

THE DISSEMINATIVE CAPABILITY OF THE SOURCES IN CROSS-BORDER KNOWLEDGE TRANSFER PROCESS: A CASE STUDY OF A FRANCO-JAPANESE JOINT VENTURE IN BRAZIL

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ABSTRACT

The objective of this research was to examine the contribution of the disseminative capability of the sources in the knowledge transfer between two international mother companies and a joint venture installed in Brazil. Successful research on international knowledge transfer generally emphasises the absorptive capability of the receivers and other factors, while the role of the knowledge source(s) has been neglected. Considering this gap, the literature review synthesised the main attributes related to the source's disseminative capability in the knowledge transfer process, among them, the ability to transfer and the motivation to engage in the process. The joint venture involved representatives of companies based in France and Japan. A qualitative, longitudinal cross-sectional approach was used. This methodology afforded a unique opportunity to examine the phenomenon of the cross-border knowledge transfer process from the perspective of the sources. The results suggest that, in terms of the knowledge transfer capability, the sources used experiences from other projects, experienced expatriates and the exploitation of social integration mechanisms, which allowed satisfactory results concerning the knowledge transfer. Regarding the motivation to transfer, the enthusiasm of the sources was more significant in the initial phases.

Keywords: Disseminative Capability, Absorptive Capability, Cross-Border Knowledge Transfer, Joint-Ventures, Mother Companies.

JEL Classification: P52, P11, O57

1. INTRODUCTION

Knowledge is an indispensable organisational resource capable of increasing productivity, fostering growth and ensuring the survival of business enterprises (Szulanski, Ringov, & Jensen, 2016). However, few companies have all the necessary information and know-how to effectively manage complex and dynamic business environments, as in globalised markets, for instance (Park, Vertinsky, & Becerra, 2015).

In this scenario, organisations whose units learn from one another's experience are more productive and competitive than counterparts that are less adept at knowledge transfer (Argote, 2012). Thus, strategic assets such as superior marketing knowledge, product differentiation, patent-protected technology and managerial know-how skills constitute a large set of strategic motivations for companies to engage in international acquisitions (Deng & Yang, 2015). Therefore, in many cases, building cross-border partnerships and

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international alliances to acquire knowledge can be a business-attractive strategy (Park et al., 2015). Among the various forms of international strategic alliances, joint ventures provide an opportune learning environment between partners, particularly between partner companies (Tsang, Nguyen, & Erramilli, 2004); further, the knowledge obtained through mother companies increases the organisational ability of these joint ventures to interpret and respond to their environment, leading to a superior performance (Park et al., 2015).

The literature discusses several factors that may facilitate or hinder the transfer of knowledge, including absorptive capacity (Szulanski et al., 2016), the nature of knowledge (Park et al., 2015) and the dynamics of the relationship between source and receiver (Battistella, De Toni, & Pillon, 2016). The literature on cross-border knowledge transfer, both in theoretical and empirical terms, has focused primarily on the discovery of how certain factors affect the results of knowledge transfer (Park et al., 2015) and, further, on the role of the absorptive capacity of the receiving firms. In this context, little attention has been given to the counterpart of the recipient's absorptive capacity, i.e., the disseminating capacity of the knowledge source (Schulze, Brojerdi, & Krogh, 2014).

Considering this research gap, the purpose of this article is to analyse how dissemination capacity contributes to the results of successful knowledge transfer, especially in cross-border alliances such as joint ventures. This study contributes to this gap in knowledge.

2. THEORETICAL REFERENCES

2.1 Disseminative capability of the knowledge source

The inter-organisational knowledge transfer is seen as an exchange, or a network, of knowledge between the source and the receptor, in which the characteristics of both are relevant to the process (Martinkenaite, 2012). Studies on the efficiency and effectiveness of knowledge transfer raise the question of how sources transfer knowledge to receptors (Tang, Mu, & MacLachlan, 2010; Noblet & Simon, 2012); research has shown that the ability of the source to disseminate knowledge is a critical factor for the transfer process (Minbaeva & Michailova, 2004; Schulze et al., 2014).

Knowledge transfer is an indispensable process in mergers and acquisitions. However, factors that facilitate this process require greater understanding, particularly in hybrid organisational forms such as joint ventures (Ranucci & Souder, 2015). Thus, although companies form joint ventures for a variety of reasons, improving organisational learning has become an important rationale for their creation and survival (Park et al., 2015). Considered as legally independent entities, joint ventures present independent decision-making processes, have a certain autonomy, and provide platforms through which knowledge transfer occurs (Park & Vertinsky, 2016).

The disseminative capability can be defined as the ability of knowledge holders to efficiently, adequately, and convincingly frame knowledge in a way that other people can understand accurately and put into practice (Tang et al., 2010). The efficiency and effectiveness of dissemination capacity is a result of the ability and willingness of organisational actors to transfer knowledge, where and when it is necessary for the organisation (Minbaeva & Michailova, 2004). In the literature, two disseminative capability attributes are often discussed: (i) the ability (Minbaeva & Michailova, 2004; Mu, Tang, & MacLachlan, 2010) and (ii) the motivation to transfer knowledge (Minbaeva, 2007; Schulze et al., 2014).

The first attribute is the ability of the source to transfer knowledge. The effectiveness of knowledge-sharing between companies demands a collaborative effort between the source – the knowledge holder – and the receiver (Mu et al., 2010). In many cases, knowledge-sharing depends on the ability of the source to communicate its knowledge in a way the receiver

can understand and benefit from in performing their activities (Minbaeva & Michailova, 2004) However, if the knowledge holder does not have sufficient capacity to articulate and communicate its knowledge to the receptors, the transfer results can be seriously affected (Mu et al., 2010).

Joint ventures are formed, at least in part, to leverage knowledge of mother companies (Park & Vertinsky, 2016), especially when they are newly established. Thus a higher level of active participation of firms is likely to be required by mother companies in promoting a satisfactory learning environment, given their still incipient absorption capacity (Park et al., 2015). As well, the ability of the source to transfer knowledge can be evaluated, among other indicators, through: (i) the previous experience of the mother companies in the management of alliances (Minbaeva & Michailova, 2004; Park, Vertinsky, & Lee, 2012); (ii) sending expatriate experts originally from the mother companies (Park, 2011; Chang, Gong, & Peng, 2012; Choi & Johanson, 2012) and (iii) the adoption of social integration mechanisms (Noblet & Simon, 2012; Penna & Castro, 2015).

Previous experience relates to the previous partnership activities between the mother companies, or each of them with other companies, before the current enterprise (Pak & Park, 2004; Rotsios, Sklavounos, & Hajidimitriou, 2014). Therefore, know-how, knowledge and experience are specific company features that can improve its ability to transfer knowledge and technology to another firm (Park, 2011). Studies have shown that the prior collaborative experience from mother companies is not only associated with the acquisition of relevant technologies by the joint venture and the understanding of local business practices, but also with improvements in problem-solving abilities and reduction of uncertainty concerning the local environment (Pak & Park, 2004; Park, 2011).

Previous experience in forming and managing a joint venture, for example, can provide useful insights to be applied in the management and training of future joint ventures. In many cases, the accumulated knowledge and competencies of a partner can also be valuable for the mother companies (Park et al., 2015). This is because managers' mental models, based on past experiences, provide useful frameworks capable of interpreting new knowledge (Dhanaraj, Lyles, Steensma, & Tihanyi, 2004). In other words, the experience of previous managerial experiences, related in many cases to the tacit knowledge of other operations, creates connections such that knowledge is transferred efficiently and, consequently, is better assimilated and interpreted.

The use of expatriate experts to assist in other alliance units is another feature of the source transfer ability (Park, 2011; Chang et al., 2012; Choi & Johanson, 2012). Expatriates are individuals with knowledge that helps to improve the performance of foreign units (Choi & Johanson, 2012); in joint ventures they may disseminate their personal experience and individual knowledge in order to improve the capacity of foreign companies (Minbaeva & Michailova, 2004; Fang, Jiang, Makino, & Beamish, 2010).

Organisations and their members acquire knowledge of others through the 'grafting' of individuals with special skills who assume the role of moderators in the knowledge transfer process between the company headquarters and its subsidiary in a foreign country (Choi & Johanson, 2012). Therefore, the interaction between the employees from the mother companies and the joint venture tends to be triggered by visits of foreign experts as part of the process of implementation and absorption of new practices and/or technologies (Park & Vertinsky, 2016).

Finally, regarding the capability of the source to transfer knowledge, it is considered relevant to observe the role of social integration mechanisms in the transfer dynamics. Social integration mechanisms are systematised routines that enable the disseminative capability of the source (Penna & Castro, 2015), reducing barriers to information exchange, intensifying

the interchange of ideas within the organisation and facilitating knowledge sharing and exploration, mainly those of a tacit nature (Vega-Jurado, Gutiérrez, & Fernández, 2008).

The main mechanisms of social integration include the use of teams and work groups, technical visits and development programmes, and may also be associated with job rotation practices, quality circles, problem-solving methodologies, participation in the decision-making activities, multifunctional teams, meetings and others (Vega-Jurado et al., 2008; Armstrong & Lengnick-Hall, 2013). Hence, knowledge transfer is expected to be significantly accelerated by the interaction between the external environment and the organisation, as well as the functional interrelationship between the subunits and the knowledge distribution within the organisation itself, obtained through the adequate use of social integration mechanisms (Park, 2011).

The second attribute of disseminative capability is the motivation for transfer knowledge. Discussions about the disseminative capability of the source maintain that the knowledge holder does not always want, nor are they capable of, transferring their knowledge to the receiver. Thus, although companies can transfer knowledge to others, knowledge holders may not do so, either by choice or because they do not see motives that justify the efforts for sharing (Martinkenaite, 2012).

Three aspects may contribute to the reduction of source motivation: (i) low trust among alliance partners (Becerra, Lunnan, & Huemer, 2008); (ii) 'spillovers' of knowledge (Inkpen, 2008; Park et al., 2015) and (iii) opportunistic behaviours that may lead to inappropriate use of transferred knowledge (Massaro, Moro, Aschauer, & Fink, 2017).

For example, according to Minbaeva (2007), the motivation for knowledge transfer is a decision of each company, and the perception of the willingness to share is a determining factor for this decision. In such instances, only those who believe it is worth sharing, and who can establish some trustworthy relationship with the partner, will be motivated to share knowledge (Becerra et al., 2008). Therefore, the knowledge source can protect the knowledge, choosing not to transfer it to the partners, thereby increasing the legitimacy of the knowledge source and, consequently, reducing its vulnerability within the alliance (Becerra et al., 2008).

Regarding the joint ventures, the overlapping competition among mother companies can make them reluctant to share, leading to a limited incentive to transfer their knowledge (Inkpen, 2008; Park et al., 2015). Since the joint venture forming members may be partners or competitors at the same time, there is a high risk of knowledge overflow, which could increase competition and favour a knowledge spillover (Inkpen & Curral, 2004; Inkpen, 2008). In fact, knowledge overflows are seen as an inevitable result among alliance partners (Park et al., 2015); thus, organisations should focus on avoiding or minimising such effects (Inkpen, 1998).

Finally, alliance partners may engage in opportunistic behaviour and misuse knowledge for their own sake (Massaro et al., 2017). The fear of losing ownership and control also represents a significant barrier to the transfer of knowledge, posing a threat to collaboration, mainly in newly formed alliances (Nielsen & Cappelen, 2014). Table 1 summarises the attributes and indicators of the disseminative capability in the knowledge transfer process.

Table 1. Attributes and indicators of disseminative capability

Disseminative capability	Attributes	Indicators
	Transfer capability	(i) Previous experiences (ii) Expatriate experts (iii) Use of social integration mechanism
	Motivation for knowledge transfer	(i) Trust between the involved companies (ii) Spillovers of knowledge (iii) Opportunistic behaviour

Source: Own Elaboration

3. METHODOLOGY

In order to investigate the role of the source's disseminative capability in the transfer of knowledge from mother companies to a joint venture, a case study of a qualitative nature (e.g. Yin, 2013; Eisenhardt, Graebner, & Sonenshein, 2016) was undertaken. The qualitative case study is particularly useful when there is a need for in-depth understanding of an event or phenomenon of interest in a real-life context (Crowe, Cresswell, Robertson, Huby, Avery & Sheikh, 2011).

The selected case was a joint venture in the steel industry, located in the steel complex of the Alto Paraopeba region, state of Minas Gerais, Brasil, to produce 600 thousand tons of seamless steel pipes per year, for applications in the OCTG (Oil Country Tubular Goods) industry, i.e., tubes for high-quality oil applications. The joint venture from now on referred to as "XYZ", is composed of two international groups, "Alfa" (French) and "Omega" (Japanese), with extensive experience in this industrial sector.

Prior to the primary data collection, secondary data were gathered for a deeper familiarisation with the context at which the joint venture and the allied companies are inserted, as well as to complement the data from the interviews. The documents and archives were obtained from internal sources, such as institutional and commemorative publications, and from information available in the portals of the involved companies; In addition, external sources, such as news in steelmaking, oil and gas specialised journals, and general press releases concerning the steel mill, were used.

For data collection, among the available sources, in-depth interviews, documents, archives and observation were applied. The use of multiple sources in case studies is critical for data triangulation, which increases the construct validity of the study (Gibbert, Ruigrok, & Wicki, 2010). Table 2 specifies the main documents used in the research.

Table 2. List of documents used in the research

Doc	Description
1	Explanatory notes from the administration – Financial Statements from Alfa Company – Minas Gerais - Book 2 - Publications of Third Parties and District Public Edits, Wednesday, 30 March 2016.
2	Notes about the joint ventures XYZ – Brasil Steel Institute – 2015
3	Institutional Information of the Omega company – 2015
4	Results from Alfa Company – Presentation to investors – 18 February 2016
5	Alfa Company financial results records for the year 2013
6	Note about the creation of the new plant in Minas Gerais – Brazilian Association of Metallurgy, Materials and Mining – 29 March 2007
7	Notes about the XYZ joint venture – Brasil Steel Institute – 2014
8	TN Petroleum – Note about the creation of the new plant in Minas Gerais 2012
9	Project Conception Document Form (CDM-PDD) – Use of Charcoal from Renewable Biomass Plantations as a Reducing Agent in the Production of Crude Iron from the XYZ Steel Complex.
10	Master's Dissertation – Information about the Brazilian steel-mining industry structure.
11	Institutional profile of the XYZ company.
12	Jornal da Comunidade: Quarterly publication of the newspaper for internal circulation. Special edition – year I. XYZ Company
13	Master's Dissertation – Information about the electric oven to ARCO CONSTEEL®
14	Industry Certification – American Association for Laboratory Accreditation
15	Note on the installation of the steelworks plant in the joint venture XYZ – Diário do Comércio.
16	Data about the pelletiser – Iron ore pelletising Grate-Kiln™

Source: Own Elaboration

After selecting this project for the case study, the authors began to prepare the interview script. Starting from the critical review of the literature, they considered themes such as the ability of the mother companies to: (a) transfer the knowledge and motivation of the sources to engage in the transference process, and (b) seek an understanding of the implications of the dissemination capacity of the creation of the joint venture.

With the interview script in hand, the next task was to select the key respondents. Data collection is a critical aspect in case studies and goes beyond the mere mechanical data recording (Yin, 2013). The selection of respondents was performed by carefully choosing people representative of all sites (mother companies and joint venture), i.e., people who participated in, or were affected by, the transfer process. These respondents occupied positions on superintendence, management, sales and Board of Directors. The snowball method was applied (Malhotra, 2001), based on the first interview with one of the directors from one of the mother companies. That is, at the end of the interview, this employee indicated two other employees who could present information about the process investigated. This approach was repeated until nine in-depth interviews were completed. The interviews were performed at the joint venture premises, they were recorded in audio and later transcribed to increase research reliability (Gibbert & Ruigrok, 2010). Each interview took approximately one hour, resulting in a total of 11 hours and 32 minutes of recorded content and 128 data sheets transcribed. As the material collected was read, it was clear that the set of interviews met the meaning saturation criterion (Gaskell, 2003).

Of the nine interviews conducted, respondents represented various nationalities, although Brazilians were the majority. Two interviews were conducted with French employees; these were managers who were fluent in Portuguese. Two other interviews were performed with

Japanese employees, with one interview in English and one in Portuguese; the remaining interviews were conducted with Brazilian employees. Table 3 presents a list of participants.

Table 3. List of Participants

Participant	Nationality	Position	Company
1	Brasilian	Quality General Superintendent	Joint Venture
2	French	Sales and Production Planning Manager	Joint Venture
3	Brasilian	Manager of the Integrated Management System	Joint Venture
4	Brasilian	Product Development Manager	Joint Venture
5	French	Project Line Pipe Manager	Alfa
6	Brasilian	Planning Representative	Alfa
7	Japanese	Planning Representative	Omega
8	Brasilian	Quality and Pipe Manufacture Process Manager	Joint Venture
9	Japanese	Technical Director	Omega

Source: Own Elaboration

After the data collection was complete and interviews transcribed, data analysis was performed. The data were analysed based on the content analysis technique (Bardin, 2010). Initially, all documents and files were sorted and selected according to their criticality. Lastly, two analytical categories for data processing were established: (i) the ability of the source to transfer knowledge and (ii) the motivation to transfer that knowledge. Thenceforth, the data were systematically categorised; following that, the data were analysed and interpreted.

4. CONTEXTUALISATION OF THE CASE AND RESULTS

4.1 Description of the data: the case of the joint venture XYZ

As longtime partners in the production of premium connections, Alfa (French) and Omega (Japanese) companies consolidated the new partnership to solve their productive capability problems, since none of them had the possibility of assuming in isolation a project of this magnitude (P1, P6). The integrated steel mill comprises the areas of reduction, steelmaking, rolling, pelletising and finishing lines (Doc 9).

At the steelworks differentiated equipment is present, such as the Consteel Technology, which allows optimisation of energy consumption during the steelmaking process and ensures greater control over the production, with low noise and particle emissions (P2, Doc. 11). As one interviewee noted,

The Alfa and Omega companies already had an integrated furnace and steel mill, so I really think they both had a high level of know-how and they have made, especially for the steelmaking, a very optimised plant in terms of space, very intelligent and well planned. (P2)

At XYZ, the rolling process works through a set of furnaces and four rolling mills that drill and transform steel bars into tubes. Considered a state-of-the-art technology, none of the companies in the group had previously worked with this type of equipment (P2). For this reason, a German supplier followed the on-site installation process, closely followed by local technicians and expatriates from the two mother companies, who were interested in learning about the technology and in absorbing the necessary knowledge from the manufacturer.

The pelletising process is considered the beginning of the production chain, and there was not enough know-how on machinery and operation since none of the mother companies had previously worked with this technology (P1 and P2). The setup of the pellet production equipment occurred in a learning and partnership environment in which both companies were able to closely follow the implementation until local and expatriate technicians obtained more confidence about its operation and integration into the production chain.

The finishing line treats the final products, giving them the appropriate characteristics to support the environment to which they will be subjected (pressure, temperature and corrosion) (Doc 12). Because they are common industry elements for any company in the sector, there was no doubt about the technical and technological dominance of the mother companies. Consequently, the implementation happened in a natural way, without relevant problems during the execution of the project (P1 and P2).

Several respondents pointed out a legitimate willingness on the part of the partner companies to transfer knowledge, probably due to the enormous efforts and resources spent on the creation of the new plant (P1, P2, P5 and P7). In the opinion of some interviewees, this provision meant that the mother companies did not make any effort to provide access to their expatriate specialists, technicians, engineers and even suppliers, facilitating the ways to resolve doubts about processes, equipment operations or the customisation of some procedures. In addition, there was great concern expressed about the transfer of technical know-how to the production process (P1, P2, P3).

4.2 Transfer capability

Firstly, in relation to the previous experience of parent companies in the management and formation of joint ventures and knowledge transfer, the data show that the extensive baggage acquired through accumulated experiences mainly contributed to the initial phases of XYZ in a positive way. Thus the technicians of the joint venture felt safe to start the plant's construction processes from its initial configuration to the full operation of machines and equipment needed to produce the pipes (P1, P2 and P6).

When the joint venture was formed, the previous collaborative experience between the partners of the venture was decisive; thus, the mother companies could deal with strategic and technical issues, resulting in more assertive decisions at this stage (P1). Some respondents said that without the know-how and experience of the management body and the expert technicians in each area of the plant, it is unlikely the technicians of the joint venture could have installed all the equipment and machinery and learned the proper way to use them (P1 and P2).

As far as the expatriate specialists are concerned, it was observed that the Japanese mother company Omega maintained in each area an expatriate called the Senior Advance, whose purpose was to closely follow factory processes, advising and taking care of the technical part. This left the French partner (Alfa) responsible for management (P4). In addition to this role, it was observed that the expatriates were present during the whole process, from the implementation of the company and continuing through to the production processes (P1, P2, P7, P8 and P9). About 40 people came from Japan; they had both experience and technical knowledge. These Japanese expatriates observed people in training, transferred in a very organised way all the tacit knowledge they possessed and often returned to Japan, bringing back the whole experience from the Brazilian plant (P1). The Alfa Company expatriates were French, Mexican and German; they converted their know-how into processes, products, procedures and other forms of knowledge (P1, P2). In addition, French expatriates were working at the plant; this was particularly due to their wide network of local contacts (P3).

As for the mechanisms of social integration, it was observed that much of the information necessary for the progress of the mill production was passed on by the mother companies to the joint venture through e-mails, periodic meetings, video conferencing, or Webex (P1, P3, P4, P5, P6 and P8). Weekly, XYZ forwarded a report to the mother companies, recounting major events or issues as well as weekend report results. There was also a monthly report, and meetings were held quarterly to report significant occurrences. Another meeting called an executive committee, in which the general heads of the two mother companies and XYZ participate, were responsible for presenting performance results and showing the new technologies developed. In the area of quality control, there were meetings of expert mission and face-to-face quality conferences (usually through video conferencing between XYZ managers and their parent companies), in which issues were discussed regarding the development of technologies for improvement of the product (P2).

Thus, from the data, some characteristics of the disseminative capacity of the sources were in evidence, especially in relation to the capacity to articulate and move knowledge from one place to another, as were determinants of the effectiveness of the knowledge transfer process in the formation of the joint venture. Specifically, these were: (i) the previous experience of mother companies in joint ventures creation and management projects; (ii) the intensive use of expatriates of the mother companies; and (iii) the choice and use of mechanisms of social integration capable of promoting the sharing of knowledge among the parties.

4.3 Motivation for knowledge transfer

The interviewees were unanimous in saying that they felt some reservations about the sharing of information from the beginning of the production and sale of pipes, mainly because of competition between the French and Japanese companies. One respondent's comment emphasises this point:

In fact, they [the technicians of the mother companies] share, but do not pass the technology directly, they develop together with us [XYZ] precisely to prevent some information from being improperly passed on, even because there are proprietary technologies of the companies and, in some cases, this is protected by patent. (P8)

Another interviewee from the Omega company said that one could not pass on the know-how or intellectual properties of his company to Brazilians, since the other partner company can appropriate this knowledge (P9).

One participant asserted that there is a whole game of power between the competitors (Alpha and Omega), especially about production capacity allocation decisions, showing that the relationships between them are not close in both the commercial and technical contexts. This interviewee also claimed that there is neither commercial sharing nor affinity, and that the relationships between parent companies are rather superficial, but always respectful (P2).

In the view of the interviewees, there is a reservation about information-sharing, mainly due to the competition between the French and Japanese companies, although some say that this does not occur explicitly. The mother companies of the joint venture operate around the world in this same segment of seamless pipe manufacturing for the oil and gas sector, among others. For this reason, although they are partners, they are competitors in the market, in the present venture and in other enterprises (P1, P2, P3, P8, P9, Doc. 3 and Doc. 4). In this case, it is only natural that both companies may be courting the same customer on the market and therefore may have reservations about placing an order to be produced by XYZ (P1).

Sometimes XYZ received quotations for the same end customer, and while this information was protected by confidentiality terms, there was a climate of tension between the joint venture partners. Thus, it is clear that, particularly with regard to market and intellectual property issues, there is little interest in making technical details involving the production of tubes available to XYZ technicians.

The data reveal, therefore, the presence of factors that are related to the motivation of the mother companies to engage in the transfer process, namely: (i) the trust between them, (ii) the risk of knowledge overflows, and (iii) fear that the partner could appropriate this knowledge opportunistically.

4.4 Discussion/analysis

Analysis of the data highlights that the disseminative capability of the sources in the case studied was a critical factor for the knowledge transfer process. This is consistent with the results of Minbaeva and Michailova (2004) and Schulze et al. (2014).

First, in relation to the previous experience of mother companies in the management and formation of joint ventures and knowledge transfer, it was observed that the extensive baggage acquired through accumulated experiences reflected mainly in the initial phases of XYZ, which were positive for the effectiveness of knowledge transfer. These results are entirely consistent with those of Park (2011), who found that know-how, knowledge and experience can improve a company's ability to transfer knowledge and technology to another enterprise. The previous experience of mother companies also leads to higher acquisition and assimilation of new technologies by the joint venture and reduces uncertainties in the local environment (Pak & Park, 2004; Park, 2011).

In addition, it is noted that the transfer of knowledge from sources (mother companies) to the XYZ joint venture was positively affected by the presence and performance of the expatriates throughout the entire process, from the plant's implementation to its full operation. Given their responsibility for ensuring the proper functioning of the processes and facilitating the interaction between the mother companies and the joint venture, the permanence of the expatriate specialists ensured improvement in the performance of the joint venture, as Minbaeva and Michailova (2004) and Fang et al. (2010) also found.

The results also confirm that the main channel through which the mother companies transferred their knowledge, especially their tacit knowledge, was through interaction between expatriates and local staff. The results on the use of these expatriates with XYZ demonstrate that they have contributed actively to the process of transfer of knowledge between mother companies and the joint venture; thus they have been indispensable to the implementation of new practices and/or technologies. Such findings confirm Park and Vertinsky's (2016) own conclusions in this regard.

Accordingly, as the last indicator through which the ability of the source to transfer knowledge to the recipient can be evaluated, the use of social integration mechanisms was observed. It was verified that the mechanisms applied were those traditionally adopted in international joint ventures, and that such functionalities were exploited to obtain relevant information about products, processes, quality improvement, problem-solving and levelling of decisive procedures. Their frequent use, as some authors report, supported the functional activities of the companies and enabled the means for knowledge dissemination (Penna & Castro, 2015) as well as knowledge transfer (Park, 2011).

As to the motivation of the sources to engage in the transfer process, it is noted that in the creation and assembly phase of the new plant, due to strong interest in the success of the venture, both companies made every effort to make available to XYZ all knowledge indispensable to its operation. However, when production started to meet the demands of

the mother companies, the competition between them became fierce. Confidence and trust issues arose; with that, the motivation of the two companies to transfer their knowledge began to diminish. Thus, as the studies of Becerra et al. (2008) revealed, only those who believe it is worth sharing, and who can establish some reliable relationship with the partner, are motivated to share knowledge.

The relationship between partnership and intermittent competition between the parent companies also contributed, to a certain extent, to a reduction in the motivation to transfer knowledge due to the fear of knowledge overflow. These findings are convergent with those of Inkpen (2008) and Park et al. (2015) in this sense.

Finally, the option not to share knowledge or to do so in a measured way may be related to the fact that the mother companies cooperated in the phase of plant construction, but then competed in the phase of operation and manufacture of the tubes. These results are similar to those of Becerra et al. (2008), who also found that the mother companies of a joint venture began to guard against transferring certain knowledge, in the face of the fear that this information would be undesirably appropriate by the partner, also a competitor. These findings, therefore, are consistent with those of Massaro et al. (2017), who claimed that alliance partners might engage in opportunistic behaviour and misuse knowledge for their own interest.

We can also affirm that the construct considered from the literature, that is, the disseminative capability of the source finds empirical support in the case studied, especially with respect to its representativity due to the inefficiency of the capacity of the joint venture technicians to absorb knowledge. Because it was a young enterprise with a low-skilled workforce, it was necessary to increase the efforts of the mother companies to adequately disseminate knowledge, minimising the effects of the low absorptive capacity of local technicians. As in the findings of Park et al. (2015), the active participation of the mother companies in promoting a satisfactory learning environment had positive effects in the process of transference due to the joint capacity of the joint venture to absorb such knowledge.

5. CONCLUSION

It was verified through this research that the ability to transfer knowledge, evaluated through previous collaborative experience, the abilities of the expatriate, and the proper use of the social integration mechanisms, was efficiently exploited by the mother companies; further, the motivation to transfer knowledge – although it has not been evidenced in a linear and continuous way during the research process – was present in at least some phases.

However, it was found that without an efficient disseminative capability of the sources it would be difficult, if not impossible, to complete the transfer process. In this sense, the disseminative capability prominence of the sources in the research process was confirmed, and the adequate exploitation of this capacity was the main course used to achieve satisfactory results in terms of knowledge transfer.

One of the theoretical contributions of this research is to attest that international joint ventures are largely dependent on the knowledge provided by mother companies, especially during the early stages, and that the ability of these mother companies to transfer knowledge is crucial for the success of the transfer process.

From an empirical point of view, the results presented in this paper can help managers working in organisational arrangements, such as joint ventures, as well as mother companies, to better understand the main factors influencing knowledge transfer in multicultural

environments. They also highlight the need for a plan that contemplates objectives related to the development of disseminative capabilities and knowledge absorption.

Despite the theoretical and empirical contributions, this research also presents some limitations. Difficulties faced in accessing the inner workings of the joint venture, imposed by strict visiting control, as well as lack of permission to divulge the names of the enterprises involved and their exact geographical location, also placed some constraints on the collection of relevant data.

With these issues in mind, an approach that could leverage future research might be to conduct a more focused investigation, examining the role of disseminative and absorptive capabilities. These could be analysed at the same time, thus shedding more light on the process of cross-border knowledge transfer.

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