

The reverse transfer of knowledge in MNEs: the perspective of foreign subsidiaries in a post-transition country

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Abstract

Purpose – The aim of the paper is to identify the determinants of the marketing and managerial knowledge transfer from a foreign subsidiary located in a post-transition country to its headquarters established in a developed country.

Design/methodology/approach – The authors combined the critical literature studies and empirical research, where the method of Computer-assisted Telephone Interview (CATI) was applied. The empirical data was gathered from 231 manufacturing foreign subsidiaries established in Poland (as one of the post-transition economy). To test the hypotheses logistic regression was applied.

Findings – The knowledge accumulated in the foreign subsidiary, the amount and level of novelty of innovation in the foreign subsidiary and its strategic autonomy is crucial for the occurrence of the reverse knowledge transfer. However, the more powerful the foreign subsidiary is, the less eager it is to transfer marketing and managerial knowledge to the headquarters.

Research limitations/implications – The study is concentrated just on the manufacturing sector in the Polish economy. The results are based on the opinions and perception of managers, but they represent the corporate perspective (not their individual ones).

Practical implications – The study provokes asking the question about the proper level of strategic autonomy of a foreign subsidiary. The implication related to the autonomy is much about the proper strategy for human resources management. The obtained results indicate that the intensity of innovation in a foreign subsidiary “translates” to the outflow of knowledge from a foreign subsidiary to its headquarters. Thus, encourages headquarters to let their subsidiaries innovate still monitoring their power.

Social implications – FSs are entities more or less embedded in the host markets, thus their strength and sustainable existence is important for their stakeholders, in particular – internal entities such as employees and

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external entities such as suppliers, and other cooperating organisations and institutions in the host market. The contribution of FSs to the innovation performance and knowledge pool of external partners is determined much by their absorptive capacity. Thus, the results obtained indirectly point to the importance of external agents ability to absorb and exploit the knowledge.

Originality/value – The originality of the paper concerns three issues. Firstly, the previous studies are mainly focused on either developed or emerging markets and as a result, the peculiarity of post-transition economies, like Poland has been neglected. Secondly, the determinants of reverse knowledge transfer are presented from the corporate perspective. Thirdly, authors focus on marketing and management knowledge distributed from a foreign subsidiary to its headquarter.

Keywords Reverse knowledge transfer, Foreign subsidiary, Headquarters, Post-transition economy, Autonomy, Innovation

Paper type Research paper

Introduction

Nowadays the key motivation for foreign direct investment is strategic assets-seeking, and thus knowledge-seeking, among others. Foreign subsidiaries (FSs) play a significant role in the global value chain of the multinational enterprises (MNE). FSs are often providers of knowledge that is valuable and unique, from the perspective of the parent company (Eden, 2009; Michailova and Mustaffa, 2012; Dabić and Kiessling, 2019; Jiménez-Jimenez *et al.*, 2008; Vlačić *et al.*, 2019a, b). This knowledge residing in FSs often becomes a primary source of strength for the whole MNE (Chung, 2014; Eden, 2009; Frost and Zhou, 2005; Makela *et al.*, 2009; Blomkvist, 2012; Nair *et al.*, 2015; Schotter and Bontis, 2009; Tseng, 2015; Wang *et al.*, 2019) and parent companies are interested in the transfer of knowledge and expertise back to themselves. This kind of knowledge transfer is called reverse knowledge transfer (RKT) (Criscuolo *et al.*, 2005; Frost and Zhou, 2005; Li *et al.*, 2016; McGuinness *et al.*, 2013; Najafi-Tavani *et al.*, 2012; Rabbiosi and Santangelo, 2013; Tseng, 2015). Up until now, studies on RKT have been mainly focused on either developed or emerging markets (Håkanson and Nobel, 2001; Ambos *et al.*, 2006; Yang *et al.*, 2008; Rabbiosi, 2011; Najafi-Tavani *et al.*, 2012; Rabbiosi and Santangelo, 2013; Mudambi *et al.*, 2014). Next, many studies still often focus on the knowledge transfer from the parent companies (usually located in higher developed countries) to their FSs (usually located in less developed countries). They also present the determinants of knowledge transfer from parent companies, for example Ling *et al.* (2009) identified three groups of elements that influence the knowledge transfer negatively: individual obstacles (e.g. poor communication and interpersonal skills), organizational barriers (e.g. poor managerial and leadership skills) and technological barriers (e.g. poor integration of knowledge and IT systems, outdated technologies, etc.) (Ferencikova and Hrdlickova, 2020). Referring to key drivers of the knowledge transfer (Minbaeva *et al.*, 2014) underline skills and motivation.

Next to these studies, other authors express the role of FS in knowledge augmenting and competence-building processes (Mudambi and Navarra, 2004; Cantwell and Mudambi, 2005; De Beule and Van Beveren, 2019).

In this paper the general authors' aim to contribute to the discourse on the foreign direct investment in Poland being a post-transition country presented in the literature (Terry, 2000; Weresa, 2004; Kowalewska and Radto, 2014; Gorynia *et al.*, 2019) and try to merge three strain of studies – internationalisation, knowledge management and organisational studies. They shed light on the sustainability and strength of FSs established in Poland and refer to the knowledge on the determinants of RKT in the context of a post-transition economy. In relation to the general aim of the paper a detailed once was formulated which concerns the identification of the determinants of the marketing and managerial knowledge transfer from a FS located in a post-transition country to its headquarters (HQ) established in a developed country.

To address the goal of the study the authors conducted computer-assisted telephone interviews (CATIs) with managers representing 231 FSs established in Poland. MNEs that invested in Poland have been more motivated by the size of the Polish market, relatively low labour costs and growing productivity, than by the technological innovativeness of the economy (World Economic Forum, 2015, Global Innovation Index, 2015). In the Global Innovation Index 2019, Poland is the last among the Visegrad countries (Poland, Czech Republic, Slovakia, Hungary). It ranks 39th in the total ranking (<https://www.globalinnovationindex.org/gii-2019-report#>) and according to the European Innovation Scoreboard (2019), like other countries in the Visegrad Group, Poland is a moderate innovator, but together with Hungary ranks last among them. Although, according to the World Bank, UNCTAD and OECD, Poland is one of the post-transition countries that in the last years has “jumped up” to the group of developed countries, but it is still in transformation as far as its innovation capacity and knowledge pool is concerned.

One of the latest research regarding to above issues is presented by Ferencikova and Hrdlickova (2020). They conducted case studies (qualitative research) among four companies located in Slovakia. Their findings identify the key drivers, communication channels and contribution of original reverse knowledge from subsidiaries located in Slovakia to their parent companies (located in Western Europe). These results show that corporate structure, control mechanisms and subsidiaries’ role as main drivers of RKT in Slovak subsidiaries. Ferencikova and Hrdlickova (2020, p. 7) also conclude that “Reverse knowledge transfer offers space for additional research: new objectives require quantitative methodology that would allow generalization of the findings”. Our paper, where results of quantitative research are presented, is an answer for this challenge and tries to cover this gap in the literature.

The novelty of this paper focuses mainly on three aspects, namely the determinants of RKT from the corporate perspective (not individual managers), the location of the subsidiaries and the type of knowledge distributed from FS to HQ. Firstly, to the best of authors’ knowledge the RKT determinants from the corporate perspective are described rarely in the literature. There is some research presenting this problem, but still it is quite new and less developed in primary quantitative research (Rabbiosi and Santangelo, 2013; Mudambi *et al.*, 2014; Nair *et al.*, 2015). For example, Chung (2014) underlines mainly elements related to the individual and personal perspective, namely relations between managers from parent companies and subsidiaries. Chung (2014) presents trust and personal contact between these managers as main aspects advancing RKT. Secondly, the paper focuses on one of the post transition markets – Poland—as a location for FS. Thirdly, the research concentrates mainly on particular type of knowledge, which relates to marketing and management. Such limitation certainly have more practical implications than general statements about RKT.

Thus, in the study the authors address the question of determinants of RKT from FSs established in a post-transition country to their HQs located in developed economies. To develop our hypotheses, authors start with a literature review on RKT and its determinants. Then it was presented the conceptual framework of the study and the methodological aspects of the research. Subsequently, authors reveal the results of the econometric modelling with the use of logistic regression, discuss the results and formulate conclusions.

Literature review and hypotheses development

The reverse knowledge transfer

The classic, conventional approach to knowledge transfer within a MNE is top-down: from the HQ to FSs (Dunning, 2001; Johanson and Vahlne, 1977, 2009; Rugman, 2006; Vahlne and Johanson, 2014; Vernon, 1993). More than 20 years ago Kuemmerle (1997) explained that knowledge flows may emerge in three different constellations: first, between a FS and its HQ, between a FS and its sister subsidiaries and among a FS and its local partners. The first

direction is vertical and the second is horizontal in nature. As far as RKT is concerned, in this study, authors focus on knowledge flows from a FS to its HQ (Ambos *et al.*, 2006; Schotter and Bontis, 2009; Vlajčić *et al.*, 2019a). Such understood RKT is vertical in nature. The vertical direction is related to the bottom-up flows and embody the international transfer of competencies (Håkanson and Nobel, 2001; Foss and Pedersen, 2002; Ambos *et al.*, 2006; Yang *et al.*, 2008). Thanks to this transfer the organisational practices of a FS may be re-used elsewhere in the MNE (Jensen and Szulanski, 2004).

In the literature, RKT is called reverse technology transfer (Belderbos *et al.*, 2013; Criscuolo *et al.*, 2005; Driffield *et al.*, 2010), reverse knowledge flow (Maehler *et al.*, 2011) and reverse transfer of practices (Chung, 2014). Thus, the notions indicate that it may be distinguished the transfer of technology, of knowledge, of practices, etc.

Scope, knowledge and innovation – what makes a FS capable of RKT

The knowledge-based view of a firm provides hints at the potential features and types of knowledge that may circulate within an MNE's network – the tacit (knowing how) and explicit (knowing what) (Polanyi, 1962, 1966), organizational routines (Nelson and Winter, 1982) and organizational competency (Prahalad and Hamel, 1990). As Polanyi (1962) noted, tacit knowledge is difficult to articulate since it is embodied in individuals and organizational practices (Nelson and Winter, 1982). Tacit knowledge is not easily codifiable and teachable (Kogut and Zander, 1992); it is more “tied to the senses, tactile experience, movement skills, physical experiences, intuition, unarticulated mental models or implicit rules of the thumb” (Nonaka and von Krogh, 2009, p. 636). For Nonaka (1994) tacit and explicit knowledge are mutually complementary (not separate) and exist along a continuum.

Asmussen *et al.* (2009) define the term “subsidiary competence” as encompassing both the existence of the activity in the value chain and proficiency in that activity. Thus, the “subsidiary competence” is reflected in the position of a FS in the value chain – whether it performs the whole set of primary and supportive activities in the value chain or just a part of them. Porter (2008) explained that firms perform primary activities related to the physical creation, sale, maintenance and support of a product or a service – from inbound logistics, through operations, outbound logistics, ending up with the marketing and sales and after-sale services. The supportive activities play a role in each primary activity and embrace procurement, human resource management, technological development and infrastructure. To perform these activities, FSs need to possess particular competencies. Competencies in general are founded on skills and abilities by which resources are deployed through an organization's activities and processes. That is why it may be assumed that the diversity and number of activities performed within the value chain reflects the subsidiary competencies. They competencies in functions can be clustered into three distinctive groups: supply competence (purchasing, logistics and distribution), technical competence (research, development, production of goods/services) and market competence (marketing and sales). And the pool of competencies a FS poses is associated with the role it plays for the whole multinational enterprise – how much it is dedicated to particular functions, how much it is involved in the value creating operations – which is a topic discussed in the literature (Gupta and Govindarajan, 1991; Morschett, 2012; Getachew and Beamish, 2017; Meyer and Estrin, 2014; Awate *et al.*, 2015; De Beule and Van Beveren, 2019). Yu *et al.* (2019) identified a positive correlation between HQ attention and a FS's reverse knowledge. Their study demonstrates that FS with more HQ attention are expected to contribute more to the performance of the MNE and it goes in line with greater participation in the activities that have greater potential for the contribution. There are studies presenting FSs as actors in the MNEs' knowledge augmenting and competence-building processes (Mudambi and Navarra, 2004; Cantwell and Mudambi, 2005; De Beule and Van Beveren, 2019). In reality the knowledge augmenting and

competence building processes take place within particular functions performed by a FS in the value chain. Since competencies arise from skills needed to exploit resources they determine the pool of knowledge to be potentially transferred by an FS to HQ. And the number and diversity of activities performed by an FS reflects its involvement in value creating activities. Accordingly it is predicted, that:

- H1. The greater the involvement of a FS in the value creating activities within the value chain, the more likely the reverse transfer of marketing and managerial knowledge; and
- H2. The greater the pool of marketing and managerial knowledge accumulated in a FS, the more likely the reverse transfer of marketing and managerial knowledge.

The possession of tacit and explicit knowledge embodied in organisations translates into innovation generated by the organisation that may be related to products and processes (technological innovation), and marketing and organisational issues (non-technological innovation). These four types of innovations, indicated in the third version of Oslo Manual (OECD, 2018), correspond with the types of knowledge. In the study authors focus on purpose on one type of non-technological knowledge and link it with non-technological innovation, that is marketing innovation. Jiménez-Jiménez *et al.* (2020) studied the relationship between RKT and HQ innovation and the results of their study indicate a positive relationship between these two constructs. According to their research the knowledge transferred from FSs to parent units is of a more tacit nature, and also when the organizational distance between them is larger (Jiménez-Jiménez *et al.*, 2020, p. 629). Bearing in mind the fact that knowledge-augmented firms and FSs, among others, strive to generate innovations, it may be assumed that the ability of a FS to engage in RKT – even with regard just to marketing and managerial knowledge – is explained not only by the knowledge itself, but by the innovations created by the FS. Moreover, even the marketing and organisational innovations may be different in terms of their level of novelty – they may be new for an FS, for the host country, region or zone in which the FS operates, or for the whole world. Therefore, it is predicted:

- H3. The greater the number and the novelty level of marketing and organisational innovation in a FS, the more likely the reverse transfer of marketing and managerial knowledge.

To sum up, this part of our reasoning authors would like to point to the fact that the capability of RKT is a multidimensional phenomenon.

Autonomy and cultural distance – what makes a FS willing to get involved in RKT

The readiness of a FS for knowledge outflow to HQ goes in line with the proactivity and cooperative attitude of the parent company and its FSs (Ciabuschi *et al.*, 2011; Dellestrand, 2011; Holm and Pedersen, 2000). FSs need to be treated rather as partners and autonomous entities. Autonomy is broadly discussed in the literature as a very important determinant of the RKT (Björkman *et al.*, 2004; Mudambi and Navarra, 2004; Schotter and Bontis, 2009; Schulz, 2001). Autonomy means the allocation of strategic decision-making to the FS, which translates power for the FS. This is related to the degree of freedom a FS enjoys with regard to decision making process on all levels that concern the FS. Palmié *et al.* (2014) emphasize that intra-MNE knowledge flows are dependent on the type of subsidiary autonomy. They indicate that strategic subsidiary autonomy impacts negatively the reverse knowledge transfer, whereas operational subsidiary autonomy has a positive effect. In one of the latest research, related to the significance of the subsidiaries' autonomy in knowledge transfer, Søberg and Wæhrens (2020, p. 163) emphasize that “operational subsidiary autonomy has a negative effect on primary knowledge transfer” (transfer of knowledge from HQ to the subsidiary)

“and a positive effect on reverse knowledge transfer”. [Gupta and Govindarajan \(1991\)](#) highlighted that innovative contributions of FS emerged more frequently from FS's autonomous initiatives than from the directives of their corporate HQ. This seems to be even more obvious in the case of marketing and organisational innovations that is very much location specific. [Kallinikos \(1984\)](#) defined autonomy as the combination of all formal and informal rules and practices which have been developed over time in an organization in order to define a unit's degree of discretion to control its own activities without interference from higher levels. That is why authors formulate the hypothesis that:

- H4.* The greater the autonomy of an FS, the more likely the reverse transfer of the marketing and managerial knowledge.

However, [Mudambi et al. \(2014\)](#) reveal that it is less trivial to expect that the level of RKT will increase monotonically. That said, it is worth highlighting that in their study, [Mudambi et al. \(2014\)](#) did not distinguish the types of knowledge and innovation (i.e. technological versus non-technological) and this distinction may have affected their results. Nevertheless, drawing on the perspectives of social community and agency theory applied to the relationships within an MNE's network, they demonstrated that in cases where the subsidiary's innovativeness was very low, it had very little to gain from withholding its knowledge from its HQ and was more eager to share the knowledge with the parent company. In cases where innovativeness increases, FS may be eager to become more powerful and may display more opportunistic behaviour, choosing not transferring their knowledge to HQ.

The proactive attitude of the FS and its HQ that translates into the readiness to share knowledge is determined by the autonomy of the FS that makes this entity feel more or less free, independent, thus motivated to be more or less creative. The level of FS autonomy is said to be lower in the case of entities established in more remote markets. The way the FS and other MNE's entities behave is influenced by the cultural features of the parties. These features impact the perception of intra-MNE cooperation. Much of the knowledge developed by a FS is tacit in nature and tacit knowledge is best acquired through observation, action, practice and reflection ([Nonaka and von Krogh, 2009](#)) since it is not accessible through consciousness, but is more automatic, non-directed and often non-intentional ([Reber, 1993](#)). As such, the cultural background of the parties involved in RKT seems to be important. Knowledge, and especially the tacit type, is communicated most effectively when there is a shared understanding between the entities involved in the transfer ([Grant, 1996](#)). The transferability of knowledge is facilitated by the presence of shared mental models and common experiences and it requires interaction, which works well in a collaborative context. The shared understanding and collaborative attitudes are very much determined by the cultural features of the parties. The cultural distance is understood as the difference between the culture of the home country and the host country, and can be measured by [Kogut and Singh's \(1988\)](#) composite index, based on [Hofstede's \(1980\)](#) four cultural dimensions (individualism, uncertainty avoidance, power distance, and masculinity). Depending on the type of difference studied, prior research has suggested various types of distance, although cultural distance, i.e. the extent to which countries differ in cultural values, remains the most widely used type of distance in international business ([Beugelsdijk et al., 2018a, b](#); [Shenkar et al., 2008](#); [Tihanyi et al., 2005](#)) and RKT is an important issue studied within IB. [Konara and Mohr \(2019\)](#) present mathematically and empirically that the [Kogut and Singh's \(1988\)](#) composite index is incorrectly specified but simultaneously they are not able to provide any solution that other authors could use or that in general could be used to reinterpret the past empirical research with the use of this index. [Cuypers et al. \(2018\)](#) arrange the discussion on the index and point to the need to distinguish three aspects in the research – the concept of distance, the algorithm, and the data but they don't offer any precise receipt how to replace this index. [Dikova and Brouters' \(2016\)](#) literature review shows Kogut and Singh's

operationalization to be by far the most commonly adopted measure of cultural distance. In the theory of transaction costs, Williamson (1985) underlines that a high cultural distance causes high transaction costs. In his opinion, high cultural distance hinders the transfer of resources and competences, as well as control of the company's operations abroad. The authors – being aware of the criticism towards this index (Konara and Mohr, 2019; Maseland et al., 2018) and respecting the approach of prominent researchers applied it to measure the cultural differences between the home and host market of particular FSs. Despite the critical arguments it is still used by researchers and provides valuable insights for practitioners (Cuyppers et al., 2018). An important argument for using this index is the availability of data to calculate it for practically almost each country and still the lack of other commonly accepted approaches to replace this index. That is why, despite the ambiguous nature of cultural distance, it is assumed that:

H5. The smaller the cultural distance between the FS and its HQ, the more likely the reverse transfer of marketing and managerial knowledge.

The key research variables and the relationships among them are presented in Figure 1 that shows the conceptual model of the study.

Method

Sample and data

In this paper, the main aim is to investigate the determinants of RKT from a FS to its HQ. To do that authors conducted CATIs with managers representing 231 entities. The primary

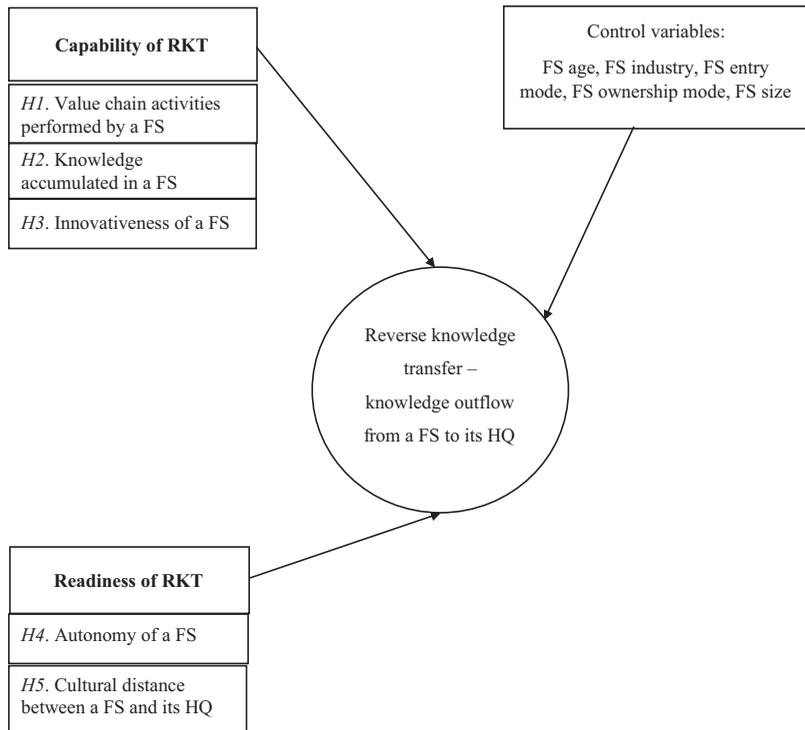


Figure 1.
Conceptual framework

Source(s): Own study

quantitative study presented in this paper was preceded with a qualitative pre-research – in-depth individual, unstructured interviews with managers. The qualitative pre-research was dedicated to the identification of the main determinants of RKT. These managers who were of the Polish nationality were to express their views and in the next step their opinions were confronted with the results of the in-depth literature studies. The results of the pre-research provided guidance as to the determinants of RKT that were taken under consideration by the authors in the presented paper. The determinants identified in pre-research were taken into account in the questionnaire's preparation (it has been checked for legibility and completeness in the pilot study by the same managers who participated in the pre-research). The managers in the pre-research and then in CATIs answering the questions presented the perspective of their companies – being FSs.

The target population in the study are FSs established by MNEs in Poland in the manufacturing section according to NACE Rev. 2 not later than in 2012. Authors applied several criteria in the sampling. First, each entity had to fulfil the criteria of a FS. Second, authors followed a multi-industry approach, which means they focused on the manufacturing section – Section C in NACE Rev. 2 - that embraces 24 different divisions of manufacturing companies according to NACE Rev. 2.0. Authors purposefully moved beyond a focus just on high-tech industries since their aim was related to non-technological knowledge. The decision to concentrate on the manufacturing section may be explained by the important role of FS established in Poland in the manufacturing industries for exports and their role in innovation processes. In the period 2016–2018, 26.1% of manufacturing (and 21% of service entities) companies introduced product and business process innovations (CSO, 2019). In the same period, the percentage of firms that implemented new or modified marketing methods was higher in the manufacturing than in the service sector (CSO, 2019, p. 2). At the same time, it is the manufacturing section that is more penetrated by foreign capital in Poland. In 2018, FDI in the manufacturing sectors in Poland achieved the value of PLN 21.5 Billion (NBP, 2019). Third, just medium and large companies are under consideration since in Poland more than 87.5% of intramural expenditures on R&D belongs to firms employing 50 or more persons (CSO, 2019). The list of potential participants (companies) of CATIs was based on the data from the Polish Investment and Trade Agency. Among these, 231 FSs (66%) declared an outflow of knowledge to their parent companies. The research instrument was a questionnaire with 28 questions about: the year of establishment, mode of establishment, country of origin, the share of foreign capital in the ownership structure, number of employees, share of products offered mainly in Poland, the number and type of value-creating activities of the FS, the level of strategic and operational autonomy in particular functions, contribution of the FS to the competitive advantage of the whole MNEs, unique resources and capabilities of the FS, indicators of the FS performance, type of innovation and its level of novelty, cooperative links with the entities in the corporate networks and with external agents and the innovation capacity of the Polish economy.

Dependent and independent variables – concepts and measurement

Reverse knowledge transfer (RKT). RKT is understood as the transfer of knowledge from a FS to its HQ. The definition of this construct is based on previous studied, i.e. Li *et al.* (2016) and Tseng (2015). Authors focused on the marketing and managerial knowledge that results in new or modified solutions in the marketing and management of the company. The respondents were asked to indicate the knowledge outflow from their subsidiary to their HQ, where: 1 stands for the existence of outflow and 0 stands for the lack of outflow of marketing and managerial knowledge. A total of 34% of the firms under the study are not involved in the RKT.

Value-creating activities (VCA). As far as the activities within the value chain of a FS (called value-creating activities) are concerned the authors refer to the Porterian approach (Porter, 2008) (Table 1), nearly 40% of the entities perform R&D, manufacturing operations, sales and after sale operations. Only around 11% of the sample is not involved in any R&D activities, focusing just on manufacturing. Thus, it may be assumed the respondents to be heavily involved in knowledge creation and dissemination activities. To operationalize the variable authors classified VCA into four different groups, where: 1 stands for the manufacturing operations; 2 stands for manufacturing and research and development activities; 3 stands for manufacturing, research and development, sales; 4 stands for the research and development activities, manufacturing, sales and marketing and after-sales services.

Knowledge accumulated in the company. The importance of knowledge for the competitive advantage of a firm was noticed by many scholars and resulted in the development of the knowledge-based theory of the firm (Conner, 1991; Demsetz, 1988; Conner and Prahalad, 1996; Kogut and Zander, 1992, 1996; Grant, 1996). Knowledge accumulated in the company was understood as the unique contribution of an FS to the knowledge of the whole MNE. It was associated with knowledge about the industry and market and with the competences and skills in the area of marketing and management. Respondents were asked how much these knowledge types contribute to the MNE's knowledge pool and to evaluate the level of contribution they used with a scale, where: 1 – very low level, 2–low level, 3 – moderate level, 4 – high level, 5 – very high level.

Novelty level of new solutions in marketing and management. From the perspective of HQs, the intensity of the involvement of the companies in innovative processes related to new solutions in marketing and management (measured by the number and level of novelty of the new solutions) is important. That is why authors distinguished the frequency of the innovations, referring to a 5-point Likert scale, where: 1 – very few, 2–few, 3 – common, 4 – many, 5 – abundant. The novelty levels were defined as: in the world, in Europe, in the country and for an FS. Only a small percentage of the FSs declared that many or an abundant number of new solutions in marketing and management were novelties in the world or the European region (Table 2).

Table 1.
Value-creating activities of the firms – percentage of indications (N = 231)

Value-creating activities		Share
1	Manufacturing operations	11.3%
2	R&D and manufacturing operations	10.8%
3	R&D, manufacturing operations and sales	38.5%
4	R&D, manufacturing operations, sales and after sale operations	39.4%

Source(s): Own study

Table 2.
New solutions in logistics, sale and marketing according to the level of novelty – percentage of indications

Novel solutions in marketing and management		New to the world	New for Europe or region/zone	New to the host country	New to the subsidiary
1	Many new solutions	5.2%	9.1%	15.6%	20.8%
2	Abundant new solutions	1.3%	3.0%	4.3%	5.6%

Source(s): Own study

Autonomy. The construct of autonomy used in this study goes in line with the approach of Andersson and Forsgren (1996). The firms under study are dependent on HQs (Table 3) and so it was distinguished the strategic and operational level of their autonomy. The level of “freedom” in strategic and operational decision making was measured with a 5-point Likert scale, where: 1 means exclusively by parent company (HQ), 2- predominantly by HQ, 3 – by FS or by HQ, 4 – predominantly by FS, 5 – exclusively by FS. Autonomy at the strategic level oscillates between 1.939 for decisions regarding selection of foreign markets, and 3.351 for human resources management. In the area of operational decisions, the level of autonomy is higher and ranges from 2.078 to 3.775 respectively for R&D activities and for human resources management practices. An important feature of the entities is the low level of operational autonomy in terms of decisions regarding product and technology development (2.753) and the dominance of HQs’ decisive power in the area of R&D activities.

Cultural distance (CD). In the study authors measure the CD with the Kogut and Singh’s (1988) composite index. More than one-fifth of the sample firms (20.35%) comes from Germany and around 10% from Italy, the subsequent most common countries of origin are France (7.36%), Austria (6.49%), Sweden (5.63%) and the Netherlands (5.19%). The whole set of countries of origin of FS under study encompasses 36 locations. In Table 4 there is presented the Kogut and Singh index calculated for FS with their HQs in the most commonly represented countries (at least 10 entities in the sample). The higher the value of this index, the greater the cultural distance between Poland – the host country of a FS that participated in the study and its country of origin.

FS decisions’ areas	Strategic autonomy		Operational autonomy	
	Mean	SD	Mean	SD
1 Selecting the target market(s)	1.939	1.082	–	–
2 FS product range/Product and/or technology modification (e.g. adaptation to host country operating conditions)	2.039	1.234	2.753	1.199
3 R&D strategy/R&D activities	1.952	1.158	2.078	1.195
4 Purchasing strategy/operations	2.545	1.193	3.255	0.999
5 Production strategy/operations	2.740	1.123	3.429	0.845
6 Sales/marketing strategy (activities) for global brands	2.277	1.182	2.771	1.242
7 Sales/marketing strategy (activities) for local brands	2.697	1.259	3.377	0.942
8 Financial management (activities)	2.489	1.134	3.459	0.863
9 Human resources management (practices)	3.351	1.081	3.775	0.576

Source(s): Own study

Table 3.
The level of FS’ decision autonomy (N = 231)

Country of origin	Share	Kogut-Singh index value
1 France	7.36%	0.342640
2 Italy	9.50%	0.527139
3 Germany	20.35%	1.080074
4 USA	8.70%	2.219591
5 Austria	6.49%	2.258846
6 The Netherlands	5.19%	3.028245
7 Sweden	5.63%	5.084648

Source(s): Own study

Table 4.
Dominating countries of the firms and the CD between Poland and FS’ countries of origin

Control variables

FS age. FS age may translate into its knowledge pool and expertise. Entities that are younger are often less involved in the host market and thus have narrower access to the external sources of knowledge that affects their own knowledge pool. However, older entities are often less flexible and less able to gain greater autonomy (Gates and Egelhoff, 1986; Gamelgaard et al., 2012) which may affect their ability and readiness for knowledge outflow to their parent companies. Thus, it is assumed that it is important to control for the age, but that it is not possible to define the direction of the dependence between age and knowledge outflow. The age of a company was measured with the number of years since a firm became part of an MNE – via the greenfield investment of the parent company or acquisition by a parent company. Authors distinguish 1 for FS not older than 5 years, 2 for FS existing from 6 to 10 years; 3 for the age from 11 to 15 years; 4 for FS of 16 to 20 years old, 5 for more than 20 years. The most common age of the firms in the study is from 6 to 10 years.

FS industry. Industries are characterised by different levels of technology. In that sense they may matter for the pool of knowledge and further innovation among their incumbents. The technological profile of an industry may impact the intensity of rivalry among incumbents. In turn, the intensity of rivalry in an industry facilitates a firm’s attempt to innovate and impacts their performance (Rumelt, 1991; McGahan and Porter, 1997; Weerawardena et al., 2006). Bearing in mind quite broad set of industries represented by the respondents, authors divided them into three main groups based on the technological advancement of their industries according to Eurostat (2019) (Table 5). A majority of the companies in the study operate in high and medium high technology industries.

FS entry mode. FS entry mode, or rather the mode of entry by a parent company impacts the way it operates and develops in the host market. Acquisition means that the established FS gets immediate access to the knowledge of the acquired company, and in the case of the greenfield mode, the FS has to develop the knowledge pool from scratch. FS established via acquisition provides “instant” external embedding (if the “inherited” links will be continued by the new owner), whereas FS established via greenfield investment are initially viewed as “outsiders” and need to develop their external relationships, which is a gradual process (Cantwell and Mudambi, 2011; Narula, 2014). In our study a dummy variable was used, where: 1 stands for greenfield; 2 stands for acquisitions. A majority of the FS – more than 70% – were established via greenfield.

FS ownership mode. FS ownership mode may influence the knowledge pool accumulated and potentially transferred to the parent company. A majority share on the side of a parent company means more control of knowledge flows by the parent company, and in the case of a majority share on the side of a FS, the FS is in charge of knowledge flows. Kim and Hwang (1992) claim that wholly owned FSs offer more effective and efficient control mechanisms when compared to JV. Ownership mode may affect the access of a FS to external knowledge sources and thus influence the knowledge pool of a FS (Oehmichen and Puck, 2016). Inclusion of the ownership form into the model should allow for controlling those effects. Again, a

Table 5. Industries represented by respondents – according to technological intensity (based on NACE Rev. 2)

Type of an industry	Share
1 High and medium high technology*	42.9%
2 Medium low technology	29.9%
3 Low technology	27.3%

Note(s): *The high-tech and medium high-tech industries were combined since there are only a few companies representing high-tech industries in the sample

Source(s): Own study

dummy variable was used, where: 1 stands for the minority share, 2 stands for the majority share.

FS size. Larger FS are usually less dependent on the HQ and, thanks to their size, they are better equipped to develop relationships with host market entities, which may contribute to the FS' knowledge pool. Previous studies point to the development of FS' capabilities thanks to their cooperation with external agents and the fact that the size of a FS measured by the number of employees is in line with the potential to develop knowledge-intensive relationships (Andersson *et al.*, 2002; Gamelgaard *et al.*, 2012; Johansen, 2007; Phene and Almeida, 2008). In our study FS size is a dummy variable with a value of: 1 for a large enterprise (250 and more employees) and 0 for a middle-sized company (50–249 employees). The companies under study employ at least 50 persons and thus represent the medium and large manufacturing entities that started their operations not later than more than in 2012. Around 60% of them are middle-size companies and 40% are large enterprises.

Data analysis

In our study it was assumed that the dependent variable – RKT from an FS to its HQ – is determined simultaneously by more than one independent variable. Authors thus applied a multivariate regression. The nature of the explained variable is discrete and dichotomous and its reactions to the system of explanatory variables are manifested in the binary form. In addition, there is also a lack of normal distribution for residues and a lack of uniformity of variance. As a result, logistic function was applied. In this case the explanatory variables can be both qualitative and quantitative. In the process of their selection it was used backward elimination modeling (Aczel, 2009, p. 545). The formula for the logistic regression model is:

$$P(Y) = \frac{e^{(\beta_0 + \beta'_1 X_1 + \beta_k X_k)}}{1 + e^{(\beta_0 + \beta'_1 X_1 + \beta_k X_k)}}$$

Where:

$P(Y)$ – The probability that the explained variable Y will take the value of 1 for the explanatory variable X_k ;

X –Explanatory variables;

β – Structural parameters of the model.

Logistic regression allows for calculating the probability of occurrence of the event in question, the so-called probability of success. All variables showed low or moderate correlations and the variance inflation factor values were low according to the usual parameters, suggesting there were no relevant multicollinearity problems. While interpreting the model authors used the so-called odds ratio (OR). In logistic regression the odds ratio represents the constant effect of predictor X_i on the likelihood that one outcome will occur. Thus, the odds ratio is the ratio of the probability that a given phenomenon will occur to the probability of the opposite event.

$$OR = \frac{P_i}{1 - P_i}$$

The quality of the model was assessed using classification tables that provide information on the percentage of correctly classified cases (Kufel, 2011) and based on several pseudo- R square: McFadden R^2 (1974), Nagelkerke R^2 (1991), Cox and Snell R^2 (1989).

Table 6.
The determinants of
RKT – the results of
logistic regression

	<i>B</i>	Std. error	Wald	df	Sig.	Exp (<i>B</i>)
FS entry mode– acquisitions (<i>reference variable</i>)	0.660	0.342	3.725	1	0.0536	1.935
FS industry (level of technology)– high-tech and medium high-technology (<i>reference variable</i>)			8.708	2	0.0129	
Low-technology	1.210	0.412	8.641	1	0.0033	3.353
Medium low-technology	0.365	0.368	0.983	1	0.3214	1.441
Strategic level autonomy	–0.461	0.249	3.415	1	0.0646	0.631
Knowledge accumulated in the company – the unique contribution of an FS (in the area of marketing and management) to the knowledge of the whole MNE	0.522	0.182	8.244	1	0.0041	1.685
New solutions in marketing and management – new to the host country	0.656	0.168	15.154	1	0.0001	1.927
Constant	–2.218	0.968	5.246	1	0.0220	0.109
–2 Log likelihood	255.240					
Cox & Snell <i>R</i> square	0.160					
Nagelkerke <i>R</i> square	0.221					
Quality of classification	74.5%					

Source(s): Own study

Results

Table 6 presents the results of the econometric modelling. Our study demonstrates that the involvement of a FS in the VCA is not statistically important from the perspective of RKT. **H1**, indicating that the greater involvement of a FS makes the outflow of marketing and managerial knowledge from a FS to its HQ more likely, is not supported. This means that for knowledge outflow from FSs established in Poland to their HQs, the scope of value creating activities does not play any role. However, the greater the knowledge accumulated in the FS, the more likely the occurrence of marketing and managerial knowledge outflow from this FS to its HQ. **H2** is empirically supported at the level of 0.0041%. **H3** is empirically supported at the level of 0.0001%. The amount and novelty of innovation in marketing and management plays a role in occurrence of knowledge outflow from the subsidiaries established in Poland to their parent companies. The level of strategic autonomy on the side of FS established in Poland is significant from the perspective of RKT. However, **H4** is empirically not supported since our results revealed that the greater the strategic autonomy, the less likely RKT is to occur. The results indicate that the more power FS have in strategic decision making, the less eager they are to transfer their marketing and managerial knowledge to their parent companies. **H5** is empirically not supported and it transpired that cultural distance is not a significant determinant of knowledge outflow from FSs operating in Poland to their parent companies.

Of the five control variables concerning FS age, industry, entry mode, ownership mode and size, only two – FS entry mode and FS industry – show significant results, indicating that greenfield investment makes RKT more likely and that the occurrence of marketing and managerial knowledge outflow for an FS depends on the technological advancement of the industry in which an FS operates. However, FSs in high or medium high-tech industries are less likely to let their knowledge flow to their HQs. Analysing the value for the Exp (B), it can be noticed that entities in medium and low tech industries had a 44% more chance for RKT than entities from high-tech industries. FSs from low-tech industries had a 235% greater chance to generate an outflow of knowledge to their HQs than high or medium high-tech industries.

Discussion

Both [Simonin and Ozsomer \(2009\)](#) and [Roth et al. \(2009\)](#) underline that MNEs establish their businesses in foreign markets to more efficiently acquire local market knowledge. Thus it is assumed that the broader the involvement of a FS in the host market, the greater their knowledge pool might be to further transfer to its parent company. Many authors manifested the pool of competencies a FS poses defines the role it plays for the whole multinational enterprise ([Gupta and Govindarajan, 1991](#); [Morschett, 2012](#); [Getachew and Beamish, 2017](#); [Meyer and Estrin, 2014](#); [Awate et al., 2015](#); [De Beule and Van Beveren, 2019](#)). However, in the case of FSs in Poland, the scope of operations in the Polish market did not play any role for RKT, while the knowledge accumulated in a company does do so. The lack of significance of the scope of operations reflects that not the number but rather the type of functions performed plays a role. Thus, a FS may perform many functions but in case they are not knowledge-based, they don't contribute to the knowledge pool a FS may transfer to its parent company. This assumption adds to the results of the studies conducted by [Yu et al. \(2019\)](#) that FS that enjoy more attention from HQ face more ambitious performance expectations and these FS are involved in activities that can demonstrate such contribution. Another explanation is that parent companies define FS' mandates in knowledge and innovation processes, often when establishing them. FS capabilities related to knowledge development are in line with the roles they play, ranging from innovation adopter, local implementer/innovator, up to a centre of excellence and strategic leader with a global mandate (e.g. [Gupta and Govindarajan, 1991](#); [Frost et al., 2002](#); [Harzing and Noorderhaven, 2006](#)). Thus, it is more the seminal decision of the HQ that impacts the knowledge flows, than the scope of value-creating activities. The latter is influenced by the decision of the HQ. FSs in Poland were not required to perform more creative roles, but rather quite traditional tasks ([Birkinshaw and Hood, 1998](#); [Blomkvist et al., 2010](#); [Kuemmerle, 1999](#)) because of the innovation capacity of the Polish economy. Furthermore, since the knowledge accumulated in a company is a statistically significant variable, it may be assumed that it is not the scope, but rather the depth and sophistication of activities performed by the FS that impact RKT.

The finding that FS that are able to create more new and modified solutions in marketing and management are more likely to transfer marketing and managerial knowledge is in line with results from many previous studies on the impact of innovation in FS on RKT. Generally speaking, not limiting the considerations to FSs it is indicated in the literature that the managerial policies and practices adopted by firms to govern their knowledge pool and further their knowledge combined with experience that makes the intellectual capital affect the impact of knowledge and firm's experience on companies performance, survival and growth ([Crupi et al., 2020](#)). [Jiménez-Jiménez et al. \(2020\)](#) demonstrated that the knowledge coming from FSs translates to innovation in HQ. Thus, our results resonate to some extent with the findings presenting importance of knowledge for innovation and the role of innovation for the pool of knowledge.

[Mudambi et al. \(2014\)](#) pointed to the fact that the level of innovativeness is important from the perspective of RKT. However, in their study, when the innovativeness level is high they postulate a lower intensity of RKT, and when it is low, RKT will be more intense. The relationship is *U*-shaped, not monotonic. The model, embedded in the context of a post-transition country indicates that the more novel the marketing and managerial solutions in a FS are, the more likely RKT is to occur, which does not correspond fully with the studies of [Mudambi et al. \(2014\)](#). However, in the study the level of innovativeness is rather low since there are only a few entities that managed to develop a novelty on a world scale ([Table 2](#)). The sophistication of business processes in post-transition countries, the "advancement" of customers in terms of their tastes, their purchasing power and sometimes openness for world-class novelty, is lower than in developed countries, which may also facilitate RKT.

The relationship between the autonomy and RKT is also worth touching upon (Palmié *et al.*, 2014; Søberg and Wæhrens, 2020). The FS in the study are characterised by a low level of strategic and operational autonomy. The context of a post-transition economy contributes to the opportunistic behaviour of FS, as previously indicated in the literature (Mudambi and Navarra, 2004; Mudambi *et al.*, 2014). Greater autonomy, and the more independent position of an FS, may reduce the likelihood of RKT since the bargaining power of FS grows. More powerful subsidiaries, which are given more autonomy, may pursue their own particular goals. The result obtained in the study confirms that the more autonomous the subsidiaries are, the more opportunistic behaviour and more rent-seeking attitude they may represent.

The lack of any significant relation between cultural distance and reverse knowledge transfer means that cultural factors neither hinder, nor facilitate the knowledge outflow from the FS under the study to their HQs. The calculation of Kogut and Singh's Index indicates that the HQs of a majority of FS are in culturally unremote countries – for example in Germany (47 parent companies), Italy (20 HQs) and France (17 HQs). Another fact is the identified low autonomy of FS. “The scope of freedom and independence”, which translates into less initiative on the side of FS, lowers creativity and unfortunately sometimes leads to the depreciation of ideas that emerge in FSs, may explain why cultural distance does not matter at all. It is not the decisive factor for whether to let the knowledge flow or not. That is, it did not impact the occurrence of RKT, which points to the uniformization of corporate strategy.

Parent companies may establish their FSs via greenfield or acquisition. The results indicate that greenfield type subsidiaries are more likely to become engaged in RKT than entities that emerged via acquisition. In previous studies Cantwell and Mudambi (2005, p. 1115) noticed that greenfield entities identify themselves more with the parent company than the acquired units. An opposite perspective is presented by Bouquet and Birkinshaw (2008). The latter authors point to the lower level of legitimacy in the case of acquired subsidiaries. Their attempts to gain legitimacy may be in line with greater knowledge outflow to HQs. The study does not confirm this relationship. However, it should be pointed out that Bouquet and Birkinshaw (2008) conducted the research among FSs in Australia, Canada and the UK. The reality of these economies is different to the context of a post-transition economy. The perception of Poland as a country with rather lower innovation capacity led MNEs to locate their premises there not because of access to knowledge at first. The awareness of FS' managers that their entities are instead responsible for lower-value activities within the value chains makes them think seriously about the position of their companies in the MNEs' networks and their power, or lack thereof, against the parent company. This result may be also explained by the greater resistance of acquired entities to contribute to the advantage of the whole MNE structure.

Authors controlled for the industry, as FSs operating in different industries may face different opportunities with regard to RKT. Specifically, it is expected that these opportunities are likely to be greater in medium-high technology intensive sectors, where distinctive subsidiary knowledge can be of more use and interest for the parent company. However, authors focused not on technological knowledge, but rather marketing and managerial knowledge. The results, to some extent, come as a surprise since the lower the technological level of the industry, the more likely it is that RKT will occur. However as it was mentioned before, the focus was here on marketing and managerial knowledge, that is. non-technological knowledge. The result may work as a facilitator for MNEs that invest in lower technology industries and in countries characterised by lower technological innovativeness. Parent companies may still take advantage in terms of knowledge contributing to innovation even in less technologically advanced circumstances. Additionally, marketing and managerial knowledge is something that Polish FS may offer to their HQ, in doing so improving their own position within the MNEs' corporate networks.

Conclusions

Emphasizing the main contribution of this research and paper it should be noted, firstly, a presentation of the RKT's determinants from the corporate perspective (value-creating activities of a FS; knowledge accumulated in a FS; the novelty level of new solution in marketing and management in a FS and cultural distance between a FS and its HQ), secondly, the companies taking part in the research are located in the post-transition country (Poland). Thirdly, the focus on the marketing and managerial knowledge as one of the most important in managing international corporations.

The results obtained in both literature and empirical studies delivered many implications as well for the academia as practitioners. One of the theoretical implication is the identification (and empirical verification) of the determinants influencing the RKT from the corporate perspective. These determinants may be implemented used in the theoretical model describing variables impacting the process of knowledge transfer from FS to HQ.

One of the practical implication is that HQ has to think about the proper level of autonomy of their subsidiaries to facilitate their pro-active and open attitude towards the parent company and other sister subsidiaries. The message for HQs is that higher autonomy positively impacts performance of their subsidiaries associated with marketing innovation (Vernaik *et al.*, 2005). Thus, the development of rules that will govern the RKT is necessary to ensure FSs that eventually it will strengthen their position. And that RKT may add to their sustainable existence and operations – in the studied case – in a post-transition market which generally is recognized as less attractive for innovation challenges. FSs need to “feel” safe and protected by rules that their knowledge will not be exploited just by the parent company but that the parent company will appreciate that. And the message for FSs managers is that in case they want to get more freedom in decision-making they have to ensure HQs about their eagerness to contribute to the broadly understood performance at first of their own companies and then to the performance of the parent company and other subsidiaries. There is a need to disseminate in FSs the philosophy “of sharing” and awareness that this approach will upgrade the strength of a FS in the corporate network. Simultaneously a FS needs to treat the level of freedom in decision-making with more attentive monitoring from HQ – a parent company increasing the level of autonomy will often increase the level of FS performance expectations and FS contribution to the performance of the whole MNE. And to go deeper into that direction it is useful to mention that the discussion about the RKT and autonomy of a FS facilitates asking the question about how FS managers and generally employees operate and are motivated to create, accumulate and share their knowledge. Thus, the implication related to the autonomy is much about the proper strategy for human resources management, too. Another thing is the ability of a FS to integrate the knowledge that resides in its employees. The social aspects related to social connections that are created between managers (entrepreneurs) are also highlighted by Crupi *et al.* (2020) in their latest work.

And the position of a FS in the corporate network is important not only from the perspective of the one FS. FSs are entities more or less embedded in the host markets, thus their strength and sustainable existence is important for their stakeholders, in particular – internal entities such as employees and external entities such as suppliers, and other cooperating organisations and institutions in the host market. At this point we touch once again the human capital issues since it is about how effectively FS representatives interact with external agents. It translates to the sustainability of working places and cooperative agreements with host market entities. Another aspect is the potentially positive impact of FDI that manifests through the establishment of FSs on host economies, in particular on the innovation capacity and innovation performance of these economies that may be improved thanks to the knowledge externalities effect. Nevertheless, the contribution of FSs to the innovation performance and knowledge pool of external partners is determined much by their absorptive capacity. Thus, the results obtained indirectly point to the importance of

external agents ability to absorb and exploit the knowledge. This aspect is of greatest importance from the perspective of post-transition economies that are still at least moderate innovators.

Limitations and future research

The study suffers from several limitations. Authors purposefully concentrated on the manufacturing sector in the Polish economy penetrated by foreign investors. Future studies should embrace the service sectors. Also, authors had to place FS from high-tech and medium high-tech industries into one category because the sample included only a few companies operating in high-tech industries. Next limitation may be related to the types of determinants taken in to account in this research. The RKT is determined by many other elements not presented in this paper. For example, [Asakawa \(2020\)](#) tested the part of HQ (as a determinant) in association with the knowledge-sharing patterns of subsidiaries. He found that FS reporting to R&D division of HQ present the highest level of external knowledge sharing. Another limitation is the application of Kogut and Singh Index that suffers much from criticism but is still used by many scholars to access the cultural distance among business partners from particular countries.

Finally, there are also potential shortcomings related to the fact that respondents who participated in the main research were managers representing the FSs. They were answering the questions from the perspective of their corporate (FS), but it is certainly difficult to eliminate one's subjective opinions from such answers. However, any limitation is a challenge for further theoretical investigations and empirical studies.

The study provides interesting challenges to future research concerning the knowledge outflow from FS to their HQ when the former entities are established in a post-transition country and the latter are located in developed countries. There is a huge amount of literature on FS of developed market multinationals established in developed countries and on the FS of emerging market multinationals located in knowledge-rich locations. However, studies on FSs established in post-transition countries by either developed or emerging market MNEs in the context of RKT are few and far between. Future studies need to compare the intensity and determinants of RKT when the FS is located in a post-transition country and parent companies are registered in another post-transition country, in an emerging market or in an advanced-developed country. Another challenging research area may be the "proper threshold of autonomy" that will facilitate both vertical (FS and HQ) and horizontal (among sister subsidiaries) knowledge circulation. As indicated in the literature ([Mudambi and Navarra, 2004](#); [Palmie and Keupp, 2014](#)), subsidiaries equipped with valuable knowledge may exercise power in relation to the parent company. It was demonstrated that when a FS is aware of the value of its knowledge for the parent company, it may refrain from cooperation with HQ to make its position stronger and thus gain greater bargaining power, on the one hand. On the other hand, greater empowerment of a FS allows it to act in a more independent and non-routine way, which may create knowledge gains for the whole MNE network.

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