingly international network of innovation sites. As a result, our expectation is that as a DMNE's offshoring innovation experience grows, the positive effect of greater cultural differences on the likelihood to undertake a HBKA implementation in a given emerging host country is reinforced. Accordingly, we hypothesize as follows:

Hypothesis 3: The greater a DMNE's offshoring innovation experience, the weaker the relationship between IP protection and the likelihood to undertake a HBKA implementation.

Hypothesis 4: The greater a DMNE's offshoring innovation experience, the stronger the relationship between cultural differences and the likelihood to undertake a HBKA implementation.

4 Methodology

4.1 Sample and Research Design

The empirical setting of this study is based on data drawn from the multi-year Offshoring Research Network (ORN) project that was launched in 2004 at Duke University Center for International Business Education and Research with the purpose of investigating the advancing trend of offshoring white-collar work (including administrative and technical tasks) as opposed to offshoring blue-collar work, which is mainly related to manufacturing and has already been practiced for many years. The ORN project captures a wide spectrum of business functions and processes, ranging from information technology to new product development. In line with its main objective, the ORN project does not cover the offshoring of manufacturing activities, nor does it capture outsourcing or shared service activities onshore/domestically (see [Appendix](#) for additional information regarding the ORN project and the original questionnaire items used in this study). The sample considered in this study

Table 1 List of emerging host countries included in the sample

Rank	Emerging country	World Bank categorization
1	India	Lower-middle income
2	China	Upper-middle income
3	Mexico	Upper-middle income
4	Argentina	Upper-middle income
5	Philippines	Lower-middle income
6	Indonesia	Lower-middle income
7	Thailand	Upper-middle income
8	Malaysia	Upper-middle income
9	Turkey	Upper-middle income
10	Costa Rica	Upper-middle income

includes 128 offshore implementations focusing on innovation activities; that is, the foreign relocation of knowledge-intensive activities that are critical to innovate firms' products and services, such as product development and design activities. The 128 offshoring innovation implementations included in our sample were undertaken by 78 DMNEs based in the US and Western Europe in ten emerging countries (see Table 1 for the ranked list of emerging countries considered in our study).

Our hypotheses call for the estimation of how formal and informal institutions relate to the likelihood that a given offshoring innovation implementation undertaken by a DMNE in an emerging country is HBKA (versus HBKE). Thus, the unit of analysis of our study is the individual offshoring innovation implementation and we used logit models with robust standard errors to test our hypotheses.

4.2 Variables

Our dependent variable is *HBKA implementation* and is intended to capture whether the focal offshoring innovation implementation was primarily undertaken to augment the home-base-knowledge of the firm (i.e., HBKA) or exploit it (i.e., HBKE). To distinguish between HBKA and HBKE implementations we used the average response to two survey questions (scaled between 0 and 1) in which respondents were asked to rate using a five-point Likert scale (1) whether the chosen location was selected for the availability of local talent (1 = strongly disagree; 5 = strongly agree), and (2) whether the chosen location was selected for the high level of expertise that can be accessed locally (1 = strongly disagree; 5 = strongly agree). Our focus on the importance of the availability of local talent and a high level of expertise in the host location to determine the HBKA orientation of a given implementation is based on extant research suggesting that (as also discussed in previous sections) the presence of local research networks of technical talent and knowledge clusters characterized by a high level of expertise is a crucial trigger for the offshore relocation of innovation activities aimed to augment the knowledge base of the firm (Demirbag and Glaister 2010; Doh et al. 2009; Lewin et al. 2009; Manning et al. 2008). This allowed us to construct a continuous variable, *HBKA*, whose values ranged from 0 to

1. Similar to prior studies aimed to investigate the role of specific contextual factors on the probability to undertake exploration versus exploitation R&D projects in a primarily developed-country context (Ambos and Ambos 2011; Kuemmerle 1999), we opted to code this variable as a dichotomous variable. Thus, *HBKA implementation* takes the value of 1 if the implementation was primarily focused on HBKA (i.e., *HBKA* scored at least 0.9) and 0 if the implementation was primarily focused on HBKE (i.e., *HBKA* scored less than 0.9). This resulted in the identification of 22% of all sampled offshoring innovation implementations that primarily focused on HBKA versus the remaining 78% that instead primarily focused on HBKE. To further corroborate the robustness of our results, we also repeated our analysis using different threshold values to distinguish between HBKA and HBKE implementations. The additional analysis (reported in the subsection titled additional analyses) provided further evidence that our operationalization of *HBKA implementation* is appropriate.

Our main explanatory variables are proxies for formal and informal institutions that are of particular interest in the emerging-country context. Specifically, to measure IP protection across countries, as done in Berry's (2017) recent research on the role of home country expatriates in managing knowledge transfers in weak IP protection countries, we used Park's (2008) updated index of patent protection which is derived from the original index created by Ginarte and Park (1997). This measure combines the unweighted sum of separate scores for a country's membership in international treaties, the coverage and duration of protection, the enforcement mechanisms that can be used as well as the available restrictions so as to create a time-varying index of patent protection (Berry 2017; Park 2008). The variable we constructed (*IP protection*) thus corresponds, for each host country, to the value reported in Park's (2008) IP protection index relative to the time period in which the focal implementation was launched. To measure the cultural distance between home and host countries, we constructed the variable *Cultural distance* using the widely used Kogut and Singh (1988) index of cultural distance—an index based on Hofstede's (1980) four cultural dimensions that measures the extent to which the home and host countries differ from a cultural standpoint (Ambos and Ambos 2011; Bunyaratavej et al. 2007; Clampit et al. 2015). Building on the notion that the psychic distance construct identifies a broad array of factors related to culture (Dow and Karunaratna 2006; Johanson and Vahlne 1977), to offer a nuanced assessment of the effects of psychic distance stimuli that are closely associated with cultural differences and of particular relevance in emerging countries (reported in the additional analyses subsection), we also constructed the variables *Language distance* and *Religion distance* to measure differences in languages and religions between home and host countries and test their differential effects on *HBKA implementation*. In order to construct these variables, we relied on the work by Dow and Karunaratna (2006) who developed two measurements to precisely capture these differences. For each of the 14,280 country pairs they used three five-point-scales to measure the difference in language (religion) between any two countries i and j —the first quantifies the difference between the dominant language (religion) of country i and country j ; the second measures the incidence of country i 's major language (religion) in country j ; while the third measures the incidence of country j 's major language (religion)

in country i . In order to produce a composite variable for each of the two dimensions they then applied confirmatory factor analysis to these three indicators using all 14,280 country pairs (the factor loadings and Cronbach Alpha reliabilities are reported on page 589 of their study). The resulting three-item-factor-scores for differences in language and religion that they obtained is what we used to construct the two variables *Language distance* and *Religion distance*.⁷ Finally, to examine the moderating role of a firm's offshoring innovation experience we constructed the variable *Offshoring experience* which captures the stock of experience accumulated by the focal firm in preceding offshoring innovation implementations. Accordingly, we operationalized *Offshoring experience* using the number of offshoring innovation implementations that the firm had already launched at the time of undertaking the focal implementation.⁸

Building on previous studies, we controlled for factors at the firm, industry, and country level and thus accounted for potential unobserved heterogeneity. At the country level, building on prior works by Kuemmerle (1999) and Ambos and Ambos (2011), we controlled for variations between home and host countries with respect to R&D spending and competitive advantage for the year in which the focal implementation was launched as these may have an effect on the likelihood that a DMNE offshoring in a specific emerging host country chooses a HBKA implementation. Accordingly, we computed the following control variables: *R&D focus ratio*, which proxies the relative strength of the host country's scientific base, was operationalized as the ratio between the R&D expenditures of the host country in the year in which the focal implementation was launched as a percentage of the GDP of the host country in the same year and the R&D expenditures of the home country as a percentage of the GDP of the home country for the same year; *Competitive advantage*, which focuses on the relative performance of the host country's export sector and thus aims to track differences in the overall competitive advantage between home and host countries, was operationalized as the ratio between the exports of goods and services of the host country in the year in which the focal implementation was launched as a percentage of the GDP of the host country in the same year and the exports of goods and services of the home country as a percentage of the GDP of the home country for the same year.

Still at the country level, we controlled for the different level of income per capita characterizing the emerging countries covered in our study and thus constructed a dummy (*Level of income*) that scores 1 if the host country belonged to the World

⁷ Further information about the operationalization of these variables is available in Appendix A of Dow and Karunaratna's (2006) article. Further details as well as the original dataset can be downloaded at the following website: <https://sites.google.com/site/ddowresearch/home>.

⁸ We note that Ambos and Ambos (2011) operationalized their experience-related construct via a dummy variable that took the value of 1 if the establishment of the offshore R&D unit occurred before 1990 and 0 otherwise. While this operationalization allowed them to proxy the sequence of offshoring innovation investments, in our study we focus on a more nuanced assessment of the experience construct by considering the number of offshoring innovation implementations that the firm had undertaken at the time the focal implementation was launched. This allowed us to examine the effect of a one unit increase in offshoring innovation experience and thus provide a finer-grained examination of the role of experience in the specific context of emerging countries.

Bank lower-middle income group reuniting countries with an annual gross national income (GNI) per capita between \$1026 and \$4035 and 0 if the host country belonged to the upper-middle income group with a GNI per capita between \$4036 and \$12,475. While this is not a direct measurement of R&D average costs in the emerging countries included in our sample, the inclusion of this control variable allowed us to provide a fine-grained distinction between sampled emerging countries based on their average per capita income levels and thus also account for the likely cost differentials faced by DMNEs when offshoring innovation activities to such countries. Inspired by previous works from Kuemmerle (1999) and Ambos and Ambos (2011), we also controlled for the relative market size of the host country and thus included the variable *Market size ratio* which was operationalized as the ratio between the GDP of the host country in the year in which the focal implementation was launched and the GDP of the home country in the same year. To account for the geographical distance, we also included the variable *Geographical distance* that equals the natural logarithm of the distance in kilometers between home and host countries (Castellani et al. 2013; Fouré et al. 2013). At the industry level, we included a dichotomous variable (*Software and IT industry*) to distinguish firms belonging to the software and IT industry from the other companies included in our sample as previous works have suggested that industry-level specificities, particularly with respect to the software/IT sector, play an important role in shaping firms' offshoring decisions (Lewin et al. 2009; Martínez-Noya and García-Canal 2011; Massini et al. 2010; Mihalache et al. 2012).

At the firm level, we controlled for the size of the focal firm (*Firm size*). We included this variable as a control in our model given that previous research has showed that DMNEs' size may affect their likelihood of engaging in certain types of offshoring (Di Gregorio et al. 2009; Lewin et al. 2009; Mihalache et al. 2012; Nieto and Rodríguez 2011; Roza et al. 2011). To do so, we categorized all companies in three main groups depending on the total number of employees and created the variable *Firm size* that scores 1 for small (i.e., less than 500 employees), 2 for mid-size (i.e., between 500 and 20,000 employees), and 3 for large firms (i.e., more than 20,000 employees). Additionally, we also controlled for the differences in the governance of the offshore innovation unit. To this end, we included the dichotomous variable *Captive* that scores 1 when the implementation is executed via a captive center and 0 otherwise. Its inclusion is relevant given that previous studies have suggested that innovation activities are generally organized via captive offshore operations due to the challenges associated with the organization of knowledge-intensive activities using contractual agreements (Hutzschenreuter et al. 2011a; Lewin et al. 2009; Mudambi and Venzin 2010; Nieto and Rodríguez 2011). Finally, we also included two variables whose aim is to account for a firm's specific focus on two drivers that have been shown to be highly relevant in the offshoring context (Dossani and Kenney 2007; Grote and Täube 2007; Mudambi and Venzin 2010; Peeters et al. 2015) and thus may be related to the decision of undertaking a HBKA (versus HBKE) implementation in emerging countries—*Market-seeking* and *Efficiency-seeking*. To measure *Market-seeking*, which thus proxies the firm's attention to market-based arguments when undertaking the focal implementation, we used the average response to two survey questions in which respondents were asked

to rate using a five-point Likert scale (1) how much the need to access new markets for products and services mattered as a driver for their offshore implementation (1 = not at all important; 5 = very important), and (2) how much ‘increasing speed to market’ mattered as a driver for their offshore implementation (1 = not at all important; 5 = very important). To measure *Efficiency-seeking*, which proxies the firm’s focus on cost savings when launching the focal implementation, we used the average response to two survey questions in which respondents were asked to rate using a five-point Likert scale how the possibility to save on (1) labor costs and (2) other costs mattered as a driver for their offshore implementation (1 = not at all important; 5 = very important). Table 2 provides an overview of the variables we used in the empirical analysis, their operationalization, and source.

5 Analysis and Results

Table 3 contains the descriptive statistics and pairwise correlations of all the variables. We analyzed Variance Inflation Factors (VIFs) to assess potential multicollinearity. The VIFs values are all well below the severest limit of 5.3 proposed by Hair et al. (2006). Hence, we do not expect issues of multicollinearity to affect our results.

5.1 Results of the Main Analysis

We report the results of the logit regression models in Table 4. Model 1 includes our main explanatory variables—*IP protection* and *Cultural distance*. Model 2 also comprises *Offshoring experience*. Model 3 contains all our explanatory variables and focuses on the moderation effect of *Offshoring experience* on the relationship between *IP protection* and the likelihood to undertake a HBKA implementation in an emerging country. Model 4 tests instead the moderation effect of *Offshoring experience* on the relationship between *Cultural distance* and *HBKA implementation*. The coefficients associated with both *IP protection* and *Cultural distance* are positive and significant across all models, thus providing empirical support for our first two hypotheses. Turning to our last two hypotheses focused on the moderating effect of offshoring innovation experience, we find empirical support for our third hypothesis (Model 3) while our fourth hypothesis is not empirically validated (Model 4). Specifically, the interaction term between *IP protection* and *Offshoring experience* is negative and significant in Model 3, thus offering empirical evidence in support of our third hypothesis according to which offshoring innovation experience negatively moderates the positive relationship between IP protection and the likelihood to undertake a HBKA implementation in emerging countries. The interaction term between *Cultural distance* and *Offshoring experience* reported in Model 4 is negative and not significant. Thus, the result obtained does not support the existence of a moderating effect of experience on the relationship between *Cultural distance* and *HBKA implementation*.

Table 2 Operationalization of the variables

Variable	Operationalization	Source
HBKA implementation	We considered the average response to the following two survey questions (scaled between 0 and 1) and then created a dummy that scores 1 when the average is at least 0.9 and 0 otherwise: Why was this particular offshore location chosen? (1 = strongly disagree; 5 = strongly agree) Talent pool available Why was this particular offshore location chosen? (1 = strongly disagree; 5 = strongly agree) High level of expertise	ORN Survey
IP protection	Park's (2008) IP protection index which combines the unweighted sum of separate scores for a country's membership in international treaties, the coverage and duration of protection, the enforcement mechanisms and restrictions (this index corresponds to an update of the previous index created by Ginarte and Park 1997)	Park (2008) used multiple sources (e.g., the World Intellectual Property Office) to construct the index
Cultural distance	The Kogut–Singh index of cultural distance between the home country and the host country	Hofstede's measures
Language distance	Measure of the difference in language between the home country and the host country	Dow and Karunaratna (2006)
Religion distance	Measure of the difference in religion between the home country and the host country	Dow and Karunaratna (2006)
Offshoring experience	Number of offshoring innovation-related implementations that the company had already initiated when launching the focal implementation	ORN survey
R&D focus ratio	(R&D expenditures of the host country in the year in which the focal implementation was launched as a percentage of the GDP of the host country in the same year)/(R&D expenditures of the home country in the year in which the focal implementation was launched as a percentage of the GDP of the home country in the same year)	World Bank
Competitive advantage ratio	(Exports of goods and services of the host country in the year in which the focal implementation was launched as a percentage of the GDP of the host country in the same year)/(Exports of goods and services of the home country in the year in which the focal implementation was launched as a percentage of the GDP of the home country in the same year)	World Bank

Table 2 (continued)

Variable	Operationalization	Source
Level of income	A dummy that scores 1 if the host country belongs to the World Bank lower-middle income group reuniting countries with an annual gross national income (GNI) per capita between \$1026 and \$4035 and 0 if the host country belongs to the upper-middle income group with a GNI per capita between \$4036 and \$12475	World Bank
Market size ratio	(The GDP of the host country in the year in which the focal implementation was launched)/(The GDP of the home country in the year in which the focal implementation was launched)	World Bank
Geographical distance	The natural logarithm of the distance in kilometers between the home country and the host country	CEPII GeoDist Database
Firm size	Category corresponding to the number of employees of the firm (1 = less than 500; 2 = between 500 and 20,000; 3 = more than 20,000)	ORN survey
Captive	A dummy indicating whether the focal offshoring implementation is organized via a captive solution (1 = captive; 0 = offshore outsourcing or joint venture)	ORN survey
Market-seeking	The average score to the following two questions: What is the importance of the following driver in offshoring this function? (1 = not important at all; 5 = very important) Access to new markets for products and services What is the importance of the following driver in offshoring this function? (1 = not important at all; 5 = very important) Increasing speed to market	ORN survey
Efficiency-seeking	The average score to the following two questions: What is the importance of the following driver in offshoring this function? (1 = not important at all; 5 = very important) Labor cost savings What is the importance of the following driver in offshoring this function? (1 = not important at all; 5 = very important) Other cost savings	ORN survey
Software and IT industry	A dummy that scores 1 if the company belongs to the software and IT industry and 0 otherwise	ORN survey

Table 3 Descriptive statistics and correlations coefficients of the variables

Variable	N	Mean	Std dev	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
HBKA implementation	1	128	0.22	0.42	1.00													
IP protection	2	128	3.51	0.71	0.08	1.00												
Cultural distance	3	128	2.39	1.03	0.02	0.12	1.00											
Offshoring experience	4	128	0.73	1.27	0.32***	0.23**	0.20*	1.00										
R&D focus ratio	5	128	0.35	0.14	0.12	0.33***	0.25**	0.19*	1.00									
Competitive advantage ratio	6	128	1.94	1.21	-0.10	0.20*	0.40***	0.04	-0.23**	1.00								
Level of income	7	128	0.66	0.48	-0.01	-	-0.57***	-0.20*	-0.37***	-0.39***	1.00							
Market size ratio	8	128	0.33	0.65	0.01	0.12	0.41***	0.12	0.53***	-0.46***	-0.19*	1.00						
Geographical distance	9	128	9.27	0.37	-0.09	-0.14	-0.31***	-0.11	-0.10	0.16	0.41***	-0.35***	1.00					
Firm size	10	128	1.98	0.73	0.28**	0.08	-0.20*	0.18*	-0.11	0.08	0.04	-0.23*	0.16†	1.00				
Captive	11	128	0.39	0.49	0.04	0.01	-0.04	0.07	0.02	0.25**	-0.20*	-0.24**	0.01	0.25**	1.00			
Market-seeking	12	128	3.18	1.05	-0.02	0.02	0.05	-0.01	0.03	-0.04	-0.07	0.14	-0.07	0.12	0.02	1.00		
Efficiency-seeking	13	128	4.15	0.84	-0.06	0.04	0.16†	0.06	0.02	0.02	-0.05	-0.04	0.03	-0.10	-0.16†	0.31***	1.00	
Software and IT industry	14	128	0.40	0.49	-0.04	-0.07	0.10	0.09	0.04	0.13	-0.12	-0.14	-0.02	-0.19*	0.36***	-	-0.19*	1.00

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

† $p < 0.10$

To better visualize the interaction between the variables considered and, more specifically, the moderating effect found (Model 3 in Table 4), in Fig. 1 we plot the average marginal effects of *IP protection* on the probability of undertaking a HBKA implementation and calculate them at two different values of our moderating variable *Offshoring experience*, that is at -1 standard deviation (corresponding to a low offshoring innovation experience) and at $+1$ standard deviation (corresponding to a high offshoring innovation experience). Figure 1 shows that when firms have a high offshoring innovation experience, the positive relationship between *IP protection* and the probability to undertake a HBKA implementation is weaker than when firms have a low offshoring innovation experience. Specifically, over the full range of IP protection, firms with a low offshoring experience see an increase in the likelihood to undertake a HBKA implementation from nearly 0% to 35%, while firms with a high offshoring experience see a much weaker increase, from nearly 30% to 45%. Thus, the findings we obtained offer a nuanced assessment of the role of experience in moderating the relationship between IP protection and the likelihood to undertake a HBKA implementation in emerging countries. All else being equal, the positive effect of a country's level of IP protection on the probability to undertake a HBKA implementation is significantly weakened by a DMNE's offshoring innovation experience.

Among the control variables, four of the included variables report significant coefficients across all models. Specifically, the coefficient associated with *R&D focus ratio* is positive and significant while the one associated with *Competitive advantage ratio* is negative and significant. These findings suggest that while, as expected, the stronger the R&D focus of the emerging host country the higher the likelihood of a HBKA implementation in such country, the stronger its competitive advantage the lower the likelihood of a HBKA implementation. One of the possible explanations for this latter result hinges on the operationalization we used to proxy a country's competitive advantage—the relative strength of its export sector. While in a developed-country context a stronger export orientation tends to be closely related to the competences owned by local firms and their relative competitive advantage in the international business landscape, in an emerging-country context this association may be weaker as specific countries may focus on the production and export of goods and services that are relatively less knowledge-intensive and, as a consequence, may not be particularly favorable locations for the establishment of HBKA offshore units. Looking at the other control variables, the coefficient of *Market size ratio* is negative and significant. This result therefore confirms that a greater market size increases the likelihood to relocate a HBKE (versus HBKA) implementation in a given emerging country, this being in line with the notion that HBKE investments are closely connected to contextual factors on the demand side. *Firm size* is instead positively and significantly related to the likelihood to launch a HBKA implementation, suggesting that, all else equal, larger firms are more likely to undertake HBKA implementations in emerging countries.

Table 4 Logit regression models with robust standard errors

Variable	Model 1		Model 2		Model 3		Model 4	
	DV: HBKA implementation		DV: HBKA implementation		DV: HBKA implementation		DV: HBKA implementation	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Explanatory variables								
IP protection	1.58*	0.66	1.85**	0.56	2.96***	0.84	1.67**	0.59
Cultural distance	2.81***	0.69	3.73***	0.92	3.76***	1.86	3.90***	0.87
Offshoring experience			0.75**	0.22	4.88**	0.50	1.37*	0.55
Interaction terms								
IP protection × offshoring experience					- 1.10*	0.50		
Cultural distance × offshoring experience							- 0.27	0.24
Control variables								
R&D focus ratio	6.31*	3.02	8.02**	2.65	6.46*	2.49	7.50**	2.49
Competitive advantage ratio	- 3.65***	0.88	- 4.86***	1.05	- 5.07***	1.07	- 4.36***	1.17
Level of income	- 0.14	0.94	0.11	0.85	- 0.83	0.91	0.41	0.91
Market size ratio	- 5.53***	1.28	- 7.99***	1.79	- 7.94***	1.74	- 6.99**	2.04
Geographical distance	0.41	0.94	0.91	1.33	1.78	1.49	0.85	1.18
Firm size	1.13**	0.36	1.04*	0.41	1.03*	0.41	1.08**	0.41
Captive	- 0.09	0.57	- 0.08	0.79	- 0.07	0.78	0.01	0.81
Market-seeking	- 0.29	1.41	- 0.08	1.55	- 0.36	1.67	0.19	1.65
Efficiency-seeking	- 0.57	1.74	- 2.07	2.12	- 1.86	2.10	- 1.96	2.14
Software and IT industry	0.13	0.62	- 0.52	0.72	- 0.27	0.74	- 0.46	0.76
Constant	- 6.71*		- 7.19*	3.12	- 10.12**	3.61	- 8.38*	3.40
Number of observations	128		128		128		128	
Prob > chi ²	0.00		0.00		0.00		0.00	
Pseudo R ²	0.26		0.35		0.38		0.36	

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ † $p < 0.10$

5.2 Additional Analyses

To check the robustness of our findings, we performed a number of additional analyses. First, we built on Dow and Karunaratna's (2006) argument that a single composite measure of Hofstede's cultural dimensions such as the Kogut and Singh index of cultural distance may not reveal the effect of important psychic distance stimuli that are closely associated with cultural differences. Thus, we introduced the two variables *Language distance* and *Religion distance* (as defined in the previous section)

to test their individual effects on *HBKA implementation* as well as the presence of a moderating effect of *Offshoring experience* on these two direct relationships. Our preliminary analysis showed that *Language distance* and *Cultural distance* are very highly correlated (0.79). Thus, we included these two variables instead of cultural distance in the additional models tested. Table 5 below reports the results of these additional analyses. The findings we obtained show that while *Language distance* is positively and significantly related to the likelihood to undertake a HBKA implementation, the relationship turns into a negative and significant one when considering *Religion distance*. Models 3 and 4 in Table 5 also corroborate that, as it was the case for cultural distance, offshoring innovation experience does not have any moderating effect on the two direct relationships tested. Thus, this additional analysis offers a nuanced assessment of the peculiar effect of language and religion differences to the likelihood that a DMNE undertakes a HBKA implementation in an emerging country. Whereas language differences, similarly to our construct measuring cultural differences, have a positive effect on such likelihood, religion differences have instead a markedly negative effect.

Additionally, to ensure the absence of common method bias, we used procedural methods to reduce potential systematic measurement errors and statistical techniques to assess the likelihood of such bias (Podsakoff et al. 2003). Procedurally, we used secondary sources such as the World Bank for our context-specific explanatory variables. Our firm-specific explanatory variable refers to the number of offshoring implementations that were launched before the focal implementation. Thus, as for other firm-specific variables included in our study (e.g., firm size), we were able to construct this variable based on basic descriptive information provided by respondents. Furthermore, the anonymity of the respondent during the execution of the ORN survey was entirely guaranteed and thus further lowered evaluation apprehension biases (Podsakoff et al. 2003). The major concern relative to potential common method bias is given by the three variables *HBKA* (based on which we then constructed our dependent variable *HBKA implementation*), *Market-seeking*, and *Efficiency-seeking*, as they use data that originates from the same survey section investigating the drivers which triggered the decision to initiate the implementation under scrutiny and the key criteria used for choosing the offshore location. To establish whether our data is likely to suffer from common method bias in relation to such variables, we performed the Harman's single-factor test (Podsakoff et al. 2003) and thus ran exploratory factor analysis on the items related to the correspondent section, determining the number of factors that are necessary to account for the variance in the variables. The analysis showed three factors with eigenvalues greater than 1, hence corroborating the lack of unidimensionality in our data.

We also tested the internal consistency as well as the convergent and discriminant validity of the three measures derived from questionnaire items, that is *HBKA* and the control variables *Market-seeking* and *Efficiency-seeking* given that these are all multi-scale items obtained from survey respondents. From a conceptual perspective, these three constructs correspond to distinct elements associated with the decision to offshore innovation activities to a specific emerging country. Thus, it is important from both methodological and theoretical standpoints that such measures exhibit adequate internal consistency, as well as convergent and discriminant validity. We

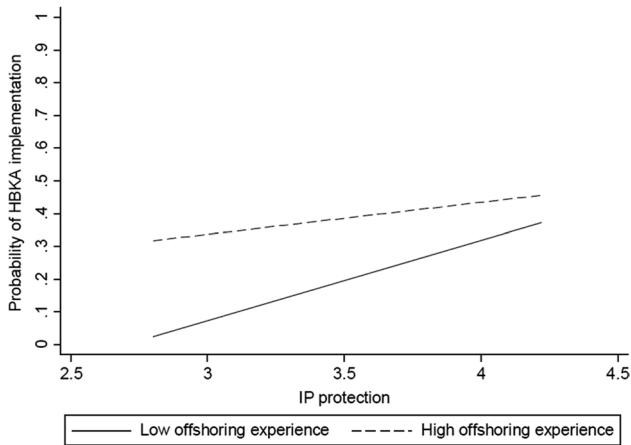


Fig. 1 Average marginal effects of IP protection on the probability of undertaking a HBKA implementation in an emerging country and the interaction with offshoring experience

based our assessment of internal consistency (composite reliability) on Fornell and Larcker's (1981) measure. The results we obtained show that the measures for internal consistency for *HBKA* (0.90), *Market-seeking* (0.80), and *Efficiency-seeking* (0.84) are all greater than the 0.70 threshold that is necessary to establish internal consistency (Nunnally and Bernstein 1994). With respect to convergent validity, we computed Fornell and Larcker's average variance extracted (AVE) measure for *HBKA* (0.81), *Market-seeking* (0.67), and *Efficiency-seeking* (0.73). Our results revealed that all AVEs exceeded the 0.50 cutoff required for the AVE to confirm a satisfactory level of convergent validity. Similarly, we used the method illustrated by Fornell and Larcker (1981) to assess discriminant validity. The square roots of the AVE for *HBKA* (0.90), *Market-seeking* (0.82), and *Efficiency-seeking* (0.85) are all greater than the correlations between each of the latent construct pairings. Furthermore, the square root of the AVE value for each of these three constructs is also greater than the correlation between each latent construct and every other variable considered in the multilevel regression models. This further corroborates the discriminant validity of the three latent constructs identified (Fornell and Larcker 1981; Hair et al. 2006).

Another important robustness issue is associated with how we constructed our dependent variable *HBKA implementation* based on the continuous variable *HBKA*. As detailed in the previous section, we built on prior relevant works (Ambos and Ambos 2011; Kuemmerle 1999) and coded this variable as a dichotomous variable that takes the value of 1 if the implementation was primarily focused on HBKA (i.e., *HBKA* scored at least 0.9) and 0 if the implementation was primarily focused on HBKE (i.e., *HBKA* scored less than 0.9). The proportion of HBKA versus HBKE implementations obtained (22%) is lower than the one obtained by Ambos and Ambos (2011) distinguishing between knowledge-seeking versus knowledge-exploiting R&D offshore laboratories in their study of German MNCs primarily offshoring innovation activities to other developed countries (32.5%). Having said

that, the two proportions remain comparable and it is reasonable to expect that a sample of offshoring innovation implementations undertaken by DMNEs in emerging countries is likely to report a lower proportion of HBKA (versus HBKE) implementations compared with a sample primarily focused on developed host countries (Ambos and Ambos 2011). To establish the degree to which the results we obtained are sensitive to changes in the threshold value used to distinguish between HBKA and HBKE implementations, we recalculated *HBKA implementation* using different threshold values (respectively 0.8, 0.85, 0.95, and 1) and for each of the dependent variables obtained we reran our Model 3 in Table 4. When using as threshold values both 0.95 and 1, the proportion of HBKA versus HBKE remained equivalent to the one obtained when using 0.9 as threshold value (22%). Consequently, the results obtained are equivalent to the ones reported in Table 4. When using 0.85 as threshold value the proportion of HBKA implementations goes up to 40% and, while all the coefficients remain of the same sign and some of them continue to be significant, the model loses most of its explanatory power (the Pseudo R^2 goes down from 0.38 to 0.11, with the $\text{Prob} > \text{Chi}^2$ going up from 0.00 to 0.12). When using 0.8 as threshold value, the proportion of HBKA implementations goes up to 73% and the model suffers a further decrease in its explanatory power (the Pseudo R^2 goes down to 0.09, with the $\text{Prob} > \text{Chi}^2$ going up to 0.35). These results provide additional evidence that our operationalization of *HBKA implementation* is appropriate as it allowed us to clearly separate the smaller subgroup of offshoring innovation implementations for which the access to talent and technical expertise was a fundamental priority—hence, those implementations whose main objective was to augment the pool of knowledge owned at home—from the larger set of other innovation implementations for which this was relatively less important.

As a last robustness test, inspired by the works of Kuemmerle (1999) and Ambos and Ambos (2011), we also considered the role of an emerging host country's scientific excellence as a factor that may have an effect on the likelihood that a DMNE undertakes a HBKA implementation in such country. Thus, we also constructed a variable that would specifically proxy the relative scientific excellence of the emerging host country so as to be able to include it as additional control in our model. To do so, we gathered additional data from the World Bank and constructed the variable *R&D employee ratio* which was operationalized as the ratio between the number of R&D researchers employed in the host country in the year in which the focal implementation was launched as a percentage of the total population of the host country in the same year and the number of R&D researchers employed in the home country as a percentage of the total population of the home country for the same year. Our preliminary analysis showed that *R&D employee ratio* is highly correlated with *R&D focus ratio* (0.84). As a result, its inclusion was not feasible as this would create multicollinearity issues with VIFs values going well beyond reasonable limits. We therefore opted to rerun our Model 3 in Table 4 in which *R&D employee ratio* was included instead of *R&D focus ratio* and thus employed this variable as an alternative operationalization of the relative R&D focus of the emerging host country. The results we obtained are completely aligned with the ones reported in Model 3 in Table 4, thus corroborating the robustness of our key findings to this additional specification.

Table 5 Additional analyses

Variable	Model 1		Model 2		Model 3		Model 4	
	DV: HBKA implementation		DV: HBKA implementation		DV: HBKA implementation		DV: HBKA implementation	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Explanatory variables								
IP protection	1.03*	0.50	1.07*	0.53	0.91	0.58	1.08*	0.49
Language distance	2.95**	0.92	2.78**	0.91	2.90**	0.92	2.75**	0.84
Religion distance	- 3.57**	1.14	- 2.80**	0.94	- 2.78**	0.95	- 3.05**	1.02
Offshoring experience			0.63**	0.21	0.47	0.33	0.50*	0.23
Interaction terms								
Language distance × Offshoring experience					- 0.13	0.17		
Religion distance × Offshoring experience							0.16	0.20
Control variables								
R&D focus ratio	11.79*	5.90	7.36	4.74	8.01†	4.61	7.37	4.56
Competitive advantage ratio	- 2.77**	0.97	- 2.81*	1.17	- 2.55*	1.18	- 2.86**	1.04
Level of income	6.79**	2.25	5.63**	1.83	5.97**	1.92	5.63**	1.74
Market size ratio	- 6.34*	3.16	- 5.80	3.54	- 5.71	3.59	- 5.81†	3.34
Geographical distance	2.46†	1.28	2.53	1.67	2.26	1.62	2.50†	1.40
Firm size	1.40**	0.42	1.24**	0.46	1.26**	0.45	1.27**	0.47
Captive	- 0.22	0.62	- 0.20	0.77	- 0.11	0.77	- 0.19	0.80
Market-seeking	- 0.35	1.44	- 0.33	1.63	- 0.16	1.65	- 0.23	1.63
Efficiency-seeking	- 0.21	1.97	- 1.09	2.14	- 1.19	2.20	- 1.18	2.14
Software and IT industry	0.75	0.59	0.15	0.64	0.16	0.66	0.22	0.64
Constant	- 0.64	3.15	0.91	3.50	0.72	3.49	1.16	3.55
Number of observations	128		128		128		128	
Prob > Chi ²	0.03		0.00		0.00		0.00	
Pseudo R ²	0.31		0.37		0.38		0.38	

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$ † $p < 0.10$

6 Discussion and Conclusion

Despite growing scholarly efforts on DMNEs' offshoring innovation, we still have a limited understanding of the many idiosyncrasies at play when DMNEs offshore their innovation activities to emerging countries. In this study, to respond to the pressing call for more IB scholarship that theorizes and adds novel empirical insights to our understanding of this phenomenon, we examined how host-country contextual

factors that are of particular salience in emerging countries influence DMNEs' strategic decision to undertake a HBKA implementation when offshoring innovation to these countries. To accomplish our purpose, we leveraged and extended the institution-based view, the dominant theoretical framework to explain emerging economy business phenomena (Meyer and Peng 2016). Specifically, we focused on the distinction between formal and informal institutions (Dikova et al. 2010; Liou et al. 2016; Meyer and Peng 2016) and examined their differential effects on DMNEs' likelihood to undertake a HBKA offshoring innovation implementation in emerging countries. First, we considered the impact of formal institutions and, building on prior work pointing to risks associated with the country-level institutional deficits related to a weak IP protection (Acemoglu and Johnson 2005; Berry 2006, 2017; Henisz 2000), we hypothesized that the stronger the emerging host country's IP protection, the higher the likelihood that a DMNE undertakes a HBKA implementation in such country. Second, we evaluated the effect of informal institutions and, building on the growing stream of research pointing to the positive effects of cultural differences in activities requiring exploration and aimed at generating new knowledge (Lisak et al. 2016; Nurmi and Hinds 2016; Stahl et al. 2010; Stahl and Tung 2015), we hypothesized that the greater the cultural differences between the developed home country and the emerging host country, the more likely a DMNE undertakes a HBKA implementation. Third, we adopted a contingency approach and proposed that the DMNE's experience with offshoring innovation weakens the positive effect of IP protection while strengthening the positive effect of cultural differences on the likelihood to undertake a HBKA implementation. Analysis of 128 offshoring innovation implementations by 78 DMNEs in ten emerging countries provided support for all our hypotheses except for the one focused on the moderation effect of experience on the relationship involving cultural differences. To offer a nuanced assessment of the effects of psychic distance stimuli that are closely associated with cultural differences and of particular salience in emerging countries, we also tested the individual effects of language and religion distances and showed that while the former increases the likelihood that a DMNE undertakes a HBKA implementation, the latter lowers it.

Our research contributes to IB scholarship in three important ways. First, we leverage and extend the institution-based view to further our understanding of the recent phenomenon of offshoring innovation to emerging countries. By arguing and empirically showing that both IP protection and cultural differences increase the likelihood of a HBKA implementation, we explicate the differential effects of formal and informal institutions on DMNEs' strategic decision to offshore innovation activities aimed at generating new knowledge in the specific context of emerging countries. In relation to the effect of IP protection, our study shows the importance of appropriate institutional safeguards to attract DMNEs' foreign investments aimed at creating new knowledge in emerging host countries. In relation to the effect of cultural differences, we built on recent insights on the role of culture (Stahl and Tung 2015) and precisely responded to the call for more research that sheds light on the specific situational contexts in which cultural differences can turn into an asset for firms (Leung et al. 2005; Tung and Verbeke 2010). Future studies could delve

more deeply into how cultural dissimilarities may impact other decision-making processes associated with firms' internationalization of innovation.

Second, we shed light on a key firm-level contingency—the experience accumulated in offshoring innovation—that attenuates the positive effect of IP protection, thus shedding light on the specific role of a firm's stock of experience in assuaging the risks associated with institutional deficits in the context of emerging countries. Contrary to our expectations, we failed to empirically validate the positive moderating role of experience on the relationship involving cultural differences. Our finding suggests that cultural differences in the emerging host country continue to represent a significant 'pull' factor in attracting HBKA implementations but DMNEs are not even more likely to opt for greater cultural differences as their number of offshoring innovation sites grows. One of the possible explanations for the finding obtained hinges on the fact that while a DMNE's greater experience can help to create organization practices that enhance the positive effects associated with greater cultural differences in the host environment, these practices may also weaken the positive marginal effect in terms of creativity of adding a new innovation site based in an emerging country characterized by large cultural differences. Building on previous works that have discussed and applied the Uppsala model in the specific context of emerging countries (Santangelo and Meyer 2011), our study adds novel insights on how experience can play a role in location decisions involving innovation activities in such countries. By doing so, our analysis further corroborates the necessity for more differentiated theoretical assessments of how experiential learning and institutions affect internationalization strategies in particular in emerging economies (Santangelo and Meyer 2011), thus also responding to the need to adapt the Uppsala model to the modern multinational (Coviello et al. 2017). Future studies could therefore delve more deeply into the role of experience for firms characterized by a highly internationalized network of innovation sites increasingly located in emerging countries as well as explore how experience accumulated by DMNEs affects other strategic decisions related to the internationalization of innovation to emerging countries, for instance the choice of entry modes.

Third, our study responds to the pressing call for more research that theorizes and produces new insights on knowledge-related issues in emerging countries (Aulakh et al. 2016). As also noted in a recent review of studies focusing on international location choices, these countries differ widely in the specific configurations of their contextual environments and thus offer a particularly rich context for IB research (Nielsen et al. 2017). Our exclusive focus on emerging countries as recipients of offshoring innovation implementations enabled us to appreciate how variations in their institutions have an effect on an important decision DMNEs make when offshoring innovation precisely to these countries. Going beyond the factors that have already been considered in prior research such as the size of the host market and its relative focus on R&D (Kuemmerle 1999), our analysis of the distinctive role of formal and informal institutions in the specific context of emerging countries importantly contributes to this body of research. Additionally, our fine-grained assessment of the individual effects of religion and language distances between home and host countries also provides new insights to the discussion on how to grasp and measure cultural differences in IB research. While an extensive portion of IB research

has to date used the Kogut and Singh (1988) index and other single scale distance measures to gauge cultural differences across countries, serious reservations about the usage of these measures have been raised in the literature (Shenkar 2001; Stahl et al. 2016; Zaheer et al. 2012). To discuss the merits and pitfalls of the Kogut and Singh (1988) cultural distance measure goes beyond the scope of our study. Having said that, in view also of the notable critiques to such measure put forward by Shenkar (2001) and several other IB scholars, in addition to the main analysis performed using the measure developed by Kogut and Singh (1988), we undertook additional analyses relying on a different operationalization to offer a more nuanced assessment of the role of cultural differences. To do so, we built on the notion that the psychic distance construct identifies a broad array of factors related to culture (Dow and Karunaratna 2006; Johanson and Vahlne 1977) and examined the individual effects of language and religion distance stimuli. We argue that our fine-grained analysis of these individual effects is of particular salience for emerging countries because of their greater differences in both languages and religions. The results we obtained shed new light on the specific role of informal institutions in driving DMNEs' internationalization of innovation activities in emerging countries while also contributing interesting insights to the discussion on how to measure cultural differences in IB research (Stahl et al. 2016).

It is also worth of note that our empirical analysis showed that efficiency-related arguments do not play any significant role on DMNEs' decision to undertake a HBKA implementation in emerging countries. Whereas previous studies have argued that cost reductions have contributed to the rise and growth of the offshoring practice (Dossani and Kenney 2007; Grote and Täube 2007; Mudambi and Venzin 2010; Peeters et al. 2015), our results suggest that, once we restrict our attention to emerging countries, cost-related considerations do not represent critical factors in driving DMNEs' decision to undertake a HBKA implementation. Our finer-grained distinction of emerging countries also shows that, while both subcategories pertaining to the World Bank's middle-income group—lower and higher middle-income—are included in our sample and do not present significant differences in their likelihood to attract HBKA implementations, none of the offshoring innovation implementations considered in our analysis was made to the lowest income group. This further illustrates the fact that these countries have been completely marginalized and have not benefitted in any way from DMNEs' increasing internationalization of knowledge-intensive activities. Finally, aligned with prior findings (Castellani et al. 2013), our empirical evidence corroborates the notion that differences in terms of geographical distance do not play a relevant role in driving DMNEs' decision on the location of their innovation activities in emerging countries.

The present study also entails insightful managerial implications. In particular, our research assists DMNEs' managers to understand how institutional factors that are of particular relevance in the context of emerging countries can influence the decision to undertake a HBKA implementation. As such, when internationalizing innovation activities, it is important for DMNEs' managers to evaluate key institutional factors of a given emerging host country, in particular its IP protection and cultural differences from the home country, as these are likely to have major implications on the decision associated with the type of innovation to be relocated in

this country. Moreover, our fine-grained distinction between religion and language distance and their opposing effect on the likelihood to undertake a HBKA implementation can turn into a very useful reference when comparing different offshore locations. Engaging in this exercise will assist managers in making more informed decisions about where to undertake a HBKA implementation. Finally, DMNEs' managers should also evaluate what they learnt in prior offshoring innovation implementations as this may become particularly useful when establishing organizational practices that can help to assuage the risks associated with institutional deficits when offshoring innovation to emerging host countries characterized by a weak IP protection.

Our study also has implications for policy makers. Our results imply that the relative IP protection is a key institutional factor driving DMNEs' internationalization of HBKA innovation activities in emerging countries. Accordingly, emerging countries should realize the importance of investing in the improvement of their regulatory environment. Interestingly, as previously discussed, cost-related factors do not emerge as relevant drivers in DMNEs' decision to undertake a HBKA implementation in emerging countries. This result stresses the notion that, all else equal, emerging countries competing to attract HBKA investments from DMNEs should focus on their ability to offer strong regulatory and judicial systems. Furthermore, our empirical evidence should be used to draw policy implications in light of the recent, markedly negative swing in the political discourse about globalization, particularly in the US and Western Europe. Our findings point to some of the potential gains that both home and host countries can derive from DMNEs' enhanced internationalization of their most knowledge-intensive and value adding activities to emerging countries. In particular, our results suggesting that DMNEs specifically look for cultural differences when offshoring HBKA implementations to emerging countries add empirical evidence to the globalization debate, showing how important it is for DMNEs to rely on cultural differences to promote creativity and stimulate learning opportunities.

This study also has limitations. The first limitation is related to the fact that, as a result of the nature of the dataset, specific aspects of the offshoring innovation implementations were measured at a single point in time after the implementation had already been launched. This can potentially lead to a bias in the answers, as respondents had the opportunity to reassess their decisions retroactively. While we contend that the issue of asking retrospectively does not jeopardize the results of our study insofar as it still captures relevant differences, future research could pay more attention to this issue and, for instance, further investigate whether a given offshoring innovation unit may change its aim (e.g., from HBKA to HBKE) over time and the key factors driving such change. A second limitation is related to the fact that our distinction between HBKA and HBKE is instrumental for the larger purpose of advancing our understanding of the role of formal and informal institutions in influencing DMNEs' decision to undertake a HBKA implementation in emerging countries. As discussed in the methodology section, we based the operationalization of our latent construct on prior works suggesting that offshoring innovation aimed to augment the knowledge base of the firm is crucially related to the availability and quality of technical talent in the host country (Demirbag and Glaister 2010; Doh et al. 2009; Lewin et al. 2009; Manning et al. 2008). To further validate

our measure, we performed additional analyses and also tested the internal consistency as well as the convergent and discriminant validity of the three variables we constructed based on ORN survey items. While we argue that ours represents a valid measurement to identify the key latent construct developed for the purposes of our research, other works have used alternative ways to distinguish between these two types of offshoring innovation in a primarily developed-country context (e.g., Kuepperle (1999) and Ambos and Ambos (2011) used the percentage of personnel in the laboratory working on exploration versus exploitation projects). Thus, future research could focus on the development of finer-grained measures and, for instance, examine whether, depending on the particular host country or region considered, different measures may proxy more closely the underlying construct. A third limitation involves the reliance on survey data. The utilization of responses from single respondents to operationalize our constructs suggests that the data we used may potentially suffer from common method bias, which can ultimately overstate the associations among variables included in the study. We took several actions in order to prevent this eventuality during the elaboration of the survey and the analysis to ensure that the likelihood of having such an occurrence in our data remains extremely small. Despite our efforts, we acknowledge that common method bias cannot be completely excluded in this study. Future studies could examine whether our results hold when considering alternative data sources. Thus, our study on how formal and informal institutions influence DMNEs' decision to undertake a HBKA implementation when offshoring innovation to emerging countries offers fruitful avenues for future research.

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Appendix: The Offshoring Research Network Project

The Offshoring Research Network (ORN) project was launched in 2004 with the aim of studying the advancing trend of offshoring white-collar work (including administrative and technical tasks) as opposed to blue-collar work. The ORN project captures a wide range of business functions and processes, ranging from information technology to new product development. Initially, the research project interested only US-based companies. However, the early involvement of other academic institutions led to the extension of the study to companies based in distinct world regions. The partner universities that joined the Offshoring Research Network project are Copenhagen Business School, WHU, RSM Erasmus University, IESE Business School, Manchester Business School, ULB-Solvay Brussels School of Economics and Management, and Macquarie University.

The project is characterized by the following key characteristics, rendering it one of the most encompassing investigations on the offshoring phenomenon (Lewin et al. 2009; Peeters et al. 2015). First, the contextual commonality and centralized

management of the data create a high degree of comparability among surveys collected across countries. Second, the level of the analysis is the specific offshore implementation and not the company's overall experience with offshoring. This means that each specific function that a company has relocated to a particular location is the object of a distinctive survey and thus treated as a separate observation. Hence, the result is a detailed database that enables a thorough analysis of offshoring implementations across a wide range of activities located in different regions, across multiple industries, and interesting all forms of governance models (i.e., captive, third party, and hybrid). While the ORN project gave companies the possibility to respond to a questionnaire also in the case they had not yet launched any offshoring implementation but were only planning to do so, in the present study we restrict our attention to implementations that were already launched at the time the focal respondent completed the questionnaire. Building on the above considerations, the project is widely considered one of the most sophisticated investigations of offshoring. Several works that have based their empirical settings on this project have recently been published in leading management journals (Elia et al. 2014; Larsen et al. 2013; Peeters et al. 2015).

Table 6 ORN survey items used in this study

Variable name	ORN survey item
HBKA implementation	Why was this particular offshore location chosen? (1 = strongly disagree; 5 = strongly agree) Talent pool available
	Why was this particular offshore location chosen? (1 = strongly disagree; 5 = strongly agree) High level of expertise
Market-seeking	What is the importance of the following driver in offshoring this function? (1 = not at all important; 5 = very important) Access to new markets for products and services
	What is the importance of the following driver in offshoring this function? (1 = not at all important; 5 = very important) Increasing speed to market
Efficiency-seeking	What is the importance of the following driver in offshoring this function? (1 = not at all important; 5 = very important) Labor cost savings
	What is the importance of the following driver in offshoring this function? (1 = not at all important; 5 = very important) Other cost savings
Offshoring experience	Indicate the number of offshoring implementations of the same function that were already initiated by the company at the time of the launch of the focal implementation
Firm size	Indicate the size of the firm [small < 500 empl.), midsize (500–20,000), large (> 20,000)]
Captive	Indicate the mode of organization of the offshored function (captive; joint venture; outsource)
Software and IT industry	Indicate the industry of the company Software/IT industry (yes; no)

The ORN dataset interests small (i.e., less than 500 employees), mid-size (i.e., between 500 and 20,000 employees), and large companies (i.e., more than 20,000 employees). The surveyed DMNEs operate in a variety of industries, including, among others, software and IT services, finance and insurance, manufacturing, professional services, and telecommunications. Moreover, the offshore implementations of the surveyed companies interest a variety of functions; that is, contact centers (e.g., call centers, help desks, and technical support), finance and accounting processes, human resources and legal services, other administrative back office services, IT-related activities, procurement, marketing and sales, and high value-added activities focused on product development (i.e., R&D, product design, and engineering services). In this study we make use of various survey items which are reported in the following Table 6.

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