



**RITA MARQUES
CASTRO**

**TRANSFERÊNCIAS INTERNAS DE CONHECIMENTO
EM EMPRESAS MULTINACIONAIS: UMA REVISÃO
SISTEMÁTICA DA LITERATURA**

**INTERNAL KNOWLEDGE TRANSFERS IN
MULTINATIONAL CORPORATIONS: A SYSTEMATIC
LITERATURE REVIEW**



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Dissertação apresentada à Universidade de Aveiro para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Gestão, realizada sob a orientação científica do Doutor António Carrizo Moreira, Professor Associado do Departamento de Economia, Gestão, Engenharia Industrial e Turismo da Universidade de Aveiro

Avô, isto é para ti.

Obrigada por nunca te teres esquecido de mim.
Prometo que nunca te esquecerei.

Estarás sempre comigo.

Adoro-te.

o júri

presidente

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agradecimentos

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palavras-chave

transferências de conhecimento, conhecimento interno, empresas multinacionais, gestão do conhecimento, subsidiárias, revisão sistemática da literatura

resumo

Nos mercados atuais — marcados pela globalização, pela proliferação da tecnologia e pela competitividade agressiva — a exploração e gestão do conhecimento interno das empresas tornou-se o melhor veículo para assegurar um posicionamento internacional diferenciador, desenvolver a base de conhecimento organizacional, incrementar o desempenho e crescimento das empresas, bem como para aumentar a capacidade de resposta às necessidades dos mercados. As empresas multinacionais atravessam ainda mais desafios na gestão destes processos, pois têm de gerir múltiplas transferências de conhecimento entre sede e subsidiárias, entre subsidiárias e também dentro de cada uma destas unidades organizacionais, em cenários culturais, geográficos e económicos muito distintos. Assim, o objetivo desta dissertação é aprofundar o conhecimento sobre o fenómeno descrito e determinar os principais fatores que influenciam as transferências internas de conhecimento em empresas multinacionais, englobando transferências dentro de uma unidade e transferências entre unidades — incluindo transferências convencionais, horizontais e reversas. Para esse fim, é adotado um método de revisão sistemática da literatura para sintetizar o conteúdo de 72 artigos. Foram tiradas conclusões sobre os anos, as revistas científicas, as bases teóricas, os métodos de investigação, as indústrias e os países mais explorados na literatura. Para além disso, esta dissertação permitiu sumariar os resultados para cada tipo de transferência, identificar oito categorias temáticas e 97 tópicos abordados, criando, assim, um esquema completo sobre este fenómeno. Por fim, são destacadas algumas lacunas na literatura e contribuições para a teoria, a investigação e a gestão, que ajudarão a progressão do conhecimento nestas áreas.

keywords

knowledge transfers, internal knowledge, multinational corporations, knowledge management, subsidiaries, systematic literature review

abstract

In the current marketplace, characterised by globalisation, proliferation of technology and hostile competition, the exploitation and management of internal knowledge in companies has become the best vehicle for ensuring a differentiated international positioning, developing organisational knowledge bases, improving performance and growth, as well as to increase market responsiveness. Multinational companies face even more challenges in these processes, since they have to manage multiple knowledge transfers between headquarters and subsidiaries, among subsidiaries, and also within each of these units, in very different cultural, geographic and economic scenarios. Therefore, the aim of this dissertation is to deepen the knowledge about this phenomenon and to uncover the main influencing factors on internal knowledge transfers in multinational companies. Apart from including intra-unit knowledge transfers, this dissertation also analyses transfers between units, namely conventional, horizontal and reverse knowledge transfers. For this purpose, a systematic review of the literature was conducted to synthesise the content of 72 articles. Conclusions were drawn regarding the most recurrent publication years and sources, theoretical foundations, research methods, countries and industries in the literature. Moreover, this dissertation allowed to summarise the results for each type of knowledge transfer, identifying eight thematic categories and 97 topics covered in the literature, thus creating a complete framework of this phenomenon. Some gaps in the literature and contributions to theory, research and management are also highlighted, which will help to advance knowledge in these fields.

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LIST OF ABBREVIATIONS

CKT	Conventional knowledge transfers
EMNC	Multinational corporation from an emerging country
FBI	Finance, banking, and insurance
FDI	Foreign direct investment
HKT	Horizontal knowledge transfers
HRMP	Human resource management processes or practices
HQs	Headquarters
ICT	Information and communication technology
IKT	Intra-unit knowledge transfers
IPR	Intellectual property rights
IT	Information technology
KBV	Knowledge-based view of the firm
MNC	Multinational corporation
NPD	New product development
RBV	Resource-based view of the firm
RKT	Reverse knowledge transfers
R&D	Research and development
SLR	Systematic literature review
USA	The United States of America
UK	The United Kingdom
VKT	Vertical knowledge transfers

1. INTRODUCTION

Knowledge is present in all aspects and functions of organisations, being the core vehicle for creating competitive advantages that allow firms to differentiate themselves, grow and overcome their competitors (Alavi & Leidner, 2001; Omerzel & Gulev, 2011; Wiig, 1993). In order to make the most of knowledge created internally, corporations must be able to manage and optimise internal transfers of knowledge (Argote & Ingram, 2000; Grant, 1996; Kogut & Zander, 1992). Multinational corporations (MNCs) face even more challenges than other enterprises in terms of knowledge management because they have to deal with multiple knowledge transfers on a global scale between headquarters, subsidiaries and local agents. Being in charge of these transfers becomes tremendously demanding, since each organisational unit has their own knowledge creation and transfer capacities and infrastructures. In addition, these companies have to adapt to totally different cultural, economic, geographical, linguistic, working and political contexts in the various countries where they operate (Gupta & Govindarajan, 1991; Jensen & Szulanski, 2004; Kogut & Zander, 1993; Laszlo & Laszlo, 2002). Despite the relevance of knowledge generated in the external environment surrounding MNCs (e.g. by clients, competitors, suppliers, distributors, and universities), the proper exploitation of internal knowledge in MNCs is the most effective and efficient way to achieve competitive advantages, grow, increase financial and business performance, improve market responsiveness and develop knowledge bases in all MNCs' units (Grant, 1996; Kogut & Zander, 1992, 1993; Li & Lee, 2015; Wang, Tong, Chen, & Kim, 2009).

As a consequence of the extreme importance and growing number of research carried out on internal knowledge transfers in MNCs, there is a need to summarise the main results found in the literature, in order to advance knowledge in this field. This will also allow to understand influential factors in these transfers and to recognise existing gaps in the literature. Although there are already literature reviews on internal knowledge transfers in MNCs (e.g. Kogut & de Mello, 2017; Michailova & Mustaffa, 2012; Smale, 2008), none adopted the methodology used in this dissertation, nor addressed such a wide range of research questions,

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categories, and topics. Beyond that, results of this review were separately examined for each type of internal knowledge transfer, which, to the best of my knowledge, was not done in previous literature reviews.

The present dissertation aims to gather and synthesise existing literature about internal knowledge transfer in MNCs, including intra-unit knowledge transfers, horizontal knowledge transfers, conventional knowledge transfers and reverse knowledge transfers. In particular, this dissertation seeks to answer the following questions:

- When were articles published about this topic?
- What are the publication sources of those studies?
- What are the theoretical foundations used by researchers in this field?
- What are the research methods applied by the authors?
- In what countries and industries do the investigated MNCs operate?
- What are the most recurrently studied types of internal knowledge transfers?
- What categories and topics are covered in the literature?

In responding these questions and deepening the understanding on the subject, this dissertation seeks to determine how knowledge can evolve in this field in terms of theory, research and practice.

To achieve these aims, this dissertation adopts a method of systematic literature review (SLR), following the methodology of Pickering & Byrne (2013), introducing some modifications of other systematic approaches of Denyer & Tranfield (2009) and Tranfield, Denyer, & Smart (2003). The SLR implemented began with the formulation of the research questions and the review plan. Then, keywords were designated and studies were searched in outstanding academic electronic databases (in this case, Scopus and ISI Web of Science). After selecting the papers, inclusion and exclusion criteria were applied and the quality of the studies was also assessed to find the most relevant articles. Then, the most pertinent information about each paper was extracted and inserted in a database structured

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by categories, which enabled answering the research questions. The categories were always revised, updated and modified, whenever necessary. Finally, the complete database was scrutinised, the assembled knowledge was synthesised and the results were discussed.

The rest of this dissertation is organised as follows. After this introduction that comprises the first chapter, a brief review of the literature on internal knowledge transfers in MNCs is presented, highlighting the central role of knowledge and MNCs in the current economy. The most important concepts and ideas in this field are also explored and defined. Afterwards, the methodology implemented in this SLR is described, and the criteria used for the selection and analysis of the 72 reviewed articles are explained. In the following chapter, the results are described in eight parts that seek to answer the research questions outlined above, namely: (1) year of publication; (2) publication source; (3) theoretical foundations; (4) methods used; (5) location of investigated MNCs; (6) industries of researched companies; (7) knowledge transfer directions; and (8) categories and topics. The last subchapter on categories and topics summarises results separately for each type of knowledge transfer. Then, results are discussed in the next chapter, which allowed the identification of future research avenues. The final chapter concludes by emphasising the contributions to theory and management, future research perspectives, as well as the main limitations of this dissertation.

2. LITERATURE REVIEW

This chapter presents the main concepts in the literature on knowledge, knowledge management and on internal knowledge transfers. The pivotal role of MNCs in global economy is also stressed. Finally, the importance of knowledge management and internal knowledge transfers in MNCs in obtaining competitive advantages that allow them to prosper in volatile and hypercompetitive environments is highlighted.

2.1. The conceptualisation and importance of knowledge

Over the years, knowledge has been conceptualised and defined in the light of different viewpoints. It has been defined as a state of mind, an object, a process, a capability, or as the access to information. The definition that is considered more comprehensive is the following: "*knowledge is information possessed in the mind of individuals: it is personalised information (which may or not be new, unique, useful, or accurate) related to facts, procedures, concepts, interpretations, ideas, observations, and judgements*" (Alavi & Leidner, 2001, p.109). Even so, knowledge is much more than that, knowledge encompasses also experiences, expertise, competences, abilities, skills, and proficiency (Omerzel & Gulev, 2011).

In spite of the fact that knowledge and information are habitually used interchangeably across the literature, these concepts are very unlike. On the one hand, information is a flow of data about a specific situation. On the other hand, knowledge is evolved, organised, structured and contextualised. Hence, knowledge has a strong subjective component, because it cannot be separated from the person that possesses it, being also deeply connected to the system of values and meanings of individuals (Nonaka, 1994; Rollett, 2003; Wiig, 1993).

There are different types of knowledge, such as: idealistic, systematic, pragmatic, automatic (Wiig, 1993), declarative, procedural, causal, conditional and relational (Alavi & Leidner, 2001). Each type of knowledge has distinct functions and particularities, for instance, some types of knowledge are the result of a deep process of reflection and reasoning (e.g. systematic knowledge), other kinds

Literature review

people do not even realise that they possess such knowledge (e.g. automatic knowledge). The most common comparison made in the literature is the tacit and explicit knowledge dichotomy. Explicit knowledge is defined, systematic and formal, corresponding mostly to the description of facts and concepts. In contrast, tacit knowledge is overly complex, personal and diffused, being related with mental models, beliefs and perspectives rooted in people's minds (Nonaka, 1994, 2007).

In addition to knowledge living in the minds of individuals, it is also embedded in groups, organisations, interpersonal relationships, infrastructures, processes, practices, cultures, equipment, tools, technologies, products, services, tasks, and networks (Argote & Ingram, 2000; Hedlund, 1994; Rollett, 2003). Consequently, apart from knowledge being crucial in our lives, organisations cannot possibly survive and prosper without it, since "*knowledge is the foundations of all functions and aspects of the enterprise*" (Wiig, 1993, p.8). Subsequently, creating, transferring and applying superior knowledge faster than the competition is the main source of sustainable competitive advantage in companies (Alavi & Leidner, 2001; Jensen & Szulanski, 2004; Nonaka, 2007; Omerzel & Gulev, 2011). In the next subchapter, it is discussed how knowledge is managed in companies.

2.2. Knowledge management

There is an agreement in the literature that developing, managing, transferring, maintaining, and applying knowledge resources internally is the sustainable basis of value creation and competition for organisations (Alavi & Leidner, 2001; Kogut & Zander, 1992; Rollett, 2003; Wiig, 1993). Thereby, companies do not necessarily have to own greater resources to outperform competitors, but what is really important is creating and managing distinctive knowledge (Davenport & Prusak, 1998; Omerzel & Gulev, 2011). This is because knowledge besides being a strategic resource in itself — which is rare, specific and difficult to imitate or substitute — it allows firms to enjoy and better exploit other organisational resources (Spender, 1996; Wernerfelt, 1984). Knowledge management in organisations encompasses many simultaneous processes, namely: planning,

creating, integrating, organising, transferring, maintaining and evaluating (Rollett, 2003).

One of the primary goals of knowledge management in companies is to make personal knowledge available to all organisational members (Grant, 1996; Nonaka, 2007; Rollett, 2003). This is often achieved through the employment of knowledge management systems, that commonly use information technology (IT) to support and improve all knowledge management organisational processes. In addition to making knowledge accessible, knowledge management strategies should aim at (Alavi & Leidner, 2001; Demarest, 1997; Wiig, 1993): (1) the identification and filling of potential knowledge gaps; (2) the optimisation of knowledge use and transfer; (3) the development of an internal culture that promotes knowledge activities and cooperation; and (4) the measurement of knowledge resources and systems performance. There is a consensus in the literature that knowledge management is particularly significant in MNCs, accordingly the succeeding subchapters will explain the role of MNCs in the world and the reasons why knowledge management is more important in these firms.

2.3. The role of MNCs in global economy

A MNC is a company with operations or value creation activities in at least two countries (Rugman, Collinson, & Hodgetts, 2006; Rugman & Verbeke, 2001). These companies are formed by headquarters (HQs) and its geographically distant subsidiaries (Ghoshal & Bartlett, 1990). MNCs are vehicles that promote globalisation and the development of the world economy, producing around 25% of global output (Jensen, 2008) and being in charge of 50% of global trade (Rugman & Verbeke, 2004). In 2018, the top-500 MNCs — considered the world's largest companies by Fortune — generated about 30 trillion dollars in revenues and employed about 67.7 million people worldwide in the previous year ("Fortune Global 500", 2018). These 500 organisations account for about 90% of foreign direct investment (FDI), leading domestic markets from foreign countries to be interconnected in a single global market where they can grow by obtaining capital and knowledge (Hill, 2011; Jensen, 2008). In line with Rugman et al. (2006), MNCs seek to enter overseas countries to escape the volatility of their own

domestic markets, to reduce costs, to overcome protectionist barriers, and to take advantage of local knowledge.

2.4. Knowledge management in MNCs

Currently, MNCs must compete in overly complex, challenging, hostile contexts that are continuously changing due to globalisation, technological advances and proliferation, as well as the increasing importance of knowledge (Hitt, Keats, & DeMarie, 2011; Laszlo & Laszlo, 2002; Nonaka, 2007). In this background, creating, exploiting, transferring and protecting internal knowledge has become the main source of sustainable competitive advantage (Nielsen & Michailova, 2004; Omerzel & Gulev, 2011; Teece, Pisano, & Shuen, 1997). In spite of MNCs having exceptional knowledge internationalisation skills — due to their superior entrepreneurship and research and development (R&D) activities (Buckley & Casson, 2009) — managing knowledge in these organisations is not an easy task because of two fundamental issues. In the first place, MNCs are embedded in several internal networks (e.g. at HQs, subsidiaries, groups and individual levels), as well as external networks (e.g. with clients, universities, suppliers, distributors, competitors and regulatory agencies) (Ghoshal & Bartlett, 1990). Secondly, as knowledge management must be carried out in different cultural contexts, subsequent efforts must be made to adapt knowledge to local specificities (Laszlo & Laszlo, 2002).

By the same token, the implementation of a knowledge management system in MNCs is influenced by numerous factors, such as knowledge transfers, human resource management processes or practices (HRMP), allocation of HQs resources, organisational structures and external factors. Thereby, critical success factors for the development of an efficient knowledge management system in MNCs consist of (Butler, Heavin, & O'Donovan, 2007; Nielsen & Michailova, 2007): (1) aligning knowledge management strategy with corporate strategy; (2) involving top management in all processes; (3) exploring internal and external knowledge; (4) recognising subsidiaries as essential repositories of knowledge; (5) creating reward systems that encourage employees participation in these

activities; (6) designing an user-friendly system; and (7) formulating a diverse and multifunctional team responsible for these processes.

An excellent example of a knowledge management system applied in a MNC is *ShareNet*, developed by Siemens AG. Siemens takes a *glocal* approach by centralizing the supervision of the system and by decentralising knowledge transfers at subsidiaries. On the one hand, Siemens has central bodies that ensure: (1) the development and smooth functioning of the system (function of the IT management); (2) the quality and systematisation of knowledge (function of the Global Editor); (3) the direct support to users (function of the User Hotline); and (4) the coordination of local managers duties (function of the Consultant). On the other hand, local managers or coaches support and encourage employees in subsidiaries to use and share their experiences and know-how in *ShareNet*. In so doing, they pull the knowledge created in subsidiaries and make it available to the rest of the MNC (Nielsen & Ciabuschi, 2003; Voelpel & Han, 2005). To sum up, one understands that knowledge transfer is one of the most relevant processes of knowledge management. Because of that, in the next subchapter this concept is defined and its specific processes are presented.

2.5. The definition and process of knowledge transfer

Knowledge transfer has been described as a process of deliberate and planned sharing of knowledge (Rollett, 2003), or as the re-creation of complex and ambiguous organisational knowledge in a new situation (Wiig, 1993). The most widely used definition across the literature (and accepted in this SLR) is that “*knowledge transfer in organisations is the process through which one unit (e.g. group, department, or division) is affected by the experience of another (...) manifests through changes in the knowledge or performance of the recipient*” (Argote & Ingram, 2000, p.151). Firstly, for knowledge transfer to happen there must be a knowledge sender and a knowledge receiver. Any of these knowledge actors can initiate the process, being called a knowledge pull, when the transfer is started by the knowledge sender, or knowledge push, when it is the knowledge receiver that requests the transfer (Rollett, 2003; Szulanski, 1996, 2000).

Literature review

Furthermore, knowledge transfer comprehends several processes, such as identification, recognition, sharing, absorption, assimilation and use of knowledge. Some of these procedures are behavioural and intended (e.g. knowledge sharing), but others occur only in the mind of the knowledge receiver (e.g. absorption). Yet, acquisition is not the end of the knowledge transfer, since knowledge has to be converted into new knowledge, improve the current knowledge base or competences of the receiver, or, otherwise, be applied across the organisation. In other words, knowledge transfers must generate positive outcomes for the knowledge receiver and for the organisation (Liyanage, Elhag, Ballal, & Li, 2009; Tangaraja, Rasdi, Samah, & Ismail, 2016; Wang, Tong, & Koh, 2004; Zander, 1991). In a straightforward way, according to Szulanski (1996, 2000), knowledge transfer process consists of four main stages: (1) initiation — when the knowledge need is recognised; (2) implementation — begins with the decision to transfer knowledge, followed by the adaptation to knowledge receiver's needs; (3) ramp-up — when knowledge begins to be used; (4) integration — the moment when transferred knowledge brings positive results.

The concepts of knowledge transfer and knowledge sharing have been misinterpreted and used interchangeably in the literature, however these processes are quite different. As already mentioned, knowledge is present in all aspects of organisations, including individuals, groups and units. In this connection, knowledge sharing only covers the knowledge personalisation process, that is, an one-way transfer from a person to another person. Contrariwise, knowledge transfer besides encompassing knowledge sharing processes and going beyond the individual level, it also covers transfers between groups, departments and units. Moreover, knowledge transfer requires the participation of the knowledge sender and the knowledge receiver, as well as positive outcomes, which does not happen in knowledge sharing. In conclusion, knowledge sharing is a fundamental part of knowledge transfer, but the latter is a much more comprehensive and complex process than knowledge sharing (Alavi & Leidner, 2001; Liyanage et al., 2009; Tangaraja et al., 2016).

Literature review

There are two central strategies for successfully transferring knowledge: personalisation and codification. Through codification, explicit knowledge is structured, made available and disseminated through IT systems (e.g. intranet or databases) or other encoded materials (e.g. books, documents, or reports). According to this strategy, the process of knowledge transfer only begins when the knowledge receiver reuses the knowledge created by the sender. On the other hand, personalisation promotes the transfer of knowledge from individual to individual (i.e., knowledge sharing), by means of face-to-face interaction, brainstorming sessions, observation, or even through electronic communication. By employing the personalisation strategy, tacit knowledge can be shared and then customised to solve individual problems (Hansen, Nohria, & Tierney, 1999; Joia & Lemos, 2010; Tangaraja et al., 2016).

Alternatively, many authors (e.g. Liyanage et al., 2009; Rollett, 2003; Wiig, 1993) have adapted the spiral of knowledge creation or conversion — developed by Nonaka & Konno (1998) — to explain the different types of knowledge transfers. In accordance with Nonaka (1994, 2007), socialisation is the conversion of tacit knowledge into a different tacit form, by means of demonstration, observation, imitation, job rotation, and training. As to combination consists of the transformation of explicit knowledge into more complex sets of this type of knowledge. This process involves a previous process of internalisation (i.e., adapting explicit knowledge to a tacit form), structuring existing knowledge, before the acquired explicit knowledge is combined to create new knowledge. Externalisation is the transformation of tacit knowledge to explicit knowledge, using words, concepts, images and figurative language (such as metaphors, analogies, and narratives). To put it in a different way, complex and personalised knowledge is translated into more understandable and simpler forms. Finally, internalisation refers to the modification of absorbed knowledge, from its explicit form to a more tacit matter. Individuals exposed to explicit knowledge (e.g. in lectures and books), internalise knowledge that they consider relevant, and reframe it mentally into new concepts and relations, in order to lastly apply it to new situations.

The literature points out the influence of knowledge actors capacities on the effectiveness of knowledge transfers (e.g. Chang & Smale, 2013; Rollett, 2003; Wang et al., 2004). Parent, Roy, & St-Jacques (2007) developed the dynamic knowledge transfer capacity model, which proposes that there are four central capacities of knowledge senders and receivers. On the one hand, the knowledge sender must be able to discover knowledge gaps and improve existing knowledge bases and processes (i.e., generative capacity). Likewise, it should have dissemination capacity, inasmuch as it is able to contextualise, adapt and transfer knowledge. On the other hand, the knowledge receiver must be capable of recognising the value of knowledge to assimilate and apply it (i.e., absorptive capacity) (Cohen & Levinthal, 1990). Along with that, the knowledge receiver has to develop its adaptive and responsive capacity to external changes, knowing also how to improve knowledge transfers, and its related practices and results, depending on the context.

2.6. Knowledge transfers in MNCs

As already mentioned, MNCs' performance and their value generating capacity relies mostly on their processes of knowledge creation and transfer. However, owing to the fact that MNCs have international operations in several countries, they must manage numerous multi-direction knowledge transfers, including flows within each organisational unit, between HQs and subsidiaries, among subsidiaries, and with external actors (Demarest, 1997; Ghoshal & Bartlett, 1990; Gupta & Govindarajan, 1991; Tsai, 2001). For this reason, MNCs are seen as global knowledge transfer systems where knowledge flows simultaneously in different backgrounds. Managing these transfers is even more complex in MNCs than other companies, since these organisations have to deal daily with totally different personal, cultural, organisational, environmental, technological, political, socioeconomic and working contexts (Crespo, Griffith, & Lages, 2014; Jensen & Szulanski, 2004; Liyanage et al., 2009; Yang, Mudambi, & Meyer, 2008). Moreover, since knowledge is intrinsically linked to particular local problems (Grant, 1996), MNCs must manage and take advantage from these different scenarios, in order to enhance their international positioning (Ambos & Ambos, 2009; McGuinness, Demirbag, & Bandara, 2013).

Literature review

Internal knowledge transfers (intra-MNC knowledge transfers) play a critical role, especially across borders, as they are the main contributors to increments in MNCs' competitiveness and growth (Grant, 1996; Kogut & Zander, 1992, 1993). On the one hand, HQs are irreplaceable sources of new knowledge for subsidiaries, as they possess valuable resources and capabilities that can be applied by subsidiaries in local markets. On the other hand, subsidiaries can develop specific advantages due to the creation of local and contextualised knowledge, which can be very beneficial to HQs and other subsidiaries. This knowledge is essential to gain access to external resources, formulate global strategies, improve market responsiveness and make progresses in R&D and new product development (NPD) activities. For these reasons, the proper exploitation and management of internal knowledge leads to gains in terms of innovativeness and performance of MNCs units (Driffield, Love, & Yang, 2016; Jiménez-Jiménez, Martínez-Costa, & Sanz-Valle, 2014; Lee, Chen, Kim, & Johnson, 2008; Qin, Wang, & Ramburuth, 2016; Rugman & Verbeke, 2001).

Intra-MNC knowledge transfers have different directions, depending on which unit is the receiver and which is the sender. There are vertical knowledge transfers (VKT), from HQs to subsidiaries, or from subsidiaries to HQs, and horizontal (or lateral) knowledge transfers (HKT), among peer subsidiaries. Concerning on VKT, there are conventional knowledge transfers (CKT), from HQs to subsidiaries, in contrast to reverse knowledge transfers (RKT), from subsidiaries to HQs. Also, when the transference of knowledge occurs inside a single unit, in this dissertation it will be referred as intra-unit knowledge transfer (IKT). Thereby, after explaining the pertinence of investigating intra-MNC knowledge transfers, one can agree that summarising the current literature on this theme to understand this complex phenomenon in more depth is in high demand.

3. METHOD

SLRs are being used in management research (e.g. Leseure, Bauer, Birdi, Neely, & Denyer, 2004; Li, 2008; Werner, 2002), since they are an efficient method for answering specific research questions. This method also enables the organisation of empirical results and knowledge about a certain topic into a new and structured way, which would unlikely be found by reading articles individually, or by applying a traditional review (Briner & Denyer, 2012; Britten et al., 2002; Denyer & Tranfield, 2009; Petticrew, 2001). Furthermore, as SLRs report and justify every decision, procedure and conclusion taken, researchers have high levels of confidence in their results (Rousseau, Manning, & Denyer, 2008). Consequently, a SLR is a transparent, upstanding and reliable method, that can be replicable and updated at all times (Pickering & Byrne, 2013; Tranfield et al., 2003; Weed, 2008).

This SLR follows largely Pickering & Byrne's (2013) systematic quantitative approach, besides introducing a few adaptations from other SLR methods (Denyer & Tranfield, 2009; Tranfield et al., 2003). The systematic quantitative review provides a straightforward structure that allows to create easily updated paper databases and draw conclusions about important theoretical, methodological and geographical gaps in the literature. In the first place, every good SLR must begin with clear and answerable research questions. These questions will also guide the selection and appraisal of articles, and decide which information should be extracted from the selected studies (Briner & Denyer, 2012; Rousseau et al., 2008).

Next, a fundamental step — proposed by Tranfield et al. (2003) — is planning the literature review by unveiling the need for a review, making a proposal, and drawing a review protocol. This protocol must describe all followed steps, including how to find, appraise and synthesise studies (Petticrew & Roberts, 2006). Then, after article are searched, inclusion and exclusion criteria, as well as quality evaluation guidelines are determined. These criteria should always keep in mind the research questions (Briner & Denyer, 2012; Denyer & Tranfield, 2009).

Afterwards, when analysing the selected studies, a database is structured to summarise information extracted from each paper. Categories are inductively generated to synthesise data and results found in the articles. After scrutinising all articles, summary tables and charts are created to help disseminating results.

In brief, this SLR followed these stages:

1. Formulate research questions;
2. Plan the SLR and create a review protocol;
3. Identify keywords and search electronic databases;
4. Select studies;
5. Apply inclusion and exclusion criteria;
6. Assess the quality of the studies;
7. Structure papers' database with key categories;
8. Analyse and synthesis articles information and results;
9. Revise database categories;
10. Produce and review summary tables and charts;
11. Draft methods;
12. Evaluate and report key results and conclusions;
13. Write introduction and abstract.

Each main procedure taken, namely database search, study selection and evaluation, and analysis and synthesis, is explained in the next subchapters in more detail.

3.1. Database search

To begin with, keywords and academic electronic databases were chosen to find relevant studies that could answer the research questions. The systematic search was performed using two online research databases: ISI Web of Science and Scopus. To search pertinent studies, two categories of search terms were defined:

- Expressions related to knowledge transfer: knowledge transfer*, knowledge shar* knowledge flow*, knowledge inflow*, knowledge outflow*, knowledge exchange, knowledge transmission;
- Equivalent words for MNCs: multinational*, MNC*, MNE*, TNC*, MNF*.

The search was based on all possible combinations of these groups of keywords, using the topic field (on ISI Web of Science) and title, abstract and/or keywords (on Scopus).

The electronic search was restricted to journal articles and reviews, due to their higher influence in the management field and valid knowledge (Podsakoff, Mackenzie, Bachrach, & Podsakoff, 2005; Tahai & Meyer, 1999). There was no restriction for the discipline or source of publication, in order to capture as much variety of perspectives as possible, as suggested by Ribau, Moreira, & Raposo (2018) and Tranfield et al. (2003). With regards to the date, articles published after 2018 were excluded, since most 2019's articles were still in press and not available. Only publications written in English were considered to this SLR. On ISI Web of Science, only the following indexes were searched: Science Citation Index Expanded and Social Sciences Citation Index. This electronic search resulted on a total of 1.649 papers. The survey was conducted in November, 2018.

3.2. Articles selection and evaluation

The information about the 1.649 studies were inserted on an Excel spreadsheet, and they were read and appraised in terms of relevance to this SLR. For this purpose, articles were evaluated using a list of reasons for exclusion and inclusion (Briner & Denyer, 2012; Denyer & Tranfield, 2009; Pickering & Byrne, 2013; Pickering, Grignon, Steven, Guitart, & Byrne, 2014). First, duplicates and articles that did not present an abstract were removed, resulting in a sample of 1.220 papers. Then, titles and abstracts were scrutinised using exclusion criteria (see Appendix A.1.). The studies ought to be about intra-MNC knowledge transfers, so all papers focusing on other research themes, about external knowledge transfers, or not concerning MNCs were left out of this SLR. To achieve a greater diversity of perspectives, and also to reduce authors' bias, papers written by similar authors on a comparable subject, only the most recent paper was reviewed, following Leseure et al.'s (2004) recommendation. After applying the exclusion criteria, a total of 262 studies was reached.

Then, the introduction chapter was read to confirm if the articles complied with the inclusion criteria (see Appendix A.2.). First, the introduction must clearly state that the study is related to intra-MNC knowledge transfers, which includes: IKT, HKT, CKT, and RKT. Given the misconceptions in the literature regarding the differences between knowledge transfer and knowledge sharing (Liyanage et al., 2009; Tangaraja et al., 2016), only studies that defined knowledge transfer (or sharing, or exchange, or transmission, or flow) as a process with expected outcomes were considered. However, in many studies, the introduction was insufficiently clear or did not present a straightforward definition of knowledge transfer. Consequently, the literature review chapter was also read to check if papers followed this inclusion criterion.

Additionally, the quality of the introduction was also appraised to select high quality articles, following Denyer & Tranfield's (2009) recommendation to use guidelines for reviewers, provided by top journals in the research field. Indeed, in line with Weed (2008), evaluating articles for inclusion on quality grounds is a wiser practice than excluding articles from the SLR that do not abide by previously established notions of what is indispensable or pertinent. This specific criterion assured a minimum quality level of the studies evaluated in the next phase. To sum up, these inclusion criteria allowed to reach a more manageable number of articles, and, at the same time, find the most relevant studies about intra-MNC knowledge transfers. Only 93 articles remained after this stage.

In the subsequent stage, the articles were fully read, and the main sections were assessed in terms of quality, by continuing to use reviewer guidelines. Two different "yes or no" questionnaires were developed, one for empirical articles and meta-analysis (Appendix A.3.1.), and another for conceptual papers and literature reviews (Appendix A.3.2.), since the baselines and sections on those types of studies are distinct. To appraise conceptual papers and literature reviews, some contributions of Hirschheim (2008) were also taken into consideration. Each section is composed by three questions, so: a total of three points was given for an article answering "yes" to all quality questions; two points when it was two

questions; one point when it was found that the article only met one of the requirements. In order to choose high quality papers, only articles scoring between two and three points on average in all sections were accepted. After administrating these selection questionnaires to the full texts, 21 papers were removed, resulting in a total of 72 core articles. Figure 1 provides an overview of the results after each stage.



Figure 1. Article selection stages

3.3. Analysis and synthesis

After selecting the most relevant studies for the purposes of this SLR, the articles were scrutinised, and their information was extracted and summarised. To that end, an electronic database was created using Excel. Each paper was analysed using an interpretative and synthesising approach, through which main categories and topics were stipulated. These categories were a result of inductive thinking about the theme, the research questions, as well as the relations between key concepts emerging from the articles (Britten et al., 2002; Pickering & Byrne, 2013; Weed, 2008). This process led to the development of a summary table in which articles were characterised systematically based on those categories and topics. The database was repetitively reviewed and updated (Pickering & Byrne, 2013; Pickering et al., 2014).

Thus, each article was examined in terms of the following aspects:

- Authors;
- Year of publication;
- Publication source;
- Theoretical foundations;
- Research method;
- Geographical location of investigated MNCs;

- Industries of studied MNCs;
- Type of intra-MNC knowledge transfer;
- Categories and topics:
 - Individual or personal characteristics:
 - Competences, qualifications, or skills;
 - Function or department;
 - Nationality;
 - Career considerations;
 - Feelings, expectations, and beliefs;
 - Age;
 - Gender;
 - Learning capacities or styles;
 - Motivation or willingness;
 - Participation or experience in knowledge transfer activities;
 - Satisfaction;
 - Seniority or hierarchical level.
 - MNC organisational characteristics or general policies:
 - Transfer, integration, or coordination mechanisms;
 - Expatriates;
 - Size;
 - Centralisation or decentralisation;
 - Formalisation;
 - HRMP;
 - Organisational culture, or learning environment;
 - Commitment, support, or management of knowledge activities;
 - Knowledge base or resources;
 - Financial and/or business performances;
 - Teams, projects, or centres of excellence.
 - Subsidiaries organisational characteristics:
 - Size;
 - Age;
 - Knowledge base or resources;

- Mode of entry or establishment;
 - Autonomy;
 - Strategic role or importance;
 - Absorptive capacity;
 - HRMP;
 - Willingness to transfer or absorb knowledge;
 - Ownership structure;
 - Rewards or incentives to participate in knowledge transfer activities;
 - Knowledge creation or transfer capacities;
 - Supply chain position, or scope of operations;
 - Establishment or internationalisation motives;
 - Motivation to participate in knowledge transfer activities;
 - Power or influence;
 - Technology capability or infrastructure;
 - Financial and/or business performances;
 - Resources;
 - Disseminative capacity;
 - Isolation;
 - Multinational experience (multinationality);
 - Teams, projects, centres of excellence;
 - Fear of opportunism.
- HQs organisational characteristics:
- Knowledge base or resources;
 - Absorptive capacity;
 - Size;
 - Disseminative capacity;
 - Willingness to transfer or absorb knowledge;
 - Motivation to participate in knowledge transfer activities;
 - Multinationality;
 - Financial and/or business performances;
 - Power or control;

- Rewards or incentives;
- Resources;
- Technology capability or infrastructure
- Relationships between individuals or units:
 - Cultural distance;
 - Similarity of practices, values, processes, or vision;
 - Socialisation mechanisms;
 - Internal embeddedness or existence of relational ties and networks;
 - Frequency of communication;
 - External embeddedness;
 - Geographical distance;
 - Organisational distance;
 - Trust;
 - Cooperation or collaboration;
 - Interdependency or dependency;
 - Linguistic distance;
 - Relational distance;
 - Relationship length;
 - Competitiveness;
 - Legal distance.
- Knowledge characteristics:
 - Type;
 - Relevance;
 - Tacitness;
 - Value;
 - Quantity;
 - Explicitness;
 - Complexity;
 - Embeddedness or stickiness;
 - Codification;
 - Specificity;

- Timing or novelty.
- External environment factors:
 - HQs and/or subsidiaries' localisation;
 - Industry characteristics;
 - Economic development or differences;
 - Market characteristics or changes;
 - National policy norms;
 - Intellectual property rights protection.
- Outcomes of intra-MNC knowledge transfers:
 - Augmented knowledge base or innovation;
 - Subsidiaries financial and/or business performance;
 - MNC financial and/or business performances;
 - HQs financial and/or business performances;
 - Market responsiveness or NPD.

After the database was completed, and all articles were synthesised, summary tables and charts were generated. This step enabled to find some mistakes when entering information about the papers. Subsequently, the categories and topics were revised and modified so to more consistently assemble the knowledge extracted from the studies. These tables and graphs represented a noteworthy tool when reporting the results and drawing conclusions.

4. RESULTS

This chapter presents the results of the SLR of the 72 selected articles on intra-MNC knowledge transfers. First, general information about the core articles is described, namely: (1) year of publication; (2) source of publication; (3) method used; (3) theoretical basis; (4) geographical locations of investigated MNCs in empirical articles; and (5) researched industries. Later, results about knowledge transfer directions, concepts, and relations between identified categories and topics investigated in the revised articles are presented. This second part is divided into four subchapters, each one focusing on different knowledge transfers: IKT, HKT, CKT, and RKT.

4.1. Year of publication

Investigation about knowledge management and transference in the MNC context is relatively new. The first articles ever exploring this research theme were published between 1991 and 2000 (e.g. Gupta & Govindarajan, 1991, 2000; Kogut & Zander, 1992, 1993). The majority of the reviewed papers are fairly recent, since 81.94% (i.e., 59 out of 72) of the articles were published in the last ten years (i.e., from 2009 to 2018). Moreover, almost half (i.e., 45.83%) of the papers were from the past five years (i.e., from 2014 to 2018). The years counting the higher number of publications (i.e., eight articles each) were 2012, 2014 and 2017. In 2018, six articles were published about intra-MNC knowledge transfers. Figure 2 represents the evolution of the articles per year of publication.

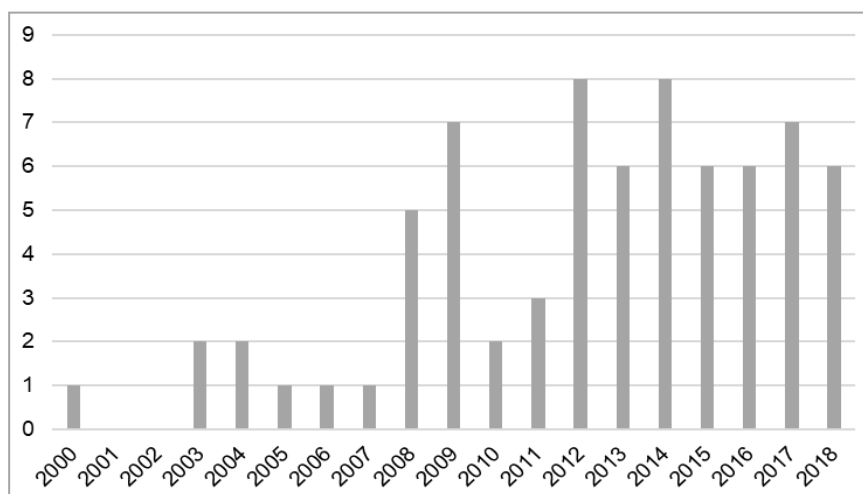


Figure 2. Number of articles by year of publication

4.2. Publication source

The articles included in this SLR were taken from 35 different scientific journals, which proves the importance of the research theme. The journal with the highest number of selected articles is the *Journal of World Business* (with 11 papers), followed by the *International Business Review* (with nine articles) and *Journal of International Business Studies* (with six studies). These journals are among the top-5 journal ranking in the field of International Business, according to the 2018's Academic Journal Guide. There were 25 one-hit journals; in other words, 25 articles were published in 25 distinct scientific journals. This unquestionably means that intra-MNC knowledge transfer is a highly multifaceted study topic across diverse research areas. Table 1 shows publication sources with more than one article analysed in this SLR.

Table 1. Main publication sources

Publication source	Number of articles	Percentages (%)
Journal of World Business	11	15.28
International Business Review	9	12.50
Journal of International Business Studies	6	8.33
Human Resource Management	4	5.56
Journal of Knowledge Management	4	5.56
Management International Review	4	5.56
Journal of Business Research	3	4.17
Journal of International Management	2	2.78
Journal of Management	2	2.78
Organization Science	2	2.78
Others	25	34.72

4.3. Theoretical foundations

Amongst the 72 articles, there were 32 different theoretical perspectives. Figure 3 presents the most popular theories in relation to intra-MNC knowledge transfers. Theories referred only by one article are not represented in Figure 3. Most of the core articles based their research on one theory, representing 21 papers (e.g. Ambos & Ambos, 2009; Nair, Demirbag, & Mellahi, 2016; Reiche, Harzing, &

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Pudelko, 2015), or two theories, covering 27 articles (e.g. Björkman, Barner-Rasmussen, & Li, 2004; Smale, 2008; Yamao, Cieri, & Hutchings, 2009). To the best of my knowledge, 16.67% (i.e., 12 out of 72) of the papers did not clearly explored any theoretical perspective. The remaining studies (i.e., 12 out of 72) considered three (e.g. Lee, Tang, & Guo, 2013), four (e.g. Williams & Lee, 2016) or five (e.g. Rabbiosi & Santangelo, 2013) theories.

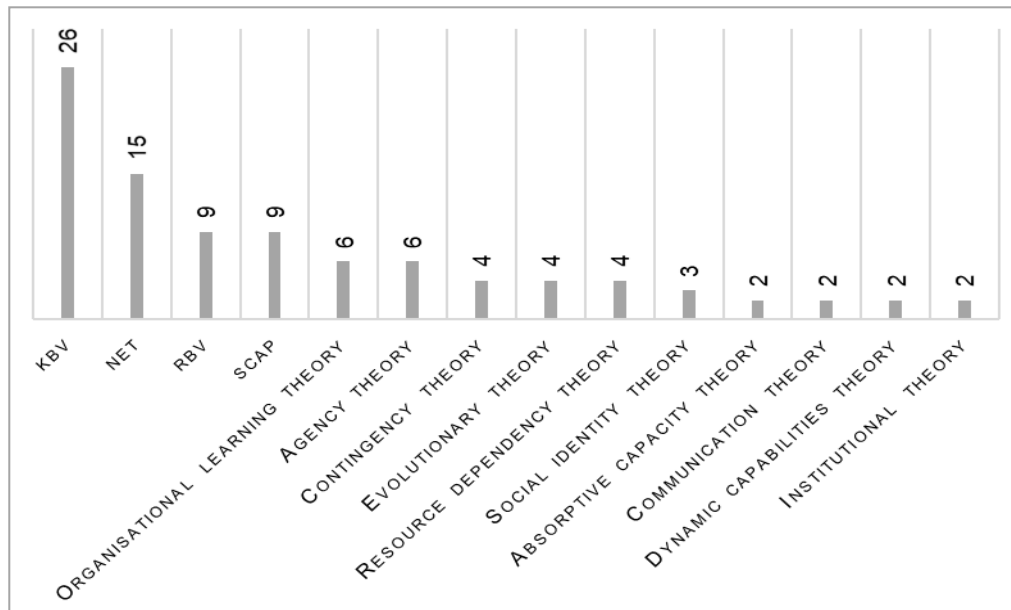


Figure 3. Theoretical foundations of analysed articles

Unsurprisingly, the knowledge-based view of the firm (KBV) is the most popular theory in intra-MNC knowledge transfer literature. Most studies based their theoretical foundations on the works of Grant (1996), Kogut & Zander (1992, 1993) and Spender (1996); however, some authors followed other literature sources (e.g. Conner & Prahalad, 1996; Gupta & Govindarajan, 2000; Hedlund, 1994; Rugman & Verbeke, 2001). All in all, the KBV supports that knowledge creation, transfer, retention, and application inside the firm are the best means to achieve sustainable competitive advantage and growth (Grant, 1996; Kogut & Zander, 1992, 1993; Spender, 1996). This is particularly true for MNCs working on knowledge-intensive industries (Buckley & Casson, 2009), as demonstrated latter in chapter 4.6. In line with KBV literature, the main performance differences amongst MNCs are caused by asymmetries in knowledge, competences and capabilities (Barney, 1991; Conner & Prahalad, 1996). Furthermore, Rugman &

Verbeke (2001) suggest that the principal contributors to MNCs' knowledge bases and competitive strengths are subsidiaries' advantages in local markets.

The network theory (NET in Figure 3) is cited in 20.83% (i.e., 15 out of 72) of the studies, being predominantly based on Ghoshal & Bartlett's (1990) view. In line with the authors, MNCs are huge networks composed by internal relations between their units — subsidiaries and HQs —, as well as external interactions with different stakeholders — such as clients, suppliers, and competitors. Some articles (e.g. Crespo, Griffith, & Lages, 2014; Persson, 2006) followed Gupta & Govindarajan's (1991) perspective of the MNC as a network of multidirectional transactions of products, capital and knowledge. The major argument of network theory is that MNCs units' embeddedness in internal and external networks is essential to obtain new knowledge, competences, and advantages. Embeddedness can be defined as the closeness in a relationship, which reflects the intensity of knowledge transfer, trust, commitment, and adaptation. Consequently, there is a consensus in literature that both internal and external embeddedness have a positive impact on MNCs' innovativeness and market competitiveness (Andersson, Forsgren, & Holm, 2001, 2002; Rugman & Verbeke, 2001; Tsai, 2001).

The resource-based view of the firm (RBV) is the third most addressed theory in the core articles, being usually sided by KBV, since "*knowledge-based view is the essence of the resource-based perspective*" (Conner & Prahalad, 1996, p.477) In agreement with this theory, MNCs can uphold a long-lasting and value-creating strategy if they possess and develop valuable, rare and imperfectly imitable resources. These resources encompass assets, processes, human capital, capabilities, as well as information and knowledge (Barney, 1991; Barney & Wright, 1998; Wernerfelt, 1984). Further, besides being a key resource in itself, knowledge also enables the effective usage and value generation of other MNC's resources (Omerzel & Gulev, 2011).

Social capital theory (SCAP in Figure 3) is referred in as many articles as RBV (i.e., nine articles). Social capital is a strategic resource obtained by people and groups through their relational ties, as well as their positions in social structures inside a network (Burt, 1997; Nahapiet & Ghoshal, 1998). Most authors consider Nahapiet and Ghoshal's social capital structure, divided in: (1) structural dimension; (2) cognitive dimension; and (3) relational dimension. Structural dimension deals with network characteristics; cognitive dimension is related to share of mental systems; and relational dimension regards trust, norms, identification, and obligations among individuals. On the whole, the benefits gained from social capital include the access to information, control or influence, and solidarity (Adler & Kwon, 2002; Burt, 1997). Along with that, prominent levels of social capital ease knowledge management in MNCs, particularly when dealing with complex knowledge (Hansen, 1999; Hoffman, Hoelscher, & Sherif, 2005). The main proposition of social capital theory is that social capital is essential to knowledge creation and learning, since social interaction facilitates idea mobilisation and combination among individuals and groups (Kogut & Zander, 1996; Nahapiet & Ghoshal, 1998).

4.4. Methods used

A wide range of methods has been used to investigate intra-MNC knowledge transfers. There is a predominance of quantitative empirical studies, standing for 55.56% (i.e., 40 out of 72) of the articles. Conversely, nine articles employed qualitative empirical methodologies, and 15 presented simultaneously quantitative and qualitative procedures. Likewise, there were four conceptual papers (Adenfelt & Lagerström, 2008; Gonzalez & Chakraborty, 2014; Lazarova & Tarique, 2005; Schlegelmilch & Chini, 2003), two literature reviews (Michailova & Mustafa, 2012; Smale, 2008) and two meta-analysis (Montazemi, Pittaway, Saremi, & Wei, 2012; Zeng, Grøgaard, & Steel, 2018).

With respect to data collection methods, 79.69% (i.e., 51 out of 64) of the empirical articles collected data on MNCs using questionnaire surveys, followed by interviews (i.e., 34.37%), case studies (i.e., 20.31%) and only one study carried out a focus group. Moreover, 11 articles used secondary data from reports and

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archives. There was a total of 13 case studies, and amongst the nine qualitative studies, only one of them did not employed a case study approach. This means that the little evidence on qualitative results almost exclusively applied case studies. The remaining articles (i.e., four out of 13) using case studies applied a mixed-method research by implementing both quantitative and qualitative methods, for example a case study and a survey (e.g. Dasí, Pedersen, Gooderham, Elter, & Hildrum, 2017; Peng, Qin, Chen, Cannice, & Yang, 2016).

From the 55 papers applying either quantitative or mixed-method research, 85.45% (i.e., 47 out of 55) of the studies employed regressions (i.e., 33 out of 55) or structural equations models (i.e., 14 out of 55). The remaining articles employed econometric (i.e., 8 out of 55) and covariance (i.e., 4 out of 55) models. Table 2 presents the most widespread methods used by researchers in intra-MNC knowledge transfers literature.

Table 2. Research methods used

Methods	No. of articles	Data collection methods	No. of articles	Quantitative methodologies	No. of articles
Quantitative	40	Questionnaire	51	Regression analysis	33
Mixed-method research	15	Interview	23	Structural equation model	14
Qualitative	9	Case study	13	Econometric model	8
Conceptual	4	Secondary data	11	Covariance analysis	4
Literature review	2	Focus group	1		
Meta-analysis	2				

4.5. Location of investigated MNCs

Exploring the geographical locations of HQs and subsidiaries was considered very pertinent, since many articles investigated the influence of location (e.g. Fang, Wade, Delios, & Beamish, 2013; Yang, Mudambi, & Meyer, 2008) and geographical distance (e.g. Ambos, Nell, & Pedersen, 2013; Kang, Rhee, & Kang, 2010; Monteiro, Arvidsson, & Birkinshaw, 2008) on intra-MNC knowledge transfers. Geographical locations of HQs are represented in Figure 4 and

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subsidiaries locations are illustrated in Figure 5. A chart and a complete list of MNCs units' locations can be found in Appendix B. Unfortunately, not all articles mentioned the location of researched MNCs, thereby only information from studies reporting units' countries were considered in this analysis. 41 locations were identified for the HQs of examined MNCs in empirical studies and 52 countries for the subsidiaries.

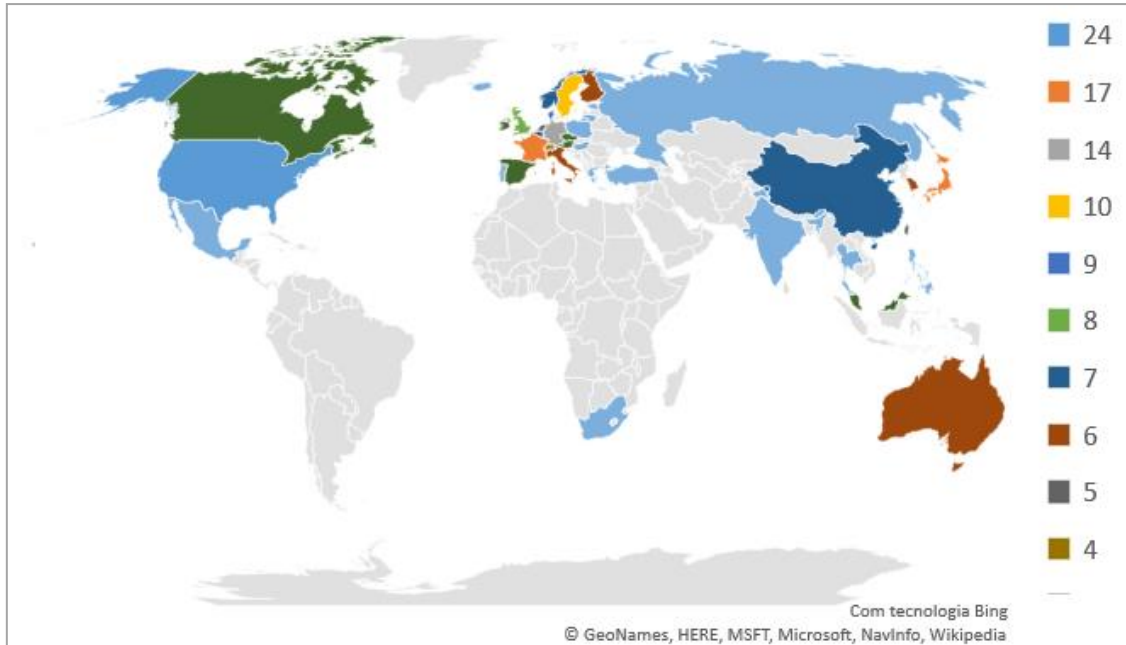


Figure 4. Geographical locations of HQs

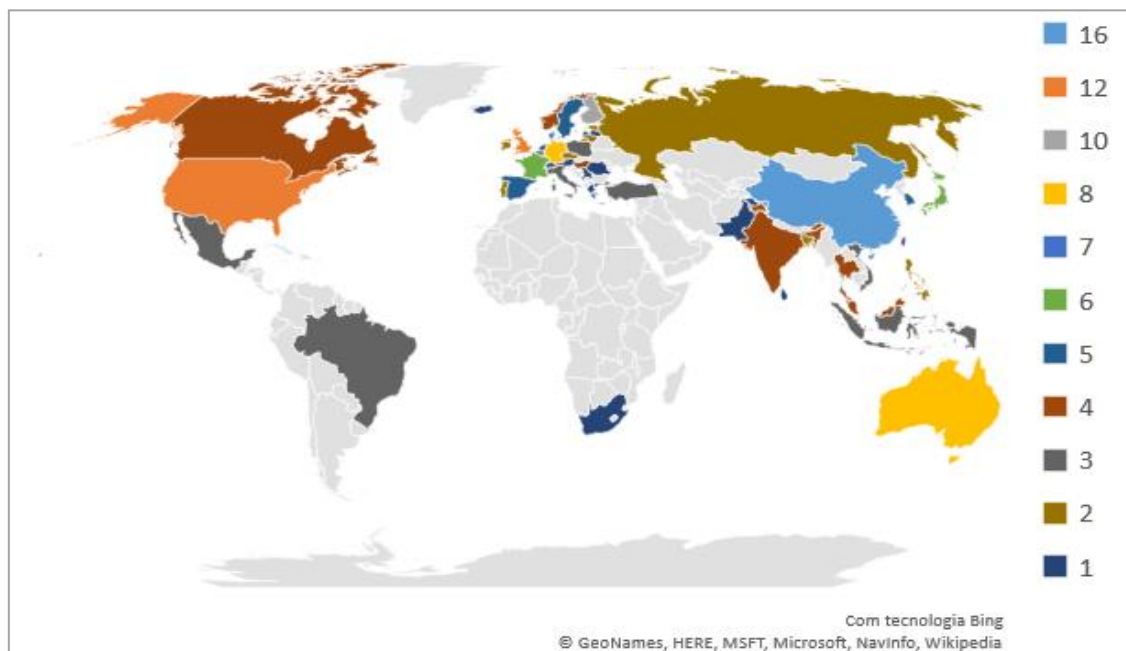


Figure 5. Geographical locations of subsidiaries

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More than half of investigated MNCs' units were situated in Europe, both HQs (i.e., 108 out of 191) and subsidiaries (i.e., 100 out of 191), reflecting either the importance of MNCs in Europe or the prominence of European researchers in this field. The European countries where more studied MNCs were based are France (in 17 articles), Germany (in 14 articles), Sweden (in ten articles), and Denmark (in nine articles). In contrast, there were largest numbers of subsidiaries found in the United Kingdom (UK) (in 12 studies), Finland (in ten articles), Germany (in eight papers) and Denmark (in seven studies).

Around 30% (i.e., 56 out of 191) of the investigated subsidiaries were located in Asia, contrasting with 25.65% (i.e., 49 out of 191) of Asian HQs. Within Asia, authors preferred to study HQs situated in developed countries, like Japan (17 articles), South Korea, and Singapore (both six articles). On the other hand, 66.07% (i.e., 33 out of 56) of the Asian subsidiaries were mainly situated in less-favoured economies, like China (16 studies), Malaysia, Thailand (both four papers), and Indonesia (three articles). In this subchapter, the distinction between developed and developing countries is supported by data on countries' Human Development Index and Gross Domestic Product (GDP) per capita from 2017.

The United States of America (USA) was the most popular HQs geographical location (i.e., 24 out of 191 units), while only 12 of the studied subsidiaries can be found there. In fact, the USA were the most target country in the literature, which could be interpreted as a sign of the fundamental presence of MNCs based in the country, or the relevance of North American researchers. Regarding other North American countries, there were more Mexican and Canadian subsidiaries than HQs.

In Oceania, there are two times more subsidiaries than HQs, 12 and six, respectively. Within this continent, only two countries were investigated: Australia and New Zealand. As for South America, none of the researchers considered MNCs based there; however, three articles studied Brazilian subsidiaries (Driffield et al., 2016; Kong, Ciabuschi, & Martín, 2018; O, Gold, Moon, & Chapple, 2016).

At last, Africa was the least studied continent, being only a single article studying a South African MNC (Driffield et al., 2016).

According to Rousseau (2015), the emerging countries enclose Argentina, Brazil, Bulgaria, Chile, China, Colombia, Czech Republic, Estonia, Hong Kong, Hungary, India, Indonesia, South Korea, Latvia, Lithuania, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Romania, Russia, Singapore, Slovak Republic, South Africa, Taiwan, Thailand, Tunisia, Turkey, Ukraine and Vietnam. In scrutinising the results, there were no studies covering the following emerging countries: Argentina, Bulgaria, Chile, Colombia, Morocco, Peru, Slovak Republic, Tunisia and Ukraine. Additionally, there was a higher number of studied subsidiaries from these countries in comparison to HQs. Only Hong Kong, South Korea, Singapore and Taiwan had more explored HQs than subsidiaries in the revised articles. Interestingly, these four countries are known as “the four Asian dragons or tigers”, since they have turned out to be, over the past 60 years (i.e., from 1960 to 2019), highly developed economies, due to FDI, political motivations, favourable geographical locations and specialised human resources (Dangayach & Gupta, 2018; Winkler, 2017).

4.6. Industries of researched MNCs

Amongst the 72 reviewed papers, the following industries were approached: (1) information and communication technology (ICT); (2) manufacturing; (3) chemicals; (4) electrical products and electronics; (5) services; (6) automobiles; (7) engineering and machinery; (8) food and beverages; (9) metals; (10) pharmaceuticals; (11) finance, banking and insurance (FBI); (12) transportation; (13) oil, gas and power; (14) rubber and plastics; (15) construction; (16) instruments; (17) paper; (18) retail; (19) consumer goods; (20) fashion; (21) forestry; (22) furniture; and (23) hotels and restaurants. The identification of 23 industries examined on intra-MNC knowledge transfer literature, plainly unveils the significance of this theme across different industries and businesses.

Overall, authors chose MNCs embedded in knowledge-intensive industries, such as ICT, chemicals, electrical products and electronics, services, pharmaceuticals,

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and FBI, that stand for 46.00% (i.e., 69 out of 150) of the studied industries. There is also a considerable number of articles investigating manufacturing industries (i.e., 18 out of 149). Furthermore, the results demonstrate that most authors preferred to compare knowledge transfers across different industries, for example manufacturing and services (Ambos & Ambos, 2009; Claver-Cortés, Zaragoza-Sáez, Úbeda-García, Marco-Lajara, & García-Lillo, 2018; Crespo et al., 2014; Oh & Anchor, 2017), in order to understand where intra-MNC knowledge transfers were most frequent and important. Figure 6 represents industries that were considered in more than three articles.

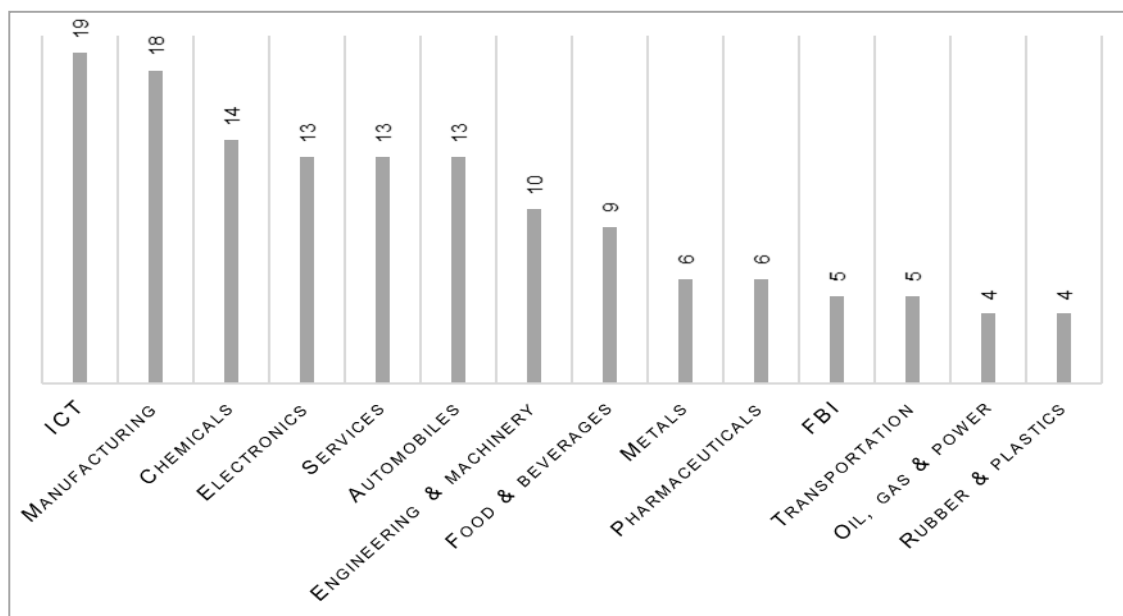


Figure 6. Most investigated industries

4.7. Intra-MNC knowledge transfer directions

As formerly stated in chapters 1 and 2, this SLR synthesises all types or directions of intra-MNC knowledge transfers. For this reason, the following subchapters point out key research categories, topics, concepts, and results for each intra-MNC knowledge transfers (IKT, HKT, CKT, and RKT). Even so, this dissertation gives emphasis to the most commonly investigated intra-MNC knowledge transfer directions across the literature.

This SLR demonstrates that most researchers decided to simultaneously study several types of intra-MNC knowledge transfers, so Figure 7 is presented to illustrate percentages of knowledge types (and their possible combinations)

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approached in the core papers. The most popular knowledge transfer is RKT, being addressed in 48 out of 72 papers. CKT were the second most investigated intra-MNC knowledge transfer, being studied in 41 out of 72 articles. As for HKT were investigated in 45.83% (i.e., 33 out of 72) of the studies. Surprisingly, only six articles explored IKT.

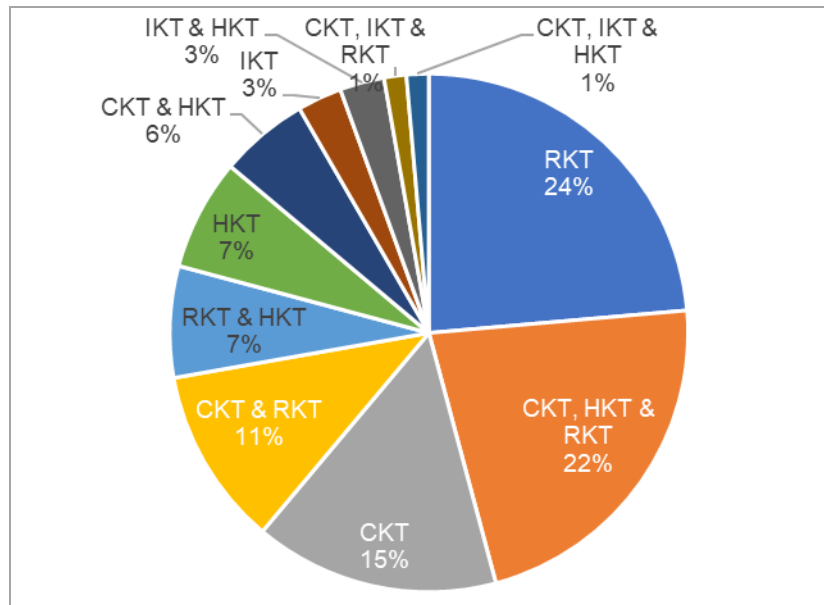


Figure 7. Percentages of knowledge transfer types investigated

Almost half of the papers (i.e., 48.61%) focused on a single type of knowledge transfer, being RKT (i.e., 17 out of 72) and CKT (i.e., 11 out of 72) the most often explored. Yet, most articles (i.e., 36 out of 72) chose to compare two or three types of knowledge transfers. The most usual comparison is made between subsidiary knowledge outflows and inflows, which means CKT, HKT, and RKT, respectively, that were investigated in 16 out of 72 papers. Some articles researched VKT (i.e., eight out of 72), which includes knowledge transfers between HQs and subsidiaries (i.e., CKT and RKT).

Focusing on HKT, authors preferred to investigate this intra-MNC knowledge transfer along with others (i.e., 28 out of 72) than in isolation, as only five articles explored exclusively HKT (e.g. Blomkvist, 2012; Persson, 2006). Hence, IKT are also principally investigated together with other knowledge transfers (i.e., three out five IKT articles), in spite of being two studies exploring it solely (Gooderham, Minbaeva, & Pedersen, 2011; Minbaeva, Mäkelä, & Rabbiosi, 2012).

4.8. Categories and topics

As described previously in chapter 3.3., after reviewing and synthesising the 72 chosen articles, eight research categories and 97 topics were identified. Thus, the content analysis of the studies consisted predominantly of describing the research categories and topics in each one of the articles. All of the reviewed studies explored at least two main research categories, being no article investigating all of the acknowledged categories; although some authors were capable of exploring seven out of eight research categories (e.g. Fang et al., 2013; Najafi-Tavani, Robson, Zaefarian, Andersson, & Yu, 2018). In this chapter, the main research categories and topics are pointed out for each type of intra-MNC knowledge transfer — IKT, HKT, CKT and RKT.

4.8.1. Intra-unit knowledge transfers

This subchapter presents the main findings from the review of the six IKT (i.e., knowledge transfers inside a MNC's unit) core articles. Figure 8 shows the number of papers that considered each category, and Table 3 reveals all of the research categories and topics.

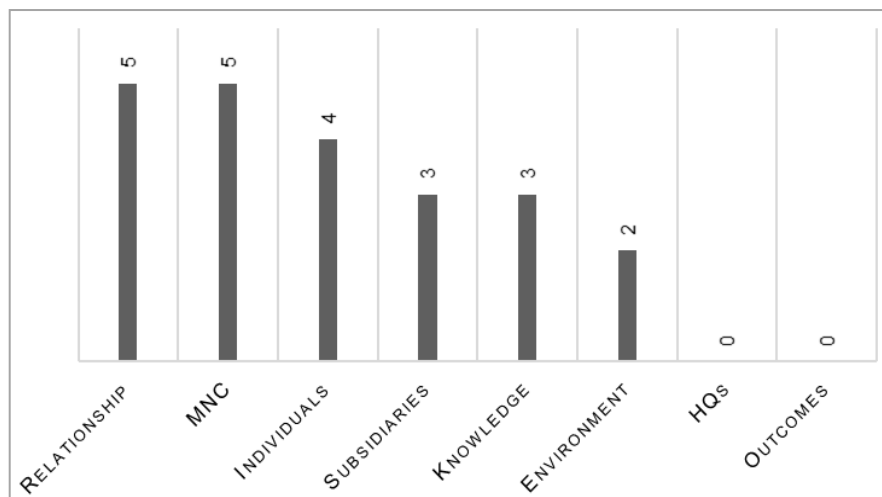


Figure 8. Number of IKT articles per research category

In the small sample of IKT articles, the most approached category was the relationship between individuals or knowledge actors, being investigated in five out of the six papers. Researchers found that the existence of relational ties and networks between employees inside a MNC have a direct and strong influence on IKT, since internal embeddedness enables employees to access knowledge and

Table 3. Categories and topics investigated in IKT papers

Individuals (4)*	No. articles**	MNC (5)	No. articles	Subsidiaries (3)	No. articles	Relationship (5)	No. articles	Knowledge (3)	No. articles	External environment (2)	No. articles
Gender	2	Expatriates	1	Knowledge base or resources	1	Internal embeddedness or existence of relational ties and networks	4	Explicitness	2	HQs and/or subsidiaries' localization	2
Feelings, expectations, and beliefs	2	Absorptive capacity	1	Rewards or incentives	1	Socialisation mechanisms	2	Type	2		
Motivation or willingness	2	Centralisation or decentralisation	1	Teams, project, or centres of excellence	1	Cooperation or collaboration	2	Tacitness	1		
Nationality	2	Commitment, support, or management of knowledge activities	1	Size	1	External embeddedness	1				
Participation or experience in knowledge transfer activities	2	Formalisation	1	Strategic role or importance	1	Linguistic distance	1				
Competences, qualifications, or skills	2	HRMP	1	Autonomy	1	Organisational distance	1				
Function or department	1	Organisational culture	1			Geographical distance	1				
Seniority or hierarchical level	1	Teams, project or centres of excellence	1			Similarity of practices, values, processes, or vision	1				
Career considerations	1	Transfer, integration, or coordination mechanisms	1			Cultural distance	1				
Satisfaction	1	Size	1								

* This number represents the total amount of articles exploring each research category

** These numbers indicate how many papers investigated each research topic

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other MNCs' resources more easily (Adler & Kwon, 2002; Gooderham et al., 2011). In agreement, Dasí et al. (2017) and Tippmann, Sharkey, & Mangematin (2014) — when comparing IKT and HKT — concluded that employees preferred to participate in knowledge activities inside their business unit — where they belong to the social structure —, in particular with individuals with whom they share the same function, instead of transferring (or receiving) knowledge to (or from) other MNC's units. There is an agreement in the literature that employing socialisation mechanisms that simplify communication (Adenfelt & Lagerström, 2008) and reward knowledge sharing between individuals (Gooderham et al., 2011) can increase IKT. Likewise, there must be a knowledge-friendly organisational culture that promotes cooperation, collaboration and dialogue (Dasí et al., 2017; Michailova & Minbaeva, 2012).

The second category that most IKT articles addressed was the organisational characteristics or general policies of MNCs. The literature supports that MNCs can enhance IKT by using expatriates (Dasí et al., 2017), teams and centres of excellence (Adenfelt & Lagerström, 2008), and also by developing an organisational culture that promotes dialogue and communication (Michailova & Minbaeva, 2012). For instance, Minbaeva et al. (2012) — an article exploring knowledge transfers between 811 employees of Danish MNCs — suggested that central support and commitment of MNCs in relation to knowledge transfer activities in their subunits can play a key role on facilitating IKT. Still, some autonomy should be given to MNCs' business units (Dasí et al., 2017; Tippmann et al., 2014) and decision-making must not be completely centralised, since this can hinder IKT (Gooderham et al., 2011).

Personal characteristics of knowledge actors are expected to be predominantly significant to IKT, when comparing with other intra-MNC knowledge transfer literature — in which this research category was one of the least explored. This happens because IKT are knowledge transfers between individuals — and not organisational units as the other knowledge transfers —, so it is natural that individual characteristics have a pivotal role. IKT literature focused on the next

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topics: (1) individual perceptions and beliefs (e.g. Gooderham et al., 2011); (2) employees' participation and experience in knowledge transfer processes (e.g. Michailova & Minbaeva, 2012); (3) gender; (4) nationality (e.g. Dasí et al., 2017); (5) qualifications, competences, and level of education (e.g. Michailova & Minbaeva, 2012); and (6) motivation or willingness to transfer knowledge (e.g. Minbaeva et al., 2012). For instance, intrinsic motivation — associated with fulfilment of personal objectives and social identity (Osterloh & Frey, 2000) — was found to have a positive impact on employees participation in IKT (Dasí et al., 2017), predominantly on women (Minbaeva et al., 2012).

The specific characteristics of subsidiaries were studied in three out of six IKT articles. Gooderham et al. (2011) — using a structural equation model to assess the impact of social capital on IKT — proposed that the compensation system executed on subsidiaries significantly influence IKT, since rewards can motivate employees to transfer knowledge more often with each other. Likewise, a subunit's knowledge base, resources (Adenfelt & Lagerström, 2008), size and strategic role inside their MNC network (Tippmann et al., 2014) may shape employees' thinking and participation on knowledge exchanges.

Within the category related with knowledge aspects, only three out of 11 identified knowledge characteristics were addressed in IKT papers, namely knowledge type, explicitness, and tacitness (Adenfelt & Lagerström, 2008; Dasí et al., 2017; Tippmann et al., 2014). Researchers agree that if individuals possess know-how, experiences, and skills related to different business areas, IKT are easier and more straightforward. No IKT studies investigated HQs characteristics nor knowledge transfer outcomes. Figure 8 reveals two occurrences for external environment impact — particularly HQs or subsidiaries' location. Yet, these articles explored both HKT and IKT, and the authors only studied the influence of external factors on HKT. So, to the best of my knowledge, none of the IKT articles considered this particular research category.

4.8.2. Horizontal knowledge transfers

HKT (i.e., knowledge transfers among peer subsidiaries of a MNC) were the central research scenario for 33 out of 72 core articles. Major categories and topics covered in these studies are presented in this subchapter. Figure 9 presents the amount of papers exploring each research category. A complete list of categories and topics approached on HKT articles can be found in Table 4.

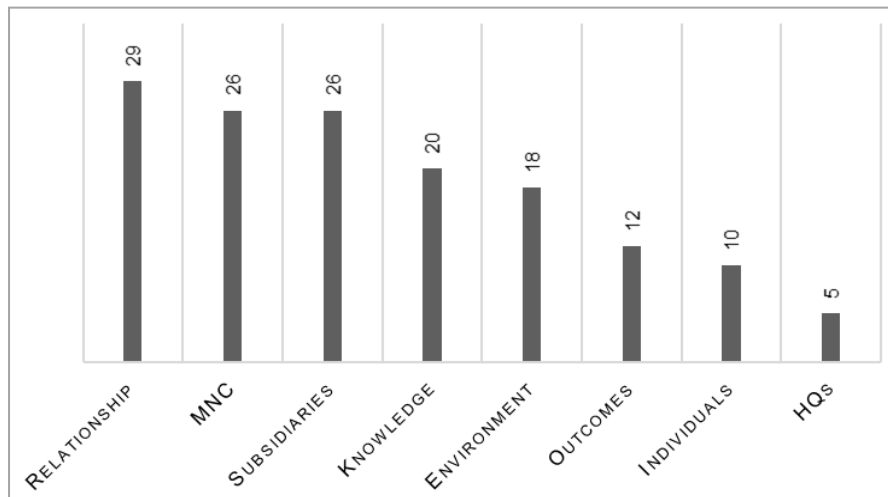


Figure 9. Number of HKT articles per research category

The relationship between knowledge actors is the second most researched category in the literature and the first one in HKT papers, being discussed in 87.88% (i.e., 29 out of 33) of these articles. In addition, this category was explored in the five articles focusing exclusively on HKT. Authors pointed out that internal embeddedness (e.g. Kang & Lee, 2017; Montazemi et al., 2012; Schulz, 2003) and frequency of communications (e.g. Crespo et al., 2014; Mäkelä, Andersson, & Seppälä, 2012; Noorderhaven & Harzing, 2009) are deeply connected with HKT, since these factors ease communication and interaction between MNCs units (Gupta & Govindarajan, 2000), and enhance subsidiaries' absorptive capacity (Peltokorpi, 2017).

Monteiro et al. (2008) — an empirical quantitative study based on the behavioural theory of the firm — demonstrated that communicating frequently with peer subunits increments HKT; as a result of interacting with other units, the focal subsidiary gets to know other subunits' knowledge capabilities, and, at the same

Table 4. Categories and topics investigated in HKT papers

Individuals (10)	No.	MNC (26)	No.	HQs (5)	No.	Subsidiaries (26)	No.	Relationship (29)	No.	Knowledge (20)	No.	KT results (12)	No.	External environment (18)	No.
Competences, qualifications, or skills	7	Expatriates	9	Knowledge base or resources	3	Size	19	Frequency of communication	10	Type	13	Subsidiary financial and/or business performances	6	HQs and/or subsidiaries' localisation	14
Nationality	4	Transfer, integration, or coordination mechanisms	8	Absorptive capacity	2	Knowledge base or resources	12	Internal embeddedness or existence of relational ties and networks	10	Tacitness	5	Augmented knowledge base or innovation	4	Industry characteristics	11
Function or department	3	Size	6	Size	1	Age	12	Socialisation mechanisms	9	Quantity	4	MNC financial and/or business performances	3	Economic development or differences	2
Career considerations	3	Formalisation	5	Motivation	1	Absorptive capacity	8	Cultural distance	8	Value	4	Market responsiveness or new product development	2		
Gender	3	HRMP	5	Rewards or incentives	1	Rewards or incentives	6	Geographical distance	8	Complexity	3				
Participation or experience in knowledge transfer activities	2	Centralisation or decentralisation	4	Technology capability or infrastructure	1	Strategic role or importance	6	Similarity of practices, values, processes, or vision	7	Specificity	3				
Learning capacities or styles	1	Knowledge base or resources	4			Autonomy	5	Organisational distance	5	Explicitness	2				
Satisfaction	1	Commitment, support, or management of knowledge activities	4			Motivation	5	Trust	5	Timing or novelty	2				
		Organisational culture	3			Supply chain position, or scope of operations	5	External embeddedness	4	Codification	1				
		Financial	1			HRMP	5	Inter-	4	Relevance	1				

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Individuals (10)	No.	MNC (26)	No.	HQs (5)	No.	Subsidiaries (26)	No.	Relationship (29)	No.	Knowledge (20)	No.	KT results (12)	No.	External environment (18)	No.
		and/or business performances						/Dependency							
		Teams, projects, centres or of excellence	1			Ownership structure	4	Linguistic distance	3						
						Power or influence	4	Relationship length	3						
						Mode of entry or establishment	3	Cooperation or collaboration	2						
						Knowledge creation or transfer capacities	3	Competitiveness	1						
						Technology capability or infrastructure	3								
						Isolation	2								
						Resources	2								
						Willingness to transfer or absorb knowledge	2								
						Disseminative capacity	1								
						Establishment or internationalisation motives	1								
						Fear of opportunism	1								
						Teams, projects, or centres of excellence	1								

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time, it has the chance to introduce its own abilities. Withal, Mahnke, Pedersen and Venzin (2009) concluded that time-consuming and costly means of communication — such as face-to-face interaction — impair HKT in a German cement MNC. The HKT literature also agrees that it is crucial to employ functional and suitable lateral socialisation mechanisms in subunits — such as inter-unit visits, trips, committees, international teams, and training programs involving several units (Björkman et al., 2004; Li, Barner-Rasmussen, & Björkman, 2007) — since they can promote and facilitate HKT (Noorderhaven & Harzing, 2009; Persson, 2006; Zeng et al., 2018).

Understanding the impact of cultural and geographical distance in the relationship between MNCs' units is a central subject across intra-MNC knowledge transfer literature, being examined in eight out of 29 HKT studies within the category related with the relationships between knowledge actors. Culture plays such a predominant role in knowledge transfers, due to knowledge being structured and assimilated in people's minds in accordance to their values, social norms, mental systems, and rules, which are intrinsically linked to their culture (Schlegelmilch & Chini, 2003). With respect to geographical distance, authors found that despite subsidiaries making a bigger effort to transfer knowledge, when they are far away from other subunits (Kang et al., 2010), this kind of distance can be overcome by face-to-face communication (Mäkelä & Brewster, 2009).

There is a consensus in the literature that subsidiaries should share similar organisational goals, practices, and values to engage in fruitful HKT (e.g. Ambos et al., 2013; Montazemi et al., 2012), mainly when involving expatriates (Mäkelä & Brewster, 2009) and different cultural contexts (Li et al., 2007). Within the 14 relational topics acknowledged in HKT papers, the relevance of organisational distance (e.g. Dasí et al., 2017; Schlegelmilch & Chini, 2003), trust (e.g. Mäkelä et al., 2012; Montazemi et al., 2012), external embeddedness (e.g. Monteiro et al., 2008; Tseng, 2015) and interdependency (e.g. Mahnke et al., 2009; Schulz, 2003) between knowledge partners or units were among the ten most investigated topics.

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The topics most commonly explored by researchers in the category concerned with the organisational characteristics of MNCs are the following: (1) expatriates, representing nine papers; (2) transfer, integration, or coordination mechanisms, corresponding to eight studies; (3) MNC's size, standing for six articles; (4) formalisation, representing five papers; and (5) HRMP, corresponding to five studies. Nine papers (out of 33) proposed that the presence of expatriates in subsidiaries' top management teams is associated with the extend of HKT (e.g. Björkman et al., 2004; Miao, Choe, & Song, 2011; Tseng, 2015), but results were not conclusive.

In connection with transfer or coordination mechanisms, concepts and definitions are not consistent across the literature, to illustrate this scenario, three perspectives are presented. First, Zeng et al. (2018) — a meta-analysis investigating HKT, CKT, and RKT — considered three types of mechanisms: socialisation, formalisation, and centralisation. Then, Persson (2006) focused on the key role of liaison mechanisms in assigning local employees to be in charge of knowledge transfers to other subunits. Finally, Smale (2008) reviewed literature on human resources integration mechanisms, pointing out the importance of global expertise networks, centres of excellence, benchmarking, and cultural global management to HKT.

HKT papers argue that MNCs should execute performance evaluation and incentive systems in their subsidiaries, that favour merit, competences (Minbaeva, Pedersen, Björkman, Fey, & Park, 2014), and knowledge transfer (Miao et al., 2011). Williams & Lee (2016) — exploring intra-MNC knowledge transfers in British, French and German subsidiaries — stood out the significance of empowering subsidiaries' employees by making them more autonomous. Still, these norms must be formalised through the usage of planning and reporting systems and practices (Noorderhaven & Harzing, 2009) that encourage HKT (Gupta & Govindarajan, 2000).

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The category related with MNCs general policies and characteristics and the category about subsidiaries characteristics were analysed evenly (i.e., 26 out of 33 papers). Size was unquestionably the most studied subsidiaries' attribute, being referred in 19 out of 26 papers in this research category. The literature agrees that bigger subsidiaries have more resources (Li et al., 2007) and influence on MNCs' strategic decisions (Persson, 2006), so they are more likely to create, transfer and absorb knowledge (Gupta & Govindarajan, 2000; Williams & Lee, 2016). Along with size, subsidiaries knowledge base and age were widely researched in HKT articles, being each topic addressed in 12 studies. Researchers agree that subsidiaries' knowledge resources in different domains can dictate their value as knowledge exchange partners (Ambos & Ambos, 2009; Björkman et al., 2004), or even as main knowledge sources to other MNCs' units (Williams & Lee, 2016). The number of years that subsidiaries were established within a MNC (Qin et al., 2016), or they are operating in a particular market (Miao et al., 2011; Tseng, 2015) — in other words, a subsidiary's age — can also have a significant impact on their lateral knowledge contributions.

When in view of subsidiaries that are receiving new knowledge from peer subsidiaries, it is fundamental to assess the receiving unit's absorptive capacity. In compliance with Gonzalez & Chakraborty's (2014) conceptual model, to measure a subsidiary's absorptive capacity, one must take into account the amount of knowledge that a subsidiary can receive, maintain, and implement. Conversely, for Montazemi et al. (2012) — a meta-analysis using social capital theory — this capacity is the function of a subsidiary's prior knowledge, social capital — which encompasses internal embeddedness, trust, as well as similarity of vision among organisational units — and extrinsic motivations. Moreover, some researchers (i.e., six out of 33 articles) claimed that the strategic role that a subsidiary plays within the MNC network has consequences on HKT (e.g. Blomkvist, 2012; Minbaeva et al., 2014; Tippmann et al., 2014).

As conceptualised by Gupta & Govindarajan (1991), subsidiaries take on different strategic roles in MNCs, when in view of the magnitude and direction of intra-firm

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knowledge transfers. In brief, this paper proposed that subsidiaries can play one of the following roles: (1) Global Innovators, when they are the main knowledge source to other MNCs' units; (2) Local Innovators, when they create most of the local knowledge; (3) Integrated Players, when they generate knowledge used by other subunits, but are not self-sufficient on their knowledge needs; (4) Implementors, when they are highly reliant on knowledge transferred by HQs and peer subsidiaries. In line with this conceptualisation, Schlegelmilch & Chini (2003) suggested — in their conceptual model about marketing-related knowledge transfers inside MNCs — that integrated players are more able to transfer marketing knowledge to peer subsidiaries than other units, principally when compared to local innovators.

HKT literature also approached other topics related to subsidiaries, such as: (1) rewards or incentives given to subunits to effectively transfer or absorb knowledge (e.g. Björkman et al., 2004; Persson, 2006); (2) autonomy (e.g. Miao et al., 2011; Schulz, 2003); (3) motivation (e.g. Noorderhaven & Harzing, 2009; Tippmann et al., 2014); (4) supply chain position or scope of operations (e.g. Li et al., 2007; Tseng, 2015); (5) HRMP (e.g. Minbaeva et al., 2014; Peltokorpi, 2017); (6) ownership structure (e.g. Kang & Lee, 2017; Michailova & Mustafa, 2012); and (7) power or influence (e.g. Claver-Cortés et al., 2018; Williams & Lee, 2016). Each of these topics was investigated in 19.23% (i.e., five out of 26) or 15.39% (i.e., four out of 26) of the HKT articles addressing the category related with subsidiaries. Amongst the 24 topics acknowledged in this research category, HKT papers were found to approach 22 of them, being no article studying the influence of subsidiaries' multinational experience nor financial and/or business performances on HKT.

The particularities of the knowledge transferred amongst MNCs' subsidiaries were addressed in 60.61% (i.e., 20 out of 33) of the HKT core articles. More than half of these studies (i.e., 13 out of 20) investigated the transfer of different knowledge types between subsidiaries. Authors pointed out several knowledge areas vital to MNCs, like technology, NPD, sales, marketing, distribution, and management

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(Gupta & Govindarajan, 2000; Kang et al., 2010; Miao et al., 2011). Some papers were able to draw conclusions about the types of knowledge most valuable to peer organisational units. For example, Qin et al. (2016) — researching Chinese subsidiaries in the ICT industry — proposed that market knowledge, which encompasses cultural and environmental know-how, is the most significant kind of knowledge. Yet, Ambos et al. (2013) — comparing the manufacturing, services, and FBI industries — proved that certain types of knowledge are more significant to upstream activities (e.g. technology and purchasing know-how) and other ones are more pertinent to downstream activities (e.g. marketing and distribution expertise).

There is an agreement in intra-MNC knowledge transfer literature that tacit knowledge — which is complex and internalised into employees' minds — is harder to transfer than other knowledge types, such as explicit or codified knowledge. Besides, researchers found that the tacitness of knowledge hinders the effectiveness of HKT (e.g. Blomkvist, 2012; Mahnke et al., 2009; Monteiro et al., 2008). Apart from that, some papers took into account other knowledge characteristics, namely: (1) amount or quantity, representing four articles (e.g. Gupta & Govindarajan, 2000; Miao et al., 2011); (2) complexity, corresponding to three papers (e.g. Kang et al., 2010; Schulz, 2003); (3) specificity or specialisation, standing for three studies (e.g. Michailova & Mustaffa, 2012; Persson, 2006); (4) explicitness, representing two articles (Crespo et al., 2014; Tippmann et al., 2014); and (5) timing or novelty, corresponding to two papers (Kang et al., 2010; Persson, 2006).

With regard to the category related to the impact of external environment, the greatest part of HKT studies (i.e., 18 out of 33) found interesting to examine this category; although none of the articles investigating solely HKT approached this research category. The geographical location of subunits was the most often studied topic within this category (e.g. Dasí et al., 2017; Li & Lee, 2015; Tippmann et al., 2014), being addressed in 14 studies. For instance, Li et al. (2007) — studying both HKT and RKT of subsidiaries from Finland and China — concluded

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that the Finnish subunits transfer more knowledge than the Chinese ones. In line with the authors, this could mean that subsidiaries located in developed countries engage in more knowledge transfer processes than those in emerging countries. However, this argument is not compelling across all HKT literature, since Williams & Lee (2016) — studying MNCs based in South Korea — found that French subsidiaries are more able to transfer knowledge than German or Britain subunits. Still, as a matter of fact, both Germany and the UK have an higher GDP and Human Development Index than France, considering the 2017's reports data found online.

HKT literature (i.e., 11 out of 33 papers) studied the relation between the characteristics of the industries where subsidiaries operate with their HKT. For instance, researchers examined knowledge intensity (Gupta & Govindarajan, 2000; Noorderhaven & Harzing, 2009), scope of business (Li & Lee, 2015; Williams & Lee, 2016), revenues per employee (Ambos et al., 2013), and global integration and competitiveness (Tseng, 2015) across different industries. Two articles explored the influence of the economic level of subsidiaries' countries on HKT, by collecting data on GDP per capita. The founding argument was that subsidiaries are more willing to receive knowledge from units located in countries whose level of economic development is higher than their own country's (Gupta & Govindarajan, 2000; Monteiro et al., 2008).

One of the least covered categories among HKT papers were the outcomes or results of intra-MNC knowledge transfers, being investigated in 12 out of 33 articles. As Schlegelmilch & Chini (2003) pointed out, the literature puts more emphasis on the adaptation and standardisation of knowledge than on its effects on organisational units. Across HKT articles, four knowledge transfer outcomes were mentioned: (1) subsidiaries' financial and/or business performances; (2) MNCs' financial and/or business performances; (3) augmented knowledge base or innovation; and (4) market responsiveness or NPD. As expected, none of these papers investigated if HKT could increase the financial and/or business performances of HQs.

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To measure financial and/or business performances, authors gathered several organisational data, such as: return-on-assets (Crespo et al., 2014; Kang & Lee, 2017), employees' perceptions about revenues, cost savings (Mahnke et al., 2009), profitability (Claver-Cortés et al., 2018), business volume, market share, and sales growth (Li & Lee, 2015; Qin et al., 2016). Four out of 12 articles exploring knowledge transfer results assessed whether the knowledge-receiving subsidiary had been able to increase its knowledge resources and innovation capacity through HKT (Ambos et al., 2013; Montazemi et al., 2012). Furthermore, two studies (Li & Lee, 2015; Qin et al., 2016) studied how HKT might increment MNCs' NPD and market responsiveness (i.e., the capacity to respond quickly to changes and opportunities in local markets).

An unanticipated result was that individuals' characteristics were the second least approached research category by HKT core articles, being only ten studies investigating this topic. Seven articles (out of ten) explored the influence of several MNCs' employees' competences on HKT. For example, researchers addressed employees' job or function, technical, and management know-how (Gonzalez & Chakraborty, 2014; Williams & Lee, 2016), language proficiency (Peltokorpi, 2017), as well as their educational level (Michailova & Minbaeva, 2012; Minbaeva et al., 2014).

In particular, Gonzalez & Chakraborty (2014) proposed that employees who participate in expatriation missions to foreign subsidiaries must develop intercultural competences, such as cultural intelligence and linguistic skills. In addition, HKT literature finds that it is easier for subsidiaries to transfer knowledge and build long-lasting relationships with other subunits if their employees come from the same countries (or from countries sharing a similar cultural background), or if national employees are present in subsidiaries' top management teams. Besides, three papers (Mäkelä et al., 2012; Michailova & Minbaeva, 2012; Minbaeva et al., 2012) suggested that the function or department to which employees belong might have an impact on knowledge transfer activities

with other subunits, since their corporate language and knowledge bases are more alike.

The characteristics of HQs were the least studied category within the eight research categories acknowledged in intra-MNC knowledge transfer literature. As previously explained, most articles investigated more than one direction of intra-MNC knowledge transfers, so when examining the article database closely, one realises that five papers addressed this category, but none of these studied HKT alone. Nevertheless, the influence of HQs' knowledge base or resources (Ambos & Ambos, 2009; Ambos et al., 2013; Schlegelmilch & Chini, 2003) on HKT was approached in three articles.

4.8.3. Conventional knowledge transfers

CKT (i.e., knowledge transfers from HQs to their subsidiaries) were the second most investigated intra-MNC knowledge transfer, being approached in 56.95% (i.e., 41 out of 72) of the core articles. This subchapter brings attention to significant findings from the SLR of these studies. Results are presented in Figure 10 — which shows the number of studies approaching each research category — and Table 5 — that presents all researched categories and topics in CKT articles.

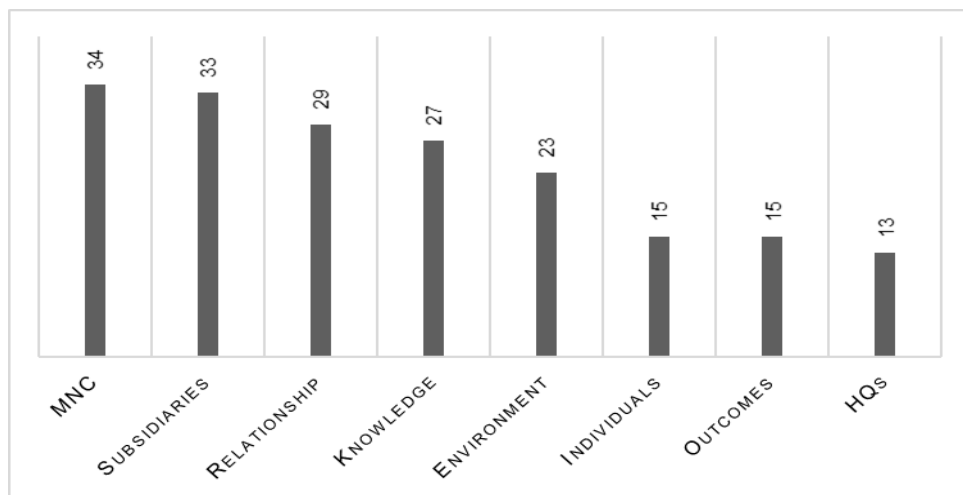


Figure 10. Number of CKT articles per research category

Table 5. Categories and topics investigated in CKT papers

Individuals (15)	No.	MNC (34)	No.	HQs (13)	No.	Subsidiaries (33)	No.	Relationship (29)	No.	Knowledge (27)	No.	KT results (15)	No.	External environment (23)	No.
Competences, qualifications, or skills	9	Expatriates	15	Knowledge base or resources	5	Size	21	Internal embeddedness or existence of relational ties and networks	11	Type	17	Subsidiary financial and/or business performances	7	HQs and/or subsidiaries' localisation	18
Function or department	4	Transfer, integration, or coordination mechanisms	9	Absorptive capacity	4	Age	17	Cultural distance	10	Explicitness	5	Augmented knowledge base or innovation	6	Industry characteristics	14
Career considerations	3	Size	7	Size	3	Absorptive capacity	16	Similarity of practices, values, processes, or vision	9	Quantity	5	Market responsiveness or new product development	5	Economic development or differences	4
Feelings, expectations, and beliefs	3	Centralisation or decentralisation	5	Disseminative capacity	3	Knowledge base or resources	14	Socialisation mechanisms	8	Tacitness	5	MNC financial and/or business performances	1	Market characteristics or changes	3
Nationality	2	HRMP	4	Willingness to transfer or absorb knowledge	2	Rewards or incentives	7	Geographical distance	8	Value	5			National policy norms	2
Learning capacities or styles	2	Knowledge base or resources	4	Motivation	1	Autonomy	6	Frequency of communication	7	Complexity	4			Intellectual property rights protection	1
Motivation or willingness	2	Organisational culture, or learning environment	4	Multinationality	1	Strategic role or importance	5	External embeddedness	4	Embeddedness or stickiness	3				
Participation or experience in knowledge transfer activities	2	Commitment, support, or management of knowledge activities	3	Financial and/or business performances	1	Motivation	5	Trust	4	Codification	3				
Age	1	Formalisation	3	Power or control	1	Supply chain position, or scope	5	Organisational distance	3	Specificity	3				

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Individuals (15)	No.	MNC (34)	No.	HQs (13)	No.	Subsidiaries (33)	No.	Relationship (29)	No.	Knowledge (27)	No.	KT results (15)	No.	External environment (23)	No.
						of operations									
Gender	1	Teams, projects or centres of excellence	3	Rewards or incentives	1	Ownership structure	5	Inter-/Dependency	3	Relevance	2				
		Financial and/or business performances	1	Technology capability or infrastructure	1	Mode of entry or establishment	4	Linguistic distance	3	Timing or novelty	2				
				Technology capability or infrastructure	1	Power or influence	4	Competitiveness	2						
						Willingness to transfer or absorb knowledge	4	Relational distance	1						
						HRMP	4								
						Establishment or internationalisation motives	3								
						Isolation	2								
						Knowledge creation or transfer capacities	2								
						Financial and/or business performances	2								
						Teams, projects, or centres of excellence	2								
						Disseminative capacity	1								
						Technology capability or infrastructure	1								

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CKT articles were the only ones in the reviewed literature in which the characteristics and policies of MNCs were the most studied category, being discussed in 34 out of 41 studies. There is an agreement in the literature that expatriates are crucial agents in transferring knowledge from HQs to subsidiaries, so it is not unforeseen that this category is investigated in almost half (i.e., 15 out of 34) of the CKT papers within this category. In order to expatriates becoming key strategic assets in their organizations, researchers recommended that they should develop excellent teaching, management, linguistic and relational skills. Hence, they ought to be capable of adapting their management and teaching styles, delegating tasks to subunits' employees (Wang et al., 2004; Wang et al., 2009), having prior experience in expatriation assignments, as well as developing strong relationships with local partners (Choi & Johanson, 2012). Some authors suggested that expatriates could struggle to transfer knowledge to subsidiaries where the intellectual property rights (IPR) protection in the host country is weak (Berry, 2017), or when HQs and subsidiaries lack relational ties, and similarities in terms of organisational culture (Chang & Smale, 2013).

Choosing proper transfer, integration, or coordination mechanisms — such as liaison personnel, task forces, and permanent teams (Gupta & Govindarajan, 2000; O et al., 2016) — is considered fundamental to CKT, as nine out of 34 studies support. For example, Ambos & Ambos (2009) compared the outcomes of applying personal coordination mechanisms and electronic coordination mechanisms when considering the simplification of HKT and VKT in manufacturing and services industries. The researchers concluded that electronic mechanisms are more effective and advantageous to intra-MNC knowledge transfers, because they are not affected by any type of distance. Within MNCs' characteristics, size is the third most explored topic, being approached in seven out of 34 studies. Yet, measuring a MNC's size is a controversial issue in the literature. Most of the times it is estimated in view of the total number of employees (e.g. Tippmann et al., 2014), but other authors consider that MNCs' size is equal to the number of MNCs' subsidiaries in a given country (Schulz, 2003), or the total number of MNCs'

assets (Kang & Lee, 2017). Naturally, the existence of different metrics to measure size hinder some comparisons of results for reviewers.

Centralisation or decentralisation of decision-making is also broadly discussed in CKT articles. Gupta & Govindarajan (2000) — employing an empirical quantitative method to scrutinise CKT, HKT and RKT— found that HQs are more likely to transfer knowledge to subsidiaries that have less influence on MNCs' strategic decisions. In addition, Reiche et al. (2015) — also based on an empirical quantitative study, but focusing only on CKT — proposed that one of the advantages of centralisation is that subsidiaries make a greater effort to share their objectives and vision with HQs, which can in turn facilitate CKT. Four (out of 34) studies enhanced the importance of implementing HRMP that enable CKT, for instance informal control mechanisms (Williams & Lee, 2016), performance appraisal systems (Chang & Smale, 2013), and expatriation assignments (Smale, 2008). Wang et al. (2004) — using a case study approach to investigate CKT to Chinese subsidiaries — concluded that employing training programs, that focus on employees' management and technical skills, increase both CKT and subsidiaries' absorptive capacity.

The literature recognises the prominence of subsidiaries' characteristics in contributing to CKT, since this category is studied in 33 out of 41 CKT articles. In the same way as in HKT literature, size of subsidiaries is the most discussed topic in the 33 CKT papers within this research category. Measuring subsidiaries' size is as controversial as estimating MNCs' size. Although most authors supported that the total number of employees in a subsidiary is an indicative value of their size (e.g. Ambos et al., 2013; Yang et al., 2008), others considered the total value of the investment made to acquire or establish that subunit (e.g. Wang et al., 2009). Alternatively, other researchers estimated a relative size by comparing the size of a subsidiary and its MNC (e.g. Minbaeva et al., 2014). To measure subsidiaries' age — a topic that was covered by 17 papers — researchers considered the year when a subsidiary was established (e.g. Berry, 2017; Monteiro et al., 2008) or acquired (e.g. Yang et al., 2008).

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There is a consensus in the literature that prominent levels of subsidiaries' absorptive capacity increases CKT. The ability to absorb successfully knowledge from other organisational units involves the processes of recognising, assimilating, and applying the received knowledge (Schleimer & Pedersen, 2014; Tran, Mahnke, & Ambos, 2010). Resemblances between HQs and subsidiaries knowledge bases (Berry, 2017), motivation (Chang & Smale, 2013), prior knowledge regarding the received knowledge, as well as suitable transfer mechanisms (O et al., 2016) have been found to be the strongest predictors of subsidiaries' absorptive capacity in the 16 articles exploring this topic. Subsidiaries knowledge bases or prior knowledge about different domains (Ambos & Ambos, 2009; Ambos et al., 2013) or about knowledge being transferred from HQs (Monteiro et al., 2008) were found pertinent to explain CKT in 42.43% (i.e., 14 out of 33) of the CKT papers within this research category. An exception is perhaps Schulz (2003), who concludes that the volume of subsidiaries' knowledge base does not influence CKT.

Amongst the category related with subsidiaries characteristics, the following topics were the most popular on CKT research: (1) rewards or incentives given to subunits to participate in knowledge transfer, representing seven papers (e.g. Harzing et al., 2015; Montazemi et al., 2012); (2) subsidiaries' autonomy, standing for six articles (e.g. Najafi-Tavani et al., 2018; Tran et al., 2010); (3) strategic roles within MNCs, corresponding to five studies (e.g. Minbaeva et al., 2014; Tippmann et al., 2014); (4) motivation to participate in knowledge transfer, representing five articles (e.g. Gupta & Govindarajan, 2000; Tseng, 2015); (5) position in the MNCs' supply chain or scope of operations, standing for five studies (e.g. Berry, 2017; Noorderhaven & Harzing, 2009); and (6) ownership structures, corresponding to five papers (e.g. Ai & Tan, 2018; Wang et al., 2009).

While in IKT and HKT studies the category associated with relationships between knowledge actors was the most investigated, among CKT articles it was the third most approached category, being investigated in 29 (out of 41) CKT studies. Results are consistent across the literature, long-lasting, trusting, open and

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informal relationships between HQs and subsidiaries ease CKT (Schleimer & Pedersen, 2014; Schulz, 2003; Zimmermann & Ravishankar, 2014). In this respect, Wang et al. (2004) proposed that internal embeddedness increases HQs' willingness to transfer knowledge to subsidiaries, principally to those that HQs would normally feel more reluctant to share valuable information, like joint ventures subsidiaries. By the same token, nine articles supported that having alike values, goals, management styles (Najafi-Tavani et al., 2018; Reiche et al., 2015), business practices, organisational culture (Ambos & Ambos, 2009), or even operating industries and markets (Fang et al., 2013) can make CKT more fruitful.

In contrast, researchers anticipated that cultural (e.g. Ambos & Ambos, 2009; Qin et al., 2016) and geographical (e.g. Monteiro et al., 2008; Tran et al., 2010) distance hinder the positive outcomes gained from these knowledge transfers — being these topics considered in ten and eight articles, respectively. An fascinating result was found by Jasimuddin, Li, & Perdakis (2015) — who studying VKT between Japanese HQs and Chinese subsidiaries — concluded that, although geographical distance hampers knowledge transfers, it shows no influence on relational distance, since the given countries share a similar historical heritage.

To make interactions between HQs and subsidiaries smoother, the literature agrees that MNCs must employ socialisation mechanisms, such as visits (O et al., 2016) or transfers to different business units, mentoring sessions (Gupta & Govindarajan, 2000), training programs, task forces and conferences (Reiche et al., 2015). In line with the eight studies covering this topic, socialisation mechanisms might also ease the transfer of tacit knowledge (Zeng et al., 2018), the absorptive capacity of receiving subsidiaries, as well as CKT (Peltokorpi, 2017). In addition, some researchers suggested that the intensity of interactions — a topic discussed in seven articles — facilitate CKT, by enhancing the capacities of subsidiaries in absorbing and recognising the value of knowledge transmitted by HQs (O et al., 2016). Even so, other authors proved that frequency is not relevant, since reporting information vertically may be mandatory (Monteiro et al., 2008).

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Authors addressing this category also explored the next topics: (1) external embeddedness, standing for four articles (e.g. Monteiro et al., 2008); (2) trust, representing four papers (e.g. Schleimer & Pedersen, 2014); (3) organisational and linguistic distances, corresponding both to three studies (e.g. Ambos & Ambos, 2009; Kang et al., 2010); (4) interdependency or dependency of the relationship, standing for three articles (e.g. Noorderhaven & Harzing, 2009); (5) competitiveness, representing two papers (e.g. Tran et al., 2010); (6) relational distance, corresponding to one study (Jasimuddin et al., 2015).

Knowledge characteristics were investigated in 27 out of 41 CKT articles and in eight (out of ten) papers investigating only CKT. Knowledge types were the most researched topic, being discussed in 62.96% (i.e., 17 out of 27) of the articles. Authors gathered that HQs transfer knowledge to their subunits related to manufacturing, cost saving (Ai & Tan, 2018), advertising, sales, design (Tran et al., 2010), management, technologies, and culture (Wang et al., 2009). The tacitness and explicitness of knowledge are often research topics, being approached in five articles each, and three of them considering both of these knowledge aspects (Ai & Tan, 2018; Tippmann et al., 2014; Wang et al., 2004). Tippmann et al. (2014) — applying a case study to Irish subsidiaries of MNCs operating in the ICT industry — found that the most frequently transferred knowledge is tacit, which includes experiences, advices, competences, and specialised knowledge. Nevertheless, CKT literature supports that explicit and codified knowledge is much easier to transfer than tacit knowledge (e.g. Schulz, 2003).

The influence of the quantity and value of transferred knowledge on the resolution of problems arising in business activities (Choi & Johanson, 2012) and on subsidiaries' performance (Tran et al., 2010) was examined in five CKT papers. To measure the amount of transferred knowledge, Schulz (2003) considered the total number of hours spent by employees working on activities related with knowledge being transmitted. Apart from the already mentioned knowledge characteristics, CKT articles also explored knowledge complexity (e.g. Michailova & Mustaffa, 2012), embeddedness or stickiness (e.g. Chang & Smale, 2013), codification (e.g.

Tran et al., 2010), specificity or specialisation (e.g. Schulz, 2003), relevance (e.g. Yang et al., 2008), besides timing or novelty (e.g. Kang et al., 2010).

Studying the external environment where MNCs operate and where knowledge transfers take place was thought important in 23 out of 41 CKT papers. The topics most commonly addressed by researchers are the following: (1) localisation of HQs or/and subsidiaries, representing 18 articles; (2) characteristics of industries, standing for 14 papers; (3) level of economic development of a given country or differences between distant localisations, corresponding to four studies; and (4) characteristics, changes, or turbulences in the marketplace, representing three articles. The impact of geographical space on CKT is not fully agreed across the literature; yet Gupta & Govindarajan (2000) demonstrated that CKT are more frequently directed to subunits situated in countries whose national economic system is more developed than the one in the HQs country.

Concerning on industry's characteristics, sector (Kang & Lee, 2017; Yang et al., 2008), competitiveness (Wang et al., 2004; Wang et al., 2009), strategic position (Ai & Tan, 2018), advantages, politics, and human resources (Tseng, 2015) are among those aspects researched in this topic. Berry (2017) employed a Heckman econometric model to understand the impact of various subsidiaries' environmental factors on CKT, namely IPR protection, government barriers, tax rates and GDP growth. In this context, the author concluded that MNCs based on the USA transfer more (and also more valuable) knowledge to subsidiaries located in countries whose IPR protection is preeminent.

Given that CKT are inter-unit knowledge transfers, it is only expected that the singular characteristics of individuals taking part in these knowledge processes are less explored in CKT literature. Amongst the 15 studies investigating this research category, nine articles emphasised the role of individual competences; four considered their functions or departments within organisational units; three approached whether career considerations or feelings, expectations, and beliefs related to knowledge transfer; and two papers found interesting to study

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employees' nationalities, learning capacities, motivation, willingness, or even participation and experience in these processes. Only Chang & Smale (2013) measured employees' gender and age. The literature demonstrated that highly qualified employees — who possess outstanding educational levels (Wang et al., 2004), job related skills (Minbaeva et al., 2014), and fluency in corporate language (Reiche et al., 2015) — are more able to receive knowledge from HQs. In connection with employees' functions inside the MNC, Harzing et al. (2015) — studying expatriation presence in subsidiaries across Europe, Asia and Oceania — revealed that most expatriates are managing directions; yet more CKT benefits come when these assignees are responsible for manufacturing functions.

The outcomes of CKT were researched in 15 (out of 41) studies, and only on two (out of ten) articles focusing solely on CKT. In the same way as in HKT research, increments on subsidiaries' financial and/or business performances and on their knowledge bases or innovation levels were the most widely studied topics, being covered by seven and six papers, respectively. Most authors considered that subsidiaries' financial and/or business performances are associated with factors such as growth, profitability (e.g. Wang et al., 2009), sales revenue, market share, and operating profit (e.g. Monteiro et al., 2008). As to the enhancement of subsidiaries' knowledge base might be interrelated with the acquisition of knowledge about the industry where a particular subsidiary operate (Qin et al., 2016), or management and technological capacities (Wang et al., 2009). Augmented market responsiveness and NPD were associated with frequent CKT (Lee et al., 2013) and subsidiaries' absorptive capacity (Najafi-Tavani et al., 2018).

The most astonishing result was perhaps to realise again the reduced number of articles (i.e., 13 out of 41) exploring the category related with HQs' organisational characteristics. This result is even more unpredicted in CKT articles than in HKT papers, considering that HQs are knowledge senders in the former. Together with that, if one analyses the results from the articles that only address CKT, one can determine that this category is approached in half of the articles (i.e., five out of ten), which is still not very representative. Amongst this research category,

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researchers studied the influence of HQs' knowledge base or resources — particularly its sophistication, richness (Wang et al., 2004), and coverage across several domains (Fang et al., 2013) — on CKT outcomes. HQs' absorptive capacity is the second most examined topic (i.e., four out of ten articles), however if one takes a closer look at the data, one can observe that this was only approached in articles examining simultaneously CKT and RKT.

It becomes more pertinent to consider HQs' disseminative capacity and willingness to transfer knowledge in CKT — which were covered in three and two papers, correspondingly. For instance, Wang et al. (2004) HQs' disseminative capacity developed by means of their knowledge resources and the competences of their expatriates. As for HQs' willingness to transfer knowledge to subsidiaries increases with intercultural communication, trust, similarity of business practices, positive expectations about knowledge transfer outcomes (Zimmermann & Ravishankar, 2014), as well as evaluation systems that focus on the performance of all organisational units (Montazemi et al., 2012).

4.8.4. Reverse knowledge transfers

Amongst intra-MNC knowledge transfers literature, RKT are the most regularly studied knowledge transfer, being covered by 66.67% (i.e., 48 out of 72) of the core studies, in which 17 (out of 48) papers considered solely RKT. Figure 11 shows the explored categories per number of articles and Table 6 presents a complete list of categories and topics addressed in RKT literature.

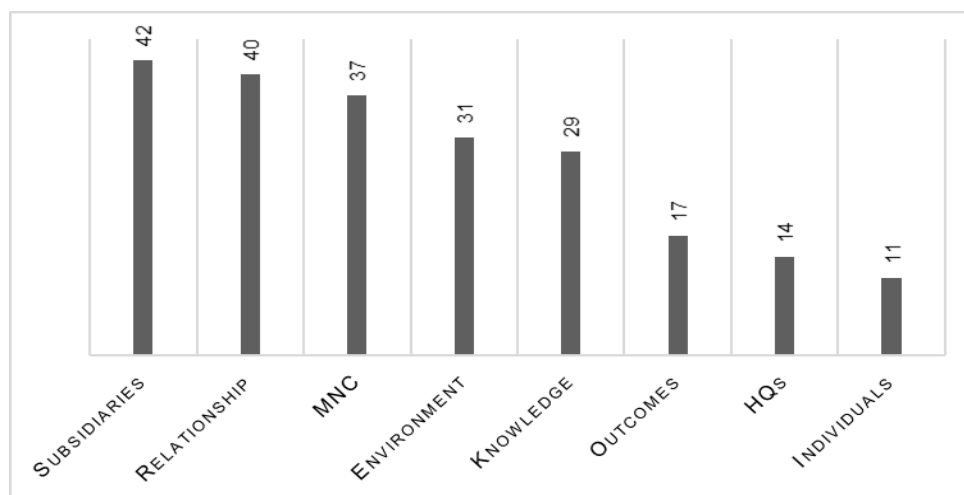


Figure 11. Number of RKT articles per research category

Table 6. Categories and topics investigated in RKT papers

Individuals (11)	No.	MNC (37)	No.	HQs (14)	No.	Subsidiaries (42)	No.	Relationship (40)	No.	Knowledge (29)	No.	KT results (17)	No.	External environment (31)	No.
Competences, qualifications, or skills	6	Transfer, integration, or coordination mechanisms	14	Absorptive capacity	8	Size	30	Cultural distance	16	Type	18	Augmented knowledge base or innovation	6	HQs and/or subsidiaries' localisation	21
Function or department	2	Expatriates	12	Size	5	Age	24	Similarity of practices, values, processes, or vision	13	Relevance	4	Subsidiary financial and/or business performances	5	Industry characteristics	19
Nationality	2	Size	6	Knowledge base or resources	4	Knowledge base or resources	14	Socialisation mechanisms	11	Tacitness	4	Market responsiveness or new product development	4	Economic development or differences	4
Career considerations	2	Centralisation or decentralisation	6	Multinationality	2	Mode of entry or establishment	11	Internal embeddedness or existence of relational ties and networks	10	Value	3	MNC financial and/or business performances	3	Market characteristics or changes	3
Feelings, expectations, and beliefs	2	Formalisation	4	Financial and/or business performances	2	Autonomy	9	Frequency of communication	10	Quantity	3	HQs financial and/or business performances	1	National policy norms	2
Age	1	HRMP	4	Power or control	2	Strategic role or importance	8	External embeddedness	9	Explicitness	3			Intellectual property rights protection	1
Gender	1	Organisational culture, or learning environment	4	Technology capability or infrastructure	2	Absorptive capacity	7	Geographical distance	8	Complexity	2				
Learning capacities or styles	1	Commitment, support, or management of knowledge activities	3	Motivation	1	HRMP	7	Organisational distance	7	Embeddedness or stickiness	2				
Motivation or willingness	1	Knowledge base or resources	3	Resources	1	Willingness to transfer or absorb knowledge	7	Trust	5	Codification	2				

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Individuals (11)	No.	MNC (37)	No.	HQs (14)	No.	Subsidiaries (42)	No.	Relationship (40)	No.	Knowledge (29)	No.	KT results (17)	No.	External environment (31)	No.
Participation or experience in knowledge transfer activities	1	Teams, projects, or centres of excellence	2	Rewards or incentives	1	Ownership structure	6	Cooperation or collaboration	3	Specificity	1				
						Rewards or incentives	6	Inter-Dependency	2	Timing or novelty	1				
						Knowledge creation or transfer capacities	6	Linguistic distance	2						
						Supply chain position, or scope of operations	6	Relational distance	2						
						Establishment or internationalisation motives	6	Relationship length	2						
						Motivation	4	Competitiveness	1						
						Power or influence	4	Legal distance	1						
						Technology capability or infrastructure	3								
						Financial and/or business performances	3								
						Resources	3								
						Disseminative capacity	2								
						Isolation	2								
						Multinationality	1								
						Teams, projects, centres of excellence	1								

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The characteristics of subsidiaries are the most studied category in RKT articles, being covered by 42 out of 48 articles, and in all of the articles only on RKT. Moreover, RKT papers are the only ones in the revised literature in which the category related with subsidiaries is the most researched category. The topics most commonly examined were: (1) subsidiaries' size, representing 71.43% (i.e., 30 out of 42) of the articles; (2) age, corresponding to 57.14% (i.e., 24 out of 42) of the papers; (3) knowledge base or resources, covered in 33.33% (i.e., 14 out of 42) of the studies; (4) mode of entry or establishment, representing 26.19% (i.e., 11 out of 42) of the papers; (5) autonomy, corresponding to 21.43% (i.e., nine out of 42) of the articles; and (6) strategic role or importance, standing for 19.05% (i.e., eight out of 42) of the studies.

There is a consensus in the literature that bigger subsidiaries transfer more knowledge to HQs (Gupta & Govindarajan, 2000; Kong et al., 2018; Oh & Anchor, 2017), owing that they develop stronger capabilities (Noorderhaven & Harzing, 2009) and relationships with external actors (Yang et al., 2008). Hence, HQs are more likely to invest more resources on these subunits (Oh & Anchor, 2017). Focusing on subsidiaries' age (i.e., year when they were established or acquired by the MNC, or that they are operating in a given market), researchers proved that older subsidiaries transfer more valuable knowledge (e.g. Rabbiosi & Santangelo, 2013), since these subunits enjoy more time to build relationships within internal and external networks, and to employ effective knowledge transfer mechanisms (Monteiro et al., 2008). Oppositely, other papers supported that younger subsidiaries are more able to reversely transfer knowledge, especially in fast growing markets (Oh & Anchor, 2017), and when those subunits are still being integrated in the MNC (Peng et al., 2016).

RKT articles propose that subsidiaries' knowledge base should be attractive to HQs — or even superior to peer subsidiaries and HQs' knowledge bases (Qin et al., 2016) — to intensify RKT. Inasmuch as subsidiaries ought to possess knowledge about different fields, such as production, marketing, R&D (Claver-Cortés et al., 2018), management, services, sales, manufacturing (Björkman et al.,

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2004), products, clients, and technology (Oh & Anchor, 2017). Yamao et al. (2009) — using a structural equation model — supported that subsidiaries knowledge bases are not only composed by their human capital, but also by their social capital (which includes internal, external, and intra-MNC social capital).

As far as modes of establishment or entry are concerned, the literature supports that acquired subsidiaries are more likely to transfer knowledge to HQs (Björkman et al., 2004; Kong et al., 2018) when compared to other subunits, like those established by a greenfield investment. In this respect, Li et al. (2007) claimed that the main motive for HQs to acquire foreign subsidiaries is to gain access to their knowledge resources, since they are less likely to overlap with HQs' prior knowledge. Rabbiosi & Santangelo (2013) — combining perspectives on liabilities of newness and aging — concluded that age is not relevant to neither acquired or wholly-owned joint ventures subsidiaries; however, greenfield subunits' age should be considered. That is because these business units still need time to develop relationships with HQs and to gain reputation in the industry.

Understanding the outcomes of subsidiaries' autonomy (i.e., freedom and influence on MNCs' strategic decisions) on RKT is a debatable subject in the literature (Oh & Anchor, 2017). On the one hand, Najafi-Tavani, Zaefarian, Naudé, & Giroud (2015) — investigating British subsidiaries in the services industry — gathered that frequent RKT can enhance the autonomy of subunits, providing that HQs and subsidiaries build strong relations. In a similar way, Miao et al. (2011) — focusing on knowledge transfers between South Korean subsidiaries and Japanese and North American HQs across different industries — found that autonomous subsidiaries transfer more valuable knowledge to HQs. On the other hand, Ciabuschi, Kong, & Su (2017) — studying German and Dutch subsidiaries of a Chinese MNC — demonstrated that the lack of HQs control, along with the intensification of subsidiaries' independence, hinder RKT, because these subunits did not recognise the authority and capacities of their HQs.

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The strategic importance of subsidiaries within MNCs — in terms of their capacities to create new knowledge or propose improvements to existing products, services and competences (e.g. Mudambi, Piscitello, & Rabbiosi, 2014; Rabbiosi, 2011) — was one of the most explored topics in the 42 articles investigating subsidiaries impact on RKT. In this perspective, McGuinness et al. (2013) — employing a case study method in three subsidiaries from Sri Lanka, USA and Turkey of a British MNC — determined the strategic roles of the examined organisational units by mapping their internal knowledge transfers, potential and capacity to create knowledge, as well as the relevance of knowledge created.

The relationships between knowledge actors (i.e., subsidiaries and HQs) were the second most addressed category within the eight research categories, being discussed in 40 (out of 48) RKT studies. Within the topics acknowledged in this category, cultural distance was the one examined the most (i.e., 16 out of 40). Nearly all studies measured cultural distance using Hofstede's (1980, 2001) dimensions (e.g. McGuinness et al., 2013; Qin et al., 2016) or Kogut & Singh's (1988) index (e.g. Crespo et al., 2014; Rabbiosi & Santangelo, 2013) — which is based in Hofstede's work. Regardless, some authors considered that organisational culture, linguistic distance (Jasimuddin et al., 2015), and the number of scientific and technical journals published in a country (Mudambi et al., 2014) were indicative of two countries' cultural distance. Researchers found that being culturally distant might hinder the RKT of tacit knowledge (Ai & Tan, 2018), as well as subsidiaries' financial and/or business performances (Qin et al., 2016).

Sharing similar business practices, organisational cultures (Li et al., 2007), knowledge resources, products, scope of operations (Mudambi et al., 2014; Rabbiosi, 2011), goals, and visions (Peltokorpi & Yamao, 2017) facilitates RKT. However, Ciabuschi et al. (2017) argued that replicating HQs' organisational culture and values in subsidiaries from developed countries, when the MNC is based in an emerging country, could not be a sustainable decision in the long term. Within relational aspects, socialisation mechanisms, frequency of communications and internal embeddedness were covered by over nine articles.

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Literature supports that HQs and subsidiaries regular interactions — through business trips, visits, meetings, electronic communication, and conferences — as well as cooperation and team work improves subsidiaries' willingness to create (Claver-Cortés et al., 2018) and transfer knowledge (Kong et al., 2018), besides incrementing RKT (Crespo et al., 2014) and its positive outcomes (Jiménez-Jiménez et al., 2014; Rabbiosi & Santangelo, 2013).

Najafi-Tavani, Giroud, & Sinkovics (2012) — using network theory — projected that employing socialisation mechanisms augment subsidiaries and HQs extension of relational ties and shared values (as well as RKT) mainly when considering younger subsidiaries. The relations between subsidiaries and external players was considered relevant by 22.50% (i.e., nine out of 40) of the articles. Researchers investigated how these external connections could be the cause of modifications in subsidiaries' products, practices, systems (Li et al., 2007), marketing, distribution, management (Najafi-Tavani et al., 2012), which, in turn, would result in improvements on MNCs' innovativeness (Jiménez-Jiménez et al., 2014). Fu, Sun, & Ghauri (2018) — investigating Chinese and British Huawei and ZTE companies — determined that knowledge collected from clients and competitors enhances subunits' NPD, as well as their market responsiveness.

MNC's characteristics and policies was a central research category in RKT papers, being approached in 77.08% (i.e., 37 out of 48) of the reviewed articles. Within this category, two research topics stood out from the ten identified topics, which were: (1) transfer, integration, or coordination mechanisms, representing 14 out of 37 studies (e.g. Hong & Nguyen, 2009; Najafi-Tavani et al., 2012) and (2) expatriates, corresponding to 12 articles (e.g. Fang et al., 2013; Peltokorpi, 2017). Many authors distinguished between personal coordination mechanisms (e.g. team work and transference to other MNC's units) and electronic coordination mechanisms (e.g. intranets, e-mails, newsletters and electronic documents) (e.g. Mudambi et al., 2014; Rabbiosi, 2011); whereas Fu et al. (2018), for example, considered integration and support mechanisms (e.g. compensating systems, strategic links and knowledge conversion systems).

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Lazarova and Tarique (2005) developed a conceptual model about RKT after repatriation, in which they propose that different knowledge extraction mechanisms must be employed depending if the knowledge being transferred by repatriated employees is explicit or tacit. Authors found that the positive influence of expatriates on subsidiaries organisational processes, business performance and RKT is associated with the following factors: (1) position and function of expatriates within subunits (Harzing et al., 2015); (2) their relations with local managers and HQs; (3) prior international experience (Kong et al., 2018); (4) level of economic development of the country where subsidiaries are located (Ciabuschi et al., 2017); and (5) expatriates' motivation to engage in knowledge transfer processes (Lazarova & Tarique, 2005).

Subsequently, the third most studied topics were MNC's size and centralisation of decision-making, being each addressed in six out of 37 RKT articles within this research category. As formerly stated, determining size of an organisational unit is a controversial subject, since some researchers compare MNC and subsidiaries' sizes (e.g. Noorderhaven & Harzing, 2009; Qin et al., 2016), and others estimate MNCs' relative size considering the total number of sales (Yang et al., 2008). With relation to decision-making, most authors claimed that prominent centralisation — through direct supervision, planning and reporting systems — increases the frequency of HQs and subsidiaries communications and also RKT (Crespo et al., 2014; Zeng et al., 2018). McGuinness et al. (2013) proposed that on the one hand, centralisation could enhance the relevance of transferred knowledge by subsidiaries; but, on the other, decentralisation of decision-making would augment subunits' potential to create new knowledge.

Amongst the category related with MNCs' organisational characteristics and policies, other topics came up in RKT studies, such as: (1) HRMP, representing four articles (e.g. Miao et al., 2011; Peltokorpi & Yamao, 2017); (2) MNCs' knowledge base or resources, corresponding to four studies (e.g. Kang & Lee, 2017; Schlegelmilch & Chini, 2003); (3) organisational culture or learning environment, standing for four papers (e.g. Ciabuschi et al., 2017; Nair et al.,

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2016); (4) central commitment, support, or management of knowledge activities, corresponding to three papers (e.g. Harzing et al., 2015; Lazarova & Tarique, 2005); (5) formalisation, standing for three articles (e.g. Crespo et al. 2014; Williams & Lee, 2016); and (6) transfer teams, projects, or centres of excellence, representing two studies (Adenfelt & Lagerström, 2008; Kang et al., 2010).

External environment factors are a central research category in RKT literature, being explored in 64.28% (i.e., 31 out of 48) of the papers. Within this category, researchers studied the succeeding topics: (1) localisation of HQs and/or subsidiaries, representing 21 out of 31 articles; (2) characteristics of industries, standing for 19 studies; (3) development or differences of countries' economic system, corresponding to four papers; (4) characteristics and changes in markets, representing three articles; (5) norms imposed by national policies, standing for two studies; (6) protection of IPR, corresponding only to one article. Focusing on subsidiaries' geographical origin, authors studied mainly RKT from subsidiaries located in developed countries to HQs situated in less-favoured locations (e.g. Ai & Tan, 2018; Fu et al., 2018; Peng et al., 2016), despite some authors exploring RKT from subsidiaries placed in developing countries to HQs from developed localisations (e.g. Hong & Nguyen, 2009; Qin et al., 2016; Yang et al., 2008). Similarly to CKT research results, there is an agreement in the RKT literature that subsidiaries located in countries whose economy is more developed than HQs' are more likely to reversely transfer valuable knowledge (Gupta & Govindarajan, 2000; Kong et al., 2018; Rabbiosi, 2011).

Regarding the characteristics of the industries where MNCs compete in, researchers considered — in line with other intra-MNC knowledge transfers — the differences between manufacturing and services (e.g. Claver-Cortés et al., 2018; Crespo et al., 2014; Oh & Anchor, 2017), as well as the technological intensity of industries (Kong et al., 2018; Nair et al., 2016). In this perspective, Mudambi et al. (2014) claimed that HQs perceive knowledge transferred by subunits operating in industries whose technological development is medium or high as more relevant. Driffield et al. (2016) — applying an econometric model to MNCs across five

continents — demonstrated the negative effects of several RKT barriers, such as geographical distance, cultural distance and legal distance, suggesting that weak protection of IPR could hinder RKT the most.

The category dealing with the characteristics of knowledge is investigated in more than half (i.e., 60.42%) of RKT studies, and in 58.82% (i.e., 10 out of 17) of the papers focusing only on RKT. Type of knowledge is still the most researched topic within this category, being covered by 18 out of 29 papers. Like previously referred, researchers considered types of knowledge, practices and systems related to different areas, for instance products, services, production, R&D, marketing, sales, management, and foreign cultures (Kong et al., 2018; Li et al., 2007; Najafi-Tavani et al., 2012; Peng et al., 2016). Hong & Nguyen (2009) — using a qualitative method to study Chinese and Vietnamese subsidiaries in automobiles and manufacturing industries — recommended the usage of different technics and mechanisms, such as integration, sense-making and formal training, to manage properly knowledge, keeping in mind its type (i.e., technical, systematic and strategic) and level of embeddedness (i.e., universal or local).

There is a consensus in intra-MNC knowledge transfer literature that tacit knowledge is harder to codify, convert and transfer (e.g. Monteiro et al., 2008; Oh & Anchor, 2017), particularly when HQs and subsidiaries are culturally distant (Crespo et al., 2014). Ai & Tan (2018) investigated the integration process of acquired European subsidiaries of a Chinese-based MNC and concluded that, at a first stage, HQs seek explicit knowledge (e.g. technologies linked with brand, manufacturing and products). To the investigated Chinese HQs, tacit knowledge was thought to be more difficult to transfer and of little relevance. A particularly important characteristic of knowledge in RKT literature is its relevance, as this topic is examined in four out of 29 articles. Knowledge relevance is associated with cultural distance, similarity of organisational practices, centralisation (McGuinness et al., 2013), and HQs perceptions on subsidiaries' capacities (Nair et al., 2016). Yang et al. (2008) supported that knowledge relevance is influenced by subsidiaries' geographical localisation, inasmuch as the relevance of

knowledge transferred from strategic locations (as perceived by HQs) is not considered a barrier to RKT.

The outcomes of RKT were covered by 17 out of 48 articles and only by three (out of 17) papers investigating solely RKT. Within RKT consequences to subsidiaries, researchers discussed enhancements on subsidiaries' knowledge bases, in terms of practices, technical and management competences, operations (Gonzalez & Chakraborty, 2014), and financial and/or business performances through HQs' knowledge resources (Fang et al., 2013). As regards to RKT positive repercussions on HQs, authors studied increases on HQs' knowledge resources in numerous areas, such as marketing, R&D (Rabbiosi & Santangelo, 2013), products, processes, and commercialisation (Jiménez-Jiménez et al., 2014). Driffield et al. (2016) is the only study investigating the antecedents of HQs' financial and business performances. The authors determined that subsidiaries' productivity might increment HQs' performance, especially when considering wholly-owned subsidiaries and HQs that are very experienced in internationalisation processes. As for market responsiveness and NPD, authors found that changes or turbulences at the technological global environment and marketplaces (Lee et al., 2008, 2013), along with the presence of a psychologically safe environment inside the MNC (Najafi-Tavani et al., 2018), could be predictors of these outcomes.

The characteristics of HQs were one of the least researched categories, being addressed in just 14 out of 48 article. Within this research category, articles focused on the following topics: (1) absorptive capacity, representing eight out of 14 articles; (2) size, corresponding to five studies; (3) knowledge base or resources, standing for four papers; (4) financial and/or business performances, representing two articles; (5) power or control, corresponding to two papers; (6) technological capabilities and infrastructure, standing for two studies; (7) motivation, representing one paper; (8) resources, corresponding to one article; and (9) rewards or incentives to absorb knowledge, representing also one study.

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RKT literature supports that HQs absorptive capacity could be enhanced when subsidiaries and HQs share similar technological, cultural, and organisational competences and practices (Rabbiosi & Santangelo, 2013) — especially in MNCs that develop a good learning environment and technical infrastructure (Nair et al., 2016). Oppositely, Ciabuschi et al. (2017) — using a case study approach — proposed that low HQs' absorptive capacity might be a result of one of the following reasons: (1) lack of qualified employees that are unable to understand tacit knowledge; (2) highly complex and bureaucratic knowledge transfer processes; (3) inexistence of socialisation mechanisms that promote the development of trusting relations between subsidiaries and HQs. With respect to HQs' size measurement, researchers considered the total number of employees (e.g. Ambos et al., 2013; Lee et al., 2008), or compared HQs and subsidiaries sizes (e.g. Nair et al., 2016). To ease RKT, HQs should also possess a wide knowledge base across different business areas (Ambos & Ambos, 2009; Ambos et al., 2013) to be entirely capable of absorbing subunits' knowledge.

11 (out of 48) RKT articles studied the influence of individuals on these knowledge transfers. Amongst this category, authors focused on the following topics: (1) employees' function or department (e.g. Harzing et al., 2015); (2) nationalities (e.g. McGuinness et al., 2013); (3) career considerations (e.g. Lazarova & Tarique, 2005); (4) feelings, expectations and beliefs (Najafi-Tavani et al., 2018); (5) age; (6) gender (Peltokorpi & Yamao, 2017); (7) learning capacities or styles (Michailova & Mustafa, 2012); (8) motivation or willingness to participate in knowledge transfer processes; and (9) participation or experience (Gonzalez & Chakraborty, 2014). Competences and qualifications of MNCs' employees were the most explored topic, being studied in 54.55% (i.e., six out of 11) of RKT articles. Employees should be highly skilled and competent in terms of working tasks, education (Williams & Lee, 2016) and corporate language (Peltokorpi & Yamao, 2017) in order to simplify RKT. As for MNCs — particularly those from developing countries — must make efforts to retain talent by providing attractive wages and opportunities in the industries where subsidiaries operate (Ai & Tan, 2018).

5. DISCUSSION AND CONCLUSION

The goal of this SLR is to map significant literature on intra-MNC knowledge transfers. To achieve this, a SLR — following the approach of Pickering & Byrne (2013), with a few variations from Denyer & Tranfield's (2009) and Tranfield et al.'s (2003) methodologies — was applied to find the most relevant studies. Overall, this SLR revealed an outstanding diversification in this field concerning research categories and topics, publication years and sources, theoretical foundations, methods, geographical dispersion, and industries. Therefore, the results found in the present SLR demonstrate the complexity and importance of the theme. This chapter draws key conclusions regarding the most widespread theories, methods, locations, industries, categories and topics considered in the literature. At the same time, this SLR allowed to find some gaps in the literature. Because of that, some recommendations and contributions for theory, research and practice are pointed out. Finally, this dissertation identifies its limitations.

5.1. Discussion of results

This part of the SLR is critical owing that it summarises and discusses key results described in the previous chapter. So, the main theoretical basis, methods, locations, industries, knowledge transfer types, categories and topics in the intra-MNC knowledge literature are stressed. This discussion allowed a better understanding of the phenomenon of knowledge transfer as a whole and also unveiled the contexts where further research is needed.

5.1.1. Theories

The theoretical background of most articles exploring intra-MNC knowledge transfers is based mainly on the following theories: (1) KBV; (2) network theory; (3) RBV; and (4) social capital theory. Despite many papers covering more than one theoretical perspective, these four theories are considered in a total of 59 (out of 72) studies. KBV is the theory that has been explored most in this field, which is not surprising since KBV was primarily developed by researchers studying intra-MNC knowledge transfers for the first time (e.g. Gupta & Govindarajan, 2000; Kogut & Zander, 1992, 1993). As KBV is an adaptation and enhancement of RBV, it is also predictable that this theory is one of the most mentioned in the reviewed

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papers. These two theories are commonly approached together in the literature (e.g. Smale, 2008; Wang et al., 2009), inasmuch as authors found useful to study RBV to completely and deeply comprehend the key foundations of KBV.

Aspects related with relationships among knowledge actors are one of the most investigated categories in the revised literature. Consequently, it is easily determined the reason why network theory and social capital theory are broadly applied theoretical foundations in this field, since these theories emphasise the crucial role of interpersonal relations and organisational networks in the working place. Although 32 theories have been acknowledged in the literature, 22 are only mentioned in one or two articles, as is the case with management control theory, absorptive capacity theory, and human capital theory. This means that most theoretical background is highly concentrated in ten perspectives. Moreover, as already revealed, 81.95% (i.e., 59 out of 72) of the articles referred to KBV, network theory, RBV, or social capital theory. Accordingly, it becomes imperative to explore different perspectives in order to create new lines of theoretically strong investigation, considering new concepts and ideas, or bringing the same ones into a different light.

5.1.2. Methods

There is a great predominance of quantitative studies (i.e., 55.56%) in the literature on intra-MNC knowledge transfer, in accordance with findings from other reviews (e.g. Kogut & de Mello, 2017; Michailova & Mustaffa, 2012). However, this SLR demonstrates the utmost importance of relational, environmental and personal influences on knowledge transfers, so the results put stress on the need for theory building and empirical qualitative studies. Since, qualitative approaches “*can potentially produce much needed rich and detailed descriptions and particularised interpretations (...) and generate ideographic, context-sensitive knowledge of particular practices, events and processes that are involved in these flows*” (Michailova & Mustaffa, 2012, p.390). Conceptual papers are also in high demand to help support new empirical research. Literature reviews are scarce in this field as well, and they play a pivotal role in mapping the relevant knowledge and results gathered in empirical studies.

5.1.3. Localisations and industries of researched MNCs

With regards to geographical locations of studied MNCs, this SLR reveals the clear prevalence of European MNCs, particularly from France, Germany, Denmark, and the UK. There is also a considerable number of Asian MNCs, concentrating in Japan, China, South Korea, and Singapore. Despite the significant variety of geographical locations, results prove the preference or convenience of studying MNCs based in developed countries, as most developing countries identified correspond to subsidiaries' locations. Furthermore, it is more usual to examine intra-MNC knowledge transfers between HQs based in developed countries and subsidiaries from developing countries (e.g. Hong & Nguyen, 2009; Li & Lee, 2015; McGuinness et al., 2013; Qin et al., 2016). Nonetheless, recent studies are exploring knowledge transfers between HQs based in developing countries and subsidiaries located in developed countries (e.g. Ai & Tan, 2018; Ciabuschi et al., 2017; Kong et al., 2018; Nair et al., 2016). Apart from that, there is a lack of research on African and South American MNCs.

Notwithstanding the abundance of investigation in different industries, researchers focused on the following industries: (1) ICT; (2) manufacturing; (3) chemicals; (4) electrical products and electronics; (5) services; (6) automobiles; (7) engineering and machinery; and (8) food and beverages. In this small sample, one can conclude that the literature clearly targets knowledge-intensive industries, with the exception perhaps of manufacturing. Additionally, 11 (out of the 23) industries are only explored in one, two or three articles, as it is the case of fashion, paper, and construction industries. Even so, the main gap in the literature is the lack of explanation of the influence of industries' particularities and differences on intra-MNC knowledge transfers. Although 23 out of 72 articles studied MNCs operating in different industries, there are few studies that draw clear conclusions about their impact on knowledge transfers, being Berry (2017) and Mudambi et al. (2014) two of the rare exceptions.

5.1.4. Knowledge transfer directions

Amongst intra-MNC knowledge transfer directions, RKT are the most examined transfers, followed by CKT. This result shows the greatest importance given to

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knowledge transfers between HQs and subsidiaries. HKT are also considered relevant in intra-MNC knowledge transfers literature, being this knowledge transfer mainly investigated along with VKT. One of the most striking results in this dissertation was the lack of research found on IKT. Still, this result may be due to the very nature of MNCs, where inter-unit knowledge transfers become more imperative than IKT. Whereas, knowledge transfer within a single organisational unit is probably most explored in small and medium-sized companies.

Apart from that, in spite of the plenty articles considering a single knowledge transfer direction, the majority of the studies makes comparisons between knowledge transfer processes across different MNCs' units. As a consequence, notwithstanding the significance of these comparisons, the findings in these studies might often be generalised, when in fact some assumptions and factors influencing each knowledge transfer may differ. For example, when studying IKT one knows that personal relationships between co-workers will be more relevant than the impact of the external environment surrounding the MNC's unit. Likewise, when analysing RKT, the characteristics of subsidiaries and their relations with HQs have a central role. Therefore, making generalisations and not explaining the specifications and assumptions of each intra-MNC knowledge transfer may cause some confusion when going through results.

5.1.5. Categories and topics

Chapter 4 presents the most examined categories and topics for each knowledge transfer type — which are IKT, HKT, CKT and RKT. In this subchapter, those results are discussed together, and some categories and topics that have not been addressed or otherwise need to be further explored in future research are identified.

On their path toward understanding and conceptualising intra-MNC knowledge transfers, researchers have extensively focused on the categories related to subsidiaries and relationships between knowledge actors or units, as they were explored in 59 and 58 out of 72 of the papers, correspondingly. Nevertheless, if one examines the number of articles that explored these categories by type of

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knowledge transfer, one finds that the category related with subsidiaries is particularly relevant in the literature on RKT and CKT. While, in studies on HKT, this research category is the third most investigated, and in the literature on IKT, it is only the fourth most investigated category. Within this research category, the most explored topics were subsidiaries' age, size, knowledge base, absorptive capacity, mode of establishment, autonomy, strategic role, rewards, and willingness to engage in knowledge transfer.

Notwithstanding the reduced number of articles revised on IKT, only six out of 24 topics named in the category related to subsidiaries were examined. For this reason, there are many opportunities to explore in this field. For instance, given the nature of IKT, it may be particularly relevant to analyse the impact of HRMP, technological infrastructures and resources on these processes. As far as HKT are concerned, there is no investigation into multinationality and performance of subsidiaries. Furthermore, the antecedents and consequences of fear of opportunism, the existence of teams, projects, and centres of excellence, disseminative capacity, as well as capacity and willingness to create and transfer knowledge to peer subunits should be further researched. In relation to CKT, it is essential to realise whether HQs transfer more knowledge to subsidiaries that have more resources, are strategically more important to MNCs, have a better business and financial performances, or work in the same line of business as HQs. Concerning on RKT, one still cannot fully understand what drives subsidiaries to willingly transfer knowledge to HQs. Accordingly, it is critical to investigate further about topics such as motivation, acquisition or establishment motives, dissemination capacity, scope of operations, among others.

The category related to relationships between knowledge actors or organisational units was the most studied category in IKT and HKT literature, the second most discussed on RKT articles, and the third in studies on CKT. The literature seems to agree that the main facilitators in building good relationships and enhancing internal embeddedness between MNCs' actors are the following: (1) similarity of practices, values, goals, and processes; (2) socialisation mechanisms; (3)

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frequency of communication; and and (4) trust. Yet, one can conclude that, regardless of the considerable amount of research in this category, some topics need more study, such as: (1) interdependency or dependency; (2) cooperation or collaboration; (3) relationship length; (4) competitiveness; (5) relational distance; (6) linguistic distance; and (7) legal distance. It might be potentially appealing to assess whether knowledge transfers and the relationships between individuals themselves develop better in working environments that promote collaboration and interdependence, or if competitive settings are more effective to these ends.

As mentioned earlier in this SLR, MNCs are companies that most of the times have subsidiaries in several continents and countries. Therefore, intra-MNC knowledge transfers happen between units dispersed in time, space, and in vastly different cultural settings and environments. Due to the complexity of the research theme and the predominance of quantitative methods, it was still not possible to draw convincing conclusions as to whether cultural and geographical distances represent barriers to knowledge transfers in MNCs. For this reason, more research employing qualitative methods should be done to uncover the repercussions of culture and geography in this field.

MNCs characteristics and policies was one of the central categories in the literature, being the most studied category in CKT articles, the second most studied in IKT and HKT research, and the third in RKT studies. There is a consensus in the literature that expatriates, HRMP, as well as suitable transfer, coordination, or integration mechanisms ease intra-MNC knowledge transfers. Nonetheless there are some topics that need additional research, such as MNCs' size, centralisation, organisational support, formalisation, and organisational culture. Although these topics are addressed quite often in the reviewed papers, their impact on intra-MNC knowledge transfers is up to this time not fully explored and captured. Focusing on IKT, there is no research on the influence of MNCs' knowledge resources and performance in these processes. Moreover, even though there are studies about the impact of RKT on MNCs' financial and

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business performances, there are no studies in the reverse direction, that is, to what extent MNCs' performance enhances (or not) RKT.

Intra-MNC knowledge transfers literature acknowledges the importance of knowledge characteristics, as this research category is addressed in 62.5% (i.e., 45 out of 72) of the studies. The characteristics of knowledge examined in the revised papers are as follows: (1) type; (2) tacitness; (3) explicitness; (4) quantity or amount; (5) value; (6) relevance; (7) complexity; (8) specificity or specialisation; (9) timing or novelty; (10) embeddedness or stickiness; and (11) codification. Among the 11 topics, the type of knowledge is arguably the most popular, being mentioned in 60.00% (i.e., 27 out of 45) of the articles. Hence, this topic is explored about three times more than the second most studied topic in this category, which is a significant difference. Because of this, one can infer that knowledge types have already been investigated in depth, so future research should concentrate on less explored topics such as relevance, complexity, specificity, timing, embeddedness, and codification. With respect to IKT papers, only three (out of 11) characteristics of knowledge — namely type, explicitness, and tacitness — have been explored, so there are many opportunities in this area. There is also no article that investigates the embeddedness of knowledge in HKT literature.

The characteristics of individuals taking part in knowledge transfer processes were one of the least explored research categories. This finding is predictable, taking into account that three (out of four) knowledge transfer types are inter-unit transfers (i.e., HKT, CKT, and RKT), and only one is inside a single unit (i.e., IKT). So, it is natural that organisational factors play a greater role in HKT, CKT and RKT. Despite this fact, one would expect more research on the category related to people's influence on knowledge transfers to be done in IKT articles, especially on learning styles and capacities. Researchers concentrating on this category studied mainly employees' competences, qualifications, functions, departments, nationalities, career considerations, gender, in addition to their perceptions, feelings and beliefs. The least covered topics were employees' motivation to

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transfer or absorb knowledge, participation or experience in knowledge transfer activities, seniority or hierarchical level, age, learning capacities or styles, and satisfaction. In the literature on HKT, there are many gaps in this area, considering that no article investigates the influence of employees' age, motivation, perceptions, feelings, expectations, beliefs, and levels of hierarchy in these processes. Also, there is no investigation on the impact of employee satisfaction on CKT and RKT, nor on employees' perceptions, feelings, expectations, and beliefs on RKT.

The most astonishing result found on this dissertation was the lack of research on the outcomes of intra-MNC knowledge transfers. Considering that the theory of knowledge transfer supports that this process is only completed when there is a change in the behaviour or performance of the knowledge recipient (Argote & Ingram, 2000), it was expected that most articles would approach this category. Nonetheless, this result may be related to misconceptions about knowledge sharing and knowledge transfer, explained in chapter 2. Yet, this research category is investigated in 29.17% (i.e., 21 out of 72) of the reviewed literature, and there is no study on IKT related to this category. Five intra-MNC knowledge transfer results were acknowledged across the studies, being associated with the improvement or enhancement of the following topics: (1) subsidiaries' financial and/or business performances; (2) MNCs' financial and/or business performances; (3) HQs' financial and/or business performances; (4) knowledge bases and innovativeness; and (5) market responsiveness and NPD. As a consequence, there are countless opportunities for future investigation in this category, taking into account the small number of recognised results and also owing that these topics are often superficially explained in the literature, specifically in terms of increases in organisational units' knowledge resources and innovativeness.

Finally, the research category least explored in the intra-MNC knowledge transfer literature is related to HQs characteristics, being only mentioned in 19 (out of 72) studies. There is no literature in IKT addressing this category and the five articles on HKT that approach this area examine simultaneously other knowledge

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transfers. For this reason, one can assume that this research category is more pertinent in VKT literature, particularly on CKT — a result that was verified in this SLR. Among the main HQs factors that influence intra-MNC knowledge transfers are: absorptive capacity; knowledge resources; size; power or control; disseminative capacity; multinationality; performance; technological infrastructure; and willingness to participate in knowledge transfer activities. There remain clear gaps in this category in terms of the drivers of HQs' capacities, motivation and willingness to create, disseminate, and transfer knowledge to subsidiaries, bearing in mind that these topics are fundamental to understand wholly the VKT phenomenon.

5.2. Conclusions

After discussing and reflecting on the results found, conclusions are drawn on the main contributions of this dissertation. In this respect, it is underlined the role of this SLR for the advancement and development of the theory on intra-MNC knowledge transfers. Likewise, it is unveiled how the results of this dissertation could become practical ideas for managers to develop knowledge transfer processes in MNCs. Along with that, suggestions are made for researchers who decide to investigate this research theme in the future and who wish to fill in gaps found in the literature. Finally, main limitations of this dissertation are mentioned.

5.2.1. Theoretical contributions

This SLR contributes to the literature, owing that it presents what is known about intra-MNC knowledge transfers. The most significant contribution of this SLR was the mapping and synthesising of existing literature on this field, which allowed to discover the most studied categories and topics. In this way, this dissertation conduces to a better understanding of the multifaceted perspectives surrounding this phenomenon, covering eight distinct categories and 97 topics.

This dissertation took a different method from that of previous literature reviews. Thereby, to the best of my knowledge, this is the first literature review on intra-MNC knowledge transfers that compares and discusses the factors that influence four different internal knowledge transfers (IKT, HKT, CKT and RKT) across the eight thematic categories recognised. For example, Michailova & Mustaffa (2012)

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considered only four research categories and three knowledge transfer types, and did not conduct a separate discussion about the implications of each research category by the different knowledge transfers. Moreover, this SLR also provides a complete list of the diverse categories and topics found in IKT, HKT, CKT, and RKT papers. The identification of core theories used as a foundation in the reviewed articles is also a contribution to future research in the area.

5.2.2. Managerial contributions

In the first place, this SLR helps managers to comprehend in a structured way the various processes of knowledge transfers taking place in MNCs. It also shows the central importance of subsidiaries in MNCs — as the main knowledge actors — and the influence that these subunits can have on MNCs' internal and external networks. Moreover, managers can draw various conclusions from this SLR regarding, for example, the factors that most influence each type of knowledge transfer. This SLR highlights strategies that can be implemented by managers to improve intra-MNC knowledge transfers, such as the use of expatriates, the employment of socialisation, integration and coordination mechanisms, as well as the development of appropriate HRMP for each subsidiary.

The application of the mentioned strategies — considering the characteristics of each MNC — is an opportunity to improve organisational performance, knowledge resources and market responsiveness of all units. Likewise, it was found that similarity of practices, frequency of communication and trust can augment internal knowledge transfers, thus managers must work continuously on these areas. Also, apart from intra-organisational influences, managers must pay close attention to the external environment in which subsidiaries operate, in view of the level of economic development, industry characteristics, market changes, national policies, and IPR protection in each country and market.

5.2.3. Recommendations for future research

Overall, the gaps identified in the literature represent promising opportunities for future research. To the best of my knowledge, no literature review has adopted the Pickering & Byrne's (2013) methodology in the intra-MNC knowledge transfer literature, particularly since the present SLR has adopted some ideas from other

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procedures (Denyer & Tranfield, 2009; Tranfield et al., 2003). Therefore, the implementation of this method is a contribution for future reviewers. To deepen the analysis, future literature reviews might study both internal and external knowledge transfers in MNCs, considering other search terms. Besides, it would be advantageous to take in non-English literature, which could help to understand the particularities of language, culture, and geographical space on intra-MNC knowledge transfers.

A major contribution of this dissertation was the identification of the central theoretical perspectives in the literature, which facilitates the process of reviewing relevant literature for next researchers. Given that the influence of external environment factors is one of the core categories within the literature, perspectives like ecology theory should be further investigated. Similarly, perspectives on liability of aging and newness should be kept in mind, owing to the fact that age is one of the most commonly investigated characteristics of subsidiaries.

Furthermore, the geographical localisation and industries most investigated in this research field were revealed, so upcoming studies should concentrate on under-explored countries and industries. Considering that most articles study intra-MNC knowledge transfers between developed countries and developing countries (or just considering developed locations), it would be interesting to investigate the particularities of knowledge transfers between organisational units from developing countries. In addition, future research ought to explore geographical locations that are rarely or never explored, such as South American and African countries. Along with that, in view of the rapid growth of emerging economies, there must be more research in these countries. For example, both Brazil and Indonesia have a company ranked as two of the 500 largest MNCs worldwide, according to Fortune Global 500 list.

Regarding the used methods, there is a great abundance of quantitative studies, so future researchers would better try to implement qualitative methods. Also, the literature is in need of new up-to-date studies that can generate more knowledge

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about intra-MNC knowledge transfers, thereby conceptual papers are in high demand. An utmost important advice for future literature is to try to standardise concepts, specify undoubtedly the type of knowledge transfer under study, and to measure constructs in similar ways to avoid misinterpretations and inconclusive results.

Focusing on research categories, studies on the characteristics of HQs and outcomes of knowledge transfers are scarce, so future investigation should concentrate on these aspects. Equally, the impact of external environment also needs greater attention. In this perspective, upcoming authors could explore other knowledge actors capacities, such as adaptive and responsive capacities of the knowledge receiver, proposed by Parent et al. (2007). Other recommendation for future research that has never been done before, to the best of my knowledge, is examining if the frequency or extent of one type of knowledge transfer leads to improvements on another. In other words, it would be alluring to understand if the fact that subsidiaries transfer much knowledge internally influences knowledge transfers to other subunits.

As has been revealed, size and age are two of the most widespread topics, however, the results in the literature are inconclusive. So, the literature would benefit from the investigation of other topics that may prove to be more significant than subsidiaries' age or size. For example, it might be interesting to explore how the experience of these subunits in international business (i.e., multinationality) and in knowledge transfer processes influence their ability to create and transfer knowledge. Together with that, more investigation needs to be done on the role of autonomy, power, dissemination capacity and isolation of subsidiaries on these activities. Although these topics have already been approached in the literature, the results are shortly explored, or dubious, and these variables may be fundamental to better understand the phenomenon under study.

5.2.4. Limitations

Given that transparency is one of the distinguishing characteristics of the SLR method, this dissertation must finish by pointing out its limitations. First, one must

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admit that prior knowledge and research on intra-MNC knowledge transfers, as well as one's beliefs on what is relevant investigation, might influence SLRs (Denyer & Tranfield, 2009). Considering the small number of articles found on IKT, another limitation of this SLR may have been the choice of search key words. To find IKT articles, words such as "internal communication", "innovation" and "subsidiaries" could have been used. Yet, this would most probably lead to a much more exhaustive and complicated process of article selection and appraisal, which could undermine the purpose and results of this dissertation.

When excluding articles, relevant literature may have been eliminated, by strict application of a priori exclusion criteria (Weed, 2008). This may have happened due to the limit of words and fixed structures imposed by journals in the abstract and introduction chapters. A major challenge found in the review of the selected studies was the identification of knowledge transfer directions, considering that different concepts are used in the various articles. For example, some papers mentioned only "knowledge inflows or outflows to other MNC's units," which leaves doubt as to whether it is only HKT and RKT, or whether it also includes CKT. Even so, an effort was made to avoid misunderstandings and whenever any misinterpretation was recognised, the analysis of that article was carried out again.

Another issue was the analysis of results from articles that explored more than one type of knowledge transfer. A separate analysis by each type of transfer should have been conducted, because some investigated variables are different. However, this problem was only identified at a very advanced stage of this SLR. Still, a separate examination would be too extensive and almost impossible to perform as there were authors who did not clearly specify which variables were applied for each knowledge transfer type. Notwithstanding this limitation, an effort was made to explain the strangest results found. Finally, like any method, SLRs have strengths and weaknesses, but within their advantages, one might stress their systematic structure and the reliance of its results. From my perspective, the SLR constitutes an improvement over more narrative reviews, because it is transparent, open and methodical.

REFERENCES

- Academic Journal Guide (2018). Retrieved March 3, 2019, from https://www.researchgate.net/publication/328968684_Academic_Journal_Guide_2018-the_guide_to_academic_journals_for_scholars_working_across_the_diverse_fields_of_Business_and_Management
- Adenfelt, M., & Lagerström, K. (2008). The development and sharing of knowledge by centres of excellence and transnational teams: A conceptual framework. *Management International Review*, 48(3), 319–338. doi:10.1007/s11575-008-0018-8
- Adler, P. S., & Kwon, S.-W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, 27(1), 17–40. doi:10.5465/amr.2002.5922314
- Ai, Q., & Tan, H. (2018). The intra-firm knowledge transfer in the outward M&A of EMNCs: Evidence from Chinese manufacturing firms. *Asia Pacific Journal of Management*, 35(2), 399–425. doi:10.1007/s10490-017-9518-z
- Alavi, M., & Leidner, D. E. (2001). Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues. *Management Information Systems Quarterly*, 25(1), 107–136.
- Ambos, T. C., & Ambos, B. (2009). The impact of distance on knowledge transfer effectiveness in multinational corporations. *Journal of International Management*, 15(1), 1–14. doi:10.1016/j.intman.2008.02.002
- Ambos, T. C., Nell, P. C., & Pedersen, T. (2013). Combining stocks and flows of knowledge: The effects of intra-functional and cross-functional complementarity. *Global Strategy Journal*, 3(4), 283–299. doi:10.1111/j.2042-5805.2013.01063.x
- Andersson, U., Forsgren, M., & Holm, U. (2001). Subsidiary embeddedness and competence development in MNCs - A multi-level analysis. *Organization Studies*, 22(6), 1013–1034. doi:10.1177/0170840601226005
- Andersson, U., Forsgren, M., & Holm, U. (2002). The strategic impact of external networks: Subsidiary performance and competence development in the

References

- multinational corporation. *Strategic Management Journal*, 23(11), 979–996. doi:10.1002/smj.267
- Argote, L., & Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behavior and Human Decision Processes*, 82(1), 150–169. doi:10.1006/obhd.2000.2893
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. doi:10.1177/014920639101700108
- Barney, J. B., & Wright, P. M. (1998). On becoming a strategic partner: The role of human resources in gaining competitive advantage. *Human Resource Management*, 37(1), 31–46. doi:10.1002/(SICI)1099-050X(199821)37:1<31::AID-HRM4>3.0.CO;2-W
- Berry, H. (2017). Managing valuable knowledge in weak IP protection countries. *Journal of International Business Studies*, 48(7), 787–807. doi:10.1057/s41267-017-0072-1
- Björkman, I., Barner-Rasmussen, W., & Li, L. (2004). Managing knowledge transfer in MNCs: the impact of headquarters control mechanisms. *Journal of International Business Studies*, 35(5), 443–455. doi:10.1057/palgrave.jibs.8400094
- Blomkvist, K. (2012). Knowledge management in MNCs: The importance of subsidiary transfer performance. *Journal of Knowledge Management*, 16(6), 904–918. doi:10.1108/13673271211276182
- Briner, R. B., & Denyer, D. (2012). Systematic review and evidence synthesis as a practice and scholarship tool. In D. M. Rosseau (Ed.), *The Oxford handbook of evidence-based management: Companies, classrooms and research* (pp. 112–129). New York, USA: Oxford University Press. doi:10.1093/oxfordhb/9780199763986.013.0007
- Britten, N., Campbell, R., Pope, C., Donovan, J., Morgan, M., & Pill, R. (2002). Using meta ethnography to synthesis qualitative research. *Journal of Health Services Research and Policy*, 7(4), 209–215.
- Buckley, P. J., & Casson, M. C. (2009). The internalisation theory of the multinational enterprise: A review of the progress of a research agenda after

References

- 30 years. *Journal of International Business Studies*, 40(9), 1563–1580. doi:10.1057/jibs.2009.49
- Burt, R. S. (1997). The contingent value of social capital. *Administrative Science Quarterly*, 42(2), 339–365.
- Butler, T., Heavin, C., & O'Donovan, F. (2007). A theoretical model and framework for understanding knowledge management system implementation. *Journal of Organizational and End User Computing*, 19(4), 1–21. doi:10.4018/joeuc.2007100101
- Chang, Y., & Smale, A. (2013). Expatriate characteristics and the stickiness of HRM knowledge transfers. *The International Journal of Human Resource Management*, 24(12), 2394–2410. doi:10.1080/09585192.2013.781436
- Choi, S., & Johanson, J. (2012). Knowledge translation through expatriates in international knowledge transfer. *International Business Review*, 21(6), 1148–1157. doi:10.1016/j.ibusrev.2012.01.002
- Ciabuschi, F., Kong, L., & Su, C. (2017). Knowledge sourcing from advanced markets subsidiaries: Political embeddedness and reverse knowledge transfer barriers in emerging-market multinationals. *Industrial and Corporate Change*, 26(2), 311–332 doi:10.1093/icc/dtx001
- Claver-Cortés, E., Zaragoza-Sáez, P., Úbeda-García, M., Marco-Lajara, B., & García-Lillo, F. (2018). Strategic knowledge management in subsidiaries and MNC performance. The role of the relational context. *Journal of Knowledge Management*, 22(5), 1153–1175. doi:10.1108/jkm-07-2017-0305
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1990), 128–152. doi:10.2307/2393553
- Conner, K. R., & Prahalad, C. K. (1996). A resource-based theory of the firm: Knowledge versus opportunism. *Organization Science*, 7(5), 477–501. doi:10.1287/orsc.7.5.477
- Crespo, C. F., Griffith, D. A., & Lages, L. F. (2014). The performance effects of vertical and horizontal subsidiary knowledge outflows in multinational corporations. *International Business Review*, 23(5), 993–1007.

- doi:10.1016/j.ibusrev.2014.03.002
- Dasí, À., Pedersen, T., Gooderham, P. N., Elter, F., & Hildrum, J. (2017). The effect of organizational separation on individuals' knowledge sharing in MNCs. *Journal of World Business*, 52(3), 431–446. doi:10.1016/j.jwb.2017.01.008
- Dangayach, Y., & Gupta, A. (2018). Four Asian dragons – Evolution and their growth. *International Journal of Advance Research and Development*, 3(1), 158–162.
- Davenport, T. H., & Prusak, L. (1998). Working with knowledge: How organizations manage what they know. *Harvard Business School Press*, (January), 1–15. doi:10.1145/348772.348775
- Demarest, M. (1997). Understanding knowledge management. *Long Range Planning*, 30(3), 374–384. doi:10.1016/s0024-6301(97)90250-8
- Denyer, D., & Tranfield, D. (2009). Producing a systematic review. In A. Buchanan & A. Bryman (Eds.), *The Sage handbook of organizational research methods* (pp. 671–689). Thousand Oaks, The United States of America: Sage Publications.
- Driffield, N., Love, J. H., & Yang, Y. (2016). Location and reverse international knowledge transfer in the MNE: (Where) does affiliate performance boost parent performance? *Research Policy*, 45(2), 491–506. doi:10.1016/j.respol.2015.11.04
- Fang, Y., Wade, M., Delios, A., & Beamish, P. W. (2013). An exploration of multinational enterprise knowledge resources and foreign subsidiary performance. *Journal of World Business*, 48(1), 30–38. doi:10.1016/j.jwb.2012.06.004
- Fortune Global 500 (2018). Retrieved May 2, 2019, from <http://fortune.com/global500/>
- Fu, X., Sun, Z., & Ghauri, P. N. (2018). Reverse knowledge acquisition in emerging market MNEs: The experiences of Huawei and ZTE. *Journal of Business Research*, 93, 202–215. doi:10.1016/j.jbusres.2018.04.022
- Ghoshal, S., & Bartlett, C. A. (1990). The multinational corporation as an interorganizational network. *Academy of Management Review*, 15(4), 603–

626. doi:10.5465/amr.1990.4310825
- Gonzalez, J. A., & Chakraborty, S. (2014). Expatriate knowledge utilization and MNE performance: A multilevel framework. *Human Resource Management Review*, 24(4), 299–312. doi:10.1016/j.hrmr.2014.03.001
- Gooderham, P., Minbaeva, D. B., & Pedersen, T. (2011). Governance mechanisms for the promotion of social capital for knowledge transfer in multinational corporations. *Journal of Management Studies*, 48(1), 123–150. doi:10.1111/j.1467-6486.2009.00910.x
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(Winter Special Issue), 109–122. doi:10.1002/smj.4250171110
- Gupta, A. K., & Govindarajan, V. (1991). Knowledge flows and the structure of control within multinational corporations. *The Academy of Management Review*, 16(4), 768. doi:10.2307/258980
- Gupta, A. K., & Govindarajan, V. (2000). Knowledge flows within multinational corporations. *Strategic Management Journal*, 21(4), 473–496. doi:10.1002/(sici)1097-0266(200004)21:4<473::AID-SMJ84>3.0.CO;2-I
- Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*, 44(1), 82–111. doi:10.2307/2667032
- Hansen, M. T., Nohria, N., & Tierney, T. (1999). What's your strategy for managing knowledge? *Harvard Business Review*, 77(2), 106–116.
- Harzing, A.-W., Pudelko, M., & Sebastian Reiche, B. (2015). The Bridging Role of Expatriates and Inpatriates in Knowledge Transfer in Multinational Corporations. *Human Resource Management*, 55(4), 679–695. doi:10.1002/hrm.21681
- Hedlund, G. (1994). A model of knowledge management and the N-form corporation. *Strategic Management Journal*, 15(S2), 73–90. doi:10.1002/smj.4250151006
- Hill, C. W. L. (2011). *International business: Competing in the global marketplace* (8th ed). New York, The United States of America: McGraw-Hill Irwin.

References

- Hirschheim, R. (2008). Some guidelines for the critical reviewing of conceptual papers. *Journal of the Association for Information Systems*, 9(8), 432–441.
- Hitt, M. A., Keats, B. W., & DeMarie, S. M. (2011). Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century. *Academy of Management Perspectives*, 12(4), 22–42. doi:10.5465/ame.1998.1333922
- Hoffman, J. J., Hoelscher, M. L., & Sherif, K. (2005). Social capital, knowledge management, and sustained superior performance. *Journal of Knowledge Management*, 9(3), 93–100. doi:10.1108/13673270510602791
- Hofstede, G. (1980). *Cultures consequences: international differences in work-related value*. Beverly Hills, The United States of America: Sage Publications.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks, The United States of America: Sage Publications.
- Hong, J. F. L., & Nguyen, T. V. (2009). Knowledge embeddedness and the transfer mechanisms in multinational corporations. *Journal of World Business*, 44(4), 347–356. doi:10.1016/j.jwb.2009.01.001
- Human Development Reports (2017). Retrieved March 27, 2019, from <http://hdr.undp.org/en/composite/HDI>
- Jasimuddin, S. M., Li, J., & Perdakis, N. (2015). Linkage between geographic space and knowledge transfer by multinational enterprises: A structural equation approach. *The Annals of Regional Science*, 54(3), 769–795. doi:10.1007/s00168-015-0684-y
- Jensen, N. M. (2008). *Nation-States and the multinational corporation: A political economy of foreign direct investment*. Princeton, The United States of America: Princeton University Press.
- Jensen, R., & Szulanski, G. (2004). Stickiness and the adaptation of organizational practices in cross-border knowledge transfers. *Journal of International Business Studies*, 35(6), 508–523. doi:10.1057/palgrave.jibs.8400107
- Jiménez-Jiménez, D., Martínez-Costa, M., & Sanz-Valle, R. (2014). Knowledge management practices for innovation: A multinational corporation's

References

- perspective. *Journal of Knowledge Management*, 18(5), 905–918. doi:10.1108/jkm-06-2014-0242
- Joia, L. A., & Lemos, B. (2010). Relevant factors for tacit knowledge transfer within organisations. *Journal of Knowledge Management*, 14(3), 410–427. doi:10.1108/13673271011050139
- Kang, J., Rhee, M., & Kang, K. H. (2010). Revisiting knowledge transfer: Effects of knowledge characteristics on organizational effort for knowledge transfer. *Expert Systems With Applications*, 37(12), 8155–8160. doi:10.1016/j.eswa.2010.05.072
- Kang, J., & Lee, J. Y. (2017). Performance effects of explorative and exploitative knowledge sharing within Korean chaebol MNEs in China. *International Journal of Technology Management*, 74(1-2-3-4), 70–95. doi:10.1504/ijtm.2017.083601
- Kogut, B., & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19(3), 411–432.
- Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3(S2), 383–397. doi:10.1287/orsc.3.3.383
- Kogut, B., & Zander, U. (1993). Knowledge of the firm and the evolutionary theory of the multinational corporation. *Journal of International Business Studies*, 24(4), 625–645. doi:10.1057/palgrave.jibs.8490248
- Kogut, B., & Zander, U. (1996). What firms do? Coordination, identity, and learning. *Organization Science*, 7(5), 502–518. doi:10.1287/orsc.7.5.502
- Kogut, C. S., & de Mello, R. C. (2017). Reverse knowledge transfer in multinational companies: A systematic literature review. *Brazilian Administration Review*, 14(1), 1–25. doi:10.1590/1807-7692bar2017160097
- Kong, L., Ciabuschi, F., & Martín, O. M. (2018). Expatriate managers' relationships and reverse knowledge transfer within emerging market MNCs: The mediating role of subsidiary willingness. *Journal of Business Research*, 93(C), 216–229. doi:10.1016/j.jbusres.2018.05.045
- Laszlo, K. C., & Laszlo, A. (2002). Evolving knowledge for development: The role

References

- of knowledge management in a changing world. *Journal of Knowledge Management*, 6(4), 400–412. doi:10.1108/13673270210440893
- Lazarova, M., & Tarique, I. (2005). Knowledge transfer upon repatriation. *Journal of World Business*, 40(4), 361–373. doi:10.1016/j.jwb.2005.08.004
- Lee, R. P., Chen, Q., Kim, D., & Johnson, J. L. (2008). Knowledge transfer between multinational corporations' headquarters and their subsidiaries: Influences on and implications for new product outcomes. *Journal of International Marketing*, 16(2), 1–31. doi:10.1509/jimk.16.2.1
- Lee, R. P., Tang, X., & Guo, X. (2013). Enhancing market responsiveness through knowledge transfer and knowledge codification: Evidence from foreign subsidiaries in China. *Advances in International Marketing*, 24(1), 3–23. doi:10.1108/S1474-7979(2013)0000024005
- Leseure, M. J., Bauer, J., Birdi, K., Neely, A., & Denyer, D. (2004). Adoption of promising practices: A systematic review of the evidence. *International Journal of Management Reviews*, 5–6(3–4), 169–190. doi:10.1111/j.1460-8545.2004.00102.x
- Li, J., & Lee, R. P. (2015). Can knowledge transfer within MNCs hurt subsidiary performance? The role of subsidiary entrepreneurial culture and capabilities. *Journal of World Business*, 50(4), 663–673. doi:10.1016/j.jwb.2014.09.004
- Li, L. (2008). A review of entrepreneurship research published in the hospitality and tourism management journals. *Tourism Management*, 29(5), 1013–1022. doi:10.1016/j.tourman.2008.01.003
- Li, L., Barner-Rasmussen, W., & Björkman, I. (2007). What difference does the location make?: A social capital perspective on transfer of knowledge from multinational corporation subsidiaries located in China and Finland. *Asia Pacific Business Review*, 13(2), 233–249. doi:10.1080/13602380601133185
- Liyanage, C., Elhag, T., Ballal, T., & Li, Q. (2009). Knowledge communication and translation - A knowledge transfer model. *Journal of Knowledge Management*, 13(3), 118–131. doi:10.1108/13673270910962914
- Mahnke, V., Pedersen, T., & Venzin, M. (2009). Does knowledge sharing pay? A multinational subsidiary perspective on knowledge outflows. In *Advances in*

References

- International Management* (Vol. 22, pp. 123–149). Elsevier.
doi:10.1108/S1571-5027(2009)0000022010
- Mäkelä, K., Andersson, U., & Seppälä, T. (2012). Interpersonal similarity and knowledge sharing within multinational organizations. *International Business Review*, 21, 439–451. doi:10.1016/j.ibusrev.2011.05.003
- Mäkelä, K., & Brewster, C. (2009). Interunit interaction contexts, interpersonal social capital, and the differing levels of knowledge sharing. *Human Resource Management*, 48(4), 591–613. doi:10.1002/hrm.20300
- McGuinness, M., Demirbag, M., & Bandara, S. (2013). Towards a multi-perspective model of reverse knowledge transfer in multinational enterprises: A case study of Coats plc. *European Management Journal*, 31(2), 179–195. doi:10.1016/j.emj.2012.03.013
- Miao, Y., Choe, S., & Song, J. (2011). Transferring subsidiary knowledge in the global learning context. *Journal of Knowledge Management*, 15(3), 478–496. doi:10.1108/13673271111137448
- Michailova, S., & Minbaeva, D. B. (2012). Organizational values and knowledge sharing in multinational corporations: The Danisco case. *International Business Review*, 21(1), 59–70. doi:10.1016/j.ibusrev.2010.11.006
- Michailova, S., & Mustafa, Z. (2012). Subsidiary knowledge flows in multinational corporations: Research accomplishments, gaps, and opportunities. *Journal of World Business*, 47(3), 383–396. doi:10.1016/j.jwb.2011.05.006
- Minbaeva, D. B., Mäkelä, K., & Rabbiosi, L. (2012). Linking HRM and knowledge transfer via individual-level mechanisms. *Human Resource Management*, 51(3), 387–405. doi:10.1002/hrm
- Minbaeva, D., Pedersen, T., Björkman, I., Fey, C. F., & Park, H. J. (2014). MNC knowledge transfer, subsidiary absorptive capacity and HRM. *Journal of International Business Studies*, 45(1), 38–51. doi:10.1057/jibs.2013.43
- Montazemi, A. R., Pittaway, J. J., Saremi, H. Q., & Wei, Y. (2012). Factors of stickiness in transfers of know-how between MNC units. *Journal of Strategic Information Systems*, 21(1), 31–57. doi:10.1016/j.jsis.2012.01.001
- Monteiro, L. F., Arvidsson, N., & Birkinshaw, J. (2008). Knowledge flows within

References

- multinational corporations: Explaining subsidiary isolation and its performance implications. *Organization Science*, 19(1), 90–107. doi:10.1287/orsc.1070.0264
- Mudambi, R., Piscitello, L., & Rabbiosi, L. (2014). Reverse knowledge transfer in MNEs: Subsidiary innovativeness and entry modes. *Long Range Planning*, 47(1–2), 49–63. doi:10.1016/j.lrp.2013.08.013
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242–266. doi:10.5465/amr.1998.533225
- Nair, S. R., Demirbag, M., & Mellahi, K. (2016). Reverse knowledge transfer in emerging market multinationals: The Indian context. *International Business Review*, 25(1), 152–164. doi:10.1016/j.ibusrev.2015.02.011
- Najafi-Tavani, Z., Giroud, A., & Sinkovics, R. R. (2012). Mediating effects in reverse knowledge transfer processes: The case of knowledge-intensive services in the U.K. *Management International Review*, 52(3), 461–488. doi:10.1007/s11575-011-0097-9
- Najafi-Tavani, Z., Robson, M. J., Zaefarian, G., Andersson, U., & Yu, C. (2018). Building subsidiary local responsiveness: (When) does the directionality of intrafirm knowledge transfers matter? *Journal of World Business*, 53(4), 475–492. doi:10.1016/j.jwb.2018.01.004
- Najafi-Tavani, Z., Zaefarian, G., Naudé, P., & Giroud, A. (2015). Reverse knowledge transfer and subsidiary power. *Industrial Marketing Management*, 48, 103–110. doi:10.1016/j.indmarman.2015.03.021
- Nielsen, B. B., & Ciabuschi, F. (2003). Siemens ShareNet: Knowledge management in practice. *Business Strategy Review*, 14(2), 33–40. doi:10.1111/1467-8616.00257
- Nielsen, B. B., & Michailova, S. (2004). *Toward a phase-model of global knowledge management systems in multinational corporations*. CKG Working paper. Copenhagen, Denmark.
- Nielsen, B. B., & Michailova, S. (2007). Knowledge management systems in multinational corporations: Typology and transitional dynamics. *Long Range*

- Planning*, 40(3), 314–340. doi:10.1016/j.lrp.2007.04.005
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14–37. doi:10.1287/orsc.5.1.14
- Nonaka, I. (2007). The knowledge-creating company. *Harvard Business Review*, (July-August).
- Nonaka, I., & Konno, N. (1998). The concept of “Ba”: Building a foundation for knowledge creation. *California Management Review*. doi:10.1016/j.otsr.2010.03.008
- Noorderhaven, N., & Harzing, A.-W. (2009). Knowledge-sharing and social interaction within MNEs. *Journal of International Business Studies*, 40(5), 719–741. doi:10.1057/jibs.2008.106
- O, G. G.-H., Gold, S., Moon, J., & Chapple, W. (2016). *Transfer of social and environmental accounting and reporting knowledge: Subsidiary absorptive capacity and organisational mechanisms*. (T. C. Ambos, B. Ambos, & J. Birkinshaw, Eds.), *Research in Global Strategic Management* (Vol. 17). Emerald Group Publishing Limited. doi:10.1108/S1064-485720160000017014
- Oh, K. S., & Anchor, J. (2017). Factors affecting reverse knowledge transfer from subsidiaries to multinational companies: Focusing on the transference of local market information. *Canadian Journal of Administrative Sciences*, 34(4), 329–342. doi:10.1002/cjas.1440
- Omerzel, D. G., & Gulev, R. E. (2011). Knowledge resources and competitive advantage. *Managing Global Transitions*, 9(4), 335–354.
- Osterloh, M., & Frey, B. S. (2000). Motivation, knowledge transfer, organizational forms. *Organization Science*, 11(5), 538–550. doi:10.1007/s00104-010-2024-1
- Parent, R., Roy, M., & St-Jacques, D. (2007). A systems-based dynamic knowledge transfer capacity model. *Journal of Knowledge Management*, 11(6), 81–93. doi:10.1108/13673270710832181
- Peltokorpi, V. (2017). Absorptive capacity in foreign subsidiaries: The effects of language-sensitive recruitment, language training, and interunit knowledge transfer. *International Business Review*, 26(1), 119–129.

doi:10.1016/j.ibusrev.2016.05.010

- Peltokorpi, V., & Yamao, S. (2017). Corporate language proficiency in reverse knowledge transfer: A moderated mediation model of shared vision and communication frequency. *Journal of World Business*, 52(3), 404–416. doi:10.1016/j.jwb.2017.01.004
- Peng, Z., Qin, C., Chen, R. R., Cannice, M. V., & Yang, X. (2016). Towards a framework of reverse knowledge transfer by emerging economy multinationals: Evidence from Chinese MNE subsidiaries in the United States. *Thunderbird International Business Review*, 59(3), 349–366. doi:10.1002/tie.21845
- Persson, M. (2006). The impact of operational structure, lateral integrative mechanisms and control mechanisms on intra-MNE knowledge transfer. *International Business Review*, 15(5), 547–569. doi:10.1016/j.ibusrev.2006.06.001
- Petticrew, M. (2001). Systematic reviews from astronomy to zoology: Myths and misconceptions. *The British Medical Journal*, 322(7278), 98–101. doi:10.1136/bmj.322.7278.98
- Petticrew, M., & Roberts, H. (2006). *Systematic reviews in the social sciences: A practical guide*. Oxford, England: Blackwell Publishing.
- Pickering, C., & Byrne, J. (2013). The benefits of publishing systematic quantitative literature reviews for PhD candidates and other early-career researchers. *Higher Education Research and Development*, 33(3), 534–548. doi:10.1080/07294360.2013.841651
- Pickering, C., Grignon, J., Steven, R., Guitart, D., & Byrne, J. (2014). Publishing not perishing: how research students transition from novice to knowledgeable using systematic quantitative literature reviews. *Studies in Higher Education*, 40(10), 1756–1769. doi:10.1080/03075079.2014.914907
- Podsakoff, P. M., Mackenzie, S. B., Bachrach, D. G., & Podsakoff, N. P. (2005). The influence of management journals in the 1980s and 1990s. *Strategic Management Journal*, 26(5), 473–488. doi:10.1002/smj.454
- Qin, C., Wang, Y., & Ramburuth, P. (2016). The impact of knowledge transfer on

References

- MNC subsidiary performance: Does cultural distance matter? *Knowledge Management Research and Practice*, 15(1), 1–12. doi:10.1057/kmrp.2015.24
- Rabbiosi, L. (2011). Subsidiary roles and reverse knowledge transfer: An investigation of the effects of coordination mechanisms. *Journal of International Management*, 17(2), 97–113. doi:10.1016/j.intman.2010.10.001
- Rabbiosi, L., & Santangelo, G. D. (2013). Parent company benefits from reverse knowledge transfer: The role of the liability of newness in MNEs. *Journal of World Business*, 48(1), 160–170. doi:10.1016/j.jwb.2012.06.016
- Reiche, B. S., Harzing, A.-W., & Pudelko, M. (2015). Why and how does shared language affect subsidiary knowledge inflows? A social identity perspective. *Journal of International Business Studies*, 46(5), 528–551. doi:10.1057/jibs.2015.3
- Ribau, C. P., Moreira, A. C., & Raposo, M. (2018). SME internationalization research: Mapping the state of the art. *Canadian Journal of Administrative Sciences*, 35(2), 280–303. doi:10.1002/cjas.1419
- Rollett, H. (2003). *Knowledge management: Processes and technologies*. New York, The United States of America: Springer Science+Business Media.
- Rousseau, D. M., Manning, J., & Denyer, D. (2008). Evidence in management and organizational science: Assembling the field's full weight of scientific knowledge through syntheses. *The Academy of Management Annals*, 2(1), 475–515. doi:10.1080/19416520802211651
- Rousseau, R. (2015). What is meant by emerging countries?. Retrieved May 9, 2019, from <https://www.diplomaticcourier.com/posts/what-is-meant-by-emerging-countries>
- Rugman, A. M., Collinson, S., & Hodgetts, R. M. (2006). *International business* (4th ed). Essex, England: Pearson Education.
- Rugman, A. M., & Verbeke, A. (2001). Subsidiary-specific advantages in multinational enterprises. *Strategic Management Journal*, 22(3), 237–250. doi:10.1002/smj.153
- Rugman, A. M., & Verbeke, A. (2004). A perspective on regional and global strategies of multinational enterprises. *Journal of International Business*

References

- Studies*, 35(1), 3–18. doi:10.1057/palgrave.jibs.8400073
- Schlegelmilch, B. B., & Chini, T. C. (2003). Knowledge transfer between marketing functions in multinational companies: A conceptual model. *International Business Review*, 12(2), 215–232. doi:10.1016/S0969-5931(02)00097-5
- Schleimer, S. C., & Pedersen, T. (2014). The effects of MNC parent effort and social structure on subsidiary absorptive capacity. *Journal of International Business Studies*, 45(3), 303–320. doi:10.1057/jibs.2013.65
- Schulz, M. (2003). Pathways of relevance: Exploring inflows of knowledge into subunits of multinational corporations. *Organization Science*, 14(4), 440–459. doi:10.1287/orsc.14.4.440.17483
- Smale, A. (2008). Global HRM integration: A knowledge transfer perspective. *Personnel Review*, 37(2), 145–164. doi:10.1108/00483480810850515
- Spender, J.-C. (1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal*, 17(Winter Special Issue), 45–62. doi:10.1002/smj.4250171106
- Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal*, 17(Winter Special Issue), 27–43. doi:10.1002/smj.4250171105
- Szulanski, G. (2000). The process of knowledge transfer: A diachronic analysis of stickiness. *Organizational Behavior and Human Decision Processes*, 82(1), 9–27. doi:10.1006/obhd.2000.2884
- Tahai, A., & Meyer, M. J. (1999). A revealed preference study of management journals' direct influences. *Strategic Management Journal*, 20(3), 279–296. doi:10.1002/(sici)1097-0266(199903)20:3<279::AID-SMJ33>3.0.CO;2-2
- Tangaraja, G., Rasdi, R. M., Samah, B. A., & Ismail, M. (2016). Knowledge sharing is knowledge transfer: A misconception in the literature. *Journal of Knowledge Management*, 20(4), 653–670. doi:10.1108/jkm-11-2015-0427
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Tippmann, E., Sharkey, P. S., & Mangematin, V. (2014). Subsidiary managers' knowledge mobilizations: Unpacking emergent knowledge flows. *Journal of*

References

- World Business*, 49(3), 431–443. doi:10.1016/j.jwb.2013.09.001
- GDP per capital (current US\$). Retrieved March 27, 2019, from https://data.worldbank.org/indicator/ny.gdp.pcap.cd?year_high_desc=false
- Tran, Y., Mahnke, V., & Ambos, B. (2010). The effect of quantity, quality and timing of headquarters-initiated knowledge flows on subsidiary performance. *Management International Review*, 50(4), 493–511. doi:10.1007/s11575-010-0046-z
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207–222. doi:10.1111/1467-8551.00375
- Tsai, W. (2001). Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance. *The Academy of Management Journal*, 44(5), 996–1004. doi:10.2307/3069443
- Tseng, C.-H. (2015). Determinants of MNC's knowledge inflows to subsidiaries: A perspective on internalization advantages. *Management International Review*, 55(1), 119–150. doi:10.1007/s11575-014-0230-7
- Voelpel, S. C., & Han, Z. (2005). Managing knowledge sharing in China: the case of Siemens ShareNet. *Journal of Knowledge Management*, 9(3), 51–63. doi:10.1108/13673270510602764
- Wang, P., Tong, T. W., & Koh, C. P. (2004). An integrated model of knowledge transfer from MNC parent to China subsidiary. *Journal of World Business*, 39(2), 168–182. doi:10.1016/j.jwb.2003.08.009
- Wang, S., Tong, T. W., Chen, G., & Kim, H. (2009). Expatriate utilization and foreign direct investment performance: The mediating role of knowledge transfer. *Journal of Management*, 35(5), 1181–1206. doi:10.1177/0149206308328511
- Weed, M. (2008). A potential method for the interpretive synthesis of qualitative research: Issues in the development of “meta-interpretation.” *International Journal of Social Research Methodology*, 11(1), 13–28.

doi:10.1080/13645570701401222

- Werner, S. (2002). Recent developments in international management research: A review of 20 top management journals. *Journal of Management*, 28(3), 277–305. doi:10.1177/014920630202800303
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180. doi:10.1002/smj.4250050207
- Wiig, K. M. (1993). *Knowledge management foundations: Thinking about thinking - How people and organizations represent, create, and use knowledge*. Texas, The United States of America: Schema Press.
- Williams, C., & Lee, S. H. (2016). Knowledge flows in the emerging market MNC: The role of subsidiary HRM practices in Korean MNCs. *International Business Review*, 25(1), 233–243. doi:10.1016/j.ibusrev.2014.08.011
- Winkler, J. (2017). The 4 Asian tigers economy growth. Retrieved May 26, 2019, from <https://www.docurex.com/en/four-4-asian-tigers-economy-growth/>
- Yamao, S., Cieri, H. de, & Hutchings, K. (2009). Transferring subsidiary knowledge to global headquarters: Subsidiary senior executives' perceptions of the role of HR configurations in the development of knowledge stocks. *Human Resource Development Review*, 48(4), 531–554. doi:10.1002/hrm.20297
- Yang, Q., Mudambi, R., & Meyer, K. E. (2008). Conventional and reverse knowledge flows in multinational corporations. *Journal of Management*, 34(5), 882–902. doi:10.1177/0149206308321546
- Zander, U. (1991). *Exploiting a technological edge - Voluntary and involuntary dissemination of technology*. Institute of International Business, Stockholm, Sweden.
- Zeng, R., Grøgaard, B., & Steel, P. (2018). Complements or substitutes? A meta-analysis of the role of integration mechanisms for knowledge transfer in the MNE network. *Journal of World Business*, 53(4), 415–432. doi:10.1016/j.jwb.2018.02.001
- Zimmermann, A., & Ravishankar, M. N. (2014). Knowledge transfer in IT offshoring relationships: The roles of social capital, efficacy and outcome

References

expectations. *Information Systems Journal*, 24(2), 167–202.
doi:10.1111/isj.12027

APPENDIXES

A. Articles appraisal criteria

A.1. Exclusion criteria

These were the chosen criteria to exclude articles as explained in chapter 3.2 (Study selection and evaluation).

No.	Criteria	Reason for exclusion
1	Other research topic	Study is not related to knowledge transfers
2	Not on a MNC	Study is not conducted on a MNC or this is not explicitly mentioned
3	External knowledge	Study is about knowledge flows to/from suppliers, customer, partners, or within clusters
4	Similar authors and theme	Older articles of similar authors on similar topics are eliminated

A.2. Inclusion criteria

All selected articles must follow these inclusion criteria, as stated on chapter 3.2. (Study selection and evaluation).

No.	Criteria	Reason for inclusion
1	Intra-MNC knowledge transfer	Study clearly explores VKT, HKT or KT at an individual level inside MNCs
2	Knowledge transfer definition	Study defines knowledge transfer or sharing as a process with expected outcomes
3	Quality	Does it clearly state the problem being investigated? Does it describe what the author hoped to achieve accurately? Is it clear how this is being challenged or built upon? Have authors provided a summary of the current research literature to provide context?

A.3. Quality checklists

Quality checklists using reviewer guidelines from top journals in the field were developed to assess the quality of the articles.

A.3.1. Empirical articles and meta-analysis

As mentioned before on chapter 3.2 (Study selection and evaluation), this checklist was used to appraise the quality of empirical articles and meta-analysis.

Section	Quality question
Literature review	Is there a well-developed and articulated theoretical framework? Are the hypotheses or research questions clearly formulated? Are they supported by the theory? Is the depth of the literature review satisfactory?
Method	Do the authors accurately explain what type of data was recorded, and how it was collected? Has the author been precise in describing measurements? Does the article explain clearly the followed procedures?
Results	Are results present in a clear, logical and straightforward way?

Section	Quality question
	Are they analysed completely and appropriately? If tables and figures are presented in the results, are they easy to interpret and understand?
Discussion and conclusion	Has the author indicated how the results relate to expectations and to earlier research? Do these sections adequately tie together the other elements of the paper? Does the author explain how the research has added to the body of knowledge?
Contributions	Does the paper identify clearly any implications/contributions for research? Does the paper identify clearly any implications/contributions for practice? Are these implications/contributions consistent with the findings and conclusions of the paper?

Adapted from Emerald and Elsevier reviewer guidelines

A.3.2. Literature reviews and conceptual papers

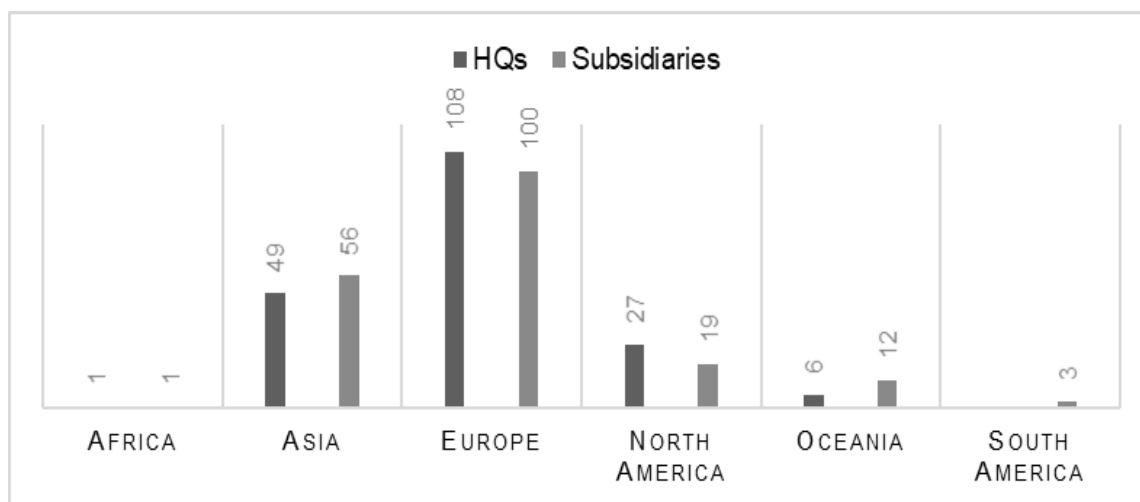
As stated earlier on chapter 3.2 (Study selection and evaluation), this checklist was used to assess the quality of literature reviews and conceptual papers.

Section	Quality question
Literature review	Is there a well-developed and articulated theoretical framework? Is the paper adequately positioned within the context of what has been done before? Is the depth of the literature review satisfactory?
Analysis and results	Is it clear how the authors have handled the data/current research results; and how they have undertaken the analysis? Are results present in a clear, logical and straightforward way? Are the premises and arguments presented explicit enough to be tested by other techniques (analytical or theoretical)? (conceptual paper) OR to be replicated in other reviews? (literature review)
Conclusion and contributions	Does the author explain how the article has added to the body of knowledge? Does the paper identify clearly implications/contributions for future research? Does the paper identify clearly implications/contributions for practice?

Adapted from Emerald and Elsevier reviewer guidelines and Hirschheim (2008)

B. Location of investigated MNCs

This figure represents the continents of studied HQs and subsidiaries.



This is the complete list of HQs and subsidiaries locations from the article database.

Appendixes

HQs	Number of articles	Subsidiaries	Number of articles
USA	24	China	16
France	17	UK	12
Japan	17	USA	12
Germany	14	Finland	10
Sweden	10	Australia	8
Denmark	9	Germany	8
UK	8	Denmark	7
China	7	France	6
Norway	7	Japan	6
Australia	6	Netherland	5
Finland	6	South Korea	5
Italy	6	Spain	5
Singapore	6	Sweden	5
South Korea	6	Canada	4
Netherland	5	Hungary	4
Taiwan	5	India	4
Switzerland	4	Malaysia	4
Belgium	3	New Zealand	4
Hong Kong	3	Norway	4
Austria	2	Thailand	4
Canada	2	Belgium	3
Czech Republic	2	Brazil	3
Ireland	2	Indonesia	3
Malaysia	2	Italy	3
Spain	2	Mexico	3
Estonia	1	Poland	3
Greece	1	Singapore	3
Hungary	1	Turkey	3
Iceland	1	Vietnam	3
India	1	Bangladesh	2
Liechtenstein	1	Czech Republic	2
Lithuania	1	Estonia	2
Luxembourg	1	Ireland	2
Mexico	1	Lithuania	2
Philippines	1	Philippines	2
Poland	1	Portugal	2
Portugal	1	Russia	2
Russia	1	Austria	1
South Africa	1	Greece	1
Thailand	1	Hong Kong	1
Turkey	1	Iceland	1

Appendixes

HQs	Number of articles	Subsidiaries	Number of articles
	191	Latvia	1
		Liechtenstein	1
		Luxembourg	1
		Montenegro	1
		Pakistan	1
		Romania	1
		Serbia	1
		South Africa	1
		Sri Lanka	1
		Switzerland	1
		Taiwan	1