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Review

Mapping Internal Knowledge Transfers in Multinational Corporations

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Abstract: Managing multiple knowledge transfers between headquarters and subsidiaries, among subsidiaries, and also within each of these units is crucial for multinational corporations' (MNCs) survival. Therefore, this article aims to uncover the main factors influencing internal knowledge transfers in MNCs—including intra-unit knowledge transfers and transfers between units, namely, conventional, horizontal, and reverse knowledge transfers. To achieve this goal, a systematic literature review (SLR) was conducted to synthesize the content of 85 articles. From a set of 1439 papers, only 85 related to knowledge transfer and knowledge sharing were considered. Based on an inductive thematic approach, eight different research categories and 97 topics were identified. Four different internal knowledge transfers (intra knowledge transfer (IKT), horizontal knowledge transfer (HKT), conventional knowledge transfer (CKT), and reverse knowledge transfer (RKT)) are compared across eight thematic categories and 97 topics. According to the results obtained, the depth of the topics analyzed varies, as does the variety of categories, with RKT being more deeply analyzed than IKT. There is a clear dominance of vertical knowledge transfer (CKT + RKT) over HKT. The exercise of power (e.g., size, knowledge base) still dominates CKT and RKT in most of the studies analyzed, which are traditionally affected by the characteristics of MNCs, HQs and subsidiaries. The debate on HKT is affected by the classical perspectives of power-based relations (e.g., expatriates, size, knowledge base) among subsidiaries. Although important, intra-unit knowledge transfer is greatly influenced by characteristics.

Keywords: knowledge transfer; internal knowledge; multinational corporations; knowledge management; intra-unit knowledge transfer; conventional knowledge transfer; horizontal knowledge transfer; reverse knowledge transfer; systematic literature review



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1. Introduction

Knowledge is present in all aspects and functions of organizations, being the basis for creating competitive advantages that allow firms to grow and rise above their competitors (Alavi and Leidner 2001; Omerzel and Gulev 2011). 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 organizations (Alavi and Leidner 2001; Kogut and Zander 1992; Rollett 2003). Thereby, to outperform competitors, creating and managing distinctive knowledge is extremely important (Omerzel and Gulev 2011). This is because knowledge, besides being a strategic resource in itself—which is rare, specific, and difficult to imitate or substitute—allows firms to enjoy and better exploit other organizational resources (Spender 1996; Wernerfelt 1984). Knowledge management in organizations encompasses many simultaneous processes, namely, planning, creating, integrating, organizing, transferring, maintaining, and evaluating (Rollett 2003).

Knowledge transfer is a deliberate process of sharing, receiving, and re-creating complex organizational knowledge with expected outcomes occurring between individuals, groups, departments, and companies (Argote and Ingram 2000; Rollett 2003). Knowledge transfer requires the participation of the knowledge sender and the knowledge receiver, as well as positive outcomes (Alavi and Leidner 2001; Liyanage et al. 2009; Tangaraja et al. 2016).

Several expressions and acronyms are used to refer to multinational companies—multinational corporations (MNCs), multinational enterprises (MNEs), multinational firms (MNFs), multinational organizations (MNOs), as well as transnational companies—transnational corporations (TNCs), transnational firms (TNFs), transnational enterprises (TNEs), and transnational organizations (TNOs). For simplicity, the expression MNC will be used here to refer to multinational companies, embracing all the types referred above. In order to make the most of knowledge created internally, MNCs must be able to manage and optimize internal transfers of knowledge (Argote and Ingram 2000; Grant 1996; Kogut and Zander 1992). 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 (HQs), subsidiaries, and local agents. Being in charge of these transfers becomes tremendously demanding, since each organizational unit has its own knowledge creation and transfer capacities and infrastructure. In addition, MNCs have to adapt to different cultural, economic, geographical, linguistic, working, and political contexts in the various countries where they operate (Gupta and Govindarajan 1991; Jensen and Szulanski 2004; Kogut and Zander 1993; Laszlo and Laszlo 2002). Despite the relevance of knowledge generated in MNCs' external environment (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 and Zander 1992, 1993; Li and Lee 2015; Wang et al. 2009).

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 organizations, including individuals, groups, and units. In this connection, knowledge sharing only covers the knowledge personalization process, that is, a 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 do 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 and Leidner 2001; Bencsik et al. 2019; Liyanage et al. 2009; Mura et al. 2021; Tangaraja et al. 2016). In this paper, internal knowledge transfer is going to be analyzed from the MNC perspective, involving the knowledge transfer between groups, departments, and units.

Internal (intra-MNC) knowledge transfers play a critical role, especially across borders, as they are the main contributors to MNCs' enhanced competitiveness and growth (Grant 1996; Kogut and Zander 1992, 1993). If HQs are irreplaceable sources of new knowledge for subsidiaries, possessing valuable resources and capabilities that can be applied by subsidiaries in local markets, subsidiaries can develop specific advantages due to the creation of local and contextualized 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 progress in R&D and new product development (NPD) activities (Qin et al. 2017).

Intra-MNC knowledge transfers have different directions, depending on the receiver and the sender unit. 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 VKT, there are conventional knowledge transfers (CKT), from HQs to subsidiaries, in contrast to reverse knowledge transfers (RKT), from subsidiaries to HQs. When knowledge transfer occurs inside a single unit, it will be referred to here as intra-unit knowledge transfer (IKT).

Although there are reviews of the literature on internal knowledge transfers in MNCs (e.g., [Kogut and de Mello 2017](#); [Michailova and Mustaffa 2012](#); [Smale 2008](#)), this paper is unique, as it addresses a wide range of types of internal knowledge transfers, categories, and topics. Moreover, the results of this review were examined separately for each type of internal knowledge transfer (intra-unit, horizontal, conventional, and reverse knowledge transfers), which, to the best of our knowledge, was not conducted in the previous literature reviews.

The present paper aims to systematically review and synthesize the existing literature about internal knowledge transfer in MNCs, addressing two main questions:

- What are the most frequently studied types of internal knowledge transfers?
- What categories and topics are covered in the literature?

This paper complements the previous literature, as it gives a clear picture of the main drivers/antecedents of knowledge transfer across MNCs. We found eight main categories—characteristics of individuals; of MNCs; of HQs; of subsidiaries; of relationships; of knowledge transferred; of external environment; and of knowledge transfer results—and 97 different topics were identified. Those categories are addressed taking into account the four different types of knowledge transfer referred to above.

The rest of this paper is organized as follows. After this introduction, brief concepts of the literature on internal knowledge transfers in MNCs are presented, highlighting the central role of knowledge and MNCs in the current economy. Section 2 presents the methodology implemented in this systematic literature review (SLR), the criteria used for selection and analysis of the 85 articles are explained, as well as the main results. Section 4 discusses the results. Section 5 presents the main conclusions.

2. Method

SLRs are used in management research (e.g., [Leseure et al. 2004](#)), since they are an efficient way to answer specific research questions and organize empirical results and knowledge about a topic in a new, structured way ([Briner and Denyer 2012](#); [Britten et al. 2002](#); [Denyer and Tranfield 2009](#); [Petticrew 2001](#)). This is a transparent and reliable method that can be replicated and updated ([Paul et al. 2021](#); [Pickering and Byrne 2013](#); [Tranfield et al. 2003](#); [Weed 2008](#)).

This SLR follows the PRISMA protocol ([Balcerzak et al. 2022](#); [Lim and Rasul 2022](#); [Moher et al. 2009](#)), which was originally developed and implemented in healthcare research, with some adaptations from other SLR methods ([Denyer and Tranfield 2009](#); [Tranfield et al. 2003](#)), involving the following stages: formulation of research questions; planning the SLR and creating a review protocol; identifying keywords and search electronic databases; selecting studies; applying inclusion and exclusion criteria; assessing the quality of the studies; structuring papers' databases with key categories; analysing and synthesizing information and results; revising database categories; producing and reviewing summary tables and charts; drafting methods; and evaluating and reporting key results and conclusions. Those stages are summarily presented in the next paragraphs.

Following the research questions presented in the introduction chapter, the systematic search was conducted using ISI Web of Science and Scopus research databases. Two categories of search terms were searched, using all possible combinations of these keyword groups:

- 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*, TNE*, TNF*, TNO*, MNO*.

The search was restricted to journal articles and reviews due to their greater rigor and relevance in the management field and valid knowledge (Podsakoff et al. 2005; Tahai and Meyer 1999). There was no restriction for the discipline or source of publication, in order to capture a wider variety of perspectives (Ribau et al. 2018; Tranfield et al. 2003). Articles until 2020, written in English, were included. On ISI Web of Science, the following indexes were searched: Science Citation Index Expanded and Social Sciences Citation Index. This electronic search resulted in a total of 1972 papers.

An Excel spreadsheet was created, and articles were read and appraised using a list of reasons for exclusion and inclusion (Briner and Denyer 2012; Denyer and Tranfield 2009; Pickering and Byrne 2013; Pickering et al. 2014). First, duplicates and articles that did not present an abstract were removed, resulting in a sample of 1439 papers. Then, titles and abstracts were scrutinized using exclusion criteria. The studies had to be about intra-MNC knowledge transfers. To achieve a greater range of viewpoints, and to reduce author bias, when papers were written by the same authors on a similar subject, only the most recent paper was reviewed, following Leseure et al. (2004). After applying the exclusion criteria, 303 studies were left.

Then, the introduction chapter was read to confirm that the articles complied with the inclusion criteria. First, the introduction must clearly state that the study is related to intra-MNC knowledge transfers. Given the misconceptions in the literature regarding knowledge transfer and knowledge sharing (Liyanage et al. 2009; Tangaraja et al. 2016), only studies that defined knowledge transfer (sharing, exchange, transmission, or flow) as a process with expected outcomes were considered. In many cases, the literature review section was also read to fully comprehend the definition of knowledge transfer. To select high quality articles, guidelines for reviewers, provided by top journals in the research field, were used, following Denyer and Tranfield's (2009) recommendation. These inclusion criteria resulted in 107 articles, the most relevant studies about intra-MNC knowledge transfers.

The articles were read fully and assessed in terms of quality, according to reviewer guidelines. Two different "yes or no" questionnaires were developed, one for empirical articles and meta-analysis, and another for conceptual papers and the literature reviews. To appraise conceptual papers and the literature reviews, the contributions of Hirschheim (2008) were taken into consideration. As such, in order to choose high quality papers, 22 documents were removed, resulting in a total of 85 core articles. The article selection stages are shown in Figure 1.

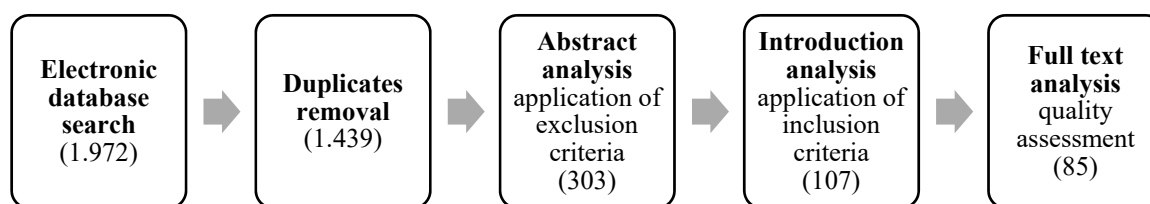


Figure 1. Article selection stages.

Each paper was analyzed using an interpretative and synthesizing approach to determine the main categories and topics. After reviewing and synthesizing the 85 articles, eight research categories and 97 topics were identified. These categories were a result of inductive thinking about the theme, the research questions, and the relations between key concepts emerging from the articles (Britten et al. 2002; Pickering and Byrne 2013; Weed 2008). This process led to elaborating a summary table in which articles were characterized systematically based on those categories and topics (Table 1). The database was repeatedly reviewed and updated (Pickering and Byrne 2013; Pickering et al. 2014).

Table 1. Categories and topics investigated.

Characteristics of Individuals	IKT	HKT	CKT	RKT	Characteristics of MNC	IKT	HKT	CKT	RKT	Characteristics of HQs	IKT	HKT	CKT	RKT	Characteristics of Subsidiaries	IKT	HKT	CKT	RKT
	5	10	16	15		5	28	37	42		-	6	13	17		3	31	34	46
Competences, qualifications, or skills	3	7	10	8	Expatriates	1	9	14	14	Knowledge base or resources		3	5	4	Size	1	22	20	33
Nationality	2	4	4	4	Transfer, integration, or coordination mechanisms	1	9	11	17	Absorptive capacity		2	3	7	Knowledge base or resources	1	12	13	15
Function or department	1	3	4	3	Size	1	6	8	7	Size		1	3	6	Age		16	18	28
Career considerations	1	3	4	3	Formalization	1	5	4	5	Motivation or willingness to transfer/absorb knowledge		1	2	2	Absorptive capacity		9	16	8
Gender	2	3	3	3	HRM practices	1	6	6	5	Rewards or incentives		1	1	1	Rewards or incentives	1	6	6	5
Participation or experience in knowledge transfer activities	2	2	3	3	Centralization or decentralization	1	4	4	5	Technology capability or infrastructure		1	1	2	Strategic role or importance	1	7	7	10
Feelings, expectations, and beliefs	2	2	4	3	Knowledge base or resources		4	4	3	Disseminative capacity			3		Autonomy	1	5	7	11
Motivation or willingness	2	2	2	1	Commitment, support, or management of knowledge activities	1	4	2	4	Multinationality		1	1	3	Motivation or willingness to transfer/absorb knowledge		6	6	9
Learning capacities or styles		1	3	2	Organizational culture or learning environment	1	3	4	3	Financial and/or business performance			1	2	Supply chain position, or scope of operations		5	5	6

Table 1. Cont.

Characteristics of Individuals	IKT	HKT	CKT	RKT	Characteristics of MNC	IKT	HKT	CKT	RKT	Characteristics of HQs	IKT	HKT	CKT	RKT	Characteristics of Subsidiaries	IKT	HKT	CKT	RKT
Satisfaction	1	1			Financial and/or business performances		1	1		Power or control		1	2	3	HRM practices		5	4	6
Seniority or hierarchical level	1	3			Teams, projects, or centres of excellence	1	1	3	2	Resources				1	Ownership structure		4	6	8
Age			2	3	Empowerment				1						Power or influence		4	4	4
															Mode of entry or establishment		4	5	13
															Knowledge creation or transfer capacities		3	2	7
															Technology capability or infrastructure		3	1	3
															Isolation		2	2	2
															Resources		2		3
															Disseminative capacity		2	2	2
															Establishment or internationalization motives		1	3	5
															Fear of opportunism		1		

Table 1. Cont.

Characteristics of Individuals	IKT	HKT	CKT	RKT	Characteristics of MNC	IKT	HKT	CKT	RKT	Characteristics of HQs	IKT	HKT	CKT	RKT	Characteristics of Subsidiaries	IKT	HKT	CKT	RKT
															Teams, projects, or centres of excellence	1	1	2	1
															Financial or business performance			2	3
															Multinationality				1
Characteristics of Relationships	IKT	HKT	CKT	RKT	Characteristics of Knowledge Transferred	IKT	HKT	CKT	RKT	KT results	IKT	HKT	CKT	RKT	Characteristics of External Environment	IKT	HKT	CKT	RKT
	6	30	31	47		3	21	29	33		-	13	16	19		2	21	23	38
Frequency of communication		10	6	11	Type	2	13	18	21	Subsidiary financial and/or business performances		6	8	5	HQs and/or subsidiaries' localization	2	14	17	22
Internal embeddedness or relational ties and networks	3	11	11	11	Tacitness	1	6	7	6	Augmented knowledge base or innovation		4	7	7	Industry characteristics	0	14	15	25
Socialization mechanisms	3	9	9	12	Quantity		4	5	3	MNC financial and/or business performances		3	1	3	Economic development or differences		2	5	5
Cultural distance	1	9	12	20	Value		4	5	3	Market responsiveness or new product development		3	5	6	Market characteristics or changes			3	3
Geographical distance	1	8	10	10	Complexity		3	4	2	HQs financial and/or business performance				1	National policy forms			2	2

3. Results

Investigation about knowledge management and transfer in the MNC context is relatively new. The first articles exploring this research theme were published between 1991 and 2000 (e.g., [Gupta and Govindarajan 1991, 2000](#); [Kogut and Zander 1992, 1993](#)). The majority of the papers reviewed are fairly recent, since 76.47% (i.e., 65 out of 85) were published in the last ten years (i.e., from 2010 to 2020). Moreover, almost half (i.e., 45.88%) of the papers were from the past five years (i.e., from 2015 to 2020). Figure 2 represents the evolution of articles per year of publication.

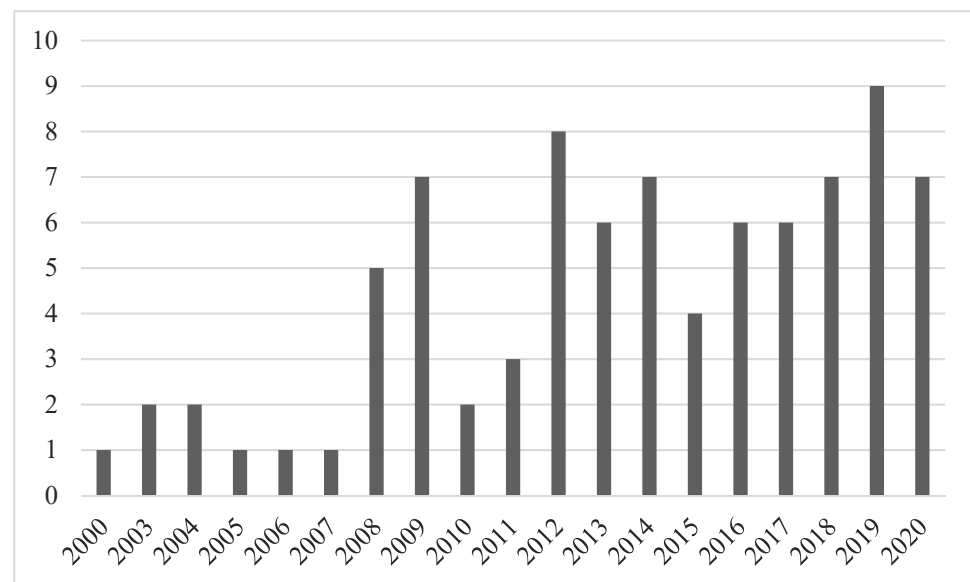


Figure 2. Number of articles by year of publication.

The articles included in this SLR were taken from 40 different scientific journals, which proves the importance of the research theme. The most representative outlet is the *Journal of World Business* (with 12 papers), followed by the *International Business Review* (with nine articles), *Journal of International Business Studies* (with six studies), and *Journal of Knowledge Management* (with six articles), as shown in Table 2.

Amongst the 85 articles, there were 36 different theoretical perspectives. Figure 3 presents the most popular theories in relation to intra-MNC knowledge transfers. Unsurprisingly, the knowledge-based view of the firm is the most popular theory in the literature on intra-MNC knowledge transfer, indicating that knowledge creation, transfer, retention, and application inside the firm are the best means to achieve sustainable competitive advantage and growth ([Grant 1996](#); [Kogut and Zander 1992, 1993](#); [Spender 1996](#)).

Network theory is referred to in 17.65% (i.e., 15 out of 85) of the studies, being predominantly based on [Ghoshal and Bartlett's \(1990\)](#) view, in which MNCs are considered huge networks composed of internal relations between their units—subsidiaries and HQs—as well as external interactions with different stakeholders—such as clients, suppliers, and competitors.

The resource-based view of the firm is the third most addressed theory in the core articles, being usually accompanied by the knowledge-based view of the firm, since “knowledge-based view is the essence of the resource-based perspective” ([Conner and Prahalad 1996](#), p. 477). According to this theory, MNCs can uphold a long-lasting and value-creating strategy if they possess and develop valuable, rare, and imperfectly imitable resources.

After reviewing and synthesizing the 85 articles, content analysis of the studies consisted predominantly of describing and analyzing the research categories and topics in each article. No article investigated all of the categories, although some authors explored seven out of eight (e.g., [Fang et al. 2013](#); [Najafi-Tavani et al. 2018](#)). In the remainder of this

section, the main research categories and topics are pointed out for each type of intra-MNC knowledge transfer—IKT, HKT, CKT and RKT.

Table 2. Main publication sources.

Publication Source	Number of Articles	Percentages (%)
Journal of World Business	12	14.12
International Business Review	9	10.59
Journal of International Business Studies	6	7.06
Journal of Knowledge Management	6	7.06
Journal of Business Research	4	4.71
Journal of International Management	4	4.71
Management International Review	4	4.71
Human Resource Management	3	3.53
Journal of Management	2	2.35
Organization Science	2	2.35
The International Journal of Human Resource Management	2	2.35
European Journal of Innovation Management	2	2.35
Others	28	32.94

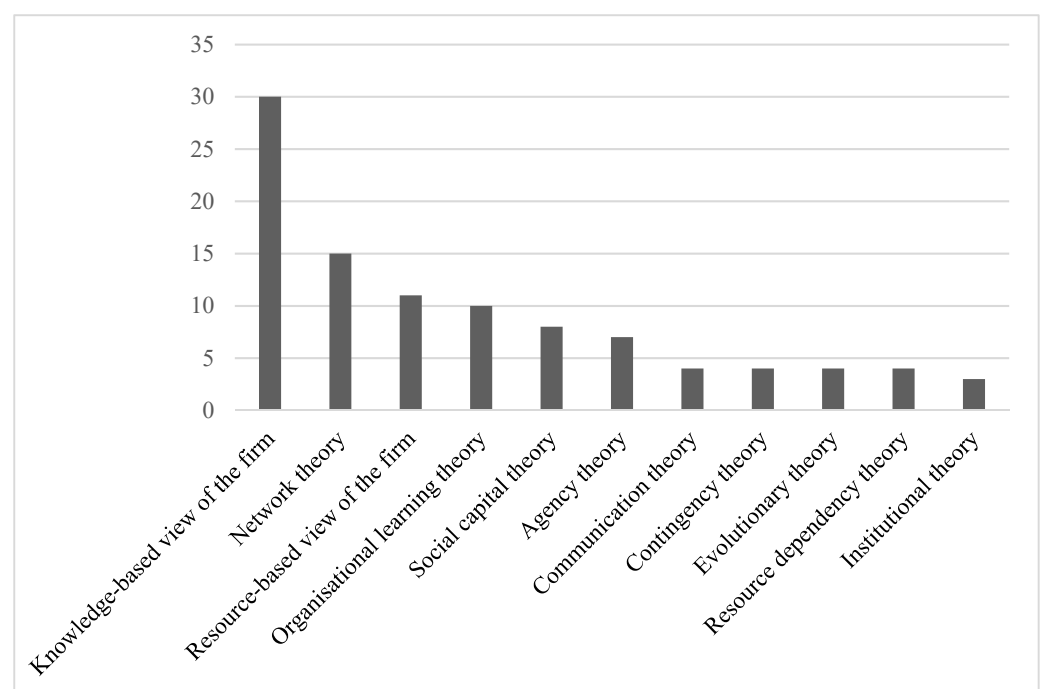


Figure 3. Theoretical foundations of articles under analysis.

3.1. Intra-Unit Knowledge Transfers

In the small sample of IKT articles, the most popular category was the relationship between individuals or knowledge actors, being investigated in six out of the seven papers. Researchers found that the existence of relational ties and networks between employees inside a MNC have a direct and strong influence on IKT (Adler and Kwon 2002; Gooderham et al. 2011). In agreement, Dasí et al. (2017) and Tippmann et al. (2014) concluded

that employees preferred to participate in knowledge activities inside their business unit, instead of transferring (receiving) knowledge to (from) other MNC units. The literature also supports that employing socialization mechanisms to simplify communication (Adenfelt and Lagerström 2008) and reward knowledge sharing between individuals (Gooderham et al. 2011) can increase IKT. Likewise, there must be a knowledge-friendly organizational culture that promotes cooperation, collaboration, and dialogue (Dasí et al. 2017; Michailova and Minbaeva 2012).

The second most common category addressed in IKT articles was the organizational characteristics or general policies of MNCs. The literature supports that MNCs can enhance IKT by using expatriates (Dasí et al. 2017), teams and centers of excellence (Adenfelt and Lagerström 2008), and also by developing an organizational culture that promotes dialogue and communication (Michailova and Minbaeva 2012). 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 centralized, since this can hinder IKT (Gooderham et al. 2011).

The personal characteristics of knowledge actors are expected to be predominantly significant for IKT compared to other intra-MNC knowledge transfer literature in which this research category was one of the least explored. This happens because IKTs are knowledge transfers between individuals—and not organizational units similar to the other forms of knowledge transfer—so it is natural that individual characteristics have a pivotal role. IKT literature focused on the following topics: (1) individual feelings, expectations, and beliefs (e.g., Gooderham et al. 2011); (2) employees' participation and experience in knowledge transfer processes (e.g., Michailova and Minbaeva 2012); (3) gender; (4) nationality (e.g., Dasí et al. 2017); (5) qualifications, competences, or skills (e.g., Ahmad and Barner-Rasmussen 2019); (6) motivation or willingness to transfer knowledge (e.g., Minbaeva et al. 2012).

The specific characteristics of subsidiaries were studied in three out of six IKT articles. Gooderham et al. (2011) proposed that the compensation system used in subsidiaries significantly influences IKT, since rewards can motivate employees to transfer knowledge to each other more often. Likewise, a sub-unit's knowledge base, resources (Adenfelt and Lagerström 2008), and size and strategic role inside their MNC network (Tippmann et al. 2014) may shape employees' thinking and participation in knowledge exchanges.

Within the knowledge category, only three out of 12 knowledge characteristics identified were addressed in IKT papers, namely, knowledge type, explicitness, and tacitness (Adenfelt and Lagerström 2008; Dasí et al. 2017; Tippmann et al. 2014). Researchers agree that, if individuals possess know-how, experience, and skills related to different business areas, IKTs are easier and more straightforward.

No IKT studies investigated HQ characteristics or knowledge transfer outcomes. There are two occurrences of the impact of the external environment. These articles explored both HKT and IKT, but the authors only studied the influence of external factors on HKT. So, none of the IKT articles considered this particular research category.

3.2. Horizontal Knowledge Transfers

HKTs were the central research scenario for 38 of the 85 core articles. The characteristics of subsidiaries category is the second most researched topic in the literature and the first one in HKT papers, being discussed in 81.58% (i.e., 31 out of 38) of these articles. Size was unquestionably the most studied subsidiary attribute, being referred to in 22 out of 31 papers in this research category. The literature agrees that bigger subsidiaries have more resources (Li et al. 2007) and more influence on MNCs' strategic decisions (Persson 2006), so they are more likely to create, transfer, and absorb knowledge (Gupta and Govindarajan 2000; Williams and Lee 2016). Along with size, subsidiaries' age and knowledge base were widely researched in HKT articles, each topic being addressed in 16 and 12 studies, respectively. Researchers agree that subsidiaries' knowledge resources in different domains can dictate their value as knowledge exchange partners (Ambos and Ambos 2009; Björkman et al. 2004), or even as main knowledge sources for other MNC units (Williams and Lee

2016). The number of years subsidiaries have been established within a MNC (Qin et al. 2017), or have been operating in a particular market (Asakawa 2020; Miao et al. 2011; Tseng 2015), can also have a significant impact on their lateral knowledge contributions.

The HKT literature also addressed other topics related to subsidiaries: (1) absorptive capacity (e.g., Ferraris et al. 2018; Gonzalez and Chakraborty 2014); (2) strategic role or importance within the MNC network (e.g., Blomkvist 2012; Szász et al. 2019); (3) rewards or incentives given to sub-units to effectively transfer or absorb knowledge (e.g., Björkman et al. 2004; Persson 2006); (3) autonomy (e.g., Miao et al. 2011; Schulz 2003); (4) motivation or willingness (e.g., Noorderhaven and Harzing 2009; Tippmann et al. 2014); (5) supply chain position or scope of operations (e.g., Li et al. 2007; Tseng 2015); (6) human resource management (HRM) practices (e.g., Minbaeva et al. 2014; Peltokorpi 2017). Amongst the 23 topics in this research category, HKT papers were found to address 21 of them, with no article studying the influence of subsidiaries' multinational experience or financial and/or business performance on HKT.

The relationship between knowledge actors is the most researched category in the literature and the second one in HKT papers, being discussed in 78.95% (i.e., 30 out of 38) 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 and Lee 2017; Montazemi et al. 2012; Schulz 2003) and frequency of communications (e.g., Crespo et al. 2014; Mäkelä et al. 2012; Noorderhaven and Harzing 2009) are deeply connected with HKT, since these factors ease communication and interaction between MNC units (Gupta and Govindarajan 2000) and enhance subsidiaries' absorptive capacity (Peltokorpi 2017).

The HKT literature agrees that it is crucial to employ functional and suitable lateral socialization mechanisms in sub-units—such as inter-unit visits, trips, committees, international teams, and training programs involving several units (Björkman et al. 2004; Li et al. 2007)—since they can promote and facilitate HKT (Noorderhaven and Harzing 2009; Persson 2006; Zeng et al. 2018).

Understanding the impact of cultural and geographical distance on the relationship between MNC units is a central subject across the literature on intra-MNC knowledge transfer, being examined in nine and eight out of 29 HKT studies within the category of the relationships between knowledge actors. Authors found that, despite subsidiaries making a bigger effort to transfer knowledge, when they are far away from other sub-units (Kang et al. 2010), distance can be overcome by face-to-face communication (Mäkelä and Brewster 2009) and a shared set of organisational values (Crespo et al. 2020).

There is a consensus in the literature that subsidiaries should share similar organizational goals, practices, and values to engage in fruitful HKT (e.g., Ambos et al. 2013; Montazemi et al. 2012), mainly when involving expatriates (Mäkelä and Brewster 2009) and different cultural contexts (Li et al. 2007). Within the 14 relational topics acknowledged in HKT papers, the relevance of organizational distance (e.g., Dasí et al. 2017; Schlegelmilch and 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 studied in five or four articles out of the 30 within the relationship category.

The topics most commonly explored by researchers in the category concerned with MNCs' organizational characteristics are the following: (1) expatriates, representing nine papers; (2) transfer, integration, or coordination mechanisms, corresponding to nine studies; (3) MNC size, in six articles; (4) HRM practices, corresponding to six studies; and (5) formalization, referred to in five papers.

The particularities of the knowledge transferred amongst MNCs' subsidiaries were addressed in 55.26% (i.e., 21 out of 38) of the HKT core articles. More than half of these studies (i.e., 13 out of 21) investigated the transfer of different types of knowledge between subsidiaries. Authors pointed out several areas of knowledge vital to MNCs, such as technology, NPD, sales, marketing, distribution, and management (Gupta and 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 organizational units. For example, [Qin et al. \(2017\)](#)—researching Chinese subsidiaries in the ICT industry—proposed that market knowledge, encompassing cultural and environmental know-how, is the most significant kind of knowledge. [Ambos et al. \(2013\)](#) proved that certain types of knowledge are more significant for upstream activities (e.g., technology and purchasing know-how), while others are more pertinent to downstream activities (e.g., marketing and distribution expertise).

The literature on intra-MNC knowledge transfer agrees that tacit knowledge is harder to transfer than other 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 and Govindarajan 2000](#); [Miao et al. 2011](#)); (2) complexity, corresponding to three papers (e.g., [Kang et al. 2010](#); [Schulz 2003](#)); (3) specificity, in three studies (e.g., [Michailova and Mustafa 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](#)).

Twenty-one out of 38 HKT studies examined the impact of the external environment, although none of the articles investigating only HKT addressed this research category. Geographical location (e.g., [Dasí et al. 2017](#); [Li and Lee 2015](#); [Tippmann et al. 2014](#)) and the characteristics of the industries where subsidiaries operate were the most commonly studied topic within this category, each topic being addressed in 14 studies. For instance, researchers examined knowledge intensity ([Gupta and Govindarajan 2000](#); [Noorderhaven and Harzing 2009](#)), scope of business ([Asakawa 2020](#); [Li and Lee 2015](#); [Williams and Lee 2016](#)), revenue per employee ([Ambos et al. 2013](#)), and global integration and competitiveness ([Tseng 2015](#)) across different industries.

One of the least covered categories (13 out of 38) in HKT papers was the outcomes or results of intra-MNC knowledge transfers. As [Schlegelmilch and Chini \(2003\)](#) pointed out, the literature gives more emphasis to the adaptation and standardization of knowledge than to its effects on organizational units. Across HKT articles, four knowledge transfer outcomes were mentioned: (1) subsidiaries' financial and/or business performance; (2) MNCs' financial and/or business performance; (3) augmented knowledge base or innovation; and (4) market responsiveness or NPD.

Six out of 13 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, three ([Crespo et al. 2020](#); [Li and Lee 2015](#); [Qin et al. 2017](#)) studied how HKT might increment MNCs' NPD and market responsiveness.

An unanticipated result was that individuals' characteristics were the second least addressed research category in HKT core articles, with only ten papers investigating this topic. Seven articles (out of ten) explored the influence of several MNC employee competences on HKT. For example, researchers addressed employees' job or function, technical, and management know-how ([Gonzalez and Chakraborty 2014](#); [Williams and Lee 2016](#)), language proficiency ([Peltokorpi 2017](#)), and their level of education ([Michailova and Minbaeva 2012](#); [Minbaeva et al. 2014](#)).

The characteristics of HQs were the least studied category within the eight research categories acknowledged in the literature on intra-MNC knowledge transfer. As previously explained, most articles investigated more than one direction of intra-MNC knowledge transfers, so when examining the article database closely, six papers are found to address this category, but none studied HKT alone.

3.3. Conventional Knowledge Transfers

CKTs (i.e., knowledge transfers from HQs to their subsidiaries) were the second most investigated intra-MNC knowledge transfer, being addressed in 54.12% (i.e., 46 out of 85) of the core articles.

CKT articles were the only ones in which the ‘characteristics and policies’ of MNCs was the most studied category, being discussed in 37 out of 46 studies. The literature agrees that expatriates are crucial agents in transferring knowledge from HQs to subsidiaries, so it is not surprising that this category is investigated in 14 out of 37 of the CKT papers within this category.

Choosing proper transfer, integration, or coordination mechanisms—such as liaison personnel, task forces, and permanent teams (Gupta and Govindarajan 2000; Gutierrez-Huerter et al. 2016)—is considered fundamental to CKT, which is supported in 11 out of 37 papers. Within MNCs’ characteristics, size is the third most explored topic, appearing in eight out of 37 studies. However, measuring a MNC’s size is a controversial issue in the literature. It is usually estimated according to the total number of employees (e.g., Tippmann et al. 2014), but other authors assess MNCs’ size as the number of MNC subsidiaries in a given country (Schulz 2003), or the total amount of MNCs’ assets (Kang and Lee 2017).

Six studies addressed the importance of implementing HRM practices that enable CKT, for instance, informal control mechanisms (Williams and Lee 2016), performance appraisal systems (Chang and Smale 2013), interculture-sensitive recruitment (Suzuki et al. 2019), expatriation assignments (Smale 2008), and participation in corporate meetings (Yoo 2020). Centralization or decentralization of decision-making is also broadly discussed in CKT articles. Gupta and Govindarajan (2000) found that HQs are more likely to transfer knowledge to subsidiaries that have less influence on MNCs’ strategic decisions.

The literature recognizes the prominence of subsidiaries’ characteristics in contributing to CKT, since this category is studied in 34 out of 46 CKT articles. As in the HKT literature, the size of subsidiaries is the most discussed topic in the 34 CKT papers within this research category. Measuring subsidiaries’ size is as controversial as estimating MNCs’ size. Although most authors took the total number of employees in a subsidiary as an indication of its 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 sub-unit (e.g., Wang et al. 2009). Alternatively, other researchers estimated a relative size by comparing the size of a subsidiary with its MNC (e.g., Minbaeva et al. 2014). To measure subsidiaries’ age—a topic covered by 18 papers—researchers considered the year when the subsidiary was established (e.g., Berry 2017; Monteiro et al. 2008) or acquired (e.g., Yang et al. 2008).

There is a consensus in the literature that significant levels of absorptive capacity in subsidiaries increases CKT (Schleimer and Pedersen 2014; Tran et al. 2010). Similarities between HQs and subsidiaries’ knowledge bases (Berry 2017), motivation (Chang and Smale 2013), prior knowledge regarding the received knowledge, and suitable transfer mechanisms (Gutierrez-Huerter et al. 2016) are 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 and Ambos 2009; Ambos et al. 2013) or about knowledge being transferred from HQs (Monteiro et al. 2008) contributed to explaining CKT in 13 out of 34 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.

In the category related to subsidiaries’ characteristics, the following topics were most common in CKT research: (1) strategic role within MNCs, corresponding to seven articles (e.g., Minbaeva et al. 2014; Szász et al. 2019); (2) subsidiaries’ autonomy, in seven papers (e.g., Gaur et al. 2019; Najafi-Tavani et al. 2018); (3) rewards or incentives given to sub-units to participate in knowledge transfer, representing six papers (e.g., Montazemi et al. 2012); (4) motivation or willingness to participate in knowledge transfer, representing six articles (e.g., Gupta and Govindarajan 2000; Tseng 2015); (5) ownership structures, corresponding

to six papers (e.g., [Ai and Tan 2018](#); [Wang et al. 2009](#)); (6) mode of entry or establishment, representing five studies (e.g., [Fang et al. 2013](#); [Suzuki et al. 2019](#)); and (7) position in the MNCs' supply chain or scope of operations, in five studies (e.g., [Berry 2017](#); [Noorderhaven and Harzing 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 addressed category, being investigated in 31 (out of 46) papers. Results are consistent across the literature defending that long-lasting, trusting, open, and informal relationships between HQs and subsidiaries ease CKT ([Schleimer and Pedersen 2014](#); [Schulz 2003](#); [Zimmermann and Ravishankar 2014](#)). In this respect, [Wang et al. \(2004\)](#) proposed that internal embeddedness increases HQs' willingness to transfer knowledge to subsidiaries. By the same token, eight articles found that having the same values, goals, management styles ([Najafi-Tavani et al. 2018](#)), business practices, organizational culture ([Ambos and Ambos 2009](#)), or even operating industries and markets ([Fang et al. 2013](#)) can make CKT more fruitful. In contrast, cultural (e.g., [Ambos and Ambos 2009](#); [Qin et al. 2017](#)) and geographical distance hinder the positive outcomes gained from these knowledge transfers (e.g., [Monteiro et al. 2008](#); [Vlajcic et al. 2018](#))—these topics being considered in 12 and ten articles, respectively.

To make interactions between HQs and subsidiaries smoother, the literature agrees that MNCs must employ socialization mechanisms, such as visits or transfers to different business units ([Gutierrez-Huerter et al. 2016](#)), mentoring sessions ([Gupta and Govindarajan 2000](#)), face-to-face meetings and informal gatherings ([Jasimuddin et al. 2019](#)). In line with the nine studies covering this topic, socialization 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 six articles—facilitates CKT by enhancing subsidiaries' capacity to absorb and recognize the value of knowledge transmitted by HQs ([Gutierrez-Huerter et al. 2016](#)). Even so, other authors proved that frequency is not relevant, since reporting information vertically may be mandatory ([Monteiro et al. 2008](#)).

Authors addressing this category also explored the following topics: (1) trust, representing five papers (e.g., [Schleimer and Pedersen 2014](#)); (2) external embeddedness, in four articles (e.g., [Monteiro et al. 2008](#)); (3) organizational and linguistic distances, corresponding to three and two studies, respectively (e.g., [Ambos and Ambos 2009](#); [Kang et al. 2010](#)); (4) interdependency or dependency of the relationship, in three articles (e.g., [Noorderhaven and 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 29 out of 46 CKT articles and in eight (out of ten) papers investigating only CKT. Knowledge types were the most researched topic, being discussed in 18 (out of 29) articles. Authors gathered that HQs transfer knowledge to their sub-units related to norms, values, expected corporate behavior ([Duvivier et al. 2019](#)), manufacturing, cost saving ([Ai and 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 addressed in seven and six articles, respectively, with four of them considering both of these knowledge aspects ([Ai and Tan 2018](#); [Gaur et al. 2019](#); [Tippmann et al. 2014](#); [Wang et al. 2004](#)).

The influence of the quantity and value of transferred knowledge on solving problems arising in business activities ([Choi and Johanson 2012](#)) and on subsidiaries' performance ([Tran et al. 2010](#)) was examined in five CKT papers. CKT articles also explored knowledge complexity (e.g., [Michailova and Mustaffa 2012](#)), embeddedness or stickiness (e.g., [Chang and Smale 2013](#)), codification (e.g., [Tran et al. 2010](#)), specificity or specialization (e.g., [Schulz 2003](#)), relevance (e.g., [Yang et al. 2008](#)), timing or novelty (e.g., [Kang et al. 2010](#)), and articulability ([Jasimuddin et al. 2019](#)).

The external environment where MNCs operate and where knowledge transfers take place was studied in 23 out of 46 CKT papers. The topics most commonly addressed by

researchers are the following: (1) localization of HQs or/and subsidiaries, representing 17 articles; (2) characteristics of industries, in 15 papers; (3) level of economic development of a given country or differences between distant locations, corresponding to five studies; and (4) characteristics, changes, or turbulences in the marketplace, representing three articles. Although the impact of geographical space on CKT is not fully consensual across the literature, [Gupta and Govindarajan \(2000\)](#) demonstrated that CKTs are more frequently directed to sub-units situated in countries whose national economic system is more developed than the HQ country's.

Given that CKTs are inter-unit knowledge transfers, it is only to be expected that the singular characteristics of individuals taking part in these knowledge processes are less explored in the CKT literature. Amongst the 16 studies investigating this research category, ten articles emphasized the role of individual competences, and four papers found it interesting to study employees' nationalities, functions, or departments within organizational units, career considerations or feelings, expectations, and beliefs related to knowledge transfer. The literature demonstrated that highly qualified employees with outstanding educational levels ([Wang et al. 2004](#)), job-related skills ([Minbaeva et al. 2014](#)), and cultural intelligence ([Vlajcic et al. 2018](#)) are more able to receive knowledge from HQs.

The outcomes of CKT were researched in 16 (out of 46) studies, and only three (out of ten) articles focus solely on CKT. As in HKT research, increments in subsidiaries' financial and/or business performance and in their knowledge bases or innovation levels were the most widely studied topics, being covered by eight and seven papers, respectively. Most authors considered that subsidiaries' financial and/or business performance is 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 for the enhancement of subsidiaries' knowledge base, this might be related to the acquisition of knowledge about the industry where a particular subsidiary operates ([Qin et al. 2017](#)), 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 surprising result was the limited number of articles (i.e., 13 out of 46) exploring the category related to HQs' organizational characteristics, considering that HQs are knowledge senders. In addition, analysis of the results from the articles that only address CKT reveals that this category is addressed in half the articles (i.e., five out of ten), which is still not very representative. In this research category, researchers studied the influence of HQs' knowledge base or resources—particularly its sophistication, richness ([Wang et al. 2004](#)), and coverage of several domains ([Fang et al. 2013](#))—on CKT outcomes. HQs' absorptive capacity is the second most examined topic (i.e., three out of 13 articles). However, a closer look at the data reveals that this was only approached in articles simultaneously examining 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, respectively.

3.4. Reverse Knowledge Transfers

In the literature on intra-MNC knowledge transfers, RKTs are the most frequently studied knowledge transfer, being covered by 68.24% (i.e., 58 out of 85) of the core studies, in which 21 (out of 58) papers considered solely RKT.

The relationships between knowledge actors (i.e., subsidiaries and HQs) were the most addressed category, being discussed in 47 (out of 58) RKT studies. Within the topics in this category, cultural distance was examined the most (i.e., 20 out of 47). Researchers found that being culturally distant might hinder the RKT of tacit knowledge ([Ai and Tan 2018](#)), as well as subsidiaries' financial and/or business performance ([Qin et al. 2017](#)).

Sharing similar business practices, organizational cultures ([Li et al. 2007](#)), knowledge resources, products, scope of operations ([Mudambi et al. 2014](#); [Rabbiosi 2011](#)), goals, and visions ([Peltokorpi and Yamao 2017](#)) facilitates RKT. Within relational aspects, socialization

mechanisms, frequency of communications, and internal embeddedness were covered by twelve and eleven articles, respectively. The literature shows that HQs and subsidiaries' regular interactions, as well as cooperation and team work, improve subsidiaries' willingness to create (Claver-Cortés et al. 2018) and transfer knowledge (Kong et al. 2018), besides increasing RKT (Crespo et al. 2014) and its positive outcomes (Rabbiosi and Santangelo 2013).

The relations between subsidiaries and external players were considered relevant by 19.15% (i.e., nine out of 47) 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, and management (Najafi-Tavani et al. 2012). Fu et al. (2018) determined that knowledge collected from clients and competitors enhances sub-units' NPD, as well as their market responsiveness.

Subsidiaries' characteristics are the most studied category in RKT articles, being covered by 46 out of 58 articles, and almost all (16 out of 19) the articles only on RKT. The topics most commonly examined were: (1) subsidiaries' size, representing 33 articles; (2) age, with 28 papers; (3) knowledge base or resources, with 15 studies; (4) mode of entry or establishment, representing 28.26% (i.e., 13 out of 46) of the papers; (5) autonomy, with eleven papers; and (6) strategic role or importance, in 21.74% (i.e., ten out of 46) of the studies.

There is consensus in the literature that bigger subsidiaries transfer more knowledge to HQs (Gupta and Govindarajan 2000; Kong et al. 2018; Oh and Anchor 2017) because they develop stronger capabilities (Noorderhaven and Harzing 2009) and relationships with external actors (Yang et al. 2008). Hence, HQs are more likely to invest in these sub-units (Oh and Anchor 2017). Focusing on subsidiaries' age, researchers proved that older subsidiaries transfer more valuable knowledge (e.g., Rabbiosi and Santangelo 2013), since these sub-units have had more time to build relationships within internal and external networks and to employ effective knowledge transfer mechanisms (Monteiro et al. 2008). On the other hand, other papers found that younger subsidiaries are more able to transfer knowledge back, especially in fast growing markets (Oh and Anchor 2017), as well as when those sub-units 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. 2017)—to intensify RKT, inasmuch as subsidiaries ought to possess knowledge about different fields, such as production, marketing, R&D (Claver-Cortés et al. 2018), industry, market, management (Jankowska et al. 2020), products, clients, and technology (Oh and Anchor 2017). As far as modes of establishment or entry are concerned, according to the literature, acquired subsidiaries are more likely to transfer knowledge to HQs (Björkman et al. 2004; Kong et al. 2018) than other sub-units, such as those established by a greenfield investment.

Understanding the outcomes of subsidiaries' autonomy (i.e., freedom and influence on MNCs' strategic decisions) for RKT is a debatable subject in the literature (Oh and Anchor 2017). On the one hand, Najafi-Tavani et al. (2015)—investigating British subsidiaries in the service industry—gathered that frequent RKT can enhance the autonomy of sub-units, providing that HQs and subsidiaries build strong relations. Similarly, Miao et al. (2011) found that autonomous subsidiaries transfer more valuable knowledge to HQs. On the other hand, Jankowska et al. (2020) found that greater autonomy could increase subsidiaries' independency and bargaining power, which could reduce RKT.

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 et al. 2014; Rabbiosi 2011)—was one of the most explored topics in the 46 articles investigating subsidiaries' impact on RKT.

MNC characteristics and policies were a central research category in RKT papers, being addressed in 72.41% (i.e., 42 out of 58) of the articles reviewed. Within this category, two research topics stood out among the ten identified: (1) transfer, integration, or coordination

mechanisms, with 17 of 42 studies (e.g., [Hong and Nguyen 2009](#); [Najafi-Tavani et al. 2012](#)); and (2) expatriates, corresponding to 14 articles (e.g., [Fang et al. 2013](#); [Peltokorpi 2017](#)).

Authors found that the positive influence of expatriates on subsidiaries' organizational processes, business performance, and RKT is associated with the following factors: (1) expatriates' relationships with local managers and HQs; (2) frequency of communication ([Froese et al. 2020](#)); (3) expatriates' prior international experience ([Kong et al. 2018](#)); (4) motivation to engage in knowledge transfer processes ([Lazarova and Tarique 2005](#)); (5) MNCs' empowering leadership ([Bucher et al. 2022](#)); (6) entrepreneurial strategy ([Raziq et al. 2019](#)).

Subsequently, formalization and centralization of decision-making were two of the most addressed topics in the RKT literature, representing five out of 42 articles within this research category. In relation to decision-making, most authors claim that prominent centralization—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](#)).

In the category related to MNCs' organizational characteristics and policies, other topics came up in RKT studies, such as: (1) MNCs' size (e.g., [Kang and Lee 2017](#); [Yoo 2020](#)); (2) HRM practices, with five articles (e.g., [Miao et al. 2011](#); [Peltokorpi and Yamao 2017](#)); (3) central commitment, support, or management of knowledge activities, with four papers (e.g., [Lazarova and Tarique 2005](#)); (4) MNCs' knowledge base or resources, with three studies (e.g., [Schlegelmilch and Chini 2003](#)); (5) organizational culture or learning environment, with three papers (e.g., [Nair et al. 2016](#)); (6) transfer teams, projects, or centers of excellence, with two studies ([Adenfelt and Lagerström 2008](#); [Kang et al. 2010](#)).

External environment factors are a central research category in RKT literature, being explored in 65.52% (i.e., 38 out of 58) of the papers. Within this category, researchers studied the following topics: (1) characteristics of industries, with 25 studies; (2) localization of HQs and/or subsidiaries, representing 22 out of 38 articles; (3) development or differences in countries' economic systems, with five papers; (4) characteristics and changes in markets, with three articles; (5) norms imposed by national policies, with two studies; and (6) protection of IPR, with only one article. Focusing on subsidiaries' geographical origin, authors studied mainly RKT from subsidiaries located in developed countries to HQs situated in less-favored locations (e.g., [Ai and Tan 2018](#); [Fu et al. 2018](#); [Peng et al. 2016](#)), despite some authors exploring RKT from subsidiaries in developing countries to HQs in developed locations (e.g., [Hong and Nguyen 2009](#); [Qin et al. 2017](#); [Yang et al. 2008](#)).

Regarding the characteristics of the industries in which MNCs compete, 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 and Anchor 2017](#)), as well as the technological intensity of industries ([Kong et al. 2018](#); [Nair et al. 2016](#)).

The category dealing with the characteristics of knowledge is investigated in more than half (i.e., 63.63%) of RKT studies. Type of knowledge is still the most researched topic within this category, being covered in 21 out of 33 papers.

There is consensus in the literature on intra-MNC knowledge transfer that tacit knowledge is harder to codify, convert and transfer (e.g., [Monteiro et al. 2008](#); [Oh and Anchor 2017](#)), particularly when HQs and subsidiaries are culturally distant ([Crespo et al. 2014](#)). A particularly important characteristic of knowledge in RKT literature is its relevance, as this topic is examined in four of the 33 articles. Knowledge relevance is associated with cultural distance, similarity of organizational practices, centralization ([McGuinness et al. 2013](#)), and HQs' perceptions of subsidiaries' capacities ([Nair et al. 2016](#)).

The outcomes of RKT were covered by 19 out of 58 articles and only by four (out of 21) papers investigating solely RKT. Concerning RKT consequences for subsidiaries, researchers discussed enhancements to subsidiaries' knowledge bases, in terms of practices, technical and management competences, operations ([Gonzalez and Chakraborty 2014](#)), and financial and/or business performance through HQs' knowledge resources ([Fang et al.](#)

2013). As regards positive repercussions of RKT on HQs, authors studied increases in HQs' knowledge resources in numerous areas, such as marketing, R&D (Rabbiosi and Santangelo 2013), products, processes, management systems and procedures (Jiménez-Jiménez et al. 2019).

The characteristics of HQs were one of the least researched categories, being addressed in just 17 out of 58 articles. Within this research category, articles focused on the following topics: (1) absorptive capacity, with seven papers; (2) size, with six papers; (3) knowledge base or resources, with four papers; (4) multinationality, with four articles; (5) power or control, with three papers; (6) technological capabilities and infrastructure, with two studies; (7) motivation or willingness, representing two papers; (8) financial or business performances, with two studies; (9) resources, with one article; and (10) rewards or incentives to absorb knowledge, also with one study.

The RKT literature supports that HQs' absorptive capacity could be enhanced when subsidiaries and HQs share similar technological, cultural, and organizational competences and practices (Rabbiosi and Santangelo 2013)—especially in MNCs that develop a good learning environment, technical infrastructure (Nair et al. 2016) and coordination mechanisms (Jiménez-Jiménez et al. 2019). To ease RKT, HQs should also possess a wide knowledge base across different business areas (Ambos and Ambos 2009; Ambos et al. 2013) to be entirely capable of absorbing sub-units' knowledge.

Fifteen (out of 58) RKT articles studied the influence of individuals on these knowledge transfers. In this category, authors focused on the following topics: (1) employees' function or department (e.g., Froese et al. 2020); (2) nationalities (e.g., McGuinness et al. 2013); (3) career considerations (e.g., Lazarova and Tarique 2005); (4) feelings, expectations and beliefs (Najafi-Tavani et al. 2018); (5) age; (6) gender (e.g., Peltokorpi and Yamao 2017; Vlajic et al. 2018); (7) learning capacities or styles (Michailova and Mustaffa 2012); (8) motivation or willingness to participate in knowledge transfer processes; and (9) participation or experience (Bucher et al. 2022). Competences and qualifications of MNCs' employees were the most explored topic, being studied in 53.33% (i.e., eight out of 15) of RKT articles.

4. Discussion

The goal of this SLR was to map significant literature on intra-MNC knowledge transfers. Overall, it 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 demonstrate the complexity and importance of the theme.

Although 32 theories have been acknowledged in the literature, the theoretical background of most articles exploring intra-MNC knowledge transfers is based mainly on the following: (1) KBV; (2) network theory; (3) RBV; and (4) social capital theory. Although several papers consider more than one theory, this result was somehow expected, since the KBV is an adaptation and enhancement of the RBV, and network and social capital theories explore relationships among knowledge actors.

Regarding types of knowledge transfer, the types of knowledge clearly differ. Based on analysis of Table 1, it is possible to argue that IKT is less complex than HKT, CKT and RKT, as the characteristics of the HQs or knowledge transfer results are not addressed. Furthermore, the characteristics of the knowledge transferred, and the characteristics of the subsidiaries or the characteristics of the external environment are barely analyzed. Figure 4 represents the eight categories in which the 97 topics were identified. It represents how the four different types of knowledge were analyzed.

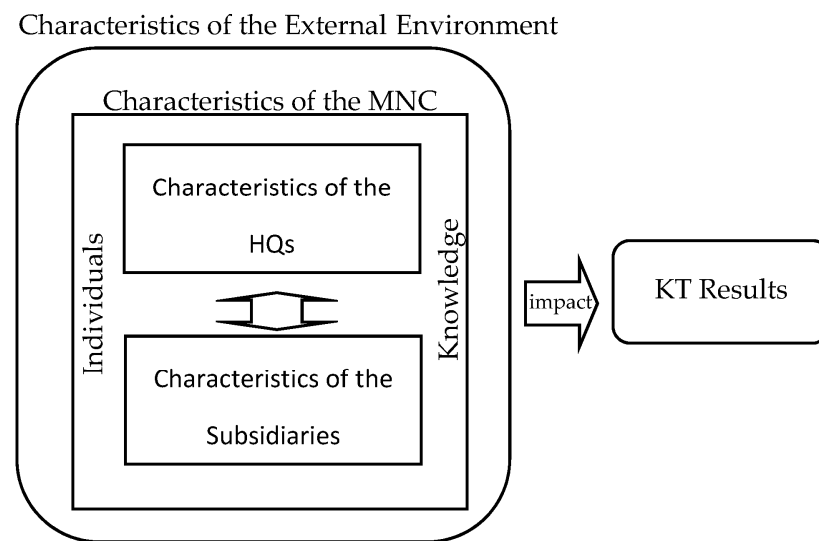


Figure 4. Aggregated framework.

Regarding the types of knowledge analyzed, and their directions, RKT, from subsidiaries to HQs, are the most examined transfers, followed by CKT, from HQs to subsidiaries. This result shows the greater importance given to knowledge transfers between HQs and subsidiaries, compared to HKT. Moreover, this indicates that the vertical focus predominates over the horizontal one and research revolves around topics such as: size, power, influence or control of the subsidiary; knowledge base and resources; transfer coordination; absorptive and disseminative capacity; and financial/business performance. If knowledge transfer is still recognized as an important driver of competitive advantage among MNCs, it is clear that HKT across the different subsidiaries lags behind the study of CKT and RKT, indicating the importance of the exercise of power when transferring knowledge.

Quantitative studies predominate in the literature on intra-MNC knowledge transfer. Moreover, as this SLR demonstrates the great importance of relational, environmental and personal influences on knowledge transfers, and based on the deductive approach followed by quantitative studies, it is possible to argue that there is a clear need for theory building and empirical qualitative studies as 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 and Mustafa 2012, p. 390). Conceptual papers are also in high demand to help support new empirical research. The 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.

On their path toward understanding and conceptualizing intra-MNC knowledge transfers, researchers have extensively focused on the categories related to the relationships between knowledge actors or units and the characteristics of subsidiaries, as these were explored in 67 and 65 out of 85 of the papers, respectively. Nevertheless, examining the number of articles that explored these categories by knowledge transfer type shows that the category related to subsidiaries is particularly relevant in the RKT, CKT, and HKT literature, while in IKT literature, it is only the third 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, and motivation or willingness to engage in knowledge transfer.

Notwithstanding the reduced number of IKT articles, there are many opportunities to explore in this field. For instance, given the nature of IKT, it may be relevant to analyze the impact of HRM practices, technological infrastructure, and resources. As far as HKTs are concerned, there is no investigation into multinationality and performance of subsidiaries.

In relation to CKT, it is essential to determine whether HQs transfer more knowledge to subsidiaries that have more resources, are strategically more important to MNCs, have a better business and financial performance, or work in the same line of business as HQs. Concerning RKT, it is still unclear what drives subsidiaries to transfer knowledge willingly to HQs. Furthermore, the antecedents and consequences of fear of opportunism, the existence of teams, projects, and centers of excellence, subsidiaries' disseminative capacity, as well as establishment or internationalization motives should be further researched.

The category related to relationships between knowledge actors or organizational units was the most studied category in IKT and RKT literature, the second most discussed in HKT 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) socialization mechanisms; (3) frequency of communication; and (4) trust. Despite the considerable amount of research, 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 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.

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 is 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 conducted to uncover the repercussions of culture and geography in this field.

MNCs' characteristics and policies are one of the central categories in the literature, being the most studied category in CKT and IKT articles, and the second most studied in HKT and RKT research. There is a consensus in the literature that expatriates, HRM practices, and suitable transfer, coordination, or integration mechanisms ease intra-MNC knowledge transfers. Nonetheless, some topics need additional research, such as MNCs' size, centralization, organizational support, formalization, and organizational culture. Although these topics are addressed quite often in the papers reviewed, their impact on intra-MNC knowledge transfers is not yet fully explored and captured. Focusing on IKT, there is no research on the influence of MNCs' knowledge resources and performance. Even though there are studies about the impact of RKT on MNCs' financial and business performance, there are no studies in the reverse direction, that is, to what extent MNCs' performance enhances (or not) RKT.

The literature on intra-MNC knowledge transfer acknowledges the importance of knowledge characteristics, as this research category is addressed in 58.82% (i.e., 50 out of 85) of the studies. Twelve knowledge characteristics are identified in the literature: (1) type; (2) tacitness; (3) explicitness; (4) quantity or amount; (5) value; (6) relevance; (7) complexity; (8) specificity or specialization; (9) timing or novelty; (10) embeddedness or stickiness; (11) codification; and (12) articulability. Among these topics, the type of knowledge is arguably the most popular, being mentioned in 58.00% (i.e., 29 out of 50) of the articles. This topic is explored about three times more than the second most studied topic in this category. 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 12) characteristics of knowledge—namely type, explicitness, and tacitness—have been explored, so there are many opportunities in this area.

The characteristics of individuals taking part in knowledge transfer processes were one of the least explored categories. This finding is predictable, taking into account that three 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 organizational factors play a greater role in HKT, CKT, and RKT. Despite this, one would expect more research on the category related to people's influence on knowledge transfers in IKT articles, especially on learning styles and capacities. Researchers concentrating on this category studied mainly employees' competences, qualifications, functions, departments, nationalities, career considerations, and gender, in addition to their perceptions, feelings and beliefs. The least covered topics were employees' motivation to transfer or absorb knowledge, participation or experience in knowledge transfer activities, seniority or hierarchical level, age, learning capacities or styles, and satisfaction. In the HKT literature, there are many gaps, considering that no article investigates the influence of employees' age, motivation, perceptions, feelings, expectations, beliefs, and levels of hierarchy. Nor is there investigation on the impact of employee satisfaction on CKT and RKT, or on employees' perceptions, feelings, expectations, and beliefs on RKT.

The most surprising result was the lack of research on the outcomes of intra-MNC knowledge transfers. Considering that according to knowledge transfer theory, this process is only completed when there is a change in the behavior or performance of the knowledge recipient (Argote and Ingram 2000), it was expected that most articles would address this category. However, this research category is investigated in 29.41% (i.e., 25 out of 85) 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 following topics: (1) subsidiaries' financial and/or business performance; (2) MNCs' financial and/or business performance; (3) HQs' financial and/or business performance; (4) knowledge bases and innovativeness; and (5) market responsiveness and NPD. There are numerous opportunities for future investigation in this category, taking into account the small number of results and the fact that these topics are often superficially explained in the literature, specifically in terms of increases in organizational units' knowledge resources and innovativeness.

Finally, the least explored research category in the literature on intra-MNC knowledge transfer is related to HQs' characteristics, being mentioned in only 21 (out of 85) studies. There is no literature on IKT addressing this category, and the six articles on HKT that deal with this area examine simultaneously other knowledge transfers. One can assume that this research category is more pertinent in the VKT literature, particularly in CKT—a result that was verified in this SLR. Among the main HQs factors influencing 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 are clearly gaps in this category in terms of the drivers of HQs' capacities, motivation, and willingness to create, disseminate, and transfer knowledge to subsidiaries.

The relationships between individuals or knowledge authors reflect the importance of employees in the transfer of knowledge. Individuals' characteristics influence the proper socialization of mechanisms used by units across MNCs when receiving and transferring knowledge. It is clear that individuals' qualifications, competences, skills, expectations, beliefs, learning capabilities, leadership styles, participation, experience, and motivation to transfer knowledge play an important role.

If those characteristics are important, knowledge transfer activities need to be put in motion. As such, relationships between individuals or knowledge actors depend on several aspects that MNCs need to address. Among the most important ones found in this SLR are those that influence the knowledge socialization mechanism involving the internal embeddedness of the subsidiaries' relational ties, the relational ties between subsidiaries and between subsidiaries and HQs, the length of the relationship between the units, and the relational/linguistic/cultural/geographical distance between the different units. The corporative/collaborative perspective and the inter dependency of subsidiaries–HG relationships also play an important role, with firms needing to be tuned to the importance of a clear similarity of practices, values, processes, and vision so that knowledge can be

transferred across the whole organization. An adequate symbiosis between individuals' characteristics and the relationship between knowledge actors is of crucial importance.

If personal characteristics are important to transfer knowledge, the characteristics of the knowledge transfer also play an important role in intra-unit knowledge transfer. The tacitness/explicitness and value of knowledge transferred is important, as this has consequences for those involved in the transfer, as well as for organizational practices. Moreover, practices, processes, and organizational characteristics influence the value of the knowledge transferred. The characteristics of knowledge also depend on the relationships of those involved in the knowledge transferred as the more embedded and more frequent the communication, and the shorter the cultural/geographical/organizational distance, the easier it is to transfer knowledge with more added value and thereby solve knowledge actors' problems.

The characteristics of HQs and subsidiaries also play an important role in the study of knowledge transferred. However, these three categories are addressed differently by a diverse group of topics, HQs' characteristics being the least studied of the three.

Four topics stand out—size, knowledge base or resources, motivation/willingness/commitment to support knowledge transfer/absorption, and financial/business performance—in those categories.

Size is the most common topic, as it is normally associated with the subsidiary's strategic role or with the strategic importance of the HQs or the MNC. It is also used as a measure of the relative importance when comparing the subsidiary with the MNC it belongs to. Size, although very controversial, as it can be measured by the number of employees in the subsidiary or by the number of subsidiaries an MNC has, is normally associated with the subsidiary's technological capacity to transfer knowledge to other sister units, to the HQs or within the MNC. It is also associated with the technological capacity and the power or influence to transfer knowledge.

The second most important topic is knowledge base or resources, which is normally associated with the firm or unit's capacity to generate, acquire, and transfer knowledge and improve its learning and absorptive capacity. This topic is also associated with the technological capacity and the power or influence to transfer knowledge.

The motivation/commitment/willingness to support knowledge transfer is normally related to the organizational unit's capacity to transfer knowledge, and, as such, it gives a clear indication of the unit's importance or technological capacity within the MNC. This topic, together with size and the knowledge base and resources, are in the studies about knowledge transfer.

Financial and/or business performance normally seeks to assess the output of the knowledge transfer with the organizational unit analyzed.

Among the characteristics of the MNC, the study of expatriation is quite common. This normally takes into account the central role expatriates traditionally play within an MNC. The transfer, and integration of a coordination mechanism, is also an important topic that seeks to address the key role MNCs normally play in their outward perspective of the knowledge transfer process. HRM practices is also an important topic that is normally addressed when analyzing the relationships between knowledge actors in the MNC.

Age and mode of entry are two important topics when analyzing subsidiaries' characteristics. Just as with size, age is an important variable used to analyze the firm's knowledge capacity. Older subsidiaries are normally associated with more competences, learning capacities, and valuable knowledge. Mode of entry is also important, as the more independent the subsidiary, the more important its role. Complementarily, acquired subsidiaries seem to play an important role for their HQs.

HQs' characteristics are not as intensively studied vis-à-vis the characteristics of MNCs or those of subsidiaries. However, there are three topics: multinationality, disseminative capacity, and absorptive capacity, which are common to the characteristics of both HQs and subsidiaries. These are important topics, as the greater the number of countries or disseminative capacity of the HQs, the more able the organization is to disseminate

knowledge. On the other hand, the greater the absorptive capacity of the HQs and the greater the disseminative capacity of the subsidiary, the greater the importance of the subsidiary in RKT.

The impact of the external environment is an important category, in which the industry characteristics and the HQs/subsidiaries' location play a major role. Industry characteristics are related to the degree of competition and complexity of the environment, which affects market and environment knowledge. Manufacturing and service firms are likely not only to behave differently, but also to have different knowledge transfer needs as a result of the degree of technological acumen and tacitness/explicitness of their activities. The distant locations of HQs and subsidiaries have important consequences for knowledge transfer, as the greater the distance between the two, the greater the likelihood of knowledge transfer complexity.

Finally, the category of knowledge transfer results deals with the outcomes achieved, where financial/business performance, whether at this, subsidiary or MNC level, is analyzed according to the aims of those studies.

Analysis of Table 1 indicates that IKT is less complex than HKT, CKT, and RKT, as the characteristics of HQs or knowledge transfer results are not studied. Furthermore, the characteristics of the knowledge transferred, those of the subsidiaries, or those of the external environment are barely analyzed.

5. Conclusions

5.1. Theoretical Contributions

The most significant contribution of this SLR was the mapping and synthesizing of existing literature in this field, which gave a better understanding of the multifaceted perspectives surrounding intra-MNC knowledge transfers.

This is the first literature review on intra-MNC knowledge transfers that compares and discusses factors influencing four internal knowledge transfers (IKT, HKT, CKT, and RKT) across eight thematic categories and 97 topics. It also identifies the core theories used as a foundation in the articles reviewed. As mentioned above, the depth of topics analyzed and the variety of categories covered give RKT more importance than IKT. Vertical knowledge transfer (CKT + RHT) clearly dominates over HKT, which is a clear indication of the need for MNCs to manage the transfer of knowledge, which is affected by the path dependency based on the traditional exercise of power (e.g., size, knowledge base), which still dominates most MNCs' vertical knowledge transfer across the world. These aspects are traditionally affected by the characteristics of MNCs, HQs and subsidiaries. Although affected by the classical perspectives of power-based relations (e.g., expatriates, size, knowledge base) with the subsidiaries, the topic of HKT is still very present. Although important, intra-unit knowledge transfer is greatly influenced by individuals' characteristics and relationships. In conclusion, the context in which knowledge takes place affects the research carried out.

5.2. Managerial Contributions

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 these sub-units can have on MNCs' internal and external networks. This SLR highlights that several strategies can be implemented by managers according to the knowledge transfer taking place. When managing IKT, it is essential to use socialization, integration, and coordination mechanisms to internalize and deploy competences and skills within the unit.

For managers, the essential issue is how to improve the competitive advantage of the unit they work for. If MNCs are to succeed, on one hand, HQs need to transfer knowledge based on objectives at the corporate level and take into account the importance of the intricacies of HQ–subsidiaries relationships. On the other hand, at the subsidiary level, managers need to improve their business unit's competitive advantage vis-à-vis other subsidiaries to enhance their position within the MNC.

It was found that similarity of practices, frequency of communication, and trust can augment internal knowledge transfers, and so managers must work continuously on these areas. Apart from intra-organizational influences, both corporate level and business unit managers must pay close attention to the external environment in which knowledge transfer takes place, the level of economic development, industry characteristics, market changes, national policies, and IPR protection in each country and market in which subsidiaries or HQs operate. When transferring, managers need to take into account the knowledge base or resources and the size of the units (subsidiary or HQs) involved in order to properly manage the knowledge absorption of the receiving unit and ensure the disseminative capacity of the sending unit so that the receiving unit improves its competitive advantage. For that, it is important to commit individuals to supporting knowledge management activities and fine-tune relational ties and activities to shorten the cultural/linguistic/geographical/organizational distance between the units involved. This could be the bedrock for knowledge transfer activities across the MNC. In the case of vertical (conventional and reverse) knowledge transfer, compared to horizontal knowledge transfer, one specific aspect needs closer attention: the exercise of political power between the subsidiary and the HQs.

5.3. Recommendations for Future Research

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 the external environment also needs greater attention. From this perspective, authors could explore how knowledge actors' capacities, such as the adaptive and responsive capacities of the knowledge receiver, are influenced during the relationships embraced. Another recommendation is to examine whether the frequency or extent of one type of knowledge transfer leads to improvements in another. In other words, it would be useful to understand if the fact that subsidiaries transfer much knowledge internally influences knowledge transfers to other sub-units.

As size and age are two of the most widespread topics, it might be interesting to explore how the experience of business units in knowledge transfer processes influences their ability to create and transfer knowledge. In addition, more investigation is needed on the role of subsidiaries' autonomy, power, dissemination capacity, and isolation in these activities. Although these topics have already been addressed in the literature, the results are little explored, or dubious, and these variables may be fundamental for better understanding of the phenomenon under study.

Another aspect that deserves close scrutiny is how knowledge-based capabilities underpin the knowledge transfer process. If absorption and disseminative capabilities are important drivers of transfer, it is necessary to investigate how organizational, product-based, process-based, learning, and strategic capabilities are influenced and how VHT and HKT are differently influenced by those capabilities. As mentioned above, as quantitative studies are based on a deductive approach, new qualitative studies, more oriented to theory building, need to take into consideration, among other aspects, the institutional perspective and how micro political power underpins or deters knowledge transfer across MNCs. Finally, as most studies are based on manufacturing and service-based firms, it would be important to broaden the study to other types of MNCs, such as how knowledge transfer occurs among NGOs or social organizations.

5.4. Limitations

A major issue was the analysis of results from articles that explored more than one type of knowledge transfer. A separate analysis for each type of transfer should have been conducted because some variables studied 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 some authors 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. As with any method, SLRs have strengths and weaknesses, but among their advantages, their systematic structure and the reliability of their results can be stressed.

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