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A MULTILEVEL ANALYSIS OF KNOWLEDGE TRANSFER BETWEEN MNCs & LOCAL FIRMS IN EMERGING ECONOMIES

The case of IT Services firms in Vietnam

UNE ANALYSE MULTI-NIVEAUX DU TRANSFERT DE CONNAISSANCES ENTRE LES ENTREPRISES MULTINATIONALES ET LES ENTREPRISES LOCALES DANS LES ÉCONOMIES ÉMERGENTES

Le cas des entreprises de services informatiques au Vietnam

Présentée par Thuy B. Do
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Sous la direction de Frédéric Le Roy et Thuy Seran

Devant le jury composé de

Ulrike MAYRHOFER, Professeur des Universités, Université Côte d'Azur	Rapporteur
Dora TRIKI, Professeur Associé (HDR), École supérieure du commerce extérieur Paris (ESCE)	Rapporteur
Frédéric LE ROY, Professeur des Universités, Université de Montpellier / Montpellier Business School	Directeur de thèse
Thuy SERAN, Professeur Associé (HDR), Chercheur, Université de Montpellier / HEC Montréal Canada	Co-directrice de thèse

UNIVERSITÉ DE MONTPELLIER

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Thuy B. Do

University of Montpellier

Montpellier, France

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ABSTRACT

Emerging economies are low-income, high-growth nations that employ economic liberalization to foster development and contribute significantly to the global economy. Multinational companies (MNCs) are drawn to these markets, partnering with local firms to access resources and knowledge, thereby enhancing their financial performance. The challenge lies in effectively transferring knowledge while safeguarding strategic assets.

There are two critical theoretical gaps in extant literature. First, there are conflicting findings regarding the consequences of interfirm knowledge transfer in international alliances within emerging markets. Second, there's a lack of research at multiple levels with a micro foundation-base to deep understanding knowledge transfer, which is influenced by factors at various levels, including individual, firm, interfirm, industry, and country levels.

To address these gaps, the study poses the fundamental question: Is it safe for MNCs to selectively share knowledge with local firms in international alliances in emerging economies? This overarching question is broken down into specific inquiries across different levels:

Firstly, examining the impact of formal and informal knowledge-sharing and protection mechanisms on interfirm knowledge transfer and leakage.

> **Question 1:** How do formal and informal sharing and protection mechanisms influence selective knowledge transfer at the interpersonal level?
>
> **Question 2:** How does selective knowledge transfer at the interpersonal level aggregate to influence knowledge transfer at the interorganizational level?

Secondly, investigating the evolving dynamics of the relationship between MNCs and local firms following selective knowledge transfer.

> **Question 3:** How do the relative positions of MNCs and local firms change after selective knowledge transfer in their collaborations?

The empirical research is conducted within Vietnam's IT industry, focusing on a long-term partnership between a global IT leader and the largest IT firm in Vietnam. The study explores the relative positions of the MNC and local firm before and after a knowledge transfer project, examines antecedents and interpersonal knowledge processes through eight embedded cases in the knowledge transfer project, and investigates the transformation of individual knowledge into organizational knowledge in both MNCs and local firms through two embedded cases.

The research findings underscore that various factors, including joint task structure, team relations, knowledge stock, and employee motivations, serve as constraints on the outcomes of interpersonal knowledge transfer. The study also demonstrates the effective assimilation of knowledge by local firms from MNCs, whereas MNCs encounter challenges in integrating local knowledge into their organizational processes. Importantly, the overall relationship between MNCs and local firms does not undergo significant changes following knowledge transfer due to the persistence of knowledge gaps. MNCs continue to introduce new knowledge, while local firms maintain their strong local relationships and adaptability.

In conclusion, this research makes a substantial contribution to the understanding of knowledge transfer in international alliances, particularly within emerging economies. The findings carry both theoretical implications for multilevel knowledge transfer research and practical insights for managers engaged in knowledge sharing within international collaborations in emerging markets. Overall, this study sheds light on the intricate dynamics of knowledge transfer and its impact on the bargaining power and competitive positions of firms in emerging economies.

PART I: INTRODUCTION

1. EMERGING ECONOMY CHARACTERISTICS AND KNOWLEDGE TRANSFER BETWEEN MNCS AND LOCAL FIRMS

"Emerging economies are low-income, rapid-growth countries using economic liberalization as their primary engine of growth. They fall into two groups: developing countries in Asia, Latin America, Africa, and the Middle East and transition economies in the former Soviet Union and China" (Hoskisson, Eden, Lau, & Wright, 2000). These economies significantly contribute to the global economy (Anand, McDermott, Mudambi, & Narula, 2021). According to IMF (2021), 20 emerging economies account for 34 percent of the world's nominal GDP in US dollars and 46 percent in purchasing-power-parity terms (Duttagupta & Pazarbasioglu, 2021).

Emerging markets (EMs) are very attractive for multinational companies (MNCs) to expand globally and sustain competitiveness (Kumar, Gaur, Zhan, & Luo, 2019). Partnering with local firms can be a primary strategy of MNCs for accessing local resources, reducing country risk, and improving financial performance (Hitt, Dacin, Levitas, Arregle, & Borza, 2000; Luo, Zhang, & Bu, 2019; Meschi & Riccio, 2008). Local firms look for superior financial, technical, and intangible assets of partners from developed economies. MNCs search for unique competencies, local market knowledge and access to select their partners (Hitt et al., 2000). As a result, EMs are ideal learning laboratories for both local incumbents and foreign entrants. Knowledge transfer through collaboration with partners is one of the main sources of learning for both local firms and MNCs (Hitt, Li, & Worthington, 2005). How to efficiently transfer knowledge to collaboration partners to co-create values is an important question to the alliances between MNCs and local firms. At the same time, both of the partners need to protect their strategic knowledge to maintain their bargaining power and competitive advantage (Luo & Rui, 2009, 2009; Yang, Fang, Fang, & Chou, 2014).

Therefore, understanding factors driving knowledge transfer process, its outcomes, consequences, and boundary conditions is vital to MNCs and local firms. With this knowledge, the firms could design collaboration organizations and control mechanisms to achieve their intended collaboration outcomes and consequences.

2. CONTRADICTED RESULTS OF KNOWLEDGE TRANSFER CONSEQUENCES AND THE NEED FOR A THEORY OF THE OPTIMUM LEVEL OF KNOWLEDGE DISCLOSE

In international business (IB), there is a recent debate on knowledge leakage in the Journal of Business Studies.

On one side, it is argued that knowledge leakage is unavoidable since it happens naturally through interfirm relationship, collocation, and employee mobility (Inkpen, Minbaeva, & Tsang, 2019). Valuable knowledge is often complex and tacit, so it is difficult for partners to absorb. Since leaking knowledge often goes with other knowledge and complementary assets to generate competitive advantage, the leaking knowledge has little value when staying in isolation. Hence, leaking bits or pieces of knowledge rarely harms MNCs. Furthermore, revealing knowledge with partners strengthens the collaborative relationship and initiates reciprocal valuable knowledge exchanges (Inkpen et al., 2019). It has been proved in past research that knowledge transfer is an important element for MNCs to gain market access, perform effectively, and win competitive advantage in EMs (H. Li, Zhang, & Lyles, 2013).

On the other side, (Contractor, 2019) shows that knowledge leakage creates severe damages to MNCs. MNCs lost hundreds of billions of USDs of intellectual property commission fee because of knowledge leakage to local partners. In addition, knowledge leakage leads MNCs to near bankruptcy (Contractor, 2019). However so far, little is known about the capabilities of MNCs to protect knowledge from local firms (Contractor, 2019; Faria & Sofka, 2010; Perri & Peruffo, 2016; Sofka, Shehu, & Faria, 2014) while transferring knowledge for

competitiveness gaining, especially in emerging markets where intellectual property protection and enforcement are often weak (Cavusgil, Ghauri, & Liu, 2021). Contractor (2019) concludes that knowledge disclose has both cost and benefit. So, we should look towards a theory of an optimum level of disclose to balance openness and secrecy and maximize the net benefits for MNCs. He suggests finding cases where MNCs could minimize knowledge leakage and cases where MNCs could selectively reveal knowledge as a part of the theory of an optimum level of disclose (Contractor, 2019).

3. INSUFFICIENT MULTILEVEL MICRO FOUNDATION-BASED RESEARCH ON KNOWLEDGE TRANSFER AND ITS THEORETICAL AND MANAGERIAL IMPACTS

Knowledge transfer is a multilevel phenomenon (Andersson, Cuervo-Cazurra, & Nielsen, 2014; Andersson, Dasí, Mudambi, & Pedersen, 2016; Foss & Pedersen, 2004, 2019) . Knowledge transferred is impacted by country factors (economics and trade, technology level, education, intellectual protection regimes, culture, norms); industry factors (innovation speed, length of product life cycle); firm factors (learning intent, receptivity, and openness); interfirm factors (structure, relation); individual factors (knowledge base, motivation of senders and receivers); and knowledge characteristics. So, knowledge transfer should be studied by considering several levels simultaneously. The factors of the different levels interact with each other to lead to divergent outcomes. In the extant literature on international knowledge transfer, factors at macro levels like country, industry, and firm factors have been separately analyzed (Faria & Sofka, 2010; Perri & Andersson, 2014) . There is a lack of studies that integrate various levels of analysis (Andersson et al., 2014; Andersson et al., 2016; Foss & Pedersen, 2004, 2019) . It is necessary to investigate knowledge transfer under multilevel perspective to understand deeply the phenomena and have more precise research results.

Furthermore, the studies at micro or individual level are largely ignored in the extant literature on knowledge management despite of the fact that individuals are the agents of knowledge transfer (Andersson et al., 2016; Foss & Pedersen, 2004, 2019; Perri & Peruffo, 2016) . Knowledge is stored, absorbed, and transferred by individuals, while control governance and knowledge processes are at interfirm, firm levels. It is hence necessary to understand the links between control mechanisms, knowledge transfer processes with individual behaviors. The linkage from governance to individuals which is related to the question of how managerial controls impact on individual behaviors is largely missing in the extant literature. Also, there is a lack of research on the linkage from individual activities to organizational knowledge processes (Foss & Pedersen, 2019). Missing such links leads not only to theoretical gaps but also has managerial implications. Comprehensive theoretical explanations of how control mechanisms influence organizational knowledge processes through individual behaviors remain elusive. As a consequence, managers in practices do not know how they can apply organizational designs and control mechanisms to influent knowledge processes especially knowledge protection (Foss & Pedersen, 2019).

4. A MULTILEVEL MICRO FOUNDATION-BASED STUDY TOWARDS THE THEORY OF THE OPTIMUM LEVEL OF KNOWLEDGE DISCLOSE

To contribute to the literature on international knowledge transfer and strategies of firms in emerging markets, this research aims to examine the relationships between driving factors and the outcomes of interfirm knowledge transfer between MNCs and local firms via international alliances in emerging markets; and the consequences of interfirm knowledge transfer to the evolvement of the relationship between MNCs and local firms. An interpersonal knowledge transfer process is introduced at the intermediate position between the driving factors and the interfirm knowledge transfer process to explain how these factors influence the outcomes of interfirm knowledge transfer through the mediation role of individuals in the interpersonal

knowledge transfer process. Additionally, the research investigates control mechanisms designed to manage the driving factors of interpersonal knowledge transfer processes. Furthermore, we will explore the outcomes of interfirm knowledge transfer through international alliances and how they impact the relative competitive, cooperative, and coopetitive positions of MNCs and local firms.

The research is going to answer the fundamental question if it is safe for MNCs to selectively share knowledge when working in alliances with local partners in the fast-developing emerging market context of Vietnam. This topic is of high relevance as MNCs continue to share and protect knowledge in international alliances with local firms in EMs. The research hence searches to inform and help MNCs to better succeed in protecting their competitive advantage and bargaining power when sharing knowledge with local partners in EMs.

This fundamental question is broken down into specific inquiries across different levels:

Firstly, examining the impact of formal and informal knowledge-sharing and protection mechanisms on interfirm knowledge transfer and leakage.

> **Question 1:** How do formal and informal sharing and protection mechanisms influence selective knowledge transfer at the interpersonal level?
>
> **Question 2:** How does selective knowledge transfer at the interpersonal level aggregate to influence knowledge transfer at the interorganizational level?

Secondly, investigating the evolving dynamics of the relationship between MNCs and local firms following selective knowledge transfer.

> **Question 3:** How do the relative positions of MNCs and local firms change after selective knowledge transfer in their collaborations?

A multilevel analysis, grounded in micro foundations, was conducted to investigate a long-term partnership between a MNC and its local partner in the Information Technology (IT)

industry in Vietnam. The research employed a longitudinal case study methodology to examine the evolvement of the partnership. A significant collaboration project within the partnership, focused on implementing the treasury and budgetary system for the government of Vietnam, marked a key milestone in knowledge transfer between the partnering entities. After this knowledge transfer milestone, an assessment was made of the changes in the relative competitive, cooperative, and coopetitive positions of the MNC and the local firm. The study also delved into interpersonal knowledge transfer driving factors, process, and outcome through the analysis of eight embedded cases, each corresponding to one of the eight teams involved in the knowledge transfer project. Additionally, two embedded cases explored the processes involved in transforming individual knowledge into organizational knowledge within both the MNC and the local firm.

Theoretically, this research introduces a novel multilevel micro foundation-based approach to interfirm knowledge transfer through international alliances, emphasizing the role of individual knowledge agents and linking interpersonal, organizational, and interfirm levels. It examines how driving factors such as team structure, relations, individual knowledge stock, and motivations impact interpersonal knowledge transfer outcomes. Additionally, the study delves into control mechanisms to manage interpersonal knowledge transfer, explores knowledge transformation processes within MNCs and local firms, and enhances understanding of relationship changes resulting from interfirm knowledge transfer, particularly in the context of economic and institutional disparities within emerging economies. Overall, these contributions enrich the literature on knowledge transfer, organizational transformation, and MNC strategies in emerging markets.

Managerially, this research provides valuable managerial insights into knowledge transfer, its driving factors, and control mechanisms. It offers practical guidance for team leaders to manage task structure, enhance interpersonal relationships, and motivate knowledge transfer

at the team level. At the firm level, it suggests fostering an organizational culture conducive to knowledge sharing and establishing robust systems to transform individual knowledge into organizational knowledge. For knowledge-intensive industries like IT, the findings support MNC leaders in considering alliance strategies with local firms in low- and middle-income countries, offering cost reduction, local knowledge advantages, and market expansion benefits.

The research contributes significantly to knowledge management studies in emerging markets, addressing the knowledge management paradox in international business. Additionally, it aligns with EU-funded projects focused on knowledge, innovation, and entrepreneurship in international business, emphasizing its broader policy and practical implications.

5. ORGANIZATION OF THE THESIS

This thesis unfolds in eight subsequent parts.

Part I: Introduction

This section provides an overview of the research context, focusing on international alliances and knowledge transfer between MNCs and local firms in emerging markets. It highlights theoretical and managerial gaps related to micro foundation-based knowledge transfer process and inconsistent findings on the consequences of interfirm knowledge transfer via international alliances in emerging markets. The need for multilevel micro foundation-based research to better understand these phenomena is emphasized.

Part II: Critical Literature Review

In this section, a comprehensive review of the existing literature concerning knowledge transfer through international alliances, with a particular focus on emerging markets is provided.

Part III: Research Gaps and Research Questions

In this part, two theoretical gaps related to the lack of multilevel micro foundation-based research and inconsistencies in the consequences of interfirm knowledge transfer are elaborated.

Continuing to address the identified gaps, this section introduces the first two research questions, exploring how antecedents influence individual knowledge transfer behaviors in interpersonal knowledge transfer (Question 1) and how individual knowledge transform to organizational knowledge (Question 2). The third research question investigates the changes in relative competitive, cooperative, and coopetitive positions of MNCs and local firms as consequences of interfirm knowledge transfer through international alliances, taking into account country and industry factors (Question 3).

Part IV: Theoretical Framework

This part outlines the theories and existing research articles that form the basis for implied hypotheses corresponding to the three research questions.

Part V: Empirical Research Context – Country and Industry Factors

This section provides information about the research context, focusing on Vietnam as an emerging economy within the group of low- and medium-income countries. It also offers a summary of the country's economic and institutional profiles and highlights the IT industry with its exceptional innovation speed.

Part VI: Research Methodologies

After summarizing the epistemological approaches, this part provides case study design, protocols to collect and analyze data corresponding to each research question.

A longitudinal case study explores a long-term partnership between a global IT leader and the largest IT firm in Vietnam, with a specific focus on the collaboration project as a knowledge transfer milestone. The analysis on the relative positions of the MNC and local firm before

and after the knowledge transfer milestone is applied (Question 3). The relationship between antecedents and interpersonal knowledge processes are examined through eight embedded cases (Question 1). And the process of transforming individual knowledge into organizational knowledge is investigated in both the MNC and the local firm through two embedded cases (Question 3).

Coding structures and data analysis strategies are also presented in this part.

Part VII: Empirical Findings

This section presents the empirical results, which respond to the three research questions. These results are based on 56 interviews with team members, team leaders, and firm managers.

Part VIII: Discussions, Conclusions and Contributions

In this final part, the empirical findings are discussed in relation to theoretical frameworks, existing literature, and research context factors. Research propositions are formulated, and the section concludes with a discussion of overall conclusions, research contributions, and limitations.

PART II: CRITICAL LITURATURE REVIEW

The purpose of this critical literature review part is to assess and synthesize the extant literature on knowledge transfer in international alliances. From the assessment and synthesizing, the thesis looks further on the theoretical and empirical gaps in knowledge transfer in international alliances. The overall question is to understand the factors driving knowledge transfer process in international alliances and the outcomes of the process.

To answer the question above, an integrative review method has been applied. First, the researcher has read the existing literature review papers to have the basis ideas of the knowledge area. The existing review articles are either not be up to date (Andersson et al., 2016; Foss & Pedersen, 2019; Perri & Peruffo, 2016) or not focusing on the knowledge transfer process in international alliances (Bamel, Pereira, Bamel, & Cappiello, 2021; Perri & Peruffo, 2016; Vrontis & Christofi, 2021; Zhao, Liu, Andersson, & Shenkar, 2022). Based on the existing literature review articles, the initial knowledge structure of this thesis was initially constructed. Second, the most cited papers and the papers of the most impacted authors listed in the existing literature review papers were selected and read to find insights. Third, new searches based on the searching key words of the existing literature review articles (Foss & Pedersen, 2019) have been executed to find the updated papers. Finally, the synthesis of insights which include the confirmation ideas of the extant literature review findings and the up-to-date analysis based on the new articles with the researcher's critical opinions has been summarized in this thesis's critical literature review.

1. RELATED CONCEPTS IN KNOWLEDGE TRANSFER VIA INTERNATIONAL STRATEGIC ALLIANCES

The main concepts which are used in this thesis are introduced below to help readers navigate the following sections and avoid any potential confusion.

1.1 Concept, categories, and knowledge transfer

1.1.1 Individual and organizational knowledge

"Knowledge is the individual ability to draw distinctions within a collective domain of action, based on an appreciation of context or theory, or both" (Vladimirou, 2001) . A person is knowledgeable if he/she can judge the information based on his/ her experiences of the context and deriving from theories. The difference between knowledge and information is that knowledge is justified by the person who owns the knowledge. Knowledge is closely connected to actions (Nonaka, 1994; Nonaka & Krogh, 2009; Vladimirou, 2001) . Knowledge is actuality or potentiality of actions (Nonaka & Krogh, 2009).

Organizational knowledge is created, advanced, and diffused by individuals within the organization. Individuals within the organization judge and act based on general rules commonly accepted by the organization (Vladimirou, 2001).

1.1.2 Explicit and tacit knowledge

Taking from the original concepts of explicit and tacit knowledge of (Polanyi, 1966) , researchers elaborate the definitions of explicit and tacit knowledge.

Explicit knowledge is knowledge that is transmittable in formal and systematic language (Nonaka, 1994) . Explicit knowledge is wholly articulated, precisely codified, and perfectly interpreted (Nieto & Pérez-Cano, 2004) . Explicit knowledge has a universal character. It can be consistently understood across context, and it is not required direct experience of the knower to interpret (Hipp et al., 2003; Nonaka & Krogh, 2009).

Tacit knowledge or know-how or knowing is "the process of integrating specific features one is subsidiarily aware of (e.g., features of a face like e.g., nose, eyes, jaw, eyebrows, cheeks, and forehead), to become focally aware of an object (e.g., the face). The

integration of subsidiary and focal awareness is referred to as indwelling." (Hadjimichael & Tsoukas, 2019; Tsoukas, 2011). Being a process of integrating subsidiaries to a focal understanding, tacit knowledge is not fully codified and it is related to feelings and experiences (Kogut & Zander, 1992; Nonaka & Krogh, 2009). Tacit knowledge is related to direct experience and cannot be codified by objects (Kogut & Zander, 1992). Tacit knowledge is attached to senses, experiences, skills, intuitions, implicit rules, and unarticulated mental models (Nonaka & Krogh, 2009).

One example to elaborate the differences between explicit knowledge and tacit knowledge is in the context of making a cake (Kogut & Zander, 1992). The original list of ingredients is explicit knowledge. It is commonly and clearly understood by everyone. And the process to make the cake is tacit knowledge. The description in the recipe is not enough to describe the process to make the cake. It is very difficult to make a cake by only looking at the recipe. It is required the baker to have some experiences or at least some observations of beating eggs, mixing flours, adjusting the temperature of the oven…

To act, tacit knowledge takes the decisive role. Explicit knowledge depends to tacit knowledge in the extent of actions (Hadjimichael & Tsoukas, 2019). A map, no matter how clear it is, to find an address still it requires a skilled reader to relate the map to the outside world landmarks. To solve a specific problem, know-how of individuals to perform is rather necessary than manuals or explanations (Nelson & Winter, 2002).

Tacitness is the extent to which knowledge can be codified and thus transmitted and communicated in a formal and systematic language Tacitness of knowledge may contribute to the sustainability of competitive advantage of a firm (Foss, Husted, & Michailova, 2010).

1.1.3 Explicit and tacit knowledge transfer

Explicit knowledge is codified and not problematic to be taught. However, tacit knowledge is not fully codifiable, difficult to be taught. Only the technical component of tacit knowledge could be articulated. Teaching tacit knowledge requires both personal communication and practice (Nieto (Nieto & Pérez-Cano, 2004). Tacit knowledge can be transferred through social interactions (Hadjimichael & Tsoukas, 2019; Nonaka, 1994; Nonaka & Krogh, 2009; Tsoukas, 2011). By observing, discussing, imitating, and practicing activities, learners could learn how to execute an action. When taking dialogical interactions, tacit knowledge of doing tasks is articulated by reminding how the tasks have been executed (Tsoukas, 2011). Also, without wording expression observers could unconsciously learn tacit knowledge by observing, imitating, and practicing. Working under the guidance of mentors who are more experienced and have a lot of tacit knowledge is an effective way to learn tacit knowledge (Tsoukas, 2011).

To limit tacit knowledge transfer, executing tasks in secrecy could work. It helps to reduce observations of others and articulation in verbal discussions. However, under the effect of working environment where people have high frequency and long duration interactions, tacit knowledge could be unintentionally transferred one to others. Without formal verbal guidance or written document sharing, tacit knowledge leakage could happen due to observation, informal talks. And the leakage could be more severe when learners have chance to imitate and practice what they have observed and heard.

It is difficult to transfer tacit knowledge: The more tacit the knowledge that an alliance partner seeks to acquire, the more difficult the acquisition (Inkpen, 1998; Simonin, 1999). The risk, particularly with tacit knowledge, is that knowledge transferred from a JV to a parent will dissipate as it spirals up to the organization level (Inkpen & Dinur, 1998). The greater the

tacitness of alliance knowledge, the greater the scope of knowledge that must be transferred to effect successful acquisition (Inkpen, 2000).

Skills comprising tacit knowledge embedded within social systems are difficult to be transferred (Hamel, 1991). Organizational routine enclosed tacit knowledge is difficult to be imitated (Contractor, 2019). Tacit knowledge planted in the organization history and culture is difficult to transfer (Inkpen, 1998). Planning and management knowledge is difficult to be transferred due to its tacitness (Inkpen & Pien, 2006). The relational embeddedness (tie strength, trust, and shared values and systems) between managers had strong impact to tacit knowledge transfer (Dhanaraj, Lyles, Steensma, & Tihanyi, 2004).

Tacit knowledge is separated into three subtypes: conscious, automatic, and collective. Individual tacit knowledge can be either conscious or automatic. Automatic knowledge is implicit knowledge that "happens by itself' and is often taken for granted. Conscious knowledge may be codified, perhaps as a set of notes, and is potentially available to other people. Collective knowledge is tacit knowledge of a social or communal nature (Inkpen & Dinur, 1998). Combing the level of tacitness with the level of individual/ collective of knowledge, Inkpen and Dinur (1998) proposed that individual tacit knowledge could be transferred through intensive interactions like working side by side or personnel transfer. And for collective tacit knowledge, strategic integration between alliance partners could help to transfer (Inkpen & Dinur, 1998).

1.2 International strategic alliances

This thesis adopted the concept of strategic alliance from Gulati (1998). Strategic alliances are defined “as voluntary arrangements between firms involving exchange, sharing, or co-development of products, technologies, or services. They can occur as a result of a wide range of motives and goals, take a variety of forms, and occur across vertical and horizontal boundaries” (Gulati, 1998). New technological development (Gnyawali & Park, 2011), access

to complementary capabilities (Diestre & Rajagopalan, 2012) , and learning (Hamel, 1991) between international partners are examples of international strategic alliances. In the context of globalization, cooperation is extended to all types of collective efforts for mutual gains.

According to this definition, the strategic partners could be horizontal competitors, vertical suppliers or customers or other types of research and development partners like universities or research institutions. International strategic alliances are strategic alliances where partners originally come from different countries. It could be the alliances between MNCs and local firms when MNCs enter a host country where local firms are located. The governance mode could be joint venture collaboration or long-term partnership contract to provide goods or services along their value chain.

1.3 Knowledge transfer and knowledge spillover

Knowledge transfer and knowledge spillover terms are both commonly used in international business literature (Andersson et al., 2016; Contractor, 2019; Dussauge, Garrette, & Mitchell, 2000; Inkpen et al., 2019; K. Meyer, 2004; K. Meyer & Sinani, 2009; Perri & Peruffo, 2016). However, these two concepts have differences in nature and governance. This thesis follows Eden (2009) in clarifying the two concepts.

Knowledge or technology transfer are knowledge flows directly between two parties A and B. In the case of strategic alliances, the parties could be suppliers, customers, horizontal partners, or research institutions who provide market information or products and service designs or technologies and manufacturing processes to achieve collaboration objectives. Knowledge transfer could be intentional or unintentional. Intentionally, both collaboration parties could agree to transfer some specific knowledge to each other to support their collaboration. There are cases where knowledge could be unintentionally transferred to collaboration partners due to interactions in their collaboration.

Spillover or externalities are “impacts on third parties not directly involved in an economic transaction, that is, when a transaction between A and B affects C” (Eden, 2009). Knowledge transfer is not spillover since the direct impacts of the relation between A and B to A and B not C are considered. Spillovers could be monetary and non-monetary. Knowledge spillover is non- monetary. It could happen due to demonstration effects where local firms who do not have direct relations with MNCs are exposed to activities of the MNCs and imitate the products or processes of MNCs. Also, employee mobility from MNCs to local firms in the labor market could create a channel for technology spillover from MNCs to local firms (Eden, 2009; Inkpen et al., 2019; Perri & Peruffo, 2016).

This thesis focuses on the phenomenon of knowledge transfer in international strategic alliances. Furthermore, the thesis also discusses the knowledge spillover effect as a byproduct of knowledge transfer phenomenon. And both knowledge transfer and spillover generate a combined effect on MNCs and local firms in the host economy.

1.4 Multilevel analysis in strategic alliance research

Alliance research is particularly ripe for multilevel research because alliance phenomena (e.g., formation, governance, dynamics) result from the simultaneous behaviors of multiple actors (e.g., teams or firms) interacting within multiple contexts (e.g., industries or countries) (Nielsen, 2010).

When doing multilevel research, it is important to identify the focal unit that researchers target to explain. Basically, the dependent variables of a particular research determines the level of theory which is consistent with the unit of analysis, Based on the unit of analysis of research, data will be collected and analyzed (Nielsen, 2010).

There are three main types of multilevel models. The first type is that the model includes antecedent predictor variables and dependent variables at different levels. The second type

includes contextual factors at country or industry level as moderators of relationships at firm or alliance level. And the third type concerns patterns of relationships that could be replicated across levels of analysis. However, the same construct in different levels have different conceptual meaning and measurement. It is not correct to imply relations in one level could be applied to other level. It is required to understand the mechanisms which link the concepts of the same construct across levels. For example, trust is a construct that has been assumed to be similar at interpersonal, intrafirm and interorganizational levels. However, interpersonal trust and interfirm trust are different concepts, and they are measured differently. In extant literature, current studies rarely specify and measure the extent to which the processes driving interpersonal trust replicate in leading to interfirm trust (Nielsen, 2010).

Interorganizational knowledge transfer in international business is a multilevel phenomenon (Andersson et al., 2014; Andersson et al., 2016; Foss & Pedersen, 2004, 2019; Perri & Peruffo, 2016). Knowledge transfer between partner firms through an international alliance which is nested in a particular host country, in a specific industry and managed by the sender and receiver firms originally from different countries under the governance of the partnership. So, institutions of the host country, characteristics of the nesting industry, openness of sender firm, absorptivity and motivations of receiver firm and alliance governance mechanisms could impact to the interfirm knowledge transfer outcome via the alliance. Furthermore, knowledge transfer is ultimately executed by human participants who are employees from both sender and receiver sides. As agents executing knowledge transfer, individual motivations and knowledge stock of the senders and receivers directly drive the interpersonal knowledge transfer process and outcomes which finally lead to alliance or interfirm knowledge transfer outcomes. Furthermore, knowledge dimensions which are the characteristic of the transferred object also have impacts on the transmission process and outcomes.

This study deals with various levels of theory and units of analysis, including the interpersonal, firm, and interfirm levels. The study introduces the interpersonal knowledge transfer process at an intermediate position between control mechanisms and the interfirm knowledge transfer process. It aims to explain how these mechanisms influence the outcomes of interfirm knowledge transfer by mediating through individuals who are the agents of knowledge transfer. In doing so, it establishes linkages between control mechanisms at the country, firm, and interfirm levels and individual knowledge agents in the interpersonal knowledge transfer process. Additionally, the transformation of individual knowledge, as the outcome of interpersonal knowledge transfer, into organizational knowledge at firm level handles the individual-firm interlevel. The study also investigates the impact of contextual factors, including the country and industry, on the interfirm knowledge transfer process and the following evolvement of the partner firms' relative positions.

In summary, the study seeks to investigate cross-level relations, encompassing country-individual, firm-individual, interfirm-individual, country-interfirm, and industry-interfirm relationships. These relations can be either direct or moderating. Further details will be provided in the research models.

1.5 Dependency, bargaining power, mutual dependence, and cooperation

According to theory of resource dependency, organizations are embedded in networks of interdependencies and social relationships. The needs of resources including financial, physical and informational resources make them dependent on the sources of these resources (Pfeffer & Salancik, 2003). *I* depends on *j* if i's goals are facilitated by *j*. The dependence of *i* on *j* provides the basis for the power of *j* over *i* (Emerson, 1962). The concept of power can be traced back to Emerson's (1962) theory of power-dependence relation. In this theory, the power of *j* over *i* is the amount of resistance on the part of *i* which can be potentially overcome by *j*" (Emerson, 1962). The power of an organization over another organization is

determined by the particularities of the relationship with the partner and other available alternatives (Emerson, 1962; Pfeffer & Salancik, 2003). According to the theory of resource dependency (Emerson, 1962; Pfeffer & Salancik, 2003) , the relation between the driving factors to the dependency of *i* on *j* or the power of *j* over *i* could be expressed in the Table 1: Resources and Partner Dependency (Chiambaretto, 2015).

According to the concept of dependency and its driving factors, the level of dependency of *i* on *j* could be different compared to the level of dependency of *j* on *i.* And the power imbalance captures the difference in the level of dependency or bargaining power of each actor over the other (Casciaro & Piskorski, 2005).

Factors	**Effect on the dependency of *i* on *j***
Share of *i*'s goals mediated by *j*	Positive
Number of resources that *i* seeks access to using *j*	Positive
Substitutability of alternative sources (Total number of substitutes, Quality of substitutes)	Negative

Table 1: Resources and Partner Dependency

Source: Chiambaretto, 2015.

Mutual dependence reflects the existence of bilateral dependencies in the dyad, regardless of whether the two actors' dependencies are balanced or imbalanced (Casciaro & Piskorski, 2005) . Mutual dependence is measured by as the sum or the average of the level of dependence of *i* on *j* and the level of dependence of *j* on *i* (Bacharach & Lawler, 1981).

1.6 Market overlapping and resource similarity as identifiers of competition

According to the strategic management researchers, competitors belong to the same strategic group which includes firms having similarities in strategic attributes. The commonly accepted similarities in identifying competitors among the strategic management researchers are market overlapping and resource symmetries (Cattani, Porac, & Thomas, 2017; Chen, 1996; Peteraf & Bergen, 2003). Cattani et al. (2017) expanded the concept of competition by incorporating the competition categorization used by economists, which defines competition based on the "cross-elasticity" of demand. According to this economic perspective, two firms selling similar products are considered competitors if a change in the price of a product from one firm influences the demand for the same product from another firm (Cattani et al., 2017). Building on Cattani et al. (2017) conceptualization of competition, competitors are not only the firms who have similar capacities but also the firms who have asymmetric capacities, and their products could be substituted for each other. Based on this expanded concept of competitors, competitors are including not only “direct competitors” but also “vertical substitutors” in the framework to identify competitors of Peteraf & Bergen, (2003). The extended concept of competitors is consistent with the view of competitors of Chiambaretto & Dumez (2016) in which they also consider indirect competitors as competitors (Chiambaretto & Dumez, 2016).

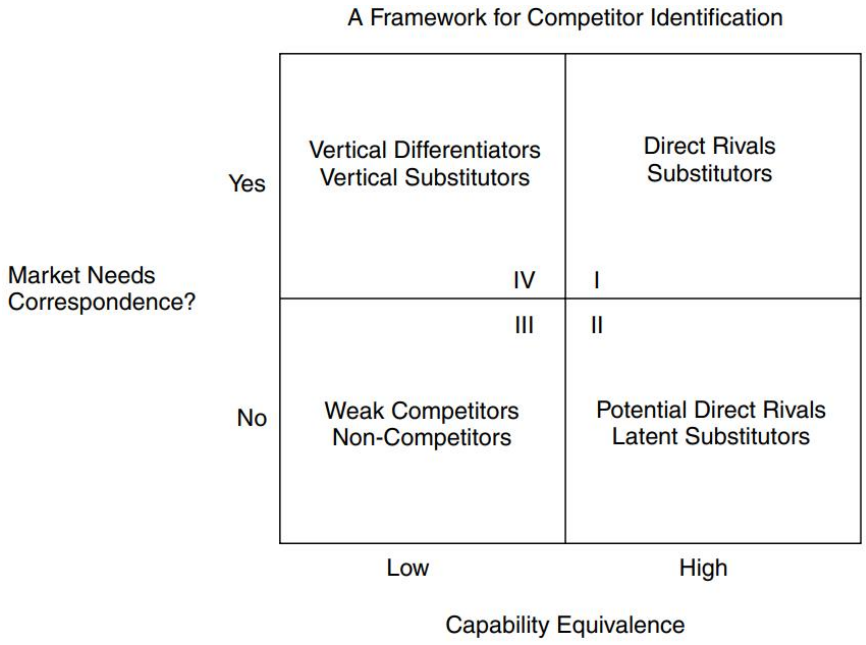


Figure 1: The Framework for Competitor Identification

Source: Peteraf & Bergen (2003)

This framework for competitor identification will be used to identify the competition status of the relationship between two alliance partners in the case study of this research.

1.7 The concept and categories of coopetition

The broad concept of coopetition is firstly introduced as the multilateral interplay between competition and cooperation within the value net where a focal firm interacts with its customers, suppliers, competitors, and complementors (Brandenburger & Nalebuff, 1996) . Bengtsson and Kock (2000) narrowed the term coopetition as a dyadic relationship where two firms cooperate in some activities and compete in other activities (Bengtsson & Kock, 2000). However later, the updated definition of coopetition extends to coopetition in multi-firm relationship to adapt with the changes of multi-firm alliances in business environment. Therefore, Bengtsson and Kock (2014) conclude that coopetition is "a paradoxical relationship between two or more actors simultaneously involved in cooperative and competitive interactions, regardless of whether their relationship is horizontal or vertical" (Bengtsson & Kock, 2014). This research paper is going to use coopetition definition defined

by Bengtsson and Kock (2014). We are going to discuss clarifying the understanding of this concept of coopetition.

In this definition, the key criterion of coopetition is that the two contradictory elements of competition and cooperation happen at the same time within a relationship of the same actors. If cooperation and competition exist in different periods of the relationship, the phenomenon is not considered as coopetition. Similarly, the relationship where one actor at the same time collaborates and competes with different actors is not coopetition (Bengtsson & Kock, 2014; Luo, 2007).

The intensity of competition and cooperation in each coopetition relationship varies (Chiambaretto & Dumez, 2016; Luo, 2007; Raza-Ullah, Bengtsson, & Kock, 2014) . The "hard core" coopetition is the coopetition that requires both intense competition and intense cooperation in critical markets and activities. Another form of coopetition distinct from the "hard core" coopetition is "protective belt" coopetition where it is not required both intense competition and intense coopetition in critical activities (Chiambaretto, Fernandez, & Le Roy, Fothcoming) . This thesis considers coopetition as extended definition which includes "hard code" and "protective belt" coopetition.

Considering both "hard code" and "protective belt" coopetition, based on the levels of competition and cooperation, Luo (2007) categorized coopetition into four categories (1) contending situation, (2) isolating situation, (3) partnering situation, or (4) adapting situation. This framework helps to analyze in depth the coopetition with each competitor and examine the dynamics of the relationship.

In the empirical case study of this research, the relation of MNC and local partner is eventually at the status of Partnering coopetition where competition is weak, and cooperation is strong. In this type of coopetition, the partners collaborate in value creation and share the

collaborative results. They enjoy the synergy effect of their resource complementary and enhance their tied relationship.

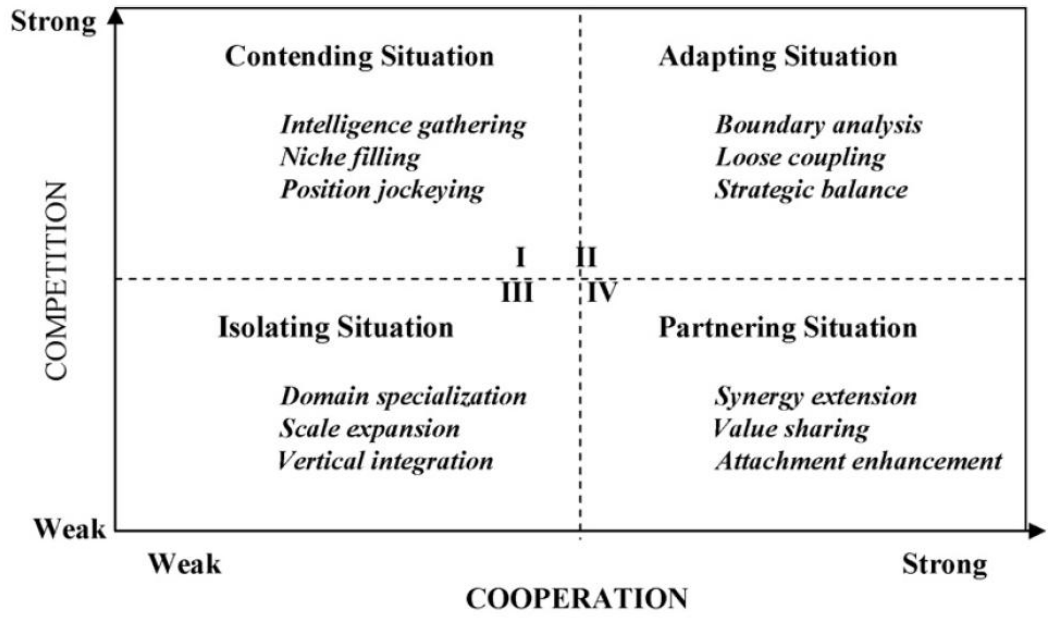


Figure 2: Coopetition Categories

Source: Luo (2007).

2. MULTI-LEVEL ANTECEDENTS OF INTERFIRM KNOWLEDGE TRANSFER IN INTERNATIONAL STRATEGIC ALLIANCES: A LITERATURE REVIEW

The existing research addresses various factors that influence interfirm knowledge transfer through strategic alliances. In this body of research, cross-level factors at the country, industry, and firm levels are implicitly shown to have a direct or indirect relationship with knowledge transfer at the alliance level, or they serve as moderators affecting the relationship between knowledge transfer within alliances and the factors that drive it. However, the cross-level aspect is not explicitly explained. The levels of these driving factors and outcomes in research models lack clear definitions and differentiation in measurement, even when referring to the same concepts across different levels. Furthermore, the theories or mechanisms that underlie

the relationships and explain how and in what ways these cross-level factors influence knowledge transfer at the alliance level are not thoroughly understood.

Below is a summary of multilevel antecedents and their relationships with knowledge transfer in international strategic alliances from the existing literature. Detailed explanations will be provided in the following sections.

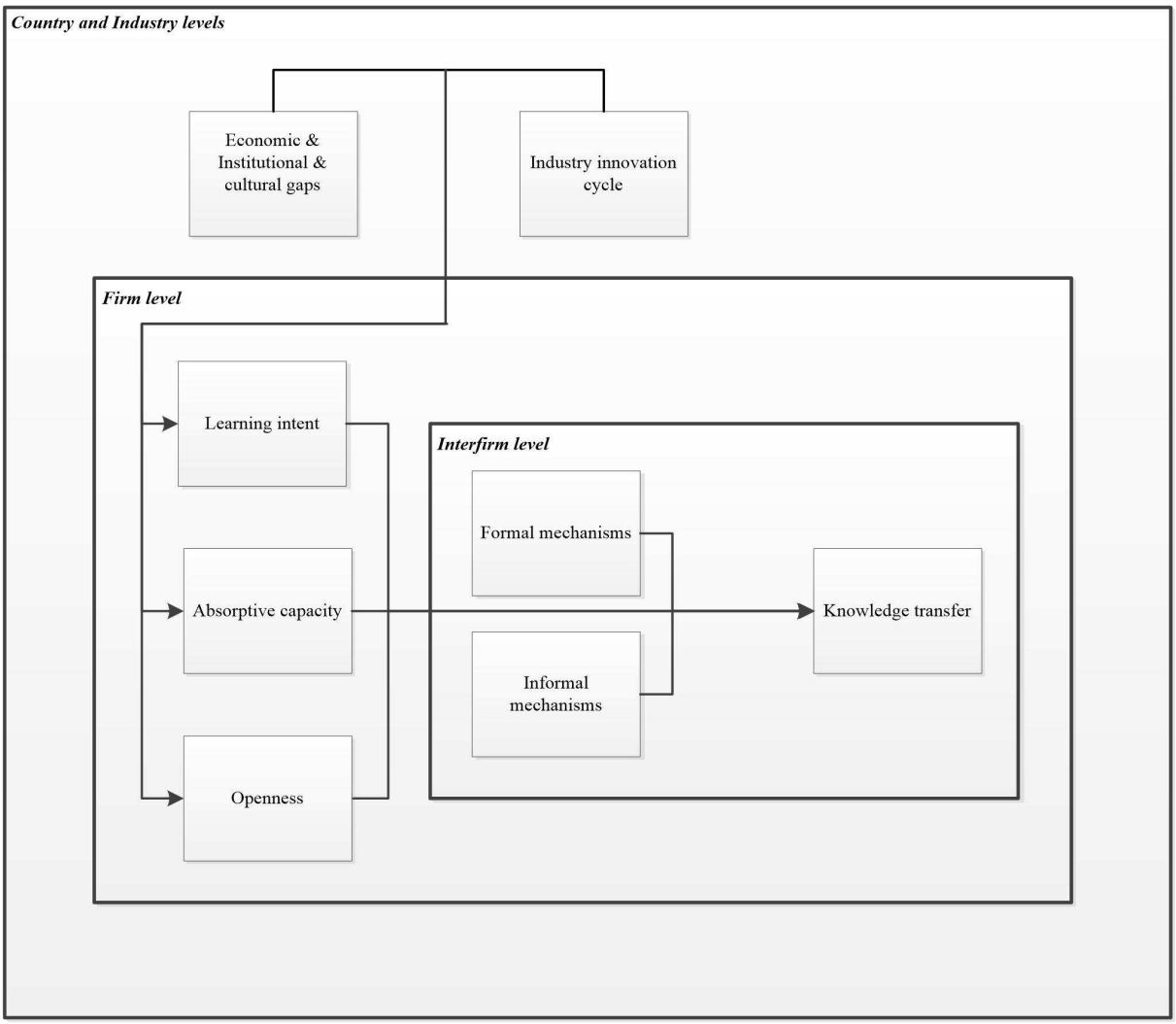


Figure 3: Summarizing Antecedents and the Interfirm Knowledge Sharing Process

2.1 Country and regional factors

Country and regional factors play a significant role in driving the knowledge transfer process and outcomes. This includes economic factors such as GDP growth, investment in research and development, labor skills, as well as institutional distances such as differences in

intellectual property protection regimes, national culture, and norms in both the sender's and receiver's countries.

2.1.1 Economic factors

Economic factors of a country and a region have direct and moderation impacts on the relation between technologies and knowledge transfer from foreign countries to that host country and location. Studying the data of provinces in Vietnam, it is found that growth of GDP, domestic investment, skills of labor workforce, domestic research and development, and international trade positively are associated to the level of technology transfer which is measured by the amount of imported capital and intermediate goods and services (H. N. Nguyen & Le, 2020). In this research, the value of knowledge transfer is included in the total amount of transferred capital and intermediate goods and services. In other research, the transition phase of the economy of Hungary which is measured by economic and institutional factors including GDP per capital, GDP growth, growth in R&D, regulatory quality, and government stability and quality has a moderation effect to the relation between foreigner partners' resource provision to a joint venture performance and knowledge acquisition from the foreign parents to the venture (Steensma, Tihanyi, Lyles, & Dhanaraj, 2005).

2.1.2 Institutional distances

Institutions are defined as "the human devised constraints that structure human interactions" (North, 1991) . Institutions drive human behaviors through three processes which are regulative, normative, and cognitive processes (Scott, 2014). According to Kostova (1996), institutional distance is the extent of similarity or dissimilarity of regulatory, normative, and cognitive institutions of two countries (Ho, Ghauri, & Larimo, 2018). Directly, the extent of similarity or dissimilarity between the regulatory institutions which include laws and regulations related to property rights and intellectual property protection of two countries pushes or impedes knowledge access and acquisition between Taiwanese Information

Communication Technology (ICT) firms with their buyer-supplier foreign partners. The effect of regulation distance to knowledge transfer is also mediated through negative impacts to absorptivity and openness of partners (Ho & Wang, 2015). Also, cognitive distance which is measured by country differences in spending on research and development, technology absorptivity and innovation capacity directly negatively impacts on knowledge access and acquisition between ICT firms and their foreign partners (Ho et al., 2018). As a part of normative institutions, language and customs constitute a barrier to learning outcomes through alliance (Hamel, 1991).

National culture indirectly affects knowledge transfer in alliance through its mediating effect on partner's openness. In a research to study learning process of Taiwanese suppliers from their foreign clients, the result shows that the national culture of the foreign clients leads to different levels of partner's openness and impact on knowledge transfer (Liu & Zhang, 2014). Japanese partners tend to keep their own knowledge especially the tacit part. European MNCs transfer more knowledge. And US partners are more open to share ideas (Hamel, 1991; Liu & Zhang, 2014). The same level of US partner's openness is also found in the research of Hamel (1991).

Similarly, the findings related to the relation between national culture and learning intent have been found in the research of Hamel (1991) on international alliances between Japanese and Western partners. While Japanese partners have an explicit learning intent, many Western partners do not possess an internalization intent at the time they entered to their Asian alliances (Hamel, 1991). And learning intent influences knowledge transfer over international strategic alliances as presented in the part Learning intent.

2.2 Industry characteristics

Industry characteristics particularly innovation speed, product life cycle and knowledge structure influence to interfirm knowledge transfer process.

2.2.1 Innovation speed and product life cycle

It is mentioned that information technology industry with its short product-life cycle and high speed to market requirement leads to high level of openness (Liu & Zhang, 2014). Innovation cycles less than six months are often seen in the software industry. Shorting innovation cycles or lead time strategy is extensively used to leave imitators behind in IT Services (Hipp et al., 2003).

2.2.2 Knowledge characteristics

Tacitness dimension of knowledge impacts on knowledge transfer (Simonin, 1999). Tacitness is the extent to which knowledge can be codified and thus transmitted and communicated in a formal and systematic language (Liu & Zhang, 2014) . It is difficult to transfer tacit knowledge. The more tacit the knowledge that an alliance partner seeks to acquire, the more difficult the acquisition (Inkpen, 1998; Simonin, 1999).

The proportion of knowledge types varies across industry sectors. In the software consulting sector, knowledge tends to be highly intangible and tacit, making it challenging for firms in this sector to transfer such knowledge (Hipp et al., 2003).

2.3 Firm factors

Learning intent, absorptive capacity, partner's openness at firm level are factors directly impacting on knowledge transfer through international strategic alliances. These factors are commonly found across the papers of Inkpen and Simonin (Inkpen, 1998, 2000; Inkpen & Dinur, 1998; Inkpen & Pien, 2006; Simonin, 1999, 2004) who are ones of the most impactful authors of the field of knowledge transfer in international business (Bamel et al., 2021). Those concepts could exist across individual and partner firm levels. However, those concepts in the extant literature are not clearly stated at what level and they are assumed at the partner firm level when considering the context of the research phenomena.

2.3.1 Learning intent

Leaning intent is defined as an initial tendency of a firm to view collaboration as a learning opportunity (Hamel, 1991). More particularly, learning intent is the intention to internalize knowledge or skill learned from alliance partners (Liu & Zhang, 2014).

It is not always that alliance partners want to acquire their partner's knowledge but they could only want to access and use the partner's human resources who have the complementary knowledge (Inkpen & Beamish, 1997). To identify what to learn to achieve learning outcome, learning partners must understand clearly what determines the competitive advantage of their partners in the case they want to acquire the knowledge from their partners. Learning intent is dynamic during the time life duration of an alliance, it is required to revisit the evolvement of learning intent to see the actual learning opportunities (Inkpen, 1998).

On driving factors of leaning intent, relative competitive position and technology, relative resource and corporate ambition, payoff to exploit skills in multiple businesses, perspective on power lead to differences in learning intent (Hamel, 1991).

Learning intent positively influences learning process and alliance learning outcomes (Hamel, 1991; Inkpen, 1998; Liu & Zhang, 2014; Simonin, 2004). Commitments from top management of alliance facilitate learning process (Liu & Zhang, 2014). The concept of learning intent is an example of not clearly stated the level of concept. In the case of learning intent, it is not clear if learning intent is at the intent of managers at individual level or learning intent at the partner firm level. And how the learning intent of the managers leads to learning intent of firm is not understood.

In relation with absorptive capacity, learning intent enables realized absorptive capacity (Khan, Lew, & Marinova, 2019). However, learning capacity is more important than learning intent in deciding learning outcome (Tsang, 2002). Firms with an enthusiasm for learning of

late-comer and humility attitude of students have stronger receptivity or learning capacity which gradually leads to better absorptivity (Hamel, 1991).

2.3.2 Absoptive capacity

Absorptive capacity is an ability to recognize the value of new information, assimilate it, and apply it to commercial ends (Cohen & Levinthal, 1990).

Absorptive capacity includes potential absorptivity and realized absorptivity. Potential absorptivity enables firms to understand and learn external knowledge but does not guarantee the application of this knowledge. Realized absorptivity is the ability to apply the learned knowledge. It is the combination of knowledge transformation and exploitation (Zahra & George, 2002).

Prior knowledge allows learners to recognize valuable knowledge and internalize the new knowledge into memory and transform and apply it into the learner's context. Connectivity between a firm's knowledge base and its partner's knowledge base positively affects the acquisition of alliance knowledge (Inkpen, 2000; Mowery, Oxley, & Silverman, 1996; Oxley & Sampson, 2004). When the object of learning is related to what is already known, learning is cumulative, and learning performance is greatest (Cohen & Levinthal, 1990). Subsequent knowledge learning will be more effective if firms have experience in previous similar knowledge or learning tasks (Cohen & Levinthal, 1990; Inkpen, 2000).

Absorptive capacity is fundamentally determined by receptivity or learning capacity of a firm. Receptivity is defined as the capacity to learn (Hamel, 1991) . Learning capability is the limited capacity of human beings to obtain, store, process, and share information accurately (Simonin, 2004). Learning capacity is related to firm specific resources and it could be built and manipulated by the learner firm itself while absorbability is ability to learn relatively related to the partner's knowledge. Learning capacity is improved by building human learning

and physical facilities to support learning. Also, learning attitudes, learning incentive system, and clear learning agenda are factors to build up learning capacity of a firm (Simonin, 2004). Greater learning capacity translates into greater absorptive capacity (Simonin, 2004).

2.3.3 Transparency (Openness)

Concerning the ”openness” of the firm to its partner, the concept of transparency is defined as “knowability” or “openness” of each alliance partner (Hamel, 1991). More particularly, Inkpen (2000) defines relationship openness as the willingness and ability of joint venture partners to share information and communicate openly (Inkpen, 2000). And openness of a firm is the firm’s willingness to open their knowledge for their partners to access (Liu & Zhang, 2014). Transparency or openness of partners or partners’ protectiveness positively associate with knowledge transfer outcome (Hamel, 1991; Inkpen, 2000; Inkpen & Pien, 2006; Simonin, 1999, 2004).

Factors from other levels could impact on the focal firm’s openness. Length of product life cycle, innovation speed of the industry where the focal firm locates could affect to the level of openness of the firm (Liu & Zhang, 2014). A firm with its rapid speed of innovation could afford to be very open to its partners (Hamel, 1991). Also, the relative competitive position of the focal firm with their partners, the relational factors such as trust could impact on the openness (Inkpen, 1998, 2000). Different national culture including language and custom leads to different levels of partner’s openness (Hamel, 1991; Liu & Zhang, 2014; Zhao et al., 2022). Transparency or openness can be influenced through the design of learning interface and the structure of joint tasks (Hamel, 1991). Also, Japanese firms’ context-based knowledge and clan culture reduce transparency Western partners (Hamel, 1991). At individual level, protectiveness of individuals directly results to the level of openness of their firm to the partner (Hamel, 1991).

In alliances, sometimes partners have to do trade-off between openness and the efficiency and profitability of their alliance (Liu & Zhang, 2014). Similar findings are found in the research of Hamel (1991). Some degree of openness is accepted to attract partners and make the joint task successful (Hamel, 1991).

2.4 Interfirm factors

In an alliance, partners collaborate to design a structure and maintain relationships to transfer specific knowledge and reap the benefits of cooperation. Simultaneously, they safeguard their strategic knowledge to maintain their competitive position and bargaining power. The degree of openness in this design falls along a continuum, with one end emphasizing maximum protection and the other prioritizing maximum sharing. Therefore, firms must carefully craft their organizational structures and maintain relationships with their alliance partners to achieve the right balance between transferring knowledge essential for collaboration and safeguarding critical knowledge for their competitiveness and bargaining power.

Knowledge can effectively be transferred when it's connected to other pieces of knowledge. To further develop and elevate knowledge, it must undergo processes such as discussion, debate, validation, or potential elimination. Both formal structures and informal relationships between individuals and groups serve as prerequisites for forming knowledge connections and facilitating the transfer process (Inkpen & Dinur, 1998). There are two types of mechanisms for controlling knowledge sharing and protection.

2.4.1 Structural factors (Formal mechanisms)

First, formal mechanisms refer to statutory methods that rely on intellectual property laws and regulations to govern knowledge protection and enforce its implementation. These statutory mechanisms include registered patents, trademarks, copyrights, and confidentiality agreements.

Patents grant exclusive rights to make, use, import, sell, and offer for sale a product or process invention for up to 20 years. Registered trademarks protect words, names, symbols, sounds, or colors that distinguish goods and services. A trademark serves as a unique identifier of a brand within an industry and market. Copyright covers the authorship of works that have been tangibly expressed, such as writings, music, and works of art.

Additionally, incorporating confidentiality clauses into contracts with employees, customers, and suppliers is one of the most commonly used methods of intellectual property protection in the service industry. Once knowledge is protected through these statutory mechanisms, it assures the appropriate level of innovation. In such a situation, knowledge can be more openly shared once this level of assurance is established. However, for the efficient protection and enforcement of statutory mechanisms, the knowledge to be protected should be codified (Hipp et al., 2003).

In terms of organizational design, both the structure of the collaboration and the interface between the collaboration and the parent firms play crucial roles in the transfer and protection of knowledge.

In terms of the collaboration's structure, equity-based collaboration governance is conducive to the effective transfer of interfirm knowledge compared to contractual arrangements (Mowery et al., 1996) . Equity joint ventures are used when there is a high requirement for knowledge sharing and protection. Their hierarchical and formal structure facilitates more stable interactions and better behavior control (J. T. Li & Xie, 2016). Also, a joint venture company located separately from the parents' headquarters helps to protect knowledge (Hamel, 1991).

Restricting the collaborative agreements to a narrow range of products or markets could help to protect knowledge (Hamel, 1991) . Firms slice their value chain activities into discrete

components. Through this division, firms have the option to outsource certain tasks to different partners located in various geographic locations while retaining control over sensitive components in-house (Contractor, Kumar, Kundu, & Pedersen, 2010).

The nature of joint tasks between partners influences transparency and, ultimately, controls knowledge sharing and protection simultaneously (Hamel, 1991). Firms could design a task structure that allows them partially share product-related knowledge but seldom share core marketing-related knowledge (Liu & Zhang, 2014).

In the interface between parent firms and alliances, the greater the linkage or knowledge connection between the parent firms and alliances, the more effectively knowledge is transferred between the partners (Inkpen, 1998, 2000). The individuals who reside at the interface between the parent firms and the collaboration unit play a crucial role in both knowledge transfer and protection (Hamel, 1991). They are often referred to as boundary spanners or gatekeepers. The behavior of these boundary spanners significantly influences the transfer and safeguarding of tacit knowledge. Those motivated by goal achievement and willing to take risks have a positive impact on tacit knowledge transfer (Qiu & Haugland, 2019). Gatekeepers are responsible for maintaining the delicate balance between knowledge sharing and protection in interfirm relationships (Hamel, 1991; Husted, Michailova, & Olander, 2013).

Individuals who can effectively integrate complex technological knowledge from external sources into their firm's activities possess not only technological expertise and external relationships within their field but also a deep understanding of their firm's specific needs, routines, and capabilities (Cohen & Levinthal, 1990).

2.4.2 Relational factors (Informal mechanisms)

Trust in an alliance is often defined as reliance on another party in the conditions of risks (Das & Teng, 1998). Three components of trust are ability trust, integrality trust, and benevolence trust. Ability trust is trust in other's ability to execute tasks. Integrality trust means that trustor believes that trustee will act within a set of accepted behaviors. And benevolence trust happens when partners do not do opportunisms activities to impact on the other partner's benefits (Muthusamy and White 2005).

When trust increases and mutual partner understanding develops, partner firms may reduce the barriers to access their knowledge (Inkpen, 1998, 2000). So, trust helps to enhance tacit knowledge transfer and at the same time reduce knowledge leakage (Qiu & Haugland, 2019). It is empirically shown that the level of trust between buyers and suppliers positively impacts on the alliance learning process and its outcomes (Liu & Zhang, 2014). The development of interfirm trust is positively associated with previous cooperative links between alliance partners (Inkpen, 2000).

Besides trust, other factors of relation capital including respect and friendship between the local and foreign partners reduces the negative impact of knowledge protection on knowledge sharing (Ho & Wang, 2015). Also, reciprocal commitment and mutual influence between partners are positively related to learning and knowledge transfer in strategic alliances (Muthusamy & White, 2005).

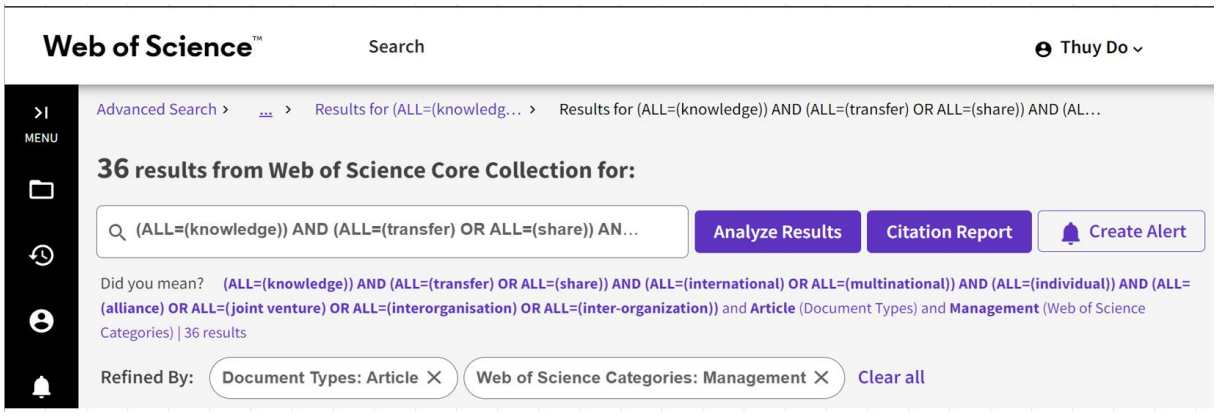
Trust and relation capital have been also discussed at individual level in the extant literature. Individual trust or interpersonal trust and strong relationship between managers settle conflict and boost knowledge transfer (Inkpen & Pien, 2006). Also, relational capital that resides at the individual level between alliance partners sets up a basis for knowledge learning and transfer between alliance partners. On the other side, it restrains opportunistic behavior of

alliance partners, thus hindering the leakage of important knowledge (Kale, Singh, & Perlmutter, 2000).

2.5 Individual level and related factors

Knowledge resides within the minds of individuals and is absorbed and transferred by individuals, while synergies and interactions manifest at the organizational level. Therefore, a comprehensive understanding of knowledge processes necessitates integrating the individual level of analysis with higher aggregate levels (Andersson et al., 2016).

However, there is a notable shortage of research articles that study knowledge transfer via international alliances at the individual level. The search for research which contain the words of "knowledge" and ("transfer" or "share") and "individual" and ("international" or "multinational") and ("alliance" or "joint venture" or "interorganization" or "inter-organization") shows 36 articles on Web of Science.



Out of 36 articles, only two address the topic of knowledge transfer via international alliances at the interpersonal level. The first of these articles is by Inkpen and Crossan (1995), which examined the process of integrating individual knowledge which had been learned through joint ventures in North America with Japanese partners into the group and organizational knowledge within American parent firms.

In this article, the theoretical framework elucidated the individual learning process, encompassing cognitive and behavioral changes. It also provided an overview of the integrating and institutionalizing processes aimed at facilitating the sharing and dissemination of knowledge from the individual level to the group and organizational levels. However, the empirical examples within the article did not comprehensively illustrate these processes. During the joint ventures with Japanese partners, individuals from the American firms struggled to learn significantly due to the American managers' misidentification and undervaluation of their Japanese partners' areas of competence and learning opportunities within the joint ventures (Inkpen & Crossan, 1995)."

The second article is by Jane Zhao and Anand (2009), which investigates knowledge transfer from multinational corporations (MNCs) to their joint ventures with Chinese partners in China.

In this paper, the concepts of individual teaching, collective teaching, individual absorptivity, and collective absorptive capacity are used to describe the conditions within the knowledge source organization and the receiving organization that support individual knowledge transfer and integration. The research results revealed that collective teaching, where individual learners could benefit from being surrounded by a large team of expatriates or working at the source organization's site, led to improved individual and collective knowledge stocks in recipient organizations. Additionally, collective absorptive capacity, which encompasses communication, information, and knowledge management systems, as well as a corporate culture characterized by collaboration and a learning orientation, supported the receiving organization in enhancing its stock of individual and collective knowledge (Jane Zhao & Anand, 2009).

The research suggests that collective teaching and collective absorptivity influence individual learning and the integration of individual knowledge into the organizational level. However,

the specific factors driving interpersonal knowledge transfer and the integration process have not been clearly identified and explained.

In summary, existing literature has begun to explore the process of individual knowledge transfer and its integration into organizational knowledge transfer. However, there is a notable gap in research concerning the factors and mechanisms that influence individual knowledge transfer and its relationship with group and organizational knowledge transfer, both from theoretical and empirical perspectives.

3. CONSEQUENCES OF KNOWLEDGE TRANSFER VIA INTERNATIONAL STRATEGIC ALLIANCES

3.1 Changes in relative bargaining power

In the extant literature of international business, there is limited research investigating the changes in relative bargaining power between partners as a consequence of learning through international strategic alliances.

Bargaining power refers to a bargainer's ability to alter conditions and negotiation outcomes in their favor over their partner (Yan & Gray, 1994). This definition applies Emerson's (1962) concept of power to the context of negotiations between alliance partners.

In the paper studying on relative bargaining power between American and Chinese joint venture partners, Yan & Gray (1994) observed factors deciding bargaining power. These factors include context-based and resource-based factors. Stakes and availability of alternatives are context-based factors. The stakes of a joint venture are measured by the importance of the joint venture to the overall business of a parent company. Available alternatives are other options such as other potential partners that the local firm could work with to achieve the same mission of the existing joint venture. And resources and capabilities committed by the joint venture partners are the resource-based factor. More particularly the

resources and capacities could be technology, management expertise, global service support, local knowledge, product distribution, material procurement and equity (Yan & Gray, 1994). These observed context-based and resource-based factors are consistent with the factors affecting to dependency and power which have described in the theory of resource dependency theories (Emerson, 1962; Pfeffer & Salancik, 2003) above.

On the dynamics of relative bargaining power between alliance partners, there are few factors triggering changes in relative bargaining power. As a result of a learning race, asymmetries in learning alter the relative bargaining power of partners (Hamel, 1991). In a European-based manufacturing joint venture between a European firm and a Japanese partner, the European firm successfully internalized the skills of developing and manufacturing products from its Japanese partner. And it was clearly that the bargaining power of the European firm has grown as its learning progress (Hamel, 1991) . Besides learning, other factors including environment and alliance's performance could trigger changes in bargaining power (Yan & Gray, 1994). For example, relaxation of prohibitions on foreign direct investment allowed a foreign firm to acquire a local company formerly owned by its Chinese partner (Yan & Gray, 1994) or convert a joint venture to fully foreign owned subsidiary (Kale & Anand, 2006). And even more important than learning, the relative pace of internal competence building or R&D capacity to create next-generation competencies of partner firms could change relative bargaining power (Hamel, 1991).

3.2 Changes in levels of cooperation and competition

When alliance partners engage in mutual learning, their resource similarity often increases. This increase in resource similarity can lead to a weakening of mutual dependence, potentially shifting the dynamics towards heightened competition and reduced cooperation.

Empirical evidence supports this phenomenon, as seen in the case of the collaboration between Germany's Vodafone and France's Vivendi Universal. As their mutual dependence

weakened, exemplified by the dissolution of their internet joint venture, Vizzavi, competition between them significantly intensified (Luo, 2007). Knowledge sharing similarly transformed the relationship between a Germany-based supplier and a Finland-based buyer firm from cooperative to competitive after the German firm had learned a product concept from its Finnish partner, subsequently producing and selling its own version (Tidström & Hagberg-Andersson, 2012) . Learning through link alliances, where partners' resources are complementary, can reduce mutual dependence and lead to alliance instability (Dussauge et al., 2000) . In another case, a 20-year alliance between an American industrial products company and its Japanese partners resulted in the Japanese partner becoming a significant global competitor after learning business practices and mastering process technology from the American firm (Hamel, 1991).

In conclusion, asymmetric learning can result in change in both relative cooperative and competitive positions (Hamel, 1991).

PART III: RESEARCH GAPS AND RESEARCH QUESTIONS

1. UNDETERMINED CONSEQUENCES OF KNOWLEDGE TRANSFER IN EMERGING MARKET ALLIANCES

The terminology of emerging economy was invented by World Bank economist Antoine Van Agtmael in 1981 to promote Third world investment fund (Ghemawat & Altman, 2016). The term has been evolved over time and used by different organizations for their purposes. Each organization has its own criteria to include a country in the list of emerging economies. However, in general the terminology is used to refer to the developing countries with low income, high GDP growth rate. In this thesis, the concept of an emerging economy is "low-income, rapid-growth countries using economic liberalization as their primary engine of growth" (Hoskisson et al., 2000) . This concept looks at both aspects of economy and institutions of a country which impact on business.

Emerging markets are very attractive for global companies to expand globally and sustain competitiveness (Kumar et al., 2019). Partnering with local firms can be a primary strategy of MNCs for accessing local knowledge, resource and improving alliance performance (Hitt et al., 2000; Luo et al., 2019; Meschi & Riccio, 2008). In addition, many MNC subsidiaries have a knowledge essential task to innovate and create useful knowledge. To complete the complex knowledge creation task, MNC subsidiaries source external complementary knowledge from domestic firms in the host countries where they locate and combine with their internal knowledge. Knowledge exchange with the local firms is the norm of reciprocity (Inkpen et al., 2019).

1.1 Knowledge transfer via international alliances in emerging markets

Low income, weak intellectual property protection and enforcement, limited technical skills impede knowledge transfer in terms of type, speed, and magnitude. As a rule, low income

developing countries could afford only matured technologies and products which are at the maturity stage after having been saturated in developed countries (Tihanyi & Roath, 2002; Vernon, 1966). In early phase of economy transition, learning capacity of firms in developing countries is limited (Steensma et al., 2005). The regulatory institution distance measured by property laws and enforcement between Taiwan and the foreign countries has a negative impact on knowledge protection from foreign partners and absorptivity of the local firms in their international alliances (Ho & Wang, 2015). Also differences in business culture between a western oriented country like Singapore and an emerging economy like China limit collaboration which impedes knowledge transfer between Singapore and Chinese partners (Inkpen & Pien, 2006).

Absorptive capacity of local partners from emerging economies is limited. For example, in an alliance between Chinese and Singaporean partners in the initial years of the venture, absorptive capacity related to Singapore knowledge of the Chinese partner was low (Inkpen & Pien, 2006).

Formal and informal mechanisms are combined in sharing and protection knowledge in emerging countries. In Pakistan construction projects, the formal complete contracts which address all uncertain and complex situations could help to reduce knowledge leakage, improve trust among parties (Fawad Sharif, Naiding, Xu, & Rehman, 2020). In the case of an advanced technology Australian firm collaborating with a Chinese partner to build ferries in China under conditions of weak intellectual property protection and eroded trust, the foreign firm used seemingly unconventional approaches to share and protect its intellectual properties. The firm shared codified documents with its partner and clients. The tacitness of its strategic knowledge of product design protected the strategic knowledge itself. And the firm kept continuously creating new knowledge by innovation as a way to leave the imitator behind (McGaughey, Liesch, & Poulson, 2000).

In summary, within the context of emerging markets, low-income economies, and institutional differences, the knowledge transfer process from MNCs to local firms faces significant impediments. The technologies transferred to developing countries are often outdated and at a maturity stage. Local firms' limited absorptive capacity directly hampers the knowledge transfer process, both in terms of magnitude and speed. While MNCs are generally more open to collaboration, their resource allocation for alliances is restricted. Additionally, the transfer of tacit knowledge, which is a crucial strategic asset for MNCs, presents greater challenges. (Inkpen & Beamish, 1997).

1.2 Limited research on the consequences of knowledge transfer in international strategic alliances: bargaining power, competitive dynamics, cooperative and coopetition relations

1.2.1 Huge damages to MNCs due to knowledge leakage

In calling for research toward a theory of an optimum level of knowledge disclosure for MNCs, Contractor (2019) shows evidence about serious losses that MNCs bear due to knowledge leakage. As an example, the annual loss due to counterfeit and pirated tangible goods, software piracy, and trade secret theft is estimated from $225 billion to $600 billion to the US economy while the annual level of U.S. exports to Asia is around $300 billion according to Updated IP Commission report of National Bureau of Asian (National Bureau of Asian Research, 2017) . International intellectual property theft erases the chance to add millions of jobs, drags down the GDP and diminishes incentives to innovation (National Bureau of Asian Research, 2017). For examples, in the cases of Sinovel (Raymond, 2018) and DuPont Chemicals (Wei & Davis, 2018; Wilber, 2016) , stealing software codes and other trade secrets not only damage billions but also lead to losing jobs and near bankruptcy.

More significantly, it appears that this issue is systemic in nature. Several other papers have indicated that the Chinese government had a clear intention to compel technology transfer

from both MNCs and local firms (Prud'homme & Zedtwitz, 2019; Wei & Davis, 2018). It's essential to recognize that the problem of international intellectual property theft extends beyond China; it also affects other emerging economies, including India and Russia. Common factors contributing to this issue include a deficient legal environment for intellectual property protection, protectionist industrial policies, and the perception that intellectual property theft is justified due to an uneven playing field that favors developed countries (National Bureau of Asian Research, 2017).

In response to this situation, governments in the United States, European Union (EU), and Japan have enacted new protective legislation. They have become increasingly aware and concerned about the annual losses amounting to hundreds of billions of dollars due to the misappropriation of proprietary company knowledge and assets (Contractor, 2019). Within Europe, the EU has placed a strong emphasis on knowledge and innovation involving emerging markets. In the realm of research, three EU-funded projects, supported under FP7 and Horizon 2020 (ENTICE, KITFEM, & EM4FIT), are working diligently to merge knowledge from both advanced and emerging markets. Their aim is to facilitate successful business ventures and promote growth in collaboration with emerging economies (Cordis, 2023a.000Z, 2023b.000Z; ENTICE, 2023.000Z).

1.2.2 Existing research: No MNC bargaining power loss in international alliance following knowledge transfer

In the existing literature on international alliances, there are only a few empirical studies that explore the consequences of knowledge transfer between MNCs and local firms. While asymmetric learning through alliance partners could theoretically lead to changes in relative bargaining power (Hamel, 1991; Inkpen & Beamish, 1997), empirical studies often yield results that contradict the evidence of MNC losses due to knowledge leakage, as discussed in the previous section.

For example, in China, Chinese firms did not experience an increase in bargaining power through international alliances with U.S. partners because MNCs effectively protected their knowledge and also learned from the local firms (Yan & Gray, 1994). Furthermore, MNCs continued to contribute new knowledge to these international alliances to maintain their bargaining power (Yan & Gray, 1994). In fact, MNCs tended to learn more effectively compared to local firms since technological knowledge is typically more challenging to acquire than local knowledge (Inkpen & Beamish, 1997). A similar outcome was observed in Japan, where foreign firms operating in Japan were capable of making local partners obsolete (Inkpen & Beamish, 1997).

Moreover, a recent argument by Inkpen et al. (2018) suggests that while knowledge leakage is a natural occurrence in international business and can be deemed unavoidable, it often benefits MNCs, and significant damages are rare (Inkpen et al., 2019).

Further exploration within the existing International Business literature reveals that the majority of papers, primarily dominated by economists, emphasize the benefits of spillovers or the diffusion of technology accruing to host nations and local firms due to the presence of FDI affiliates (Contractor, 2019; Perri & Peruffo, 2016). Specifically, MNCs engage in FDI with the aim of realizing the advantages of their competitive knowledge ownership. They do so by internalizing their operations abroad to leverage foreign location advantages (Dunning, 2000). As a by-product of FDI, knowledge spillover emerges as an externality generated by MNC activities, becoming accessible to other agents at no cost (Perri & Peruffo, 2016).

For instance, Jiang, Keller, Qiu, & Ridley (2018) discovered that domestic benefits, in the form of increased productivity and technological spillovers, extended to both the Chinese partners in joint ventures and other domestic Chinese firms Chinese firms (Jiang, Keller, Qiu, & Ridley, 2018). However, it remains unclear whether MNCs can acquire local knowledge related to the local market and culture through their Chinese joint venture partners.

Consequently, the net benefits to MNCs engaged in joint ventures are not definitively positive or negative in this study.

In another example, Zhang, Li, Hitt, & Cui (2007) found that the relationship between R&D intensity and joint venture performance is more likely to occur when the joint venture is focused on export markets. The study argues that joint ventures focusing on export markets contribute less to knowledge spillover for local imitators because they reduce demonstration effects, linkages to domestic suppliers and distributors, and the applicability of knowledge in the local market (Zhang, Li, Hitt, & Cui, 2007). This study highlights the indirect effects of knowledge spillover on the domestic economy rather than the direct consequences of knowledge transfer between MNCs and local partners in international alliances.

In summary, the existing literature underscores the benefits of knowledge spillover for domestic firms and host countries. However, there is a notable gap in research regarding the perspectives of MNCs, including their costs, benefits, and mechanisms for protecting knowledge (Perri & Peruffo, 2016).

1.2.3 Evolution of cooperation, competition, and coopetition relationships between MNCs and local firm in emerging markets following knowledge transfer via internatioal alliances

Cooperation and bargaining power

As previously presented, there exists an inconsistency in the outcomes of knowledge transfer within the context of emerging markets. Reports and news articles from Western countries highlight substantial losses incurred by MNCs due to knowledge leakage resulting from FDI in host countries (Contractor, 2019). Acquiring science and technology knowledge via joint venture alliances is one of the ways to make China stands out (National Bureau of Asian Research, 2017). However, there is a notable absence of systematic evidence demonstrating

that these losses suffered by MNCs are attributed to knowledge transfer via international alliances when examining the existing literature on international knowledge transfer(Inkpen et al., 2019; Inkpen & Beamish, 1997).

Furthermore, empirical evidence from the 1990s and early 2000s indicates that changes in relative bargaining power resulting from knowledge transfer tend to favor MNCs. They excel in the learning race and often outperform local firms in acquiring and applying knowledge (Inkpen & Beamish, 1997; Kale & Anand, 2006; Yan & Gray, 1994). To gain a deeper understanding of the contradictory consequences of knowledge transfer in emerging economies, further research is needed to determine whether knowledge transfer via international alliances indeed leads to changes in relative bargaining power.

Competition dynamics

Emerging market economies, characterized by low costs, rapid growth, and limited technology and management skills (Hoskisson et al., 2000; Luo et al., 2019) provide the context within which foreign entrants and local incumbents establish their relationships. In these markets, MNCs and local rivals frequently engage in dynamic interactions (Kumar et al., 2019). For instance, the presence of foreign entrants can have varying effects on the survival of regional and national local firms in countries like China. Conversely, foreign entrants themselves can face competition and potential displacement from both regional and national local firms (S. J. Chang & Xu, 2008).

However, existing research in this field often concentrates solely on either MNCs or local firms, without adequately exploring the interactive relationship between the two. In reality, MNCs and local firms interact with each other. The lack of sufficient research on the competitive dynamics and co-evolution of MNCs and local firms in emerging markets has resulted in an incomplete understanding of this complex area (Kumar et al., 2019).

Theoretically, Mutlu et al. (2015) propose a framework for understanding the competitive dynamics between Multinational Corporations (MNCs) and domestic firms in transition economies that are part of emerging market economies. This framework represents the first systematic effort to model the awareness, motivation, and actions of both actors in this interactive relationship over time. The framework consists of three stages in the longitudinal relationship.

The relationship begins with the aggressive entry of MNCs into emerging markets. MNC entrants and local incumbents share the same geographic country market but possess asymmetric resources. What gives MNCs a competitive advantage is often a disadvantage for domestic firms, and vice versa. MNCs typically have superior technical and managerial skills and an international network, while local knowledge and relationships are advantages held by local firms. Under the competitive pressure from these advanced competitors, local firms strive to learn and adapt in order to survive.

In the second stage, as a result of the learning effects over the long term, some local firms with upgraded capabilities become better equipped to respond to the MNC entrants, not only in the local market but also in other emerging or even developed markets. Simultaneously, MNCs also attempt to acquire local knowledge and establish managerial ties.

Finally, in the third stage, both competitors develop their capabilities and resources to compete in multiple markets. At the outset of the relationship, awareness of the competitive threat from the other party may not be high. MNCs may not perceive local firms as a significant threat, and local firms with limited competitive abilities may struggle to understand the competitive challenges they face. However, as the relationship progresses, competitive intensity increases due to the diminishing resource asymmetry and the growing market commonality (Mutlu, Zhan, Peng, & Lin, 2015).

Therefore, the competition between MNCs and local firms is not straightforward. It varies depending on the stage of competition and relies on the awareness and capacity of each party to respond. To gain a deeper understanding of this area, further longitudinal empirical research on the competitive dynamics of MNCs and local firms in emerging markets is needed. In particular, it is important to investigate whether learning through international alliances leads to increased competition between MNCs and local partners.

Coopetition between global and local firms in emerging markets

International joint ventures and global strategic alliances are the important cooperative strategies of MNCs in emerging markets (Luo et al., 2019). Firms from emerging markets and the ones from developed markets are the ideal partners for each other. The relationship is based on resource complementary and learning opportunities. Emerging markets firms emphasize the superior financial, technical, intangible assets of the partners from developed economies. And the developed market firms stress the unique competencies and local market knowledge access of their partners (Hitt et al., 2000) . Emerging markets are learning laboratories for local incumbents and foreign entrants. Besides self-learning, learning from partners is very important for both types of firms. Foreign entrants try to acquire knowledge of culture, institutional norms, and important social relationships. Local incumbents try to learn superior technological knowledge and managerial expertise from partners coming from developed markets (Hitt et al., 2005).

We do not yet have a definitive understanding of whether learning between Multinational Corporations (MNCs) and local partners in international alliances in emerging markets leads to coopetition. To date, coopetition in the international business context remains relatively underexplored. One of the rare studies addressing coopetition concepts and typologies in international business is by Luo (2007). Luo provided examples of coopetition between MNCs and explained the scenarios in which changes in cooperation and competition occur.

However, the specific question regarding the existence of coopetition between MNCs and local firms has not been adequately addressed.

Furthermore, if coopetition does indeed exist between MNCs and local partners, the typology of coopetition between these entities in emerging markets remains unknown. The degree of competition and cooperation, as well as the dynamics of coopetition between MNCs and local firms in emerging markets, still represent significant research gaps.

According to the concept of coopetition developed by Bengtsson and Kock (2014), a relation is called coopetition if both cooperation and competition exist at the same time (Bengtsson & Kock, 2014) . In the context of the relationship between MNCs and local partners in international alliances within emerging markets, it is suggested that cooperation between them is initially strong due to their significant resource complementarity and opportunities for cooperative learning.

On the competition side, resource compatibility may not be high at the outset when MNCs enter emerging markets, implying that competition may be minimal or low initially. However, as both partners engage in robust learning processes and co-evolve over time, resource asymmetry diminishes, and market commonality increases. This leads to a rise in the intensity of competition and a reduction in cooperation.

Using the categorization provided by Luo (2007), if coopetition exists between MNCs and local firms in emerging markets, it could be classified as a partnering situation where cooperation is strong, while competition is weak.

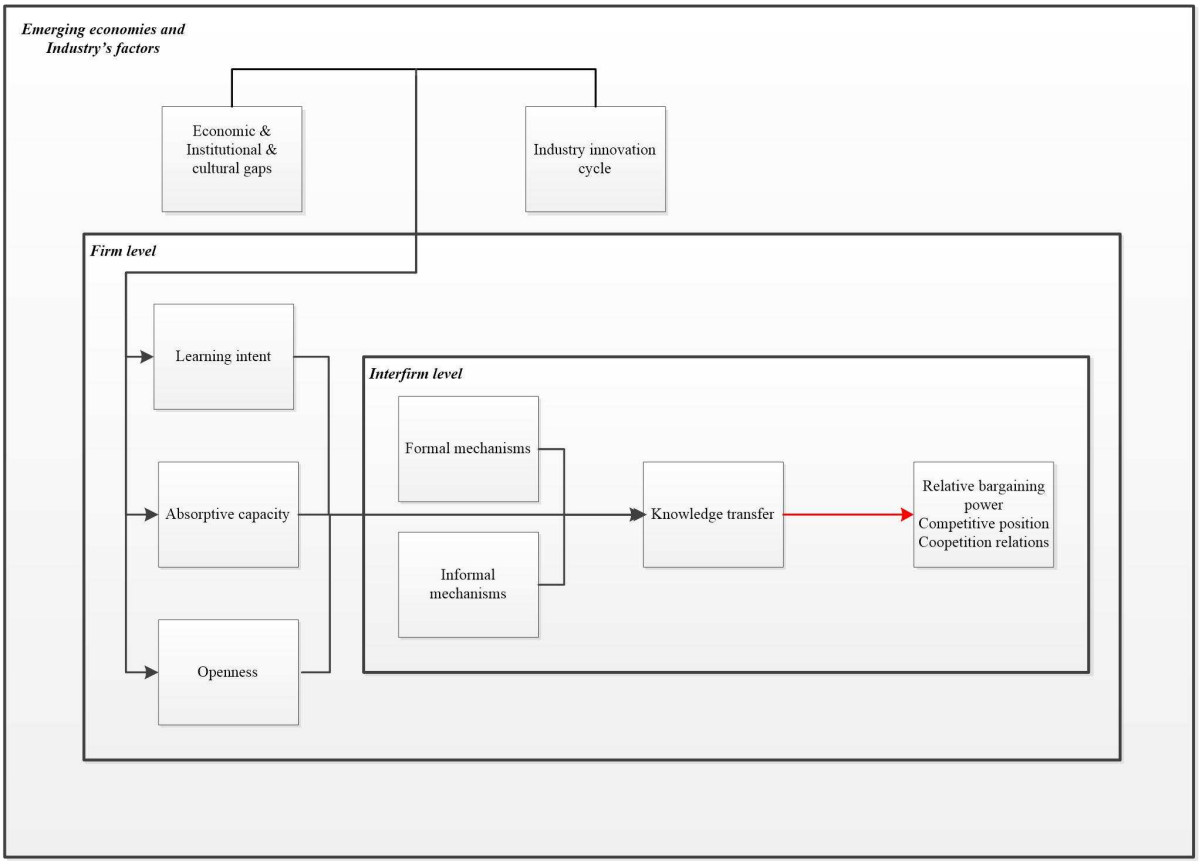


Figure 4: The Gap in the Relationship between Interfirm Knowledge Transfer in Emerging Markets and Its Consequences

2. LACK OF MICRO FOUNDATION-BASED RESEARCH LINKING CONTROL MECHANISMS TO INTERFIRM KNOWLEDGE TRANSFER VIA INDIVIDUAL KNOWLEDGE AGENTS

2.1 Irrational theoretical explanations on direct relations between aggregate antecedents and interfirm knowledge transfer process in the extant literature

As previously mentioned, there exist various constructs at different levels, including the country, industry, firm, and interfirm levels, which influence the interfirm knowledge transfer process and its outcomes. In our discussion of the relationships between these factors and interfirm knowledge transfer, we will place particular emphasis on three key constructs: learning intent, transparency, and absorptivity. These concepts, learning intent, transparency, and absorptivity, have been defined by prominent authors in the field (Cohen & Levinthal, 1990; Hamel, 1991; Inkpen, 1998, 2000; Inkpen & Pien, 2006; Simonin, 1999, 2004) and are commonly used in research to analyze the outcomes of the knowledge transfer process.

However, the specific mechanisms by which these antecedents lead to the outcomes of the knowledge transfer process have not been clearly explained in the existing literature.

The concepts have been abstractly defined as characteristics of a firm. Those characteristics originally were the traits of a human. Firms and partnerships or joint ventures are not human beings. So, we do not really understand and imagine what are openness, absorptivity or intention of a firm when looking at the definition of the concepts. For example, openness is willingness and ability of partners to share information and communicate openly (Hamel, 1991; Inkpen, 2000) and absorptivity is an ability of an organization to recognize the value of new information, assimilate it, and apply it to commercial ends (Cohen & Levinthal, 1990). What exactly is willingness or ability to share, communicate or learn knowledge of firms since they themselves could not see, speak, or think.

Upon closer examination of related articles, it becomes evident that these concepts have been further elucidated through empirical examples. Take, for instance, Hamel's study in 1991, where Japanese partners were found to reveal less information about themselves but displayed a better ability to learn compared to their Western counterparts. From this empirical example, Hamel (1991) drew the conclusion that some partners were more transparent and open than others and exhibited greater receptivity.

These empirical examples shed light on the abstract concepts of transparency and receptivity. However, it's noteworthy that in existing research and other papers, there is often a lack of available theoretical explanations regarding how transparency or receptivity directly influences the outcomes of knowledge transfer.

The unavailability of explanations for the direct linkage between concepts like transparency, absorbability, and intention and the outcomes of the knowledge transfer process can be attributed to the fundamental principles governing how the social world operates (Mäki,

2001). In the social world, there is often no direct or causal linkage or clear mechanisms that connect social phenomena at higher levels, such as firms and interfirm relations (Cartwright, 1989).

Social phenomena are centered around human activities and are influenced by the surrounding environment and conditions, which enable humans to act. Without mediating linkages to humans, high-level factors may not be able to produce effects on high-level processes or outcomes (Abell, Felin, & Foss, 2008). This could be the logical reason why no theoretical explanations are available to link transparency, absorbability, and intention of firms to the knowledge transfer process. Transparency, absorbability, and intention are concepts attached to human and interpersonal relations. When applied within a firm, they serve as useful shorthand to refer to as aggregated antecedents to knowledge transfer. However, there is no direct ontological linkage between transparency, absorbability, and intention and the knowledge transfer process.

In conclusion, much like transparency, absorbability, and intention, other aggregate antecedents at the country, industry, and interfirm levels, including national culture, institutions, innovation cycles, knowledge characteristics, formal mechanisms, and informal mechanisms, cannot directly impact interfirm knowledge transfer. The way the aggregated antecedents influence the knowledge transfer process must be mediated by humans who are the knowledge agents. And the actions of humans are driven by their perceptions and conditions of the actions.

2.2 A need of explanatory studies on the linkage between control mechanisms and interfirm knowledge transfer mediated by individuals

2.2.1 Linkages between aggregate antecedents and knowledge transfer must be mediated by individuals

Knowledge is a multilevel construct. It resides within the minds of individuals and is absorbed and transferred by individuals. However, individual knowledge interacts with factors at different levels. Therefore, a comprehensive understanding of knowledge processes requires an integration of the individual level of analysis with more aggregate levels (Andersson et al., 2016) . If the literature remains being preoccupied with the linkages between knowledge transfer outcomes and aggregated antecedents, it will remain difficult to explain and predict how individuals react (Foss et al., 2010).

Linking individuals as an intermediate level is essential for understanding how aggregate concepts drive interfirm knowledge transfer. This involves breaking down complex constructs into micro-level components, including humans and the conditions of their activities. The systematic causal mechanisms that result from the relationships between these components of humans and conditions of human activities, and the knowledge transfer process, are expected to provide greater predictability compared to technical statistical relations between the aggregate constructs themselves and knowledge transfer outcomes. Therefore, micro-level theoretical explanations are more stable, fundamental, and general than macro-level explanations (Abell et al., 2008).

Some initial efforts have been made to dissect and break down complex and abstract concepts into their smaller components. This involves decomposing these complex constructs into components that include humans and the conditions of their activities. Such an approach could assist managers in implementing specific conditions and attributing actions to individuals.

As an example, let's discuss the decomposition of the concept of organizational absorbability to understand its components. A few research papers have initially addressed the concepts of individual receptivity or individual absorptivity and collective receptivity or collective absorptivity and their relationships. Cohen and Levinthal (1990) conceptualized that the cognitive structure of an individual, including prior related knowledge and a diversity of backgrounds, was regarded as individual absorptive capacity. To convert the absorptive capacity of employees into organizational absorptive capacity, it was required to have a good organizational communication system and a diversified knowledge structure among the employees (Cohen & Levinthal, 1990) . They defined absorptive capacity as the ability to recognize the value of new information, assimilate it, and apply it to commercial ends and argued that organizational absorptive capacity depended on individual absorptive capacity (Cohen & Levinthal, 1990). Hamel (1991) also observed similar logics. Receptivity was seen applied to both the corporate body and individual receptors. It was required to have mechanisms to sum up and integrate fragmented knowledge from individuals to turn individual receptivity into organizational receptivity. He concluded that a firm's receptivity was a function of the skills and absorptiveness of receptors, exposure positions, and parallelism in facilities such as top management's commitment to learning and cross-functional teamwork and inter-business coordination (Hamel, 1991) . The concepts of individual absorptive capacity and organizational absorptive capacity were clearly segregated in the research on knowledge transfer via international joint ventures by Jane Zhao and Anand (2009). They used the concept of individual absorptive capacity from Cohen and Levinthal (1990). The concept of collective absorptive capacity was further elaborated as the structural and cultural attributes of the receiving organization (Jane Zhao & Anand, 2009). Synthesizing the concepts discussed in these three papers, the absorbability of a firm could be decomposed

into the absorptivity of individuals in the firm and the firm's structural and cultural attributes for transferring individual knowledge into organizational knowledge.

By decomposing the concept of organizational absorbability, we turn our attention to two key questions to explain the linkage between organizational absorbability and interfirm knowledge transfer. The first question pertains to finding explanations at the micro level, focusing on the combination of individual absorptivity, structural and relational conditions, and individual knowledge transfer. The second question seeks to explain the relationship between individual knowledge and organizational knowledge.

Adding a micro-level perspective to the connection between organizational absorbability and knowledge transfer could potentially result in more robust theoretical explanations for these high-level concepts. Enhanced theoretical explanations would be instrumental in making interfirm knowledge transfer more manageable from a managerial perspective. When considering the positions of firm or alliance managers, the challenge lies in how to achieve a specific expected level of interfirm knowledge transfer. It raises questions about how to reduce or increase levels of transparency, absorbability, and intention.

Once we comprehend the components of transparency, absorbability, and intention, as well as the causal mechanisms governing their impacts on interpersonal knowledge transfer, and the relationship between individual knowledge and organizational knowledge, managers can make necessary decisions to drive targeted interfirm knowledge transfer. They can choose and apply the right control mechanisms to adjust the input components and relations to achieve the desired outcomes in interfirm knowledge transfer.

For instance, when dealing with absorbability, managers will employ appropriate control mechanisms to adjust various components, including cross-functional teamwork, communication system design, alliance manager commitments, and individual cognitive

structures. This allows them to effectively manage the firm's absorbability after understanding how these components contribute to knowledge transfer outcomes.

Connecting the high-level constructs to interfirm knowledge transfer through mediate role of micro level by decomposing those concepts to their components humans and conditions for human activities makes the relations more potentially understandable and interfirm knowledge transfer more managerially controllable.

2.2.2 Aggregate antecedents as control mechanisms of interfirm knowledge transfer

Management controls are defined as systems, rules, practices, values, and other activities that management puts in place to direct employee behaviors (Malmi & Brown, 2008) . Governance structure, organizational structure, policies and procedures, budgetary planning, rewards, compensation, and culture are the main components of a control system package(Malmi & Brown, 2008). Formal and informal control mechanisms can work together to effectively manage employee behaviors especially in transferring knowledge (Seran, Pellegrin-Boucher, & Gurau, 2016).

According to the definition of management controls, the antecedents or driving factors of interfirm knowledge transfer presented in the part of critical literature review are considered control mechanisms, as they are factors that guide employee behaviors.

At the country level, economic factors in a host country drive the decisions of MNCs regarding investment in the host country (Kumar et al., 2019) , collaboration with local firms (Hitt et al., 2000; Luo et al., 2019) and resource endowment to alliance knowledge transfer (Steensma et al., 2005) . Distances in national legal regulations, innovation systems, norms, and values impact alliance partners' absorptive capacity (Ho et al., 2018; Ho & Wang, 2015), openness (Hamel, 1991; Ho et al., 2018; Liu & Zhang, 2014).

In terms of industry factors, a short industry innovation cycle leads to a high level of openness (Liu & Zhang, 2014). Tacit knowledge structure of an industry makes knowledge transfer more challenging (Inkpen, 1998; Simonin, 1999, 2004).

At the firm level, common factors driving interfirm knowledge transfer include organizational transparency, learning intention, and absorbability (Hamel, 1991; Inkpen, 2000; Liu & Zhang, 2014; Simonin, 2004).

Regarding interfirm factors, governance structure (Contractor et al., 2010; J. T. Li & Xie, 2016; Mowery et al., 1996), joint task structure (Hamel, 1991; Liu & Zhang, 2014), learning interface structure (Hamel, 1991; Inkpen, 1998, 2000), interfirm trust and relation capital (Ho & Wang, 2015) (Inkpen, 1998, 2000; Muthusamy & White, 2005) all have an impact to knowledge transfer.

We understand that all these factors influence interfirm knowledge transfer. However, ontologically, they may not have direct relations with knowledge transfer since they are all aggregate, macro, or high-level constructs. The antecedents of interfirm knowledge transfer must ultimately influence interfirm knowledge transfer through individuals who are the knowledge agents. Even though we may not know the exact details of the causal mechanisms of this relationship, ontologically, these antecedents influence individual perceptions and conditions of actions, thereby directing employees' behavior (Foss et al., 2010) . This logic implies that all these antecedents can be considered as control mechanisms. These control mechanisms are referred to as knowledge governance, which in turn influences knowledge processes (Foss et al., 2010).

Foss et al. (2010) categorize knowledge governance into formal mechanisms, which include organization structure, job descriptions, communication systems, incentives, and proprietary

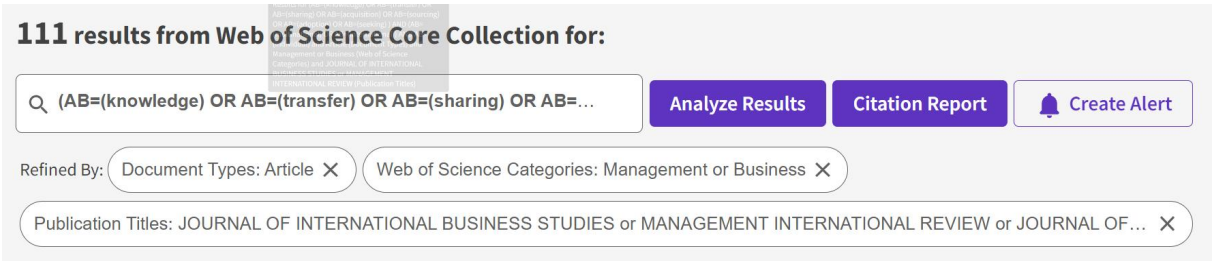
governance regimes, as well as informal mechanisms, such as culture and community practices or norms (Foss et al., 2010)

2.2.3 A proposal of explanatory studies on the linkage between control mechanisms and interfirm knowledge transfer mediated by individuals

In general, the existing international business literature on knowledge transfer lacks research based on micro-foundations that focus on individuals (Andersson et al., 2016; Foss et al., 2010; Foss & Pedersen, 2004, 2019). During the literature review for this study, we searched for knowledge management papers related to the individual level. The search results confirmed that, to date, there is a lack of research on knowledge management related to the individual level.

Here are the details of the search inquiry and the results:

This search inquiry was conducted using the Web of Science database with the query (AB=(knowledge) OR (AB=(transfer) OR AB=(sharing) OR AB=(acquisition) OR AB=(sourcing) OR AB=(adoption) OR AB=(seeking)) AND (AB=(multinational) OR AB=(international)) AND AB=(individual) to find any papers related to individuals in international knowledge management. The results showed that there were 111 articles with keywords related to the search intent.



After reading and summarizing the papers, it becomes evident that there are 21 empirical papers that include individuals as a research construct. Out of these 21 papers, 20 focus on knowledge management within internal multinational corporations (MNCs), specifically

examining knowledge transfer between MNC head offices and subsidiaries, or between various business units or subsidiaries.

Remarkably, only one paper is related to interfirm knowledge transfer. This particular study discovered that the bilingual and bicultural competence of highly skilled migrants plays a significant role in identifying potential key contacts and establishing relationships that facilitate interfirm knowledge exchanges. However, it's worth noting that this study was conducted through interviews with skilled migrants in the UK and did not specifically investigate any alliances or partnerships.

In conclusion, there is a significant gap in international knowledge management research at the micro level. The details of how aggregate antecedents are related to individual knowledge-sharing behavior and, consequently, to knowledge-sharing outcomes remain largely unexplored. As a result, it is often unclear in the literature precisely through which mechanisms aggregate variables exert their influence on interorganizational-level knowledge sharing outcomes. This conclusion corroborates the findings of previous literature summaries on international knowledge management (Andersson et al., 2016; Foss et al., 2010; Foss & Pedersen, 2004, 2019) . This finding is consistent with the results obtained in the part reviewing literature on knowledge transfer at the individual level.

Given the identified gap in explanatory theories concerning the causal mechanisms behind the relationship between aggregate antecedents and the interfirm knowledge transfer process, which is mediated by the individual level, there is a pressing need for exploratory studies. These studies aim to investigate the relationship between control mechanisms and interfirm knowledge transfer through alliances, with individuals playing intermediate roles. This study will seek to uncover the mechanisms that connect formal and informal control mechanisms with individuals and the conditions that facilitate interpersonal knowledge transfer.

Furthermore, it will explore mechanisms for integrating interpersonal knowledge transfer into interfirm knowledge transfer.

By breaking down abstract aggregate antecedents into lower levels, we can analyze the efficiency of each control mechanism and the combined effects they have on knowledge sharing and protective behaviors.

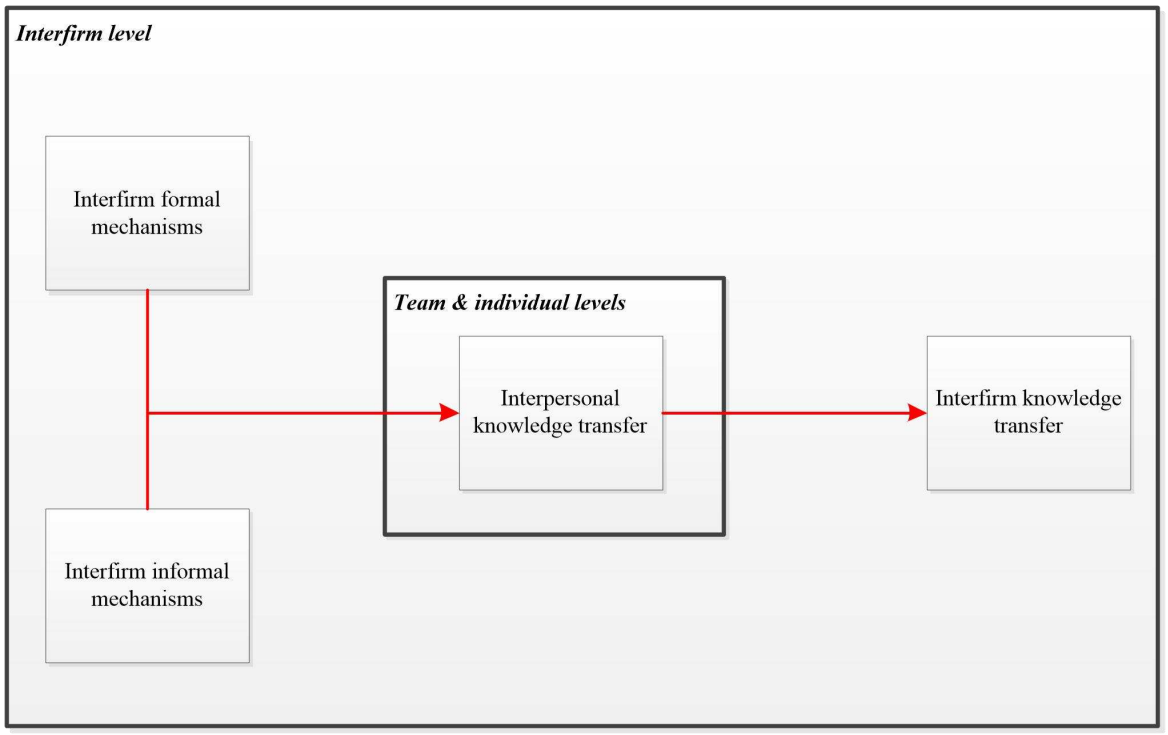


Figure 5: The Gaps on Linkages Between Control Mechanisms, Individual Knowledge Agents, and the Interfirm Knowledge Transfer Process

3. RESEARCH QUESTIONS

Emerging markets attract MNCs due to their rapid economic growth and low labor costs, making them highly promising markets. One primary strategy for MNCs to tap into these markets involves partnering with local firms. This strategic move enables MNCs to access local knowledge, leverage cost-effective local resources, and enhance alliance performance (Hitt et al., 2000; Luo et al., 2019; Makino & Delios, 1996).

However, given the technology and management gaps that typically exist between MNCs and local firms in emerging markets, it becomes imperative for MNCs to selectively share

knowledge with their local partners to ensure successful collaborations. To achieve selective knowledge transfer, MNCs can utilize both formal mechanisms (Contractor et al., 2010; Hamel, 1991; Liu & Zhang, 2014) and informal mechanisms (Inkpen, 2000; Liu & Zhang, 2014; Muthusamy & White, 2005; Qiu & Haugland, 2019) to simultaneously share and protect their knowledge.

Addressing the significant managerial question of whether it is safe for MNCs to selectively disclose their knowledge in emerging markets while collaborating with local firms, this research adopts a multilevel analysis approach (Eden & Nielsen, 2020; Foss & Pedersen, 2019) (Refer to Figure 6: High-Level Research Model).

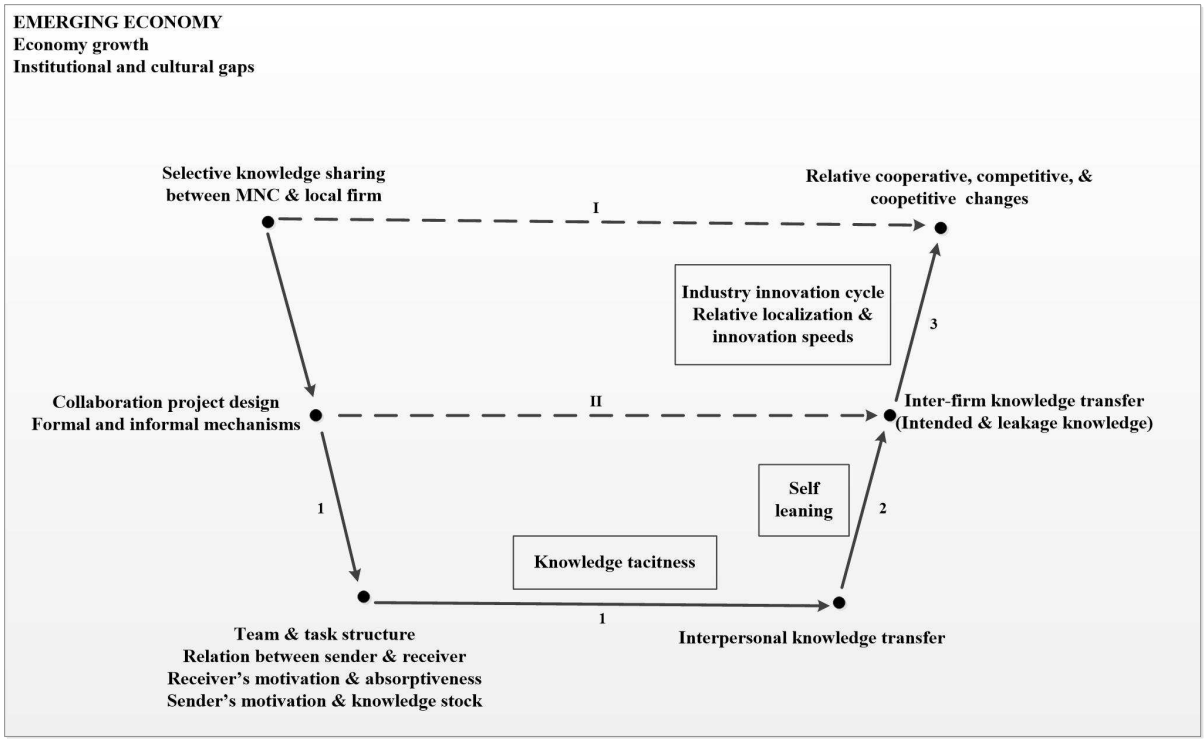


Figure 6: High-Level Research Model

To gain a deeper understanding of knowledge transfer and leakage, this research employs Coleman's bathtub framework within a multilevel analysis research approach, grounded in micro-foundations (Coleman, 1990) . This framework serves as a link between the research questions and the research design.

This study examines the relationship between collaboration design, knowledge sharing, and protection mechanisms, and interfirm knowledge transfer. It does so by considering the mediating roles of team and individual factors. Adopting a multilevel micro foundation approach, we aim to understand how collaboration project design, knowledge sharing, and protection mechanisms at the interfirm level; team structure and relational factors at the team level; and individual knowledge base and motivation at the individual level impact the outcomes of interpersonal knowledge transfer under effects of knowledge characteristics (Refer to Arrow 1 of Figure 6: High-Level Research Model).

Next, the research delves into how the outcome of interpersonal knowledge transfer contributes to both intended and unintended knowledge transfer at the interfirm level (Refer to Arrow 2 of Figure 6: High-Level Research Model). This investigation involves examining the knowledge aggregation processes from individual knowledge to organizational knowledge.

After examining the transformation processes of individual knowledge to organizational-level knowledge transfer, we can provide clear answers to questions regarding the relationship between factors, including project design and selective sharing mechanisms, and outcomes such as intended transferred knowledge and knowledge leakage at the interfirm level (Refer to Arrow I of Figure 6: High-Level Research Model).

Once we have clarity about the knowledge transfer outcomes at the interfirm level, the research revisits the original question concerning the changes in cooperative, competitive, and coopetitive relations as consequences of selective sharing (Refer to Arrow II of Figure 6: High-Level Research Model).

Expanding upon the insights obtained from the micro-level analysis, this study scrutinizes the outcomes of both intended and unintended interfirm knowledge transfers. These examinations are vital for understanding how these transfers impact the relative positions of partner firms.

The question regarding changes in relative positions is explored within the context of moderator effects, which encompass economic, institutional, and cultural disparities between the local host and MNCs' home countries, as well as the relative innovation speeds of both MNCs and local firms. Additionally, the study takes into consideration industry innovation cycles. (Refer to Arrow 3 of Figure 6: High-Level Research Model).

In summary, knowledge transfer in EMs is a crucial phenomenon that warrants investigation from both theoretical and managerial perspectives. It prompts academic researchers and managers from both MNCs and local firms to consider the fundamental question: Is it safe for MNCs to selectively share knowledge with local firms in their international alliances in emerging economies?

This overarching question is broken down into specific inquiries across different levels:

Firstly, examining the impact of formal and informal knowledge-sharing and protection mechanisms on interfirm knowledge transfer and leakage.

- How formal and informal sharing and protection mechanisms influence knowledge transfer and leakage at interfirm level? (Refer to Arrow I of Figure 6: High-Level Research Model)
    - ✓ **Question 1:** In what ways do formal and informal sharing and protection mechanisms influence selective knowledge transfer at interpersonal level? (Refer to Arrow 1 of Figure 6: High-Level Research Model)
    - ✓ **Question 2**: How does selective knowledge transfer at interpersonal level aggregate to knowledge transfer at interorganizational level? (Refer to Arrow 2 of Figure 6: High-Level Research Model)

Secondly, investigating the evolving dynamics of the relationship between MNCs and local firms following selective knowledge transfer.

- **Question 3:** How do relative cooperative, competitive, and coopetitive positions of MNCs and local firms change after selective knowledge transfer in the collaboration between them? (Refer to Arrow II of Figure 6: High-Level Research Model.). This question is addressed by examining the consequences of intended knowledge transfer and knowledge leakage at the interfirm level on the relative bargaining power and the collaborative, competitive, and coopetitive positions of MNCs and local firms. This analysis takes into account moderator effects influenced by factors such as industry innovation cycles, relative comparative learning, and innovation speeds (Refer to Arrow 3 of Figure 6: High-Level Research Model).

PART IV: THEORETICAL FRAMEWORK

For each research question, a distinct level of theory and theoretical framework is employed. Presented below are succinct summaries of the primary theories and research papers that pertain to the phenomena associated with the three research questions (Refer to Table 2: Summaries of Theoretical Framework).

For Research Question 1, the focal point pertains to the phenomenon of interpersonal knowledge transfer within a team. This inquiry is grounded in several foundational theories, including Social Exchange Theory (Blau, 1964) , Social Exchange Theory of Emotions (Lawler & Thye, 2006) , and Determination Theory (Ryan & Deci, 2000) which govern motivations, interpersonal relations, and exchange principles among individuals within a team.

The theoretical model guiding our investigation encompasses four primary factor groups that directly influence knowledge exchange interactions, ultimately leading to changes in individual knowledge and outcome of interpersonal knowledge transfer. This model draws inspiration from established theoretical frameworks including Minbaeva (2007) conceptualization of intrafirm knowledge transfer processes and Myers (2018) co-active vicarious learning framework.

The principles and control mechanisms employed to govern these four driving factors of interpersonal knowledge transfer are anchored in a variety of academic frameworks. These include the Control Mechanisms framework proposed by Malmi and Brown (2008), the concepts of Team Task Interdependence outlined by Wageman (1995), Team Building strategies as articulated by Klein et al. (2009) and Payne (2001), Leader-Member Exchange theory advanced by Graen and Uhl-Bien (1995) and Wayne, Shore, and Liden (1997), as well as the institutional perspectives offered by DiMaggio and Powell (1983), North (1991), Peng,

Sun, Pinkham, and Chen (2009), and Scott (2014), all of which guide the management of individual characteristics.

Research Question 2 pertains to the process by which a firm transforms individual knowledge acquired through international alliances into organizational knowledge. The theoretical foundation for this inquiry is rooted in Nonaka's (1994) concept of organizational knowledge creation.

The processes for converting individual knowledge into organizational knowledge are primarily based on the integration and institutionalization processes outlined in the works of Crossan, Lane, and White (1999) and Inkpen & Crossan (1995).

Several factors influence the processes of integrating and institutionalizing individual knowledge into group and organizational knowledge. These factors include managerial support, organizational culture, and knowledge transfer, as evidenced in studies by Connelly and Kevin Kelloway (2003), Kim & Lee (2006), and Lee, Kim, & Kim (2008). Additionally, the role of organizational communication and information systems in this context is highlighted in studies by Cohen & Levinthal (1990), Hamel (1991), and Kim & Lee (2006).

In this study, the concept of institutional duality, as originally proposed by Kostova and Roth (2002), is applied to the context of knowledge institutionalization within both MNCs and local firms. The original framework was developed within the context of an MNC subsidiary integrating practices from its parent company, which may not necessarily align with the institutional profiles of the host country.

Research Question 3 delves into the dynamics of relative competitive, cooperative, and coopetitive positions of both multinational corporations (MNCs) and local firms, stemming from interfirm knowledge transfer through international alliances. The learning outcomes facilitated by these alliances can induce shifts in partner firms' resource profiles, potentially

leading to alterations in their competitive advantages (Hamel, 1991). Likewise, the learning process may influence the relative resource contributions of partners within these alliances, thereby impacting their bargaining power (Inkpen & Beamish, 1997; Kale & Anand, 2006; Yan & Gray, 1994).

However, it is crucial to emphasize that a firm's resource value and its contributions to an alliance, which fundamentally underpin the firm's relations with its partners (Bergen & Peteraf, 2002; Casciaro & Piskorski, 2005; Chen, 1996; Emerson, 1962; Peteraf & Bergen, 2003; Pfeffer & Salancik, 2003), are not solely shaped by the process of learning. They are also profoundly influenced by the firm's inherent capacity heterogeneity (Barney, 1991; Wernerfelt, 1984), industry-specific factors (Porter, 1980, 2008) and institutional contextual elements (DiMaggio & Powell, 1983; North, 1991; Peng, Sun, Pinkham, & Chen, 2009; Scott, 2014).

Research question	**Theoretical framework**	**Level of theory**
Question 1: In what ways do formal and informal sharing and protection mechanisms influence knowledge transfer at interpersonal level?	Social Exchange Theory (Blau, 1964). Social Exchange Theory of Emotions (Lawler & Thye, 2006). Self-Determination Theory (Intrinsic and Extrinsic motivations) (Minbaeva, Mäkelä, & Rabbiosi, 2012; Ryan & Deci, 2000). Interpersonal learning model (Minbaeva, 2007; Myers, 2018). Framework of control mechanisms (Malmi & Brown, 2008).	Team (Interpersonal)

Research question	Theoretical framework	Level of theory
	Task interdependence and knowledge transfer (Wageman, 1995). Team building (Klein et al., 2009; Payne, 2001) , leader and member exchange (Graen & Uhl-Bien, 1995; Wayne, Shore, & Liden, 1997) and knowledge transfer. Institution-Based View (DiMaggio & Powell, 1983; North, 1991; Peng et al., 2009; Scott, 2014).	
Question 2: How does selective knowledge transfer at interpersonal level aggregate to knowledge transfer at organizational level?	Organizational learning theories (Crossan, Lane, & White, 1999; Inkpen & Crossan, 1995; Nonaka, 1994). Managerial support, organization culture and knowledge transfer (Connelly & Kevin Kelloway, 2003; Kim & Lee, 2006; Lee, Kim, & Kim, 2008) Organizational communication and information systems (Cohen & Levinthal, 1990; Hamel, 1991; Kim & Lee, 2006) Dual institutionality (Kostova & Roth, 2002)	Firm
Question 3: How do relative cooperative,	Resource-Based View (Barney, 1991; Wernerfelt, 1984)	Interfirm

Research question	Theoretical framework	Level of theory
competitive, and coopetitive positions of MNCs and local firms change after selective knowledge transfer in the collaboration between them?	Competitor analysis and dynamics (Bergen & Peteraf, 2002; Chen, 1996; Peteraf & Bergen, 2003). Resource Dependency (Casciaro & Piskorski, 2005; Emerson, 1962; Pfeffer & Salancik, 2003). Institution-Based View (DiMaggio & Powell, 1983; North, 1991; Peng et al., 2009; Scott, 2014). Industry-Based View (Porter, 1980, 2008).	

Table 2: Summaries of Theoretical Framework

We will proceed step by step, systematically exploring factors, mechanisms, and the corresponding theoretical arguments that influence interpersonal knowledge transfer within international alliances. Additionally, we will delve into the processes involved in transferring individual knowledge into organizational knowledge, as well as the dynamic changes in the relative positions of MNCs and local firms over time.

1. CONTROL MECHANISMS TO INTERPERSONAL KNOWLEDGE TRANSFER

1.1 Based theories on interpersonal knowledge transfer

1.1.1 Intrinsic and extrinsic motivations

According to Self-Determination Theory, as posited by Ryan and Deci in 2000, the motivations or intentions driving human activities can be categorized as either intrinsic or extrinsic. Intrinsic motivations stem from the innate tendencies of human beings to explore, acquire knowledge, absorb information, and develop proficiency and mastery in a particular

skill or subject. These inclinations are often observed in children from birth in their most natural and healthy states. Intrinsic motivations manifest as qualities of being active, inquisitive, curious, and playful, even in the absence of specific external rewards. Intrinsic motivations are closely tied to three fundamental psychological needs: autonomy, competence, and relatedness. In essence, intrinsic motivations represent internal desires that individuals possess to feel independent, competent, and connected to their work or activities.

In contrast to intrinsic motivation, extrinsic motivation refers to engaging in an activity with the primary aim of achieving a distinct, externally provided outcome (Ryan & Deci, 2000).

1.1.2 Social Exchange and Social Exchange Theory of Emotions

The Social Exchange Theory, originally conceived by Blau in 1964, along with its counterpart, the Social Exchange Theory of Emotions developed by Lawler and Thye in 2006, provide valuable insights into the intricate dynamics of interpersonal connections, interactions, and emotions.

In the context of specific interpersonal relationships, individuals engage in transactions or interactions while meticulously evaluating the net benefits resulting from these exchanges (Blau, 1964) . The resources involved in these exchanges encompass a wide spectrum of elements, including love, status, information, financial assets, goods, and services, each of which may be associated with either intrinsic or extrinsic motivations (Blau, 1964).

Reciprocal exchange serves as the fundamental principle governing social exchanges, where individuals reciprocate actions or goods (Blau, 1964) . Additionally, the principle of productive exchange can be applied when individuals collaborate to pursue a shared goal or objective within exchange transactions. In such scenarios, the shared responsibilities and positive emotions stemming from these exchanges are maximized. Productive exchange

fosters a heightened emotional attachment to the group or interpersonal relationship (Lawler & Thye, 2006), thereby facilitating knowledge-sharing behaviors (Serenko & Bontis, 2016).

It is important to highlight that exchange transactions and interpersonal relationships exert a reciprocal influence on each other. Repeated exchange transactions that yield equitable satisfaction for both parties lead to the development of a cohesive interpersonal relationship characterized by affection, trust, and commitment. Conversely, a cohesive interpersonal relationship marked by mutual affection, relatedness, and a reduced perception of risks establishes a favorable context for future exchange transactions (Lawler & Thye, 2006).

Initially, in the early stages of interpersonal relationships, exchange transactions or interactions may be driven by individual preferences. Subsequently, the outcomes of these exchange transactions reciprocally shape the nature of the interpersonal relationship between the individuals (Lawler & Thye, 2006).

1.2 Individual factors and conditions of actions driving interpersonal knowledge transfer

When exploring the key determinants that directly influence interpersonal knowledge transfer, it can be conceived as a communication process wherein a sender conveys a message to a receiver. Within this communication process, several factors come into play, which include the sender's ability and willingness, the receiver's capacity for absorption and motivation, the physical context of the communication process, the relationship between the sender and the receiver, and the attributes of the message being communicated. These elements collectively contribute to shaping the outcomes of knowledge transfer.

This metaphor of the knowledge transfer process and its driving factors finds resonance in existing research on interfirm knowledge transfer (Hamel, 1991; Inkpen, 1998, 2000; Inkpen & Tsang, 2005; Simonin, 1999, 2004) . However, it is important to acknowledge that

interpersonal and interfirm knowledge transfer processes are theoretically distinct. The theoretical foundations underlying interpersonal and interfirm relationships differ, leading to dissimilar driving factors influencing these two distinct processes.

A comprehensive review of the existing literature reveals that interpersonal knowledge transfer and its associated driving factors, particularly in the context of knowledge exchange between individuals from different organizations, have not been exhaustively addressed in prior research. An exceptional contribution in this domain is found in the work of Minbaeva (2007), which stands as a rare article offering insights into a knowledge transfer model at the individual level.

Minbaeva's research investigates the extent of knowledge transfer to subsidiary employees from MNCs headquarters, with a particular emphasis on how this process is influenced by the characteristics of knowledge receivers, knowledge senders, relationships between these entities, and the attributes of the knowledge itself. Notably, the research model appears to represent an interpersonal knowledge transfer process with individual characteristics and interpersonal relations serving as its driving factors. The research instrument used a questionnaire to gather data, which included individual characteristics like basic skills, a shared language, prior experience, up-to-date information in knowledge domains, motivation of subsidiary employees, and the willingness and ability of knowledge senders at MNC headquarters to share knowledge, as measurements of independent variables.

However, there are noteworthy inconsistencies between the level of theory and the level of measurement in this article. The characteristics of knowledge receivers within each subsidiary were assessed as collective characteristics of all individual receivers within that subsidiary. Similarly, the characteristics of knowledge senders at each MNC's headquarters were collectively evaluated as common characteristics of all individual senders at that headquarters. Furthermore, the relationships between knowledge receivers at a particular subsidiary and

knowledge senders at the MNC's headquarters were measured at the interunit level, considering the relationship between the subsidiary and other units within the MNC. Additionally, the dependent variable, the degree of knowledge transfer to subsidiary employees from the MNC's headquarters, was collectively measured as a single value for each subsidiary. The survey was administered to the human resource manager or general manager of the respective subsidiary, who evaluated the aggregated values and responded to the questionnaire (Minbaeva, 2007).

In summary, there are notable inconsistencies between the theoretical level and the level of measurement in Minbaeva's article. Nonetheless, this research paper, originally designed to examine the knowledge transfer process within MNCs at the interunit level, offers a theoretical research model that could also be effectively employed to examine interpersonal knowledge transfer processes. This model effectively integrates individual characteristics and relation as driving factors within the knowledge transfer process. Importantly, it aligns with the metaphor of a communication process and previous research models pertaining to knowledge transfer at the interfirm level.

The inclusion of Myers' (2018) theoretical work on coactive vicarious learning significantly enriches the theoretical framework for understanding interpersonal knowledge transfer within international alliances. This model, derived from the integration of vicarious learning (Bandura, 1971), experiential learning (Kolb, 1984), and social interaction (Mead, 1934), Myers (2018) has built this conceptual model of coactive vicarious learning to offers comprehensive understand of the process of building individual knowledge in the context of knowledge economy where knowledge becomes more complex, and individuals are in relationships with others.

In essence, the common thread among these three theories which Myers (2018) relies on is that the learning process begins with motivation, involves interactions with others, and then

progresses through reflection and the application of what has been observed. Therefore, it's not only the motivations of learners and their interactions with teachers that matter, but also the cognitive and action capabilities of learners. These capabilities enable them not only to retain and reflect upon what they've observed but also to effectively reproduce or apply those behaviors. Additionally, the complexity of the events or information being observed plays a significant role in influencing the ultimate learning outcomes.

Myers' conceptual model of coactive vicarious learning adds a valuable notion to this framework by emphasizing the concept of interactions between teachers and learners. These interactions are defined as a collaborative process wherein teachers share prior experiences through demonstrations or storytelling, learners engage by posing questions, providing comments, or seeking clarifications, and both parties support each other through encouraging statements and emotional assistance. The continuous and discursive nature of these interactions serves to co-construct meaning and facilitate reciprocal sharing of experiences between learners and teachers. As a result, these interactions contribute to a more nuanced understanding for both parties involved.

In conclusion, the conceptual model by Myers underscores that driving factors, which include structural work context, the quality of the teacher-learner relationship, and the characteristics of both the learner and the teacher, all play a significant role in facilitating interactions between learners and teachers. These interactions ultimately lead to improvements in individual knowledge, benefiting not only the learner but also the teacher (Myers, 2018). This model offers a valuable perspective for understanding the process of interpersonal knowledge transfer in the context of international alliances, where such interactions can be particularly critical for knowledge sharing and mutual learning.

Knowledge transfer between international partners is a vital aspect of collaborative efforts between MNCs and local firms, primarily due to the complementary nature of their

knowledge assets (Hitt et al., 2000) . In their collaborative endeavors, MNCs and local partners engage in mutual interactions to exchange existing knowledge and co-create new knowledge, thereby enriching their collective understanding and expanding their knowledge base (Hitt et al., 2000; Luo et al., 2019).

This knowledge transfer process within international alliances can take on various forms, both intentional and unintentional. Importantly, not all instances of knowledge transfer involve explicit verbal discussions or validation between partners, as some may opt to maintain a degree of ambiguity around their knowledge to safeguard their competitive advantages (Simonin, 1999) . Nonetheless, it is useful to conceptualize knowledge transfer between international alliance partners as a form of coactive vicarious learning. The level of interaction can span a spectrum, ranging from minimal interaction, where one party quietly observes the other, to high interaction levels where partners openly share and engage in discussions. This flexible approach accommodates the varying preferences and strategies of alliance partners in the knowledge transfer process.

The proposed research model for interpersonal knowledge transfer in this thesis represents an integration of two conceptual models. It combines the interunit knowledge transfer model with considerations for individual characteristics as outlined by Minbaeva (2007), and it also incorporates the coactive vicarious learning conceptual model presented by Myers (2018).

The coactive vicarious learning model developed by Myers (2018) is a comprehensive framework that goes beyond individual characteristics and their relationships, as previously captured in the model by Minbaeva (2007). In addition to individual attributes and their interplay, Myers' (2018) model takes into account the influence of structural factors that characterize the interactions between learners and teachers.

This integrated approach provides a more robust understanding of the factors affecting knowledge transfer, including the complex dynamics of interpersonal learning. The Myers (2018) model also offers valuable insights into the cause-and-effect relationship between these driving factors and the extent of change in individual knowledge. It clarifies how these factors ultimately impact individual knowledge, highlighting the mediating role played by interactions between learners and teachers. This mediation is central to the process of knowledge transfer in interpersonal learning.

This proposed model also incorporates recommendations drawn from theories related to motivations, social exchange, and affection, particularly in the context of understanding interactions between individuals engaged in an exchange relationship. Unlike economic transactions, knowledge exchange doesn't fit the mold of clear-cut, strictly economic obligations on both sides of the exchange. Instead, the principles of social exchange and affection theories help guide the transactions which involve *"favors that create diffuse future obligations and the nature of the return cannot be bargained"* and *"only social exchange tends to engender feelings of personal obligations, gratitude, and trust; purely economic exchange as such does not"* (Blau, 1964).

Below is the proposed conceptual model of interpersonal knowledge transfer, aiming to connect the driving factors, including the characteristics of knowledge senders, characteristics of receivers, relational conditions, and structural conditions, to the interactions between the senders and the receivers, ultimately leading to the changes of individual knowledge.

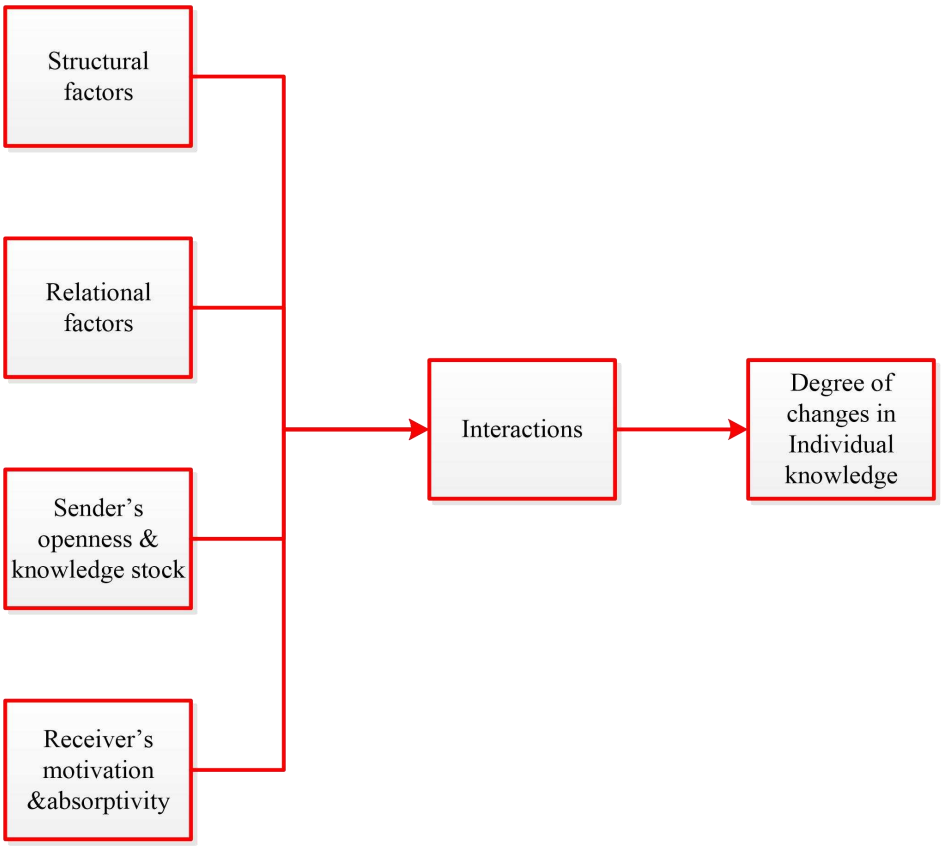


Figure 7: Interpersonal Knowledge Transfer Process

Structural factors

Structural context of individuals' work – the properties or characteristics of a work arrangement that create networks of relationships and connections affect the patterns of interactions among individuals (Blau, 1964; Lawler & Thye, 2006). In the specific context of knowledge transfer collaboration between international alliance partners, particular attention is placed on the joint task structure between the international partners and local firms. Empirical observations have identified the joint task structure as a pivotal factor influencing the sharing and protection of knowledge within international alliances (Contractor et al., 2010; Hamel, 1991; Liu & Zhang, 2014).

Task interdependence in a team refers to situations where each member's actions are necessary for other team members to perform their work effectively (Johnson & Johnson, 1989). A classic example of task interdependence can be found in a basketball team, where

the players must collaborate closely for the team to succeed. The level of task interdependence indicates the extent to which the task necessitates collective actions. It's important to distinguish between sequential interdependence, where subtasks are completed in a specific order, and pooled interdependence, where subtasks can be performed separately and in any order (van de Ven & Ferry, 1980).

Research, such as Wageman's work in 1995, has demonstrated that designing tasks with a higher degree of interdependence has a positive impact on cooperation, mutual assistance, and learning within groups. Task interdependence is a structural aspect of work, and tasks can be intentionally designed to be performed with varying levels of interdependency (Wageman, 1995).

In addition, physical (Borgatti & Cross, 2003) and hierarchical proximity (Siemsen, Roth, Balasubramanian, & Anand, 2009) play a significant role in facilitating knowledge sharing. And when helper (mentor) and learner (mentee) roles within a working structure are clearly defined, it enhances the likelihood of effective communication and knowledge exchange (Hofmann, Lei, & Grant, 2009).

While past research may not have directly targeted the context of interpersonal knowledge exchange within international alliances, the fundamental principles governing how working structures impact communication and interactions among team members can be extrapolated to the realm of interpersonal knowledge exchange in international alliances. It is suggested that factors such as joint task structure, physical and hierarchical proximity, and the clear delineation of mentor-mentee roles can play a positive role in enhancing interactions and, consequently, facilitating knowledge transfer among individuals within collaborative teams. These structural elements can create an environment conducive to effective knowledge sharing and learning in the context of international alliances.

Relational factors

Myers' (2018) model incorporates three key factors: relationship quality, affective tone, and the history of the relationship. In the context of interpersonal knowledge transfer within international alliances, the history of the relationship may not be as relevant as the other two factors. This is because individuals from different partner organizations may not have prior knowledge of each other or established relationships. The focus in such settings is often on the quality of the current relationship and the emotional tone of interactions, as these factors are likely to have a more immediate and significant impact on interpersonal knowledge exchange via alliances.

The quality of the relationship between individuals is determined by the degree of mutual respect, trust, and obligation they share (Blau, 1964; Colquitt, Baer, Long, & Halvorsen-Ganepola, 2014). This quality of the relationship tends to foster more frequent exchanges of information, particularly information that is private and proprietary in nature, between individuals (Lawler & Thye, 2006). In the context of interpersonal knowledge transfer within international alliances, a high-quality relationship built on trust and respect is likely to lead to more effective sharing of knowledge, including sensitive or proprietary information, among collaborating partners.

Affective tone can manifest as either negative or positive. When individuals have a positive affection or sentiment, they tend to place a higher emphasis on the competence of potential task partners when making their selection. Conversely, when negative sentiments are present, competence can become almost irrelevant when individuals seek a partner for task-related interactions (Casciaro & Lobo, 2008).

Furthermore, the quality of social relationships between a knowledge sender and a knowledge receiver plays a significant role in shaping how the receiver evaluates the new knowledge shared by the sender (Menon & Blount, 2003).

Warmth and competence are two universally recognized dimensions by which people judge individuals. When individuals perceive someone as possessing high levels of both warmth and competence, it tends to evoke feelings of admiration and ultimately motivates them to initiate contact and cooperate with the targeted individual (Cuddy, Fiske, & Glick, 2008).

Moreover, individuals are more inclined to seek help from potential providers who are perceived as experts, accessible, and trustworthy. These perceptions of expertise, accessibility, and trustworthiness encourage individuals to turn to experts for assistance (Hofmann et al., 2009).

In summary, when combined with perceptions of the competence of knowledge senders, the quality of the relationship and the affective tone towards knowledge senders significantly influence the interactions between knowledge seekers and knowledge senders. These factors ultimately impact the degree of interpersonal knowledge transfer between them.

Sender's openness and knowledge stock

Openness refers to the willingness of a knowledge sender to share their knowledge (Minbaeva, 2007). Research has demonstrated that both intrinsic and extrinsic motivations can influence an individual's willingness to share knowledge (Minbaeva et al., 2012) . Two intrinsic motivations that have been identified as drivers for knowledge sharing intentions are a sense of self-worth or knowledge self-efficacy and the enjoyment of helping others (Bock, Zmud, Kim, & Lee, 2005; H.-F. Lin, 2007a; H.-F. Lin, 2007b) . These intrinsic motivations play a significant role in motivating individuals to share their knowledge.

Additionally, researchers have found that extrinsic motivations, such as expected organizational rewards and reciprocal benefits, can also influence knowledge sharing among individuals within an organization (Bock et al., 2005; H.-F. Lin, 2007a; H.-F. Lin, 2007b). These external incentives can further encourage individuals to engage in knowledge sharing activities.

Another significant factor influencing interpersonal knowledge transfer is the ability of knowledge senders (Minbaeva, 2007). Knowledge senders who possess a deeper understanding and greater knowledge are more adept at analyzing specific experiences, which in turn makes them more actively engaged in knowledge exchange interactions. Their extensive knowledge allows them to effectively communicate complex information through various means of communication (Minbaeva, 2007; Myers, 2018). This enhanced ability to convey complex knowledge contributes to the success of interpersonal knowledge transfer within international alliances.

Consequently, the combined factors of knowledge stocks and the willingness of knowledge senders to share can potentially result in a greater number of knowledge exchange interactions, ultimately increasing the degree of interpersonal knowledge transfer to knowledge receivers. In other words, when knowledge senders have both the capacity to share and a willingness to do so, the knowledge transfer process becomes more robust, benefiting the recipients of that knowledge within international alliances.

Receiver's motivation and absorbability

Learning is a process that hinges on the intentions or willingness of learners (Bandura, 1971; Kolb, 1984). Learning motivation encompasses both a general inclination to learn exhibited by each individual and specific learning purposes that are influenced by the particular learning context (Myers, 2018). Individuals with a strong learning motivation are more likely to

actively seek out the experiences and knowledge of others (VandeWalle, Ganesan, Challagalla, & Brown, 2000) . They tend to actively engage in various learning activities (Colquitt & Simmering, 1998).

Cohen and Levinthal (1990) introduced the concept of individual absorptive capacity, defining it as the cognitive structure of an individual that encompasses their prior related knowledge and diversity of backgrounds. When knowledge receivers possess prior related knowledge and come from diverse backgrounds, they are better equipped to engage in in-depth discussions with knowledge senders, fostering a deeper understanding, reflection, and integration of new knowledge into their existing knowledge base. This enhanced absorptive capacity enables more effective knowledge transfer and integration in interpersonal relationships.

Highly motivated individuals can contribute significantly to organizational gains, particularly when their absorptive capacity is enhanced (Vroom, 1995) . Research has demonstrated that the combination of motivation and absorptive capacity among individuals in a MNC subsidiary positively impacts the degree of knowledge transfer between the subsidiary and its headquarters (Minbaeva, 2007) . In the context of interpersonal knowledge transfer in international alliances, it is anticipated that the motivation and absorptive capacity of knowledge receivers will have a positive influence on the extent of knowledge exchange interactions between knowledge senders and knowledge receivers. Consequently, this is expected to result in an increase in individual knowledge stock, representing the outcome of interpersonal knowledge transfer.

Interactions

Interactions within the context of interpersonal knowledge transfer represent the communication and exchange between knowledge senders and knowledge receivers. These

interactions encompass various forms, such as sharing prior experiences through demonstrations or storytelling by knowledge senders, raising questions, offering comments, or seeking clarifications from knowledge receivers, as well as providing support through encouraging statements or emotional assistance. Importantly, interactions can be initiated by either knowledge senders or knowledge receivers, and during these exchange interactions, the roles of the participants may alternate, with interactions progressing through subsequent rounds (Myers, 2018).

Individual knowledge

The ultimate outcome of interpersonal knowledge transfer is the enhancement of an individual's knowledge, resulting in the acquisition of new beliefs, awareness, skills, or behaviors as they make meaning of the teacher's experiences (Myers, 2018). Importantly, this process is not unidirectional; it's not only learners who stand to gain increased knowledge. In the context of this knowledge exchange, teachers or knowledge senders can also benefit from the experience by co-constructing their understanding, testing and verifying ideas, and refining their knowledge based on the observations and interactions with the learners (Nonaka, 1994).

1.3 Control mechanisms driving individual characteristics and conditions of actions

1.3.1 Formal and informal control mechanisms to conditions of individual actions

1.3.1.1 Selective revealing control mechanisms influencing collaboration scope and joint task interdependency.

Based on the concept of selective revealing in the context of open innovation networks (Alexy, George, & Salter, 2013; Henkel, 2006) , I define the concept of selective revealing in the context of international alliances as MNCs voluntarily and strategically disclosing to their

local partners how to solve a particular problem. This disclosure can be embodied in various forms, such as patents, publications, processes, products, or product components, addressing specific needs or providing particular functions, all aimed at fostering collaboration and efficiency. Statutory control mechanisms, including patents, trademarks, copyrights, and confidentiality clauses, serve as methods for managing selective knowledge disclosure. Another approach to managing selective revealing involves MNCs breaking down their value chain into smaller components and contracting out pieces of work to different local vendors worldwide (Contractor et al., 2010; Hamel, 1991).

Furthermore, through the design of joint task structures, MNCs can share the knowledge necessary for collaborative purposes while safeguarding their strategic knowledge simultaneously (Hamel, 1991; Liu & Zhang, 2014). By designing job descriptions, workflows, reporting and decision-making structures, and mentor-mentee roles, MNCs can establish and influence knowledge connections between knowledge senders and knowledge receivers (Inkpen, 1998, 2000), shape task dependency (Wageman, 1995), and ultimately manage the frequency of knowledge exchange interactions (Myers, 2018) and information flow (Hofmann et al., 2009).

In summary, formal mechanisms, including statutory intellectual protection, formal contracts, and the design of collaboration structures, influence the interpersonal knowledge transfer process by managing knowledge connections and interactions between knowledge senders and knowledge receivers.

1.3.1.2 Team building activities and leader member exchanges influencing team relation quality

Informal mechanisms, such as team building and leader-member exchange, have been shown to influence the relationship between knowledge senders and knowledge receivers, ultimately affecting the outcomes of interpersonal knowledge transfer.

Team building is designed as a group intervention (Schein, 1999) aimed at improving interpersonal relations, social exchanges, and achieving common results, goals, and tasks (Payne, 2001) . Examples of team building activities include running team games and activities, holding group discussions, hosting away days, or simply engaging in collaborative endeavors as a team. Team building consists of four key components: goal setting, role clarification, problem-solving, and interpersonal relations (Klein et al., 2009).

Setting clear work outcomes, clarifying the roles of team members, and identifying significant tasks to solve collectively facilitate interactions and exchanges between team members, all contributing to a common goal. Interpersonal relation-focused team building activities foster mutual trust, cooperation, and cohesive relations among team members. Meta-analysis research has shown that team building is most strongly related to team affective outcomes, which include mutual trust and cooperation (Klein et al., 2009).

By influencing the quality of team relations, team building activities ultimately drive interpersonal knowledge exchanges and outcomes.

Leader-member exchange (LMX) has been defined as the exchange relationship that occurs between an employee and their supervisor (Wayne et al., 1997) . LMX leadership style is rooted in trust, respect, and mutual obligations, fostering mutual learning (Graen & Uhl-Bien, 1995) . Furthermore, LMX leadership influences employees' perception of organizational support and their organizational commitment (Cropanzano & Mitchell, 2005).

In summary, the continuous practice of team-building activities and fostering leader-member exchange relationships between team members and their supervisors enhances the quality of team relations. Consequently, MNCs can effectively manage interpersonal knowledge transfer between MNCs' knowledge senders and local knowledge receivers.

1.3.2 Perception control mechanisms to individual motivations

Managers design and implement control mechanisms to achieve their intended level of control. When these control mechanisms are presented to employees, they can interpret or perceive them (Tessier & Otley, 2012). Employee perceptions, in turn, shape their behaviors (Malmi & Brown, 2008). Depending on how employees perceive regulations or control mechanisms, they may internalize these regulations or mechanisms at different levels of integration and align their behavior accordingly to the level of integration (Ryan & Deci, 2000).

According to social exchange theory (Blau, 1964), in collaborative alliances, knowledge senders weigh the costs and benefits before deciding to share knowledge, just as in any exchange transaction. Costs may include the time and effort required to share knowledge. The cost could be time and effort to share knowledge (H.-F. Lin, 2007a). There is also the risk that individuals from other organizations might utilize the shared knowledge, which is a valuable resource for the focal organization, without making reciprocal contributions (Brian K. Thorn & Terry Connolly, 1987; Dawes, 1980). On the other hand, the benefits of knowledge sharing can include a sense of self-efficacy, the satisfaction of helping others, reciprocal knowledge and relationships, and organizational incentives, such as promotions or bonuse (Bock et al., 2005; H.-F. Lin, 2007a; H.-F. Lin, 2007b).

Motivation for knowledge sharing can be driven by common collaboration goals, especially when both partners are working towards the production of common goods and services. In such cases of productive exchange, knowledge sharing is expected to occur at a higher level (Lawler & Thye, 2006; Serenko & Bontis, 2016).

In the context of internal organizational knowledge sharing, control mechanisms such as organizational culture, performance management, training and development, compensations and rewards, and talent management can influence both intrinsic and extrinsic motivations.

These, in turn, lead to knowledge-sharing behaviors among employees (Minbaeva et al., 2012).

As it relates to international alliances where external knowledge is shared among different partners, there is limited knowledge about the specific control mechanisms and how these mechanisms influence knowledge-sharing and protection behaviors among individuals in these alliances. By applying lessons from internal organizational knowledge sharing to alliance contexts, it is suggested that fostering a positive knowledge-sharing culture can shape individuals' perceptions of knowledge sharing, ultimately influencing their motivation to share knowledge and their actual knowledge-sharing behaviors.

Furthermore, in collaborative alliances, the productive exchange mode—where all alliance members believe they contribute to common collaboration objectives—has been shown to strongly influence knowledge-sharing behaviors (Lawler & Thye, 2006; Serenko & Bontis, 2016).

1.3.3 Instutional control mechanisms to individual characteristics

1.3.3.1 Host country's economy and institutions influencing knowledge stock of MNC's knowledge senders

During the early stages of development in developing countries, the influence of resource endowment from MNC parents on joint venture performance and knowledge acquisition is typically low (Steensma et al., 2005) . Additionally, due to economic difficulties and underdeveloped regulatory institutions, technology transfer to developing countries tends to occur in the later growth stages, such as maturity or decline(Tihanyi & Roath, 2002; Vernon, 1966).

Vietnam, classified as an emerging market, still falls within the group of low- and medium-income countries according to the ("IMF Data Mapper ®," 2023.000Z) and faces challenges

with ineffective intellectual property right enforcement (Akhlaque, Frias, & Cirera, 2021; United States Trade Representative, 2023.000Z) . Consequently, both the technologies and human resources brought from MNCs to Vietnam may not be very modern or of high quality. The decisions regarding resource endowment by MNCs in the Vietnamese market significantly impact the technologies and knowledge stock of the knowledge senders from the MNCs.

This research seeks to investigate how the modernity of technology and the knowledge stock of knowledge senders influence the extent of changes in individual knowledge resulting from interpersonal knowledge transfer between MNCs' knowledge senders and local knowledge receivers.

1.3.3.2 Level of collectivism of national culture influencing knowledge senders' openness

Normative institutional processes influence human behavior through shared values and norms. Under normative institutional control, human actions are constrained by commonly accepted norms (Scott, 2014) . These actions are more morally governed and follow the logic of appropriateness (Scott, 2014) . National culture, in which people within a nation share common beliefs and values, serves as a carrier of normative institutions (Yiu & Makino, 2002).

Hofstede (2001) defines culture as the collective mindset that distinguishes one group or category of people from another. He also demonstrates the validity of the concept of national culture. While a nation may have multiple races, each with their diverse group cultures, the people living within the same country share a common national culture (Hofstede, 2001; Minkov & Hofstede, 2012) . This common national culture or value system is attributed to shared ecological factors such as geography, history, demography, hygiene, nutrition, economy, technology, and urbanization. In his comparison of cultural differences among

countries, Hofstede employs six dimensions: power distance, individualism, masculinity, uncertainty avoidance, and indulgence (Hofstede, 2001).

Individualism is defined as the degree of interdependence a society maintains among its members (Hofstede Insights, 2021+00:00) . Among the six dimensions of natural culture, individualism or collectivism directly influences interpersonal knowledge transfer and business relationships. A country with a high score in individualism or a low score in collectivism is referred to as an individualist society. In individualist societies, people tend to prioritize the well-being of themselves and their immediate families. In contrast, countries with low scores in individualism are considered collectivist societies. In collectivist societies, individuals identify with a group and act in the interest of that group rather than solely for themselves (Hofstede, 2001).

In collectivist societies, organizational success is attributed to the practice of sharing information and openly committing oneself to organizations and alliances (Hofstede, 2001). Intensive knowledge sharing has been observed in both Chinese and Russian organizations characterized by a collectivist national culture (Michailova & Hutchings, 2006) . A study comparing R&D units of two large companies operating in Finland, the United States, and China found that the level of knowledge leakage risk in the Chinese units was significantly higher (Olander & Hurmelinna, 2015). Employees in these Chinese units were notably open in their approach to sharing information, and some did not adequately acknowledge confidentiality issues. The managers in the study noted that there was limited action they could take because open knowledge sharing was deeply ingrained in Chinese culture (Olander & Hurmelinna, 2015).

Following this logic, individuals in Vietnam and Singapore, who have collectivist cultures influenced by Chinese traditions, tend to prioritize the benefits of their in-group over their individual needs, goals, and aspirations. They are expected to share knowledge within their

group to achieve common collaboration goals. In contrast, individuals in India, with higher scores of individualism, are suggested to be less inclined to share knowledge when working within their respective groups.

1.3.3.3 National education and science technology innovation systems of host country influencing absorbability of local firm's knowledge receivers

Institutions are defined as "the human devised constraints that structure human interactions" (North, 1991). Institutions drive human behaviors through three distinct processes: regulative, normative, and cognitive processes (Scott, 2014).

Extensive research by psychologists has revealed that humans interpret, evaluate, infer, and select information based on their cognitive structure (Markus & Zajonc, 1985) . Cognitive structure encompasses human perceptions about the world within a cognitive framework, including categories, relations, schemas, and inferential sets. Common understandings and interpretations established through socially shared cognitive processes significantly influence individual behaviors (Scott, 2014).

Research has demonstrated that national education and science technology innovation systems, as cognitive institution processes, positively influence a firm's absorptive capacity (Akhlaque et al., 2021; Ho et al., 2018) . Institutions exert their influence on organizations through individuals (Scott, 2014) . Consequently, it is suggested that national education and science technology innovation systems shape individual cognitive structures, impacting individual absorptive capacity, and ultimately driving organizational absorptive capacity. In the case of developing countries where national education and science technology innovation systems are underdeveloped, it is assumed that individual absorptive capacity remains low.

1.4 Summary of relations of control mechanisms and outcomes in interpersonal knowledge transfer

The diagram below summarizes all the relationships between control mechanisms and interpersonal knowledge transfer outcomes. These relationships will be empirically validated later to elucidate how control mechanisms influence changes in the level of individual knowledge among employees of both MNCs and local firms through interpersonal knowledge transfer in international alliances.

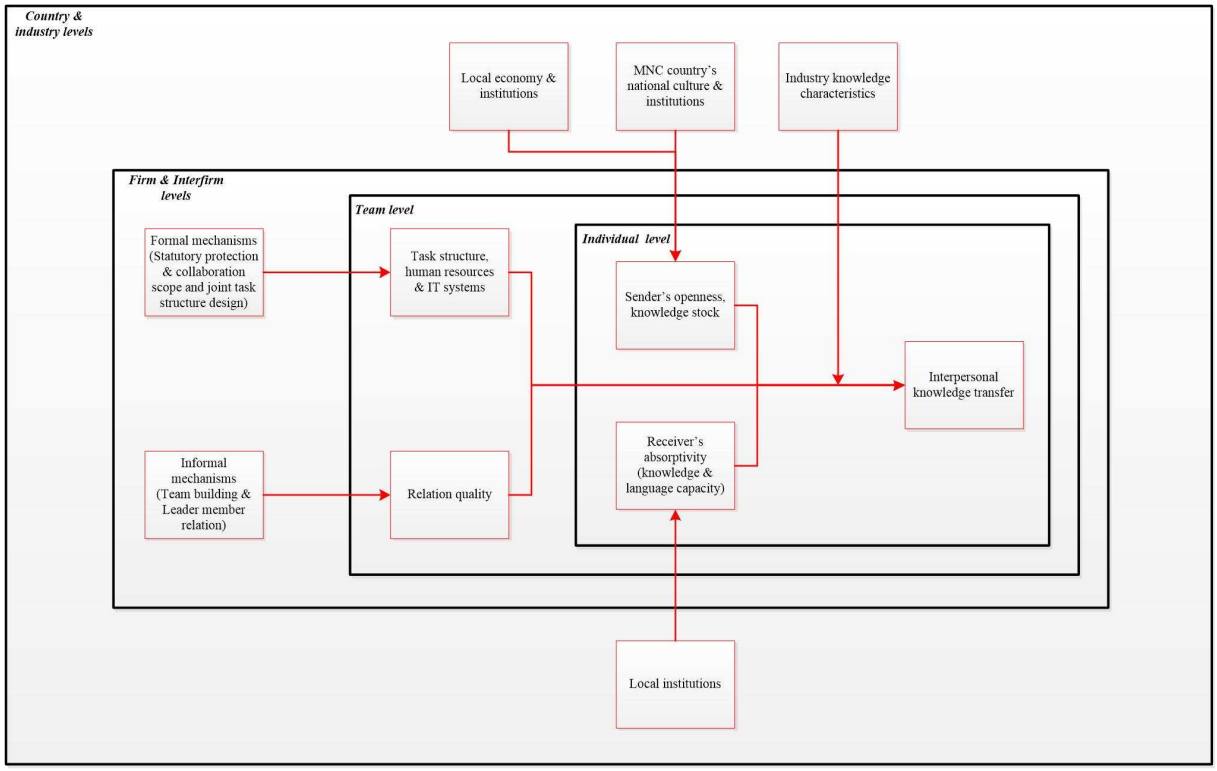


Figure 8: Research Model 1 of Control Mechanisms and Interpersonal Knowledge Transfer Process

2. INTERPERSONAL KNOWLEDGE TRANSFER AGGREGATES TO INTERFIRM KNOWLEDGE TRANSFER

2.1 Theoretical foundation of knowledge conversion and extension

2.1.1 Knowledge conversion and extension

Four modes of knowledge conversion are proposed, grounded on the premise that knowledge is generated through the transformation between tacit and explicit knowledge (Nonaka, 1994). These four modes are as follows:

Socialization: Entails the conversion of tacit knowledge to tacit knowledge.

Combination: Involves the conversion of explicit knowledge to explicit knowledge.

Externalization: Centers on converting tacit knowledge into explicit knowledge.

Internalization: Focuses on converting explicit knowledge into tacit knowledge

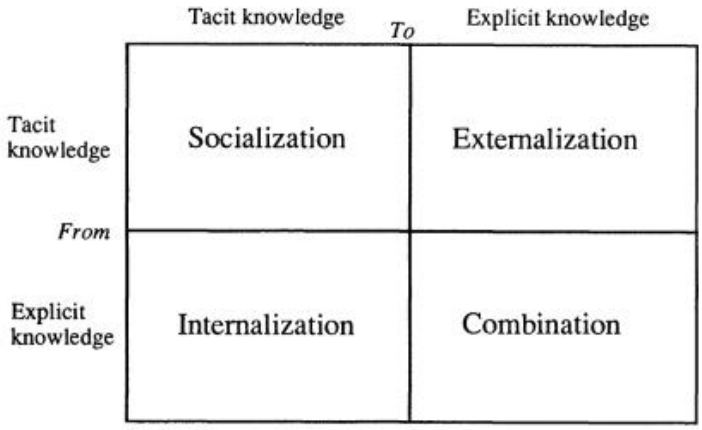


Figure 9: Knowledge Conversion and Extension

Source: Nonaka (1994).

2.1.2 Spiral of Organizational Knowledge Creation

he interactions between the four modes of knowledge conversion in Modal Shift and the Spiral of Knowledge framework, as proposed by Nonaka (1994), serve to generate and

augment new knowledge. This process involves knowledge ascending in a spiral trajectory, transitioning from the individual to the group, and ultimately to the organizational level.

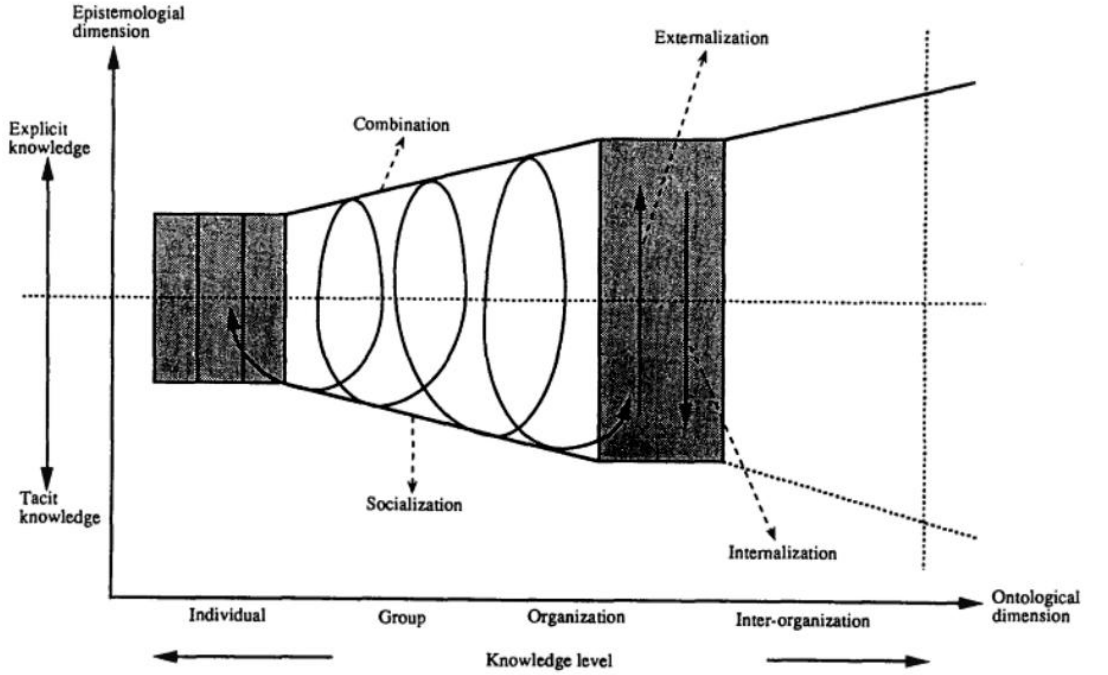


Figure 10: Spiral of Organizational Knowledge Creation

Source: Nonaka (1994).

2.1.3 Organizational Knowledge Creation Process

Applying theories and models of knowledge conversion and creation within corporate organizational contexts, Nonaka (1994) introduced a process for the creation and development of knowledge within an organization. Through this process, an organization can expand and transform individual knowledge into organizational knowledge (Nonaka, 1994).

This process comprises several integral stages, commencing with the expansion of individual knowledge, followed by knowledge sharing, conceptualization, and the transformation of conceptual knowledge into tangible manifestations, such as products or systems. Subsequently, the crystallized knowledge undergoes validation, and its accuracy is subjected to rigorous scrutiny within the organization through justifications. Ultimately, the validated knowledge is disseminated throughout the entire organization and its extensive network,

including customers and suppliers, thus initiating another cycle of knowledge creation (Nonaka, 1994).

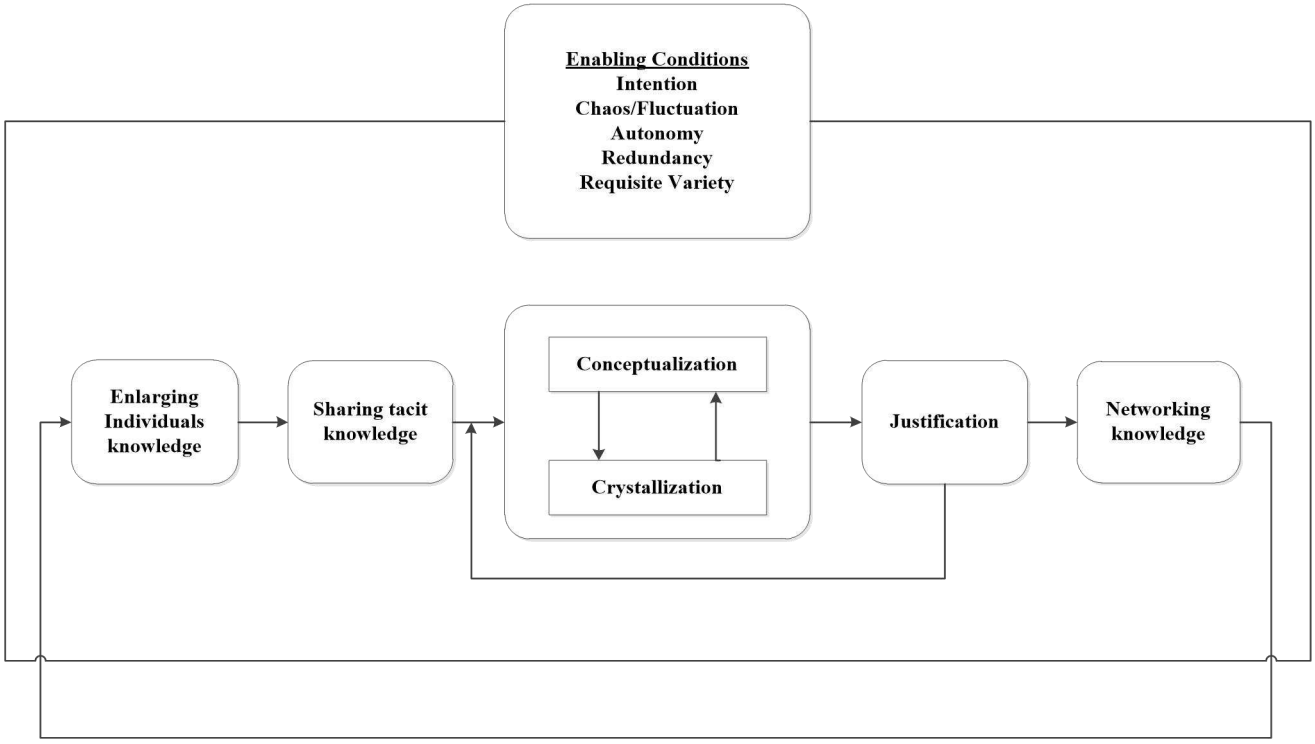


Figure 11: Organizational Knowledge Creation Process

Source: Nonaka (1994).

2.2 Processes to transform individual to organizational knowledge

As mentioned in the Spiral of Organizational Knowledge Creation, knowledge undergoes a transition from the individual level to the group level and, ultimately, to the organizational level (Nonaka, 1994). This conceptual framework aligns with the findings in the research by Inkpen and Crossan (1995), where it is emphasized that, at the individual level, interpretation plays a central role, at the group level, integration is crucial, and at the organizational level, institutionalization is the key process (Inkpen & Crossan, 1995). Knowledge is enriched and amplified as individuals engage in interactions with one another and with their respective organizations while progressing through the spiral process (Inkpen et al., 2019; Inkpen & Dinur, 1998).

2.2.1 Interpreting

Grounded in their cognitive structure, individuals receive information, map this information onto their cognitive framework for interpretation, and subsequently revise their individual knowledge. The result of this interpretative process manifests in the modification of individual beliefs or schemas and, consequently, individual behaviors (Inkpen & Crossan, 1995).

2.2.2 Integrating

Group integration is defined as a set of activities in which a group of individuals participate to exchange knowledge, share experiences, and enhance their problem-solving capabilities. These integration activities, which may include training sessions and group discussions, play a pivotal role in promoting knowledge transfer and the exchange of ideas, serving as significant functions within organizational groups (Crossan et al., 1999).

2.2.3 Institutionalizing

Institutionalizing is organizational processes and structures that foster routinization of certain practices inside the firm (Heimeriks, Duysters, & Vanhaverbeke, 2007) . This institutionalization is a means for organizations to leverage the learning of their individual members. Structures, systems, and procedures provide a context for interactions. And the patterns of individual interactions and communications are captured and formalized. Over time, individual knowledge which is articulated in individual interactions and communications becomes embedded in the organization's routines and begins to guide the actions and learning of organizational members (Crossan et al., 1999).

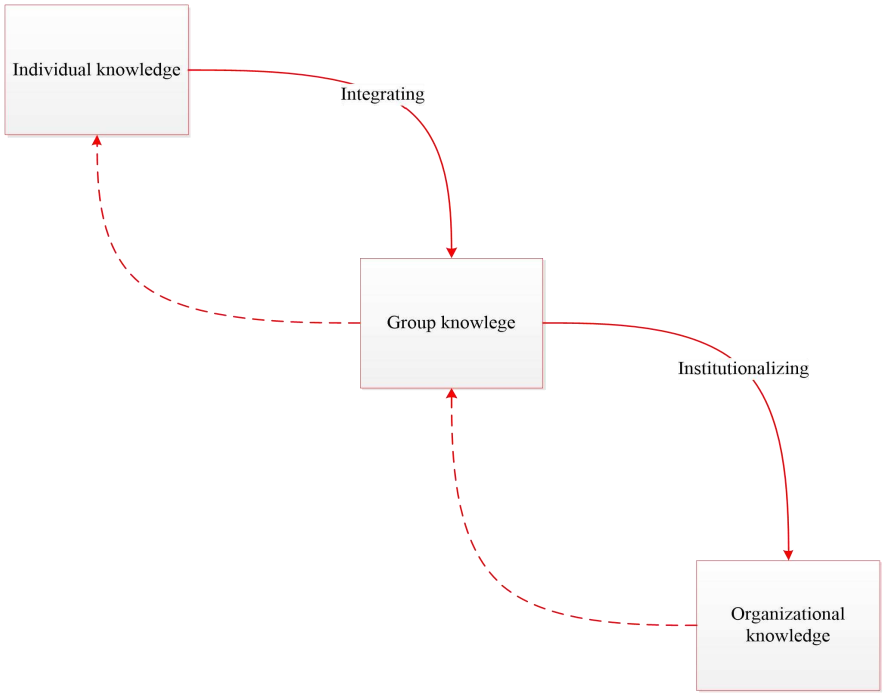


Figure 12: Processes to Transform Individual to Organizational Knowledge

Organizational learning encompasses both the process of feedforward aggregation, which involves the conversion of individual knowledge into organizational knowledge, and the exploitation of feedback mechanisms, which facilitate the dissemination of acquired knowledge from the organizational level to the group and individual levels (Crossan et al., 1999).

2.3 Factors influencing the processes to transfer individual to organizational knowledge

Factors influencing the processes of transferring individual or organizational knowledge are including management support, organization culture, communication and knowledge management systems and institutional duality.

2.3.1 Management support, organization culture and climate

Management support, as measured by the encouragement and provision of resources to facilitate knowledge sharing among employees (H.-F. Lin, 2007b), plays an important role in shaping organizational knowledge-sharing culture (Connelly & Kevin Kelloway, 2003), and

knowledge-donating and collecting processes (H.-F. Lin, 2007b). Top management support is associated with the enhancement of both the quality and quantity of knowledge sharing, mediated through the maturity of the organizational climate. This climate maturity is assessed by aggregating dimensions such as learning orientation, trust, and employee commitment (Lee et al., 2008).

In addition, various forms of managerial power, including reward power and expert power, positively influence knowledge-sharing behaviors among R&D employees and their colleagues (Liao, 2008). The establishment of organizational norms is significantly shaped by the words and actions of senior executives. It is through these channels that the desirability of risk, the actions that lead to pay raises, promotions, and rewards, are effectively communicated within the organization (Wang & Noe, 2010).

In the context of MNCs, it is shown that managerial involvements reduce the negative effect of cultural isolation to the effectiveness of knowledge sharing among globally dispersed expert groups within a professional service MNC (Raab, Ambos, & Tallman, 2014).

2.3.2 Communication, information, and knowledge management systems

The absorptive capacity of an organization is contingent upon the absorptive capacity of its individual members. However, a firm's absorptive capacity is not simply the sum of the absorptive capacities of its individual employees. Absorptive capacity encompasses not only the processes of knowledge acquisition and assimilation but also the critical phases of knowledge exploitation and application. To effectively transform the absorptive capacity of individual employees into organizational absorptive capacity, it is necessary to establish an effective organizational communication system, in addition to fostering diverse knowledge structures among employees (Cohen & Levinthal, 1990). Similar findings have been found by Hamel (1991). Absorptive capacity, or receptivity, applies to both corporate entities and individual recipients. Mechanisms must be in place to aggregate and integrate fragmented

knowledge from individuals, transitioning from individual receptivity to organizational receptivity. In addition to the commitment of top management to learning and the promotion of cross-functional teamwork, inter-business coordination is essential to convert the skills and absorptive capacities of recipients into organizational absorptive capacity (Hamel, 1991). A firm's absorptive capacity is influenced not only by individuals positioned at the interface between the firm and the external environment but also by those situated at the interface between sub-units within the organization (Cohen & Levinthal, 1990).

Information systems serve as the foundational infrastructure for knowledge management initiatives. These systems fulfill the crucial functions of storing organizational knowledge and facilitating connections among individuals within the organization (Huber, 2009). Through the support of information systems, knowledge sharing and collaboration are significantly enhanced within the organization (Bensaou, 1997). The extent to which information systems are utilized and the perceived ease of using information technology applications directly impact employees' knowledge-sharing capabilities (Kim & Lee, 2006).

2.3.3 Institutional duality

Institutional duality, as defined by Kostova and Roth (2002), characterizes the situation confronted by a multinational corporation (MNC) subsidiary, where the subsidiary is compelled to adhere to practices mandated by the parent company while simultaneously preserving its legitimacy within the institutional framework of the host country in which it operates.

In such scenarios, the degree of alignment between the parent company's practices and the regulative, normative, and cognitive profiles of the host country significantly influences the internalization of the parent's practices within the subsidiary. When the alignment of the parent company's practices with the normative and cognitive profiles of the host country is positive, the practice is more likely to be deeply embedded in the subsidiary's routines, as it

aligns seamlessly with the cognitive structures and norms of the subsidiary's employees (Kostova & Roth, 2002). However, the adoption of the practice may exhibit variation in more complex cases where the practice has been designed based on institutional profiles that contradict the institutional profiles of the host country (Kostova & Roth, 2002).

In the present study, the concept of institutional duality, as articulated by Kostova and Roth (2002), is applied within the specific context of knowledge transfer between a MNC subsidiary and a local firm engaged in an international alliance. Within the context of knowledge transfer through international alliances, both the MNC subsidiary and the local firm encounter situations of institutional duality during the process to integrate acquired knowledge or practices from the partners to their own existing system. The subsequent sections elucidate the intricacies of this scenario.

2.3.3.1 Local firms are under the situation of institutional duality

In international alliances, MNCs share technological and managerial knowledge with local partners to facilitate the collaboration (Hitt et al., 2000; Hitt et al., 2005) . During the knowledge-sharing process, MNCs employ various statutory protection mechanisms, such as patents, copyright, licensing contracts, and confidentiality agreements, to define the scope of shared knowledge within the collaborative framework. Employees of the local partner involved in the alliance gain access to documents, software systems, and the shared knowledge.

In developed countries with robust intellectual property protection laws and rigorous enforcement, individuals are well aware of the consequences of violating intellectual property regulations. Consequently, they adhere to established legal norms and practices. However, the scenario can differ in developing countries, where people may not be as cognizant of the penalties associated with intellectual property violations, given the relatively weaker enforcement of intellectual property protection. Particularly in countries characterized by a

collectivist culture, the open sharing of knowledge may be considered a societal norm. The substantial disparities in cognitive, normative, and regulative institutions between developed and developing countries can give rise to instances of institutional duality faced by local firms. These firms must navigate the complexity of operating within the institutional framework of their home country while simultaneously adhering to the intellectual property protection norms rooted in the institutional framework of their developed-country partners.

In this scenario, the knowledge protection practices established by MNCs often do not align favorably with the cognitive and normative dimensions of the local country's institutions. As demonstrated within the context of an MNC subsidiary's compliance, the successful implementation and internalization of a practice are contingent upon the alignment of the practice with the cognitive and normative aspects of the host country's institutional profile (Kostova & Roth, 2002) . While laws, contracts, and agreements serve to regulate human behavior through enforcement mechanisms, the effective implementation of a practice governed by legal regulations or agreements is contingent upon its consistency with the cognitive frameworks, values, and beliefs of the local population (Scott, 2014).

In cases of institutional duality encountered by local partners, the regulations aimed at protecting shared knowledge provided by MNCs do not align with the cognitive structures and societal norms of the local populace. Consequently, there is a possibility that the agreement governing the utilization of shared knowledge within these collaborations may not be effectively internalized and adhered to by individuals within the local firms. This, in turn, can lead to the sharing of individual knowledge acquired by local individuals through alliances with MNCs, which subsequently transforms into organizational knowledge within the local firms.

2.3.3.2 MNC subsidiaries are under the situation of institutional duality

Through international alliances in emerging markets with local partners, MNC subsidiaries could learn knowledge of local culture, institutional norms, and important social relationships (Hitt et al., 2000; Hitt et al., 2005). Within this repository of local knowledge, local business practices can be transmitted to MNC employees who participate in the alliance through interactions with employees of the local partner. It's important to note that these local business practices embody the regulative, normative, and cognitive institutions of the host country. Notably, the institutional profiles of the local country and the MNC's home country can diverge, particularly in the case of a Western developed country and an Asian developing country, given the disparities in legal systems, regulations, values, norms, and cognitive structures. These discrepancies can give rise to instances of institutional duality faced by MNC subsidiaries, wherein the local business practices acquired by MNC individuals may conflict with or contravene the established routines, processes, and procedures of the MNC parent company. This situation arises because the routines, processes, and procedures of the MNC parent company are constructed based on the assumptions rooted in the institutional profiles of the Western developed country where the parent company is headquartered.

In particular, the practice of leveraging personal relationships in business significantly varies between Western developed individualistic countries and Asian developing collectivist countries. Collectivist societies tend to prioritize personal relationships over task-oriented or company-centric considerations (Hofstede, 2001). This emphasis on personal relationships is particularly pronounced in countries like China, where the concept of guanxi (interpersonal connections of managers) is deeply rooted in Confucian philosophy and plays a pivotal role in business, especially in cases where formal institutional support for business is relatively weak (Peng et al., 2009). A similar emphasis on personal relations is observed in Vietnam, where personal relationships also hold significant sway in business dealings. Empirical evidence

underscores the importance of personal relationships in Vietnam, with a noteworthy 10 percent of the population engaging in angel investment based on informal connections, a rate that surpasses the 8.6 percent in China and the 3.7 percent in Australia (Akhlaque et al., 2021).

Upon reviewing existing literature, it becomes evident that the process of integrating local business practices acquired through international alliances into the routines of MNC subsidiaries remains a topic that lacks definitive answers. Nevertheless, based on insights drawn from the extant literature, several suggestive approaches emerge. For instance, when MNC subsidiaries in Sri Lanka encountered institutional conflicts related to corporate community responsibility, negotiated decisions were reached by reconciling the differing institutional profiles (Beddewela, 2019) . Similarly, in cases where quality management practices were transferred from a parent MNC in Germany to a subsidiary in Brazil, the adaptation of hybridized practices to the local context gained acceptance among local employees (Bausch, Barmeyer, & Mayrhofer, 2022). Another approach observed in situations where host country institutions significantly diverged from those of the parent firm's home country, involved Japanese overseas subsidiaries opting to collaborate with local partners through joint ventures to navigate and manage these institutional disparities (Yiu & Makino, 2002).

In summary, when individuals within an MNC subsidiary acquire knowledge of local business practices from their local partners, the subsidiary often encounters a situation characterized by institutional duality. Our study is dedicated to investigating the profound impact of this institutional duality on the process of integrating individual knowledge of local business practices into the broader organizational knowledge within the MNC subsidiary.

2.4 Summary of the processes converting individual knowledge to organizational knowledge and their influencing factors

The diagram below provides a succinct summary of the processes involved in converting individual knowledge into organizational knowledge, along with an identification of the various factors that influence these processes. It is essential to underscore that these processes and influencing factors will be subject to empirical validation in the subsequent phases of our research.

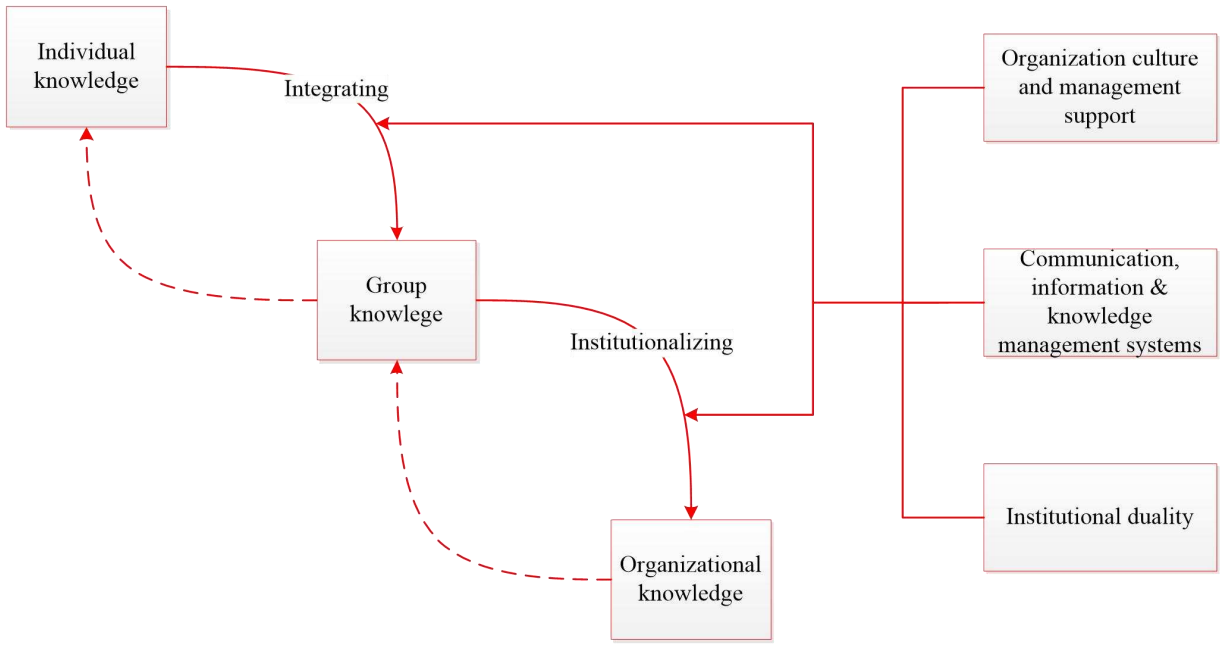


Figure 13: Research Model 2 of Processes to Convert Individual to Organizational Knowledge & Their Driving Factors

3. COUNTRY AND INDUSTRY FACTORS MODERATING THE RELATION OF INTERFIRM KNOWLEDGE TRANSFER AND ITS CONSEQUENCES

3.1 Theoretical framework for competition, cooperation, and coopetition

The Resource-Based View (Barney, 1991; Wernerfelt, 1984) , Industry-Based View (Porter, 1980, 2008) and Institution-Based View (DiMaggio & Powell, 1983; North, 1991; Scott, 2014) a are the three legs of the strategy tripod (Peng et al., 2009). Firms employ these three

views as analytical frameworks to assess their circumstances and devise their strategic approaches. While the Resource-Based View and Industry-Based View have been instrumental, they sometimes fall short in adequately considering the contextual aspects (Barney, 2001; Peng et al., 2009), Hence, the Institution-Based View complements these two perspectives. Combining three base views could explain strategic questions on firms' differences, behaviors, scope, success, and failure drivers (Peng et al., 2009). As a result, the integration of these three foundational pillars of the strategy tripod facilitates a comprehensive explanation of the competitive, cooperative, and coopetitive dynamics exhibited by both MNCs and local firms within international alliances. Notably, the Institution-Based View significantly contributes to our understanding of international business strategies, particularly in emerging markets (Peng, Wang, & Jiang, 2008) . The Institution-Based View is indispensable for enhancing our comprehension of international alliances in emerging economies (Bahri Korbi, Ben-Slimane, & Triki, 2021; Triki & Mayrhofer, 2016).

Firms possess heterogeneity resources and capacities (Barney, 1991; Wernerfelt, 1984), so they compete based on their resources and capacities (Bergen & Peteraf, 2002; Chen, 1996; Peteraf & Bergen, 2003). And because of their resource interdependency, firms cooperate (Casciaro & Piskorski, 2005; Emerson, 1962; Pfeffer & Salancik, 2003) . Resource contribution to a collaboration and other available substitute options for the partner's resources decide a firm's dependency or bargaining power against the partner. Mutual interdependency or the strength of a collaboration is measured by the sum of dependencies of partners on each other (Casciaro & Piskorski, 2005).

In addition, innovation speed and product life cycles of the industry where a firm locates could impact the valuableness of firm resources. Innovation and new technologies could make existing valuable resources become less valuable or obsolete. Technology and innovation are factors to be considered when firms form their strategy (Porter, 1980, 2008).

Furthermore, the institutions of the country of origin can differentiate firms. Firms within one institutional environment tend to be similar (DiMaggio & Powell, 1983) but firms differ across institutional frameworks (Z. Lin, Peng, Yang, & Sun, 2009) . Firms from developed countries have strong innovation capacities. Firms from developed countries, where education, science, and technology are well developed, possess a strong innovation capacity for creating radical innovations. Meanwhile, local firms in developing countries, where education, science, and technology are underdeveloped, tend to focus on incremental innovations (Kumar et al., 2019). However, local firms have the advantage of 'localness,' which includes local networks and a deep understanding of local cultures (Kumar et al., 2019).

The resource and capacity differences between local firms and MNCs, stemming from the dissimilarities between developed and developing countries, could influence the dynamics of competition and co-evolution between local firms and MNCs (Kumar et al., 2019) . MNCs from developed countries can create innovative knowledge to maintain their competitive position as technology and management leaders. They can also continue to introduce innovation in their collaborations with local firms to bolster their bargaining power. Simultaneously, local firms can sustain their relationships with local governments and clients, adapting their business to meet local requirements and thus maintain their local competitive advantage and bargaining power in their collaborations with MNCs (Kumar et al., 2019).

3.2 Country and industry factors moderating the relation between interfirm knowledge transfer and its consequences

The consequences of knowledge transfer through international alliances in emerging markets are varied, and there are contradictions in the literature regarding these outcomes. It is suggested that context factors, including the host market (S. J. Chang & Xu, 2008) , host country institutional environment (Bahri Korbi et al., 2021; Mayrhofer, 2004; K. Meyer & Sinani, 2009) , and focal industry (S.-J. Chang & Park, 2012; Hipp et al., 2003) have

impacts on the behaviors of alliance partners and the relations between them. Additionally, national distances, such as administrative distance (Moalla & Mayrhofer, 2020), cultural distance (Engsig, Chiambaretto, & Le Roy, 2018; Mayrhofer, 2004), technological distance (Mayrhofer, 2004; Moalla & Mayrhofer, 2020), and geographic distance (Engsig et al., 2018) between the home and host country influence the choice of partners (Engsig et al., 2018) and the mode of alliances (Mayrhofer, 2004; Moalla & Mayrhofer, 2020).

Emerging economies share some common characteristics, such as low income and rapid growth. These countries primarily rely on economic liberalization as their engine of growth (Hoskisson et al., 2000). Despite these commonalities, emerging economies are tremendously diversified in terms of economic development and institutions (K. Meyer & Peng, 2016). The diversified economic statuses, ranging from low to middle to high income, in the host country result in different consequences of interfirm knowledge transfer and knowledge spillover (K. Meyer & Sinani, 2009).

Vietnam and China are both emerging economies but significantly differ in terms of economic status and institutions. As of 2021, Vietnam belongs to the lower-ranking group in terms of economic development, society, environment, and governance. Meanwhile, China is considered an outlier due to its very high GDP growth (Casanova & Miroux, 2022). In the Global Innovation Index ranking of 2022, Vietnam ranks 84th for knowledge creation, 41st for knowledge absorption, and 44th for knowledge diffusion. On the other hand, China is among the top countries in innovation, ranking 4th for knowledge creation, 8th for knowledge absorption, and 19th for knowledge diffusion (WIPO, 2022).

The level of government intervention in technology transfer also differs. In Vietnam, it is not mandatory for MNCs to collaborate with local firms to obtain an investment license to enter the market. Since the beginning of FDI laws, it has been allowed for MNCs to establish 100% foreign-owned enterprises. There are no conditions that force joint ventures between MNCs

and local firms in FDI in Vietnam. Additionally, the Vietnamese government provides FDI firms with many advantages and incentives compared to local firms, including tax incentives, land allocation, loans, and administrative registration procedures (Truong Le, 2019; Xuan Than, 2015).

Regarding industry-related factors, two key elements come into play: industry knowledge structure and innovation cycle. In cases where knowledge is more tacit and not easily codified, it becomes challenging, if not impossible, for unauthorized individuals to steal, or for governments to force its transfer. Additionally, in industries characterized by short innovation cycles and high innovation speeds, knowledge can quickly become outdated as imitators require time to learn and master this knowledge. In such scenarios, knowledge transfer or leakage to other parties may not significantly impact innovative firms. This suggests that the knowledge structure and innovation cycle of an industry not only influence the interfirm knowledge transfer process but also moderate the consequences of that process.

In an analysis of competitive dynamics between MNCs and local firms in China, S.-J. Chang and Park (2012) found that technological complexity and market heterogeneity play pivotal roles in determining the nature and extent of competitive dynamics. MNCs tend to succeed and dominate in industries characterized by high technological complexity and market heterogeneity, thanks to their strong technological and marketing capabilities. In contrast, local firms, leveraging their low-cost advantages, tend to dominate industries where technological complexity and market heterogeneity are low (S.-J. Chang & Park, 2012).

Differences in the host country's environment and industry characteristics can result in varying impacts on interfirm knowledge transfer processes and their consequences. The economic, institutional, and cultural distances between Vietnam and developed countries differ from those between China and developed countries. In addition, it's crucial to take into account the different stages of competitive dynamics between local firms and MNCs over

time (Mutlu et al., 2015). Conducting a longitudinal study is essential to investigate interfirm knowledge transfer processes and their outcomes under diverse industry and country-specific conditions. This will help us gain a deeper understanding of the underlying factors contributing to the divergent and sometimes contradictory results observed in different settings. The tripod-based views proposed by Peng et al. (2009) serve as a foundational framework for the suggested longitudinal research.

3.3 Summary of country and industry factors in moderating the relationship between interfirm knowledge transfer and changes in competition, cooperation and coopetition

The diagram below summarizes the research model aimed at investigating how country and industry factors moderate the relationship between interfirm knowledge transfer and the evolution of relative competition, cooperation, and coopetition positions of MNCs and local firms in emerging economies. These elements will be empirically validated in subsequent sections.

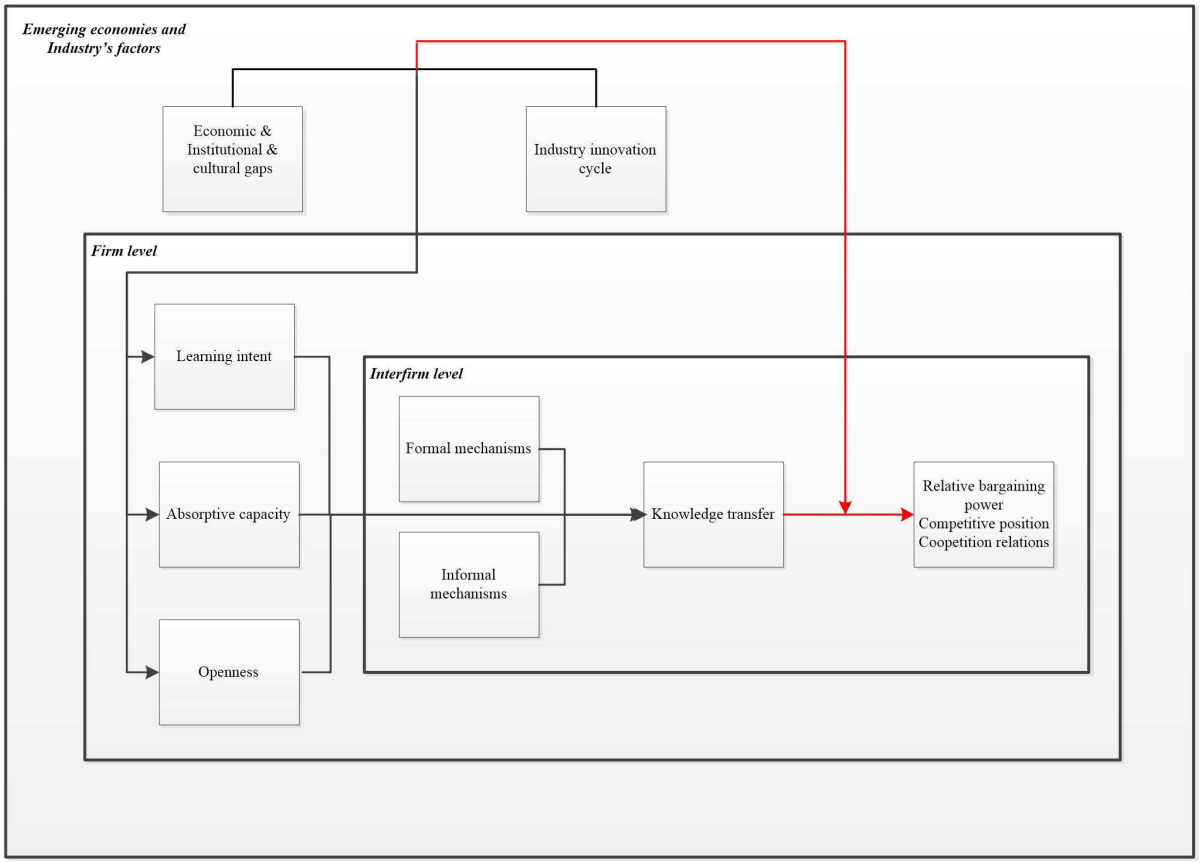


Figure 14: Research Model 3 of Country and Industry Factors in Moderating the Relationship between Interfirm Knowledge Transfer and Changes in Relative Competition, Cooperation, and Coopetition

PART V: EMPERICAL RESEARCH CONTEXT -COUNTRY AND INDUSTRY FACTORS

In this section, we will present the country and industry context of the collaboration project, starting in the period of 2005-2006 when the project commenced and continuing up to the present day.

1. VIETNAM AS AN EMERGING ECONOMY AND ITS ECONOMIC GAPS COMPARED TO DEVELOPED COUNTRIES

Current low ranking but having high growth among emerging economies

Among emerging economies, as of the year 2021, Vietnam falls into the lower ranking group when considering aspects such as economic development, society, environment, and governance, despite having demonstrated the highest rate of progress over the past ten years. However, Vietnam claims the top position among 20 emerging economies (excluding China due to its significantly high economic growth) when combining both progress rate and current position scores (Casanova & Miroux, 2022). If Vietnam continues with the growth rate of the last ten years, it is expected to emerge as a leader among emerging economies in the future (Refer to Figure 15: Vietnam Ranking in Emerging Markets Economic Growth).

Big economic gaps compared to developed countries

After the war in 1975, Vietnam underwent a period of centralized planning and agricultural collectivization. This approach led to impressive achievements in terms of high literacy rates and health indicators. However, the country faced economic crises marked by hyperinflation in both 1985 and 1988.

In 1986, Vietnam initiated a new reform program known as 'Doi moi,' aimed at reducing government intervention in the private sector and opening up to economic development. Since then, Vietnam's economy has gradually evolved, becoming more industrialized and integrated

with the global economy. GDP per capita increased from US$430 in 1986 to US$693 in 2005, the year when the collaboration project contract between the MNC and the Vietnamese partner in our case study was signed. By 2021, it had further risen to US$3,756 (World Bank Group, 2023).

Comparatively, at the time the collaboration project was signed in 2005, the GDP gaps between Vietnam and the two countries involved in the case study, the United States and Singapore (the home country and subsidiary of the MNC), were substantial. The GDP per capita of the United States was 64 times higher than that of Vietnam, and Singapore's was 43 times higher. However, by the end of 2021, these gaps had narrowed significantly, with Vietnam's GDP per capita still lower but now only 19 times less than that of both the United States and Singapore.

Despite Vietnam's high GDP growth rate, its GDP per capita remains considerably lower when compared to Singapore and the United States. Vietnam continues to be classified as a low-income developing country ("IMF Data Mapper ®," 2023.000Z) (Refer to Table 3: Vietnam GDP per Capita in Comparison with Other Countries and Figure 16: Vietnam GDP per capita in Comparison with Other Countries).

Country Name	Year 1986	Year 2005	Year 2021
Singapore	US$ 6,800	US$ 29,961	US$ 72,794
United States	US$ 19,071	US$ 44,123	US$ 70,249
Vietnam	US$ 430	US$ 693	US$ 3,756
Singapore/Vietnam	16 times	43 times	19 times
United States / Vietnam	44 times	64 times	19 times

Table 3: Vietnam GDP per Capita in Comparison with Other Countries

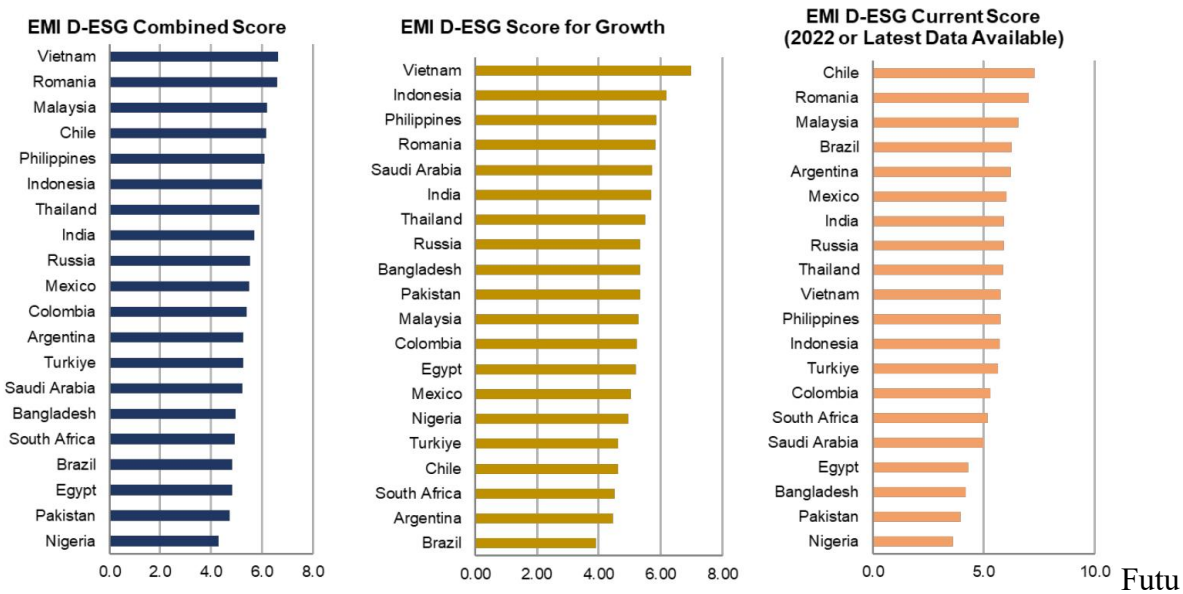


Figure 15: Vietnam Ranking in Emerging Markets Economic Growth

(Casanova & Miroux, 2022)



Figure 16: Vietnam GDP per capita in Comparison with Other Countries

(World Bank Group, 2023)

2. VIETNAM INSTITUTIONS AND ITS INSTITUTIONAL GAPS COMPARED TO DEVELOPED COUNTRIES

Alongside its economic development, Vietnam has been gradually reforming institutions to support knowledge transfer and innovation. However, Vietnamese firms lag significantly behind their counterparts in developed countries such as Singapore and the United States. This gap can be attributed to several factors, including the limited quality of human capital and the domestic science and technology system. Additionally, complementary factors, such as competition and the regulatory environment, the finance market, and infrastructure, also play a role in this discrepancy. Furthermore, firm innovation capacities are another contributing factor.

To illustrate this disparity, Vietnam is ranked 48th, while the United States holds the 2nd position and Singapore the 7th position among 132 economies featured in the Global Innovation Index 2022 (WIPO, 2022).

Below, we provide details about Vietnam's institutions that support technology transfer and innovation, covering aspects such as human capital, technology and science systems, competition and regulatory framework, finance and infrastructure, and firm innovation capacities.

2.1 Shortage of skillful human capital, technology, and science knowledge

2.1.1 Shortage of skillful human resources

Colleges, universities, and technical and vocational education and training schools play a vital role in providing skilled manpower and knowledge to the national innovation system. Despite significant progress in Vietnamese education over the last two decades, tertiary education, in

terms of both enrollment numbers and quality, lags behind other countries in the region, particularly developed nations.

The tertiary education enrollment rate has significantly risen from 10 percent in 2000 to 28 percent in 2016. Nevertheless, this rate remains lower in comparison to other countries in the region, such as Thailand and China, and substantially lower when compared to developed nations like Japan and South Korea. One contributing factor to this lower enrollment rate is the limited public education funding, which accounts for only approximately 0.33% of the GDP, making it less affordable for economically disadvantaged students (Akhlaque et al., 2021).

In terms of quality, the current tertiary curriculum falls short as it emphasizes theoretical knowledge over applied skills and essential soft skills such as entrepreneurship, leadership, communication, and teamwork. The 2018 Global Competitiveness Report ranks Vietnam 116th in the skills-set of university graduates and 76th in capacity for innovation among 141 ranked countries (World Economic Forum, 2019).

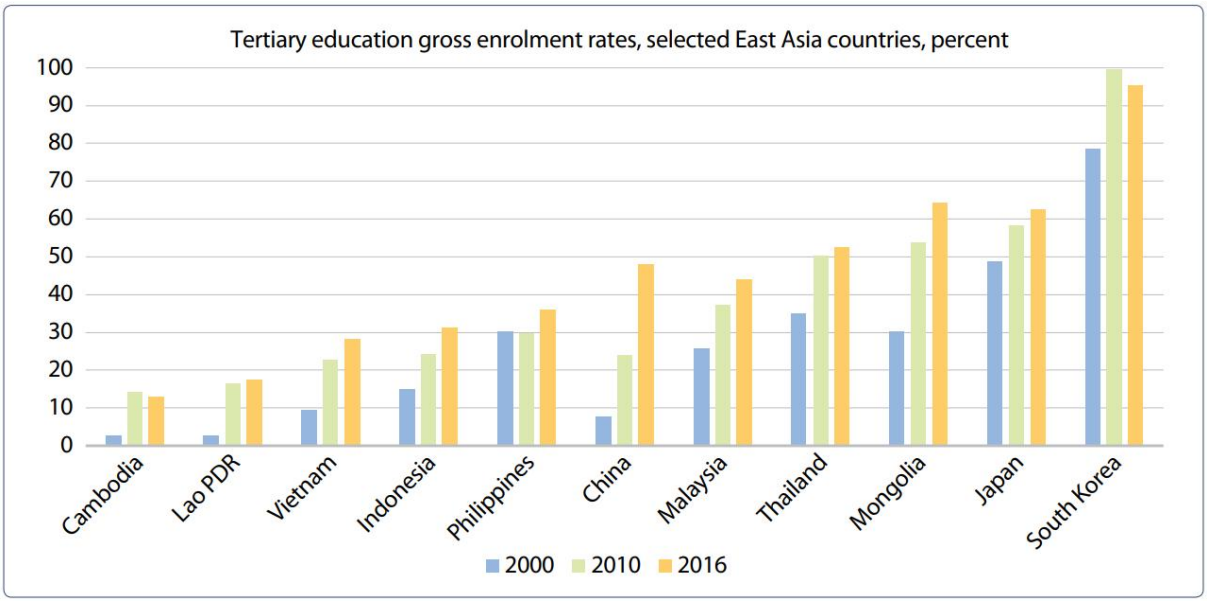


Figure 17: Tertiary Education Gross Enrolment Rates of Vietnam in Comparison with East Asia Countries

Moreover, the skills level of the current elder employees is low. In the 2019 World Bank Enterprise Survey on Innovation and Skills, more than 54 percent of employees in surveyed firms performed below literacy proficiency level 3, a critical level for 21st-century workplaces (Akhlaque et al., 2021).

In summary, Vietnam faces a shortage of skilled human resources. The 2019 World Bank Enterprise Survey on Innovation and Skills revealed that a significant percentage of surveyed firms reported challenges in hiring employees with the necessary managerial, leadership, socio-emotional, foreign language, and technical/vocational skills, including 73% for managerial and leadership skills, 53% for socio-emotional skills, 58% for foreign language skills, and 68% for technical and vocational skills. (Akhlaque et al., 2021).

2.1.2 Shortage of scientific and technological knowledge

Vietnam's overall R&D expenditure as a percentage of GDP is low, at 0.53% in 2019, in stark contrast to the United States at 3.17% and Singapore at 1.89% (World Bank Group, 2023b.000Z).

In Vietnam, the majority of domestic R&D is carried out by approximately 600 government research institutions (GRIs). Despite low R&D funding levels, these GRIs suffer from fragmentation, inefficiency, and a lack of connectivity with industries. Funding for GRIs is provided through block grants without consideration of merit or performance. A significant portion of this funding is allocated for employee salaries, and many of these employees are not actively engaged in research (Akhlaque et al., 2021).

The allocation of science and technology investment expenditure in Vietnam is imbalanced. The domestic private sector receives limited government support for R&D and absorptive capacity improvement, while the government directs a significant portion of the science and technology budget to large MNCs with the expectation of economic spillover. In 2017, nearly

94% of the total science and technology investment expenditure was allocated to 38 large MNCs under the form of tax incentives (Akhlaque et al., 2021). Spillover effects from MNCs to the domestic economy are limited. Foreign direct investment is largely disconnected from the domestic private sector. Vietnam serves as a destination for MNCs' labor-intensive and final assembly stages in their value chains, primarily in exporting apparel, shoes, and mobile phone handsets. These tasks mainly involve the production of low-value-added inputs, such as basic materials and packaging, resulting in minimal technology transfer or knowledge spillover through supplier-buyer relationships, co-location, or employee mobility (Akhlaque et al., 2021).

With the current resource allocation and knowledge spillover situation, Vietnam ranks 84th in knowledge creation and 44th in knowledge diffusion in the Global Innovation Index 2022 ranking. In contrast, the United States ranks 3rd for knowledge creation and 9th for knowledge diffusion, while Singapore ranks 24th in knowledge creation and 8th in knowledge diffusion (WIPO, 2022).

2.2 Inferior complemental conditions to technology transfer and innovation

2.2.1 Competition environment in favor of SOEs and FDI enterprises

Since the implementation of Doi moi, Vietnam has made significant progress in enhancing its business environment. Its ranking in the Doing Business Index has risen from 104th in 2007 to 70th position in 2020 (World Bank Group, 2023a.000Z). Business conditions, including tax incentives, governmental subsidies, land allocation, loans, and administrative procedures, continue to favor Foreign Direct Investment (FDI) and State-Owned Enterprises (SOEs) over private enterprises in Vietnam. Historically, the income tax rate for FDI enterprises was significantly lower, at half the rate applied to domestic firms for approximately two decades. While the income tax rate is now common for all types of enterprises, income tax exemption amounts for FDI enterprises remain at 48% of the common rate, compared to 4.6% for SOEs

and 14% for private enterprises (Truong Le, 2019) . On governmental subsidies, SOEs continue to receive subsidies from the state budget, while private enterprises, which contribute 47.1% of GDP, receive less government support, encompassing not only tax incentives and subsidies but also areas such as land rental, license registration, and loan processing time (Xuan Than, 2015). This unfair competitive environment hinders innovation motivation not only for private enterprises but also for FDI and SOEs.

2.2.2 Weak intellectual property right enforcement and FDI transfer price issues

Over the last three decades, Vietnam has made significant strides in building and enhancing its business laws and regulations. Key milestones include the issuance of the Foreign Investment Law in 1987, the Enterprise Law in 1999, the Law on Science and Technology in 2010, the Law on Technology Transfer in 2006, and the Law on Intellectual Property in 2013. These legal frameworks have played a pivotal role in shaping business, technology transfer, and innovation.

Furthermore, Vietnam's participation in regional and global organizations such as ASEAN in 1995, APEC and ASEM in 1998, WTO in 2007, along with the signing of 15 bilateral and multilateral free trade agreements, including the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in 2018, the EU–Vietnam Free Trade Agreement (EVFTA) in 2019, and the Vietnam-UK Free Trade Agreement (UKVFTA) in 2020, has propelled Vietnam to amend and enhance its laws to integrate seamlessly with the global economy (Ban Chỉ đạo liên ngành hội nhập quốc tế về kinh tế, 2018).

Nevertheless, Vietnam still lacks specific rules and guidance for the implementation of intellectual property (IP) laws and the necessary officials to investigate and prosecute crimes in IP infringement cases (Akhlaque et al., 2021) . Consequently, Vietnam is grappling with issues related to online copyright enforcement and counterfeit goods in the markets (United

States Trade Representative, 2023.000Z). Vietnam's IP protection ranking ranks at 105th out of 141 countries, significantly trailing behind Singapore (1st) and the United States (2nd) (World Economic Forum, 2019). This issue discourages MNCs from sharing knowledge with local firms and hampers innovation investment by domestic firms and venture capital.

Another significant issue pertains to transfer pricing by FDI enterprises. Current tax regulations and enforcement have not been effective in preventing FDI enterprises from engaging in transfer pricing practices and evading taxes. Many FDI enterprises have declared losses in multiple years, despite continuous expansion of their manufacturing and business activities in Vietnam. It is noteworthy that approximately 50% of FDI enterprises reported losses during the period from 2015 to 2017. Many MNCs entered the Vietnamese market during the late 1980s and early 1990s by forming joint ventures with local partners to mitigate high transaction and establishment costs. (H. T. Nguyen, Nguyen, & Meyer, 2004). MNCs have often exploited their control over joint ventures, resulting in unreasonable expenses paid to their parent firms and substantial losses incurred by these joint ventures, which local firms with limited capital could not sustain. This pressure has forced many local firms to exit joint ventures with MNCs. A prominent example is Coca Cola, which commenced its operations in Vietnam in 1994 through three joint ventures with local partners. By August 1999, all three joint ventures had transitioned into 100% FDI enterprises owned by Coca Cola. The company consistently reported losses attributed to the high cost of raw materials, primarily aromatic spices directly imported from the parent company at exceptionally high prices (Tran, 2013). With consecutive loss declarations over 17 years until 2011, the accumulated losses of Coca Cola Vietnam exceeded their owner equity. In accordance with tax regulations, they were allowed to carry forward these losses to offset future profits. Remarkably, even after more than 20 years in the Vietnamese market, Coca Cola has never reported a profit (Nhóm PV Kinh tế , 2021).

The gaps of laws and regulations and unfair competitive business environment significantly hamper technology transfer and innovation in Vietnam.

2.2.3 Lack of financial supports for innovation

While credit growth is robust, access to innovation finance remains constrained in Vietnam. The constraints originate from both the demand and supply sides. On the demand side, many firms struggle to develop compelling business plans that attract investment. On the supply side, venture capital investment opportunities are limited. Vietnam is less attractive for venture capitalists, making Vietnam less appealing to venture capitalists. Additionally, government incentives are challenging to access due to administrative hurdles. Furthermore, the angel investment network in the country is still in its early stages of development. (Akhlaque et al., 2021).

Country	Rank	Score
Singapore	6	90.7
Malaysia	13	83.1
China	18	80.7
Thailand	27	72.2
Indonesia	37	64.3
Philippines	42	61.3
Vietnam	43	60.7
Kenya	53	57.6
Sri Lanka	55	57.3
Pakistan	63	53.2
Morocco	64	52.9

Table 4: Global Venture Capital and Private Equity

(Groh, Liechtenstein, Lieser, & Biesinger, 2018).

2.2.4 Digital infrastructure

Vietnam continues to face challenges in providing widespread internet access. According to the Vietnam ICT White Book 2019, one in three Vietnamese individuals lacks internet access (Bộ Thông tin và Truyền thông, 2019). Additionally, as reported by the World Bank's Digital Adoption Index in 2014, the level of digital adoption in Vietnam, particularly in the business and government sectors, lags behind that of other countries in the Southeast Asian region (World Bank Group, 2014).

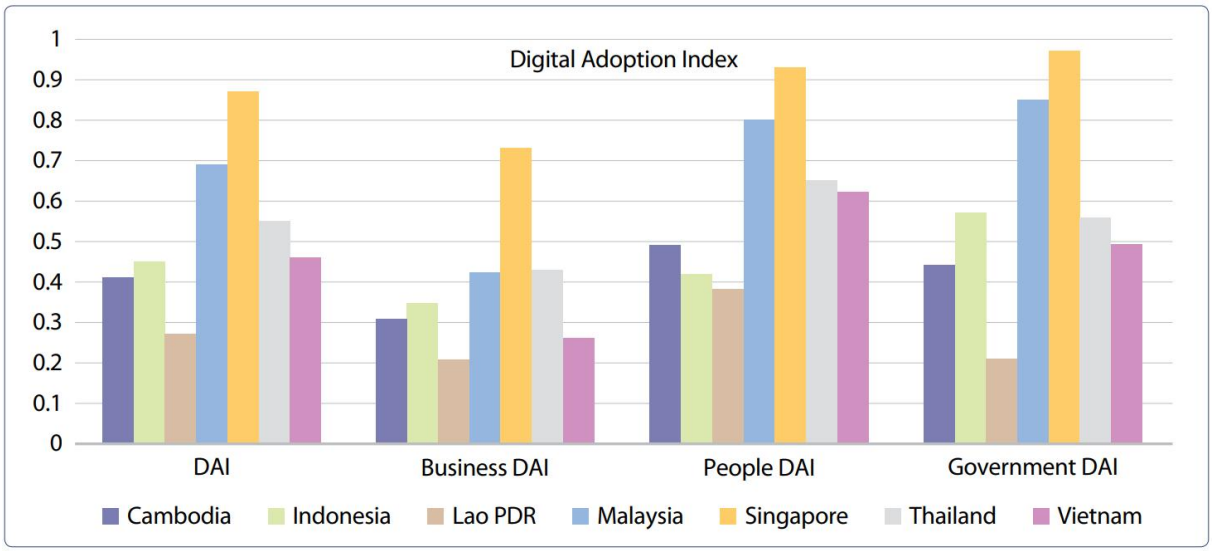


Figure 18: Digital Adoption Index of Vietnam in Comparison with Other ASEAN Countries 2014

2.3 Collectivist culture supports knowledge sharing and informal business relations

On the cultural dimension of collectivism and individualism, Vietnam scores 20, indicating a tendency towards collectivism influenced by Chinese culture, a trait shared with Singapore and China. In contrast, the United States scores the highest at 91, reflecting an extremely individualistic tendency. India falls in the middle with a score of 48 (Hofstede Insights, 2023+00:00).

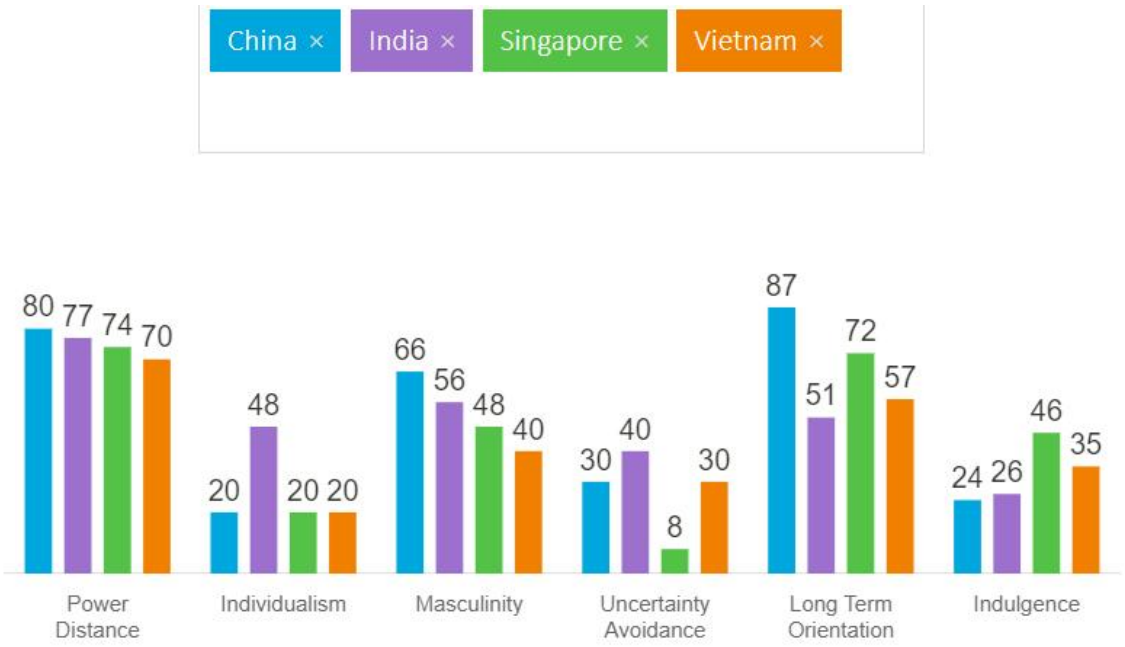


Figure 19: Cultural Dimensions of Vietnam in Comparison with Other Countries

(Hofstede Insights, 2023+00:00)

2.4 Weak innovation capabilities of Vietnam firms

Vietnam's firms exhibit lower management practices and inputs for innovation. The World Management Survey reveals that Vietnam's firms have lower management scores compared to peer countries such as China and Turkey, and significantly lower scores when compared to developed countries like the United States and Singapore. Vietnam's employers also face considerable difficulty in finding employees with sufficient managerial and leadership skills (Akhlaque et al., 2021).

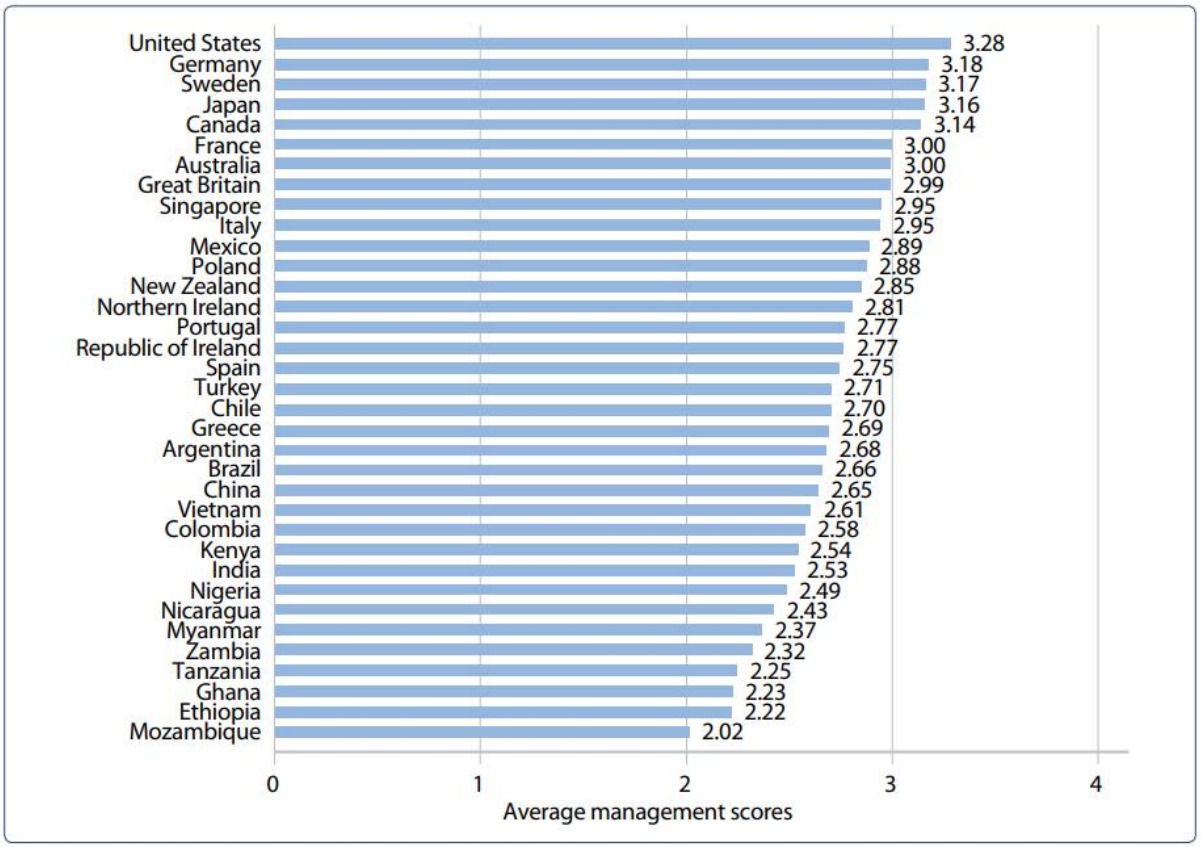


Figure 20: World Management Survey

(Akhlaque et al., 2021).

Furthermore, Vietnam's firms have lower levels of innovation inputs, which encompass research and development, formal training for workers, the utilization of technology licensed from foreign firms, and internationally recognized certifications, in comparison to peer countries, as revealed by the World Bank Enterprise Survey (Akhlaque et al., 2021).

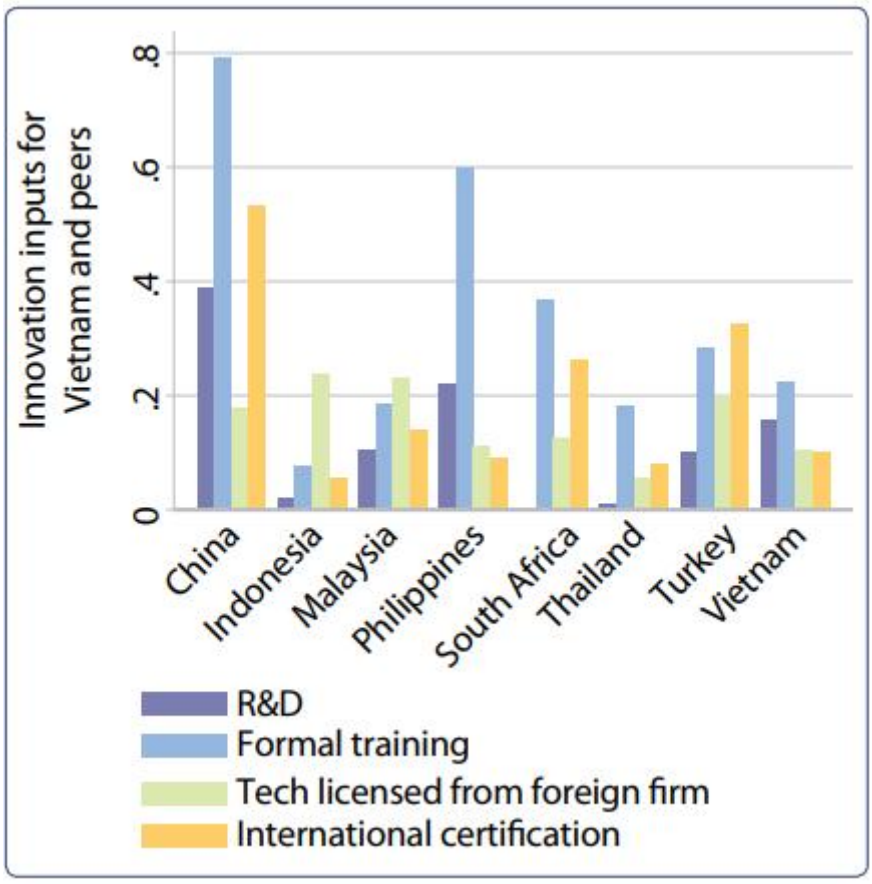


Figure 21: World Bank Enterprise Survey

(Akhlaque et al., 2021)

3. IT INDUSTRY

3.1 Innovations drive changes in business in IT industry

The IT industry had its origins in ancient memory aids like tally sticks, followed by the development of mechanical calculators and electronic computers in the early 1940s. In the 1950s and 60s, large and expensive mainframe computers from companies like Unisys and IBM were primarily used by systems and programmers in major corporations and government research laboratories. The rapid development of the IT industry was propelled by innovations such as personal computers, Ethernet, the World Wide Web, cloud computing, and artificial intelligence. These innovations led to increased data generation, improved data storage,

enhanced data processing speeds, and reduced costs, resulting in significant changes in the IT business.

3.1.1 Innovation of personal computers and the creation of personal computers' hardware and software businesses.

The feasibility of small and inexpensive personal computers emerged in the 1970s with the introduction of the first personal computer (PC) called Altair by a small firm named MITS. Commercialization of personal computers began in the 1980s with companies like Apple and IBM leading the way. Intel supplied microprocessors, while Microsoft provided operating systems for these personal computers (Press, 2013).

3.1.2 Innovations on Ethernet and the appearance of networking and database businesses

The invention of Ethernet in 1973 facilitated the connection of personal computers to form both local area networks (LANs) and wide area networks (WANs), effectively enabling PCs to communicate with each other over the internet. PCs empowered people to create content using their programming capabilities, store data, and produce printed output. This connectivity between PCs played a pivotal role in the circulation and distribution of data. The introduction of Ethernet significantly increased the volume of data created, stored, circulated, and consumed.

Furthermore, notable IT companies like Oracle, founded in 1977 under the name Software Development Laboratories, focused on developing relational database management systems. Cisco Systems, established in 1984, played a pioneering role in LAN technology (Press, 2013).

3.1.3 Innovations on HyperText Transfer Protocol and HyperText Markup Language and new business models on data searching, e-commerce and social networking.

The World Wide Web, initiated by the invention of Hypertext Transfer Protocol (HTTP) and Hypertext Markup Language (HTML) by Tim Berners-Lee at the European Organization for Nuclear Research, became publicly accessible and widely used between 1991 and 1995. Advancements in audio and image compression contributed to a significant increase in the volume of data transferred via the Web.

During this period, significant milestones included the launch of Yahoo! Directory in 1994, which became the first Web directory, and the introduction of Yahoo! Search in 1995, marking the emergence of the first popular search engine on the World Wide Web. Web commerce began to take shape with the establishment of eBay and Amazon in 1995, leading to the commercialization of the Web in subsequent years.

Microsoft's release of Windows 95 and the Internet Explorer browser further popularized the Web. In 1998, Google patented its search algorithm and was founded. By the mid-2000s, a new model of exchanging information featuring user-generated and user-edited websites gave rise to social networking websites. Facebook was launched in 2004, and in 2005, YouTube was created (Press, 2013).

3.1.4 Cloud computing driving service-oriented business models in providing IT hardware and software

Pioneered by Amazon in 2006 and embraced by major IT companies such as Microsoft, Google, IBM, and Oracle, cloud computing introduced the concept of sharing computing infrastructure to reduce costs and achieve flexibility in IT resource allocation. This shift has ushered in service-oriented business models for providing IT hardware and software.

Cloud computing offers three primary service models: Infrastructure as a Service (IaaS), which provides computing and storage resources; Platform as a Service (PaaS), enabling application development using supported programming languages, libraries, services, and tools; and Software as a Service (SaaS), offering software applications running on the cloud infrastructure of service providers.

The adoption of cloud computing technology has brought about significant changes in the roles of stakeholders involved in software package implementation. Software has become more standardized and industry specific. The complexity associated with infrastructure has shifted from clients' locations to software vendors' sites, with vendors providing infrastructure, licenses, and platforms for customization. Implementation partners now focus less on IT-intensive tasks and more on business process management.

This transformation has led to reduced emphasis on tasks like data migration, interfacing, IT security, and mobile application development. Project management and implementation times have become quicker and more agile. Notable examples of this trend include the rise of Salesforce CRM SaaS on the cloud, the transition from Oracle EBS on-premises to Oracle Fusions on the cloud, and the shift from SAP ERP on-premises to SAP HANA on the cloud (Pedamkar, 2020; Press, 2013).

Huge improvements in data storage, computing speed, and amount of data allow to open a new age of big data, artificial intelligence and robotics in IT industry (Rockwell & Anyoha, 2017).

3.1.5 Cloud computing dramatically changed IBM business as an example of innovation drives changes in business

IBM was incorporated in the state of New York on June 16, 1911, as the Computing-Tabulating-Recording Company. On February 14, 1924, the name Computing-Tabulating-Recording was formally changed to International Business Machines Corporation (IBM). On April 7, 1964, the introduction of the System/360 family of mainframe computers marked IBM's transformation from a medium-sized manufacturer of tabulating equipment and typewriters into a leader in the computer industry.

Cloud computing entered the business landscape in the early 2000s, notably with the creation of Amazon Web Services in 2006. At that time, IBM's business comprised three main segments: Systems (including IBM servers, operating systems, storage, and semiconductor products, which were the most significant business segment for IBM); Software (including database management software DB2, middleware such as the application server WebSphere, collaboration and messaging software like Lotus Notes, integrated tools designed to enhance an organization's software development processes and capabilities such as Rational Software, and software for infrastructure management like Tivoli software); and Services (providing technical and business consulting services to enhance their clients' business performance and processes). In the business service segment, IBM employed its deep industry knowledge to deliver technical and business consulting services. They used IBM's custom solutions or third-party software, such as Oracle or SAP, to implement solutions for their clients.

In the year 2005, IBM reported annual revenue of $91.1 billion USD, with Software contributing $15.8 billion USD, Services $47.4 billion USD, and Systems $24.3 billion USD (IBM, 2005). It shows that the revenue of System or hardware was more than half of the total revenue.

While the cloud revenue of Amazon Web Services gradually increased during the 2000s, it took around five years to see clear impacts on IBM's business. Starting in 2012, IBM's revenue and profit consistently declined for nearly a decade until 2019 when IBM completed the RedHat acquisition, enabling them to provide hybrid cloud services (IBM, 2019).

During this period, IBM's total revenue decreased significantly from over 100 billion US dollars to around 79 billion US dollars in 2018. Notably, hardware revenue also experienced a significant decline, dropping from around 40 billion US dollars during the 2000s to 26 billion US dollars in the year 2020. However, after the spinoff of their hardware business in 2021, IBM's revenue showed signs of recovery, with the first observed increase in 2022 (IBM, 2022).

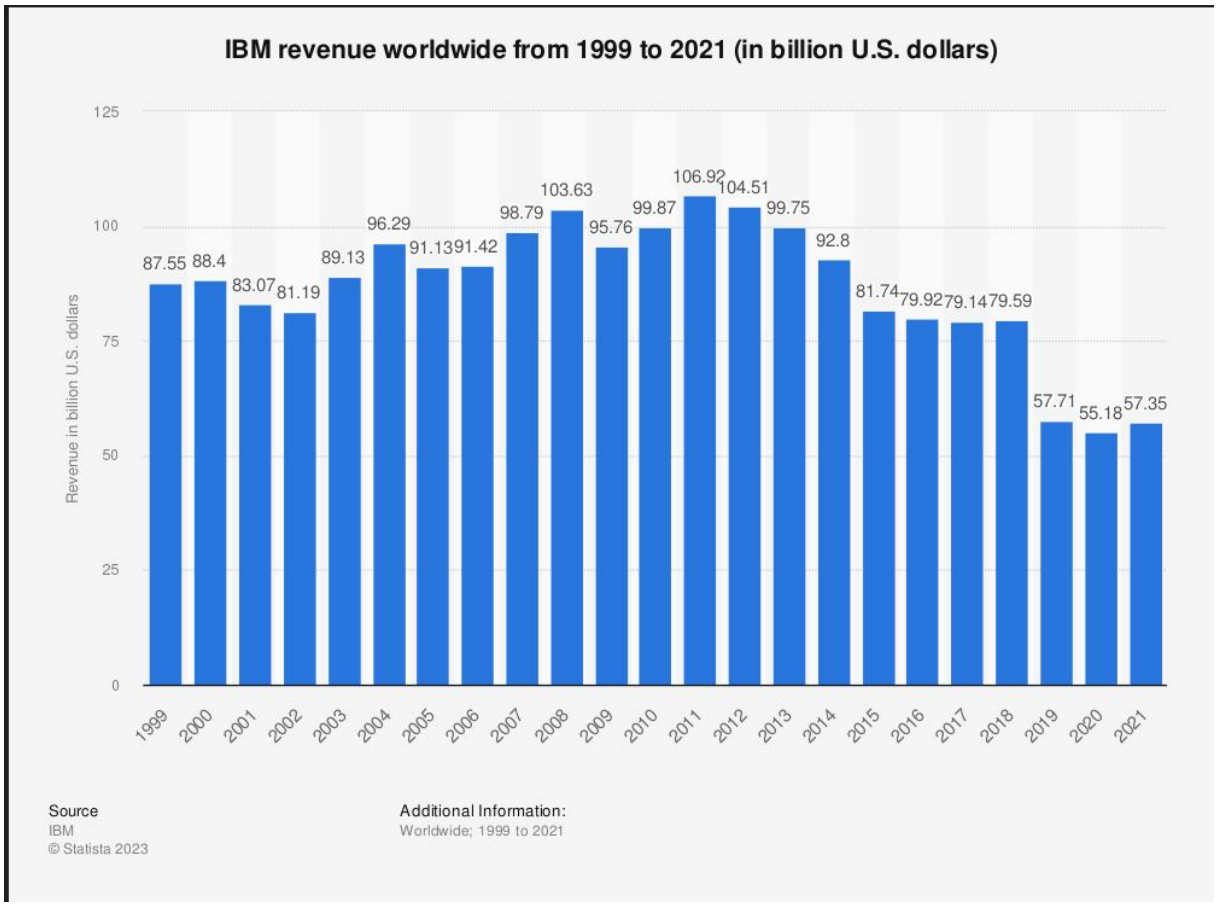


Figure 22: IBM Revenue 1999-2021

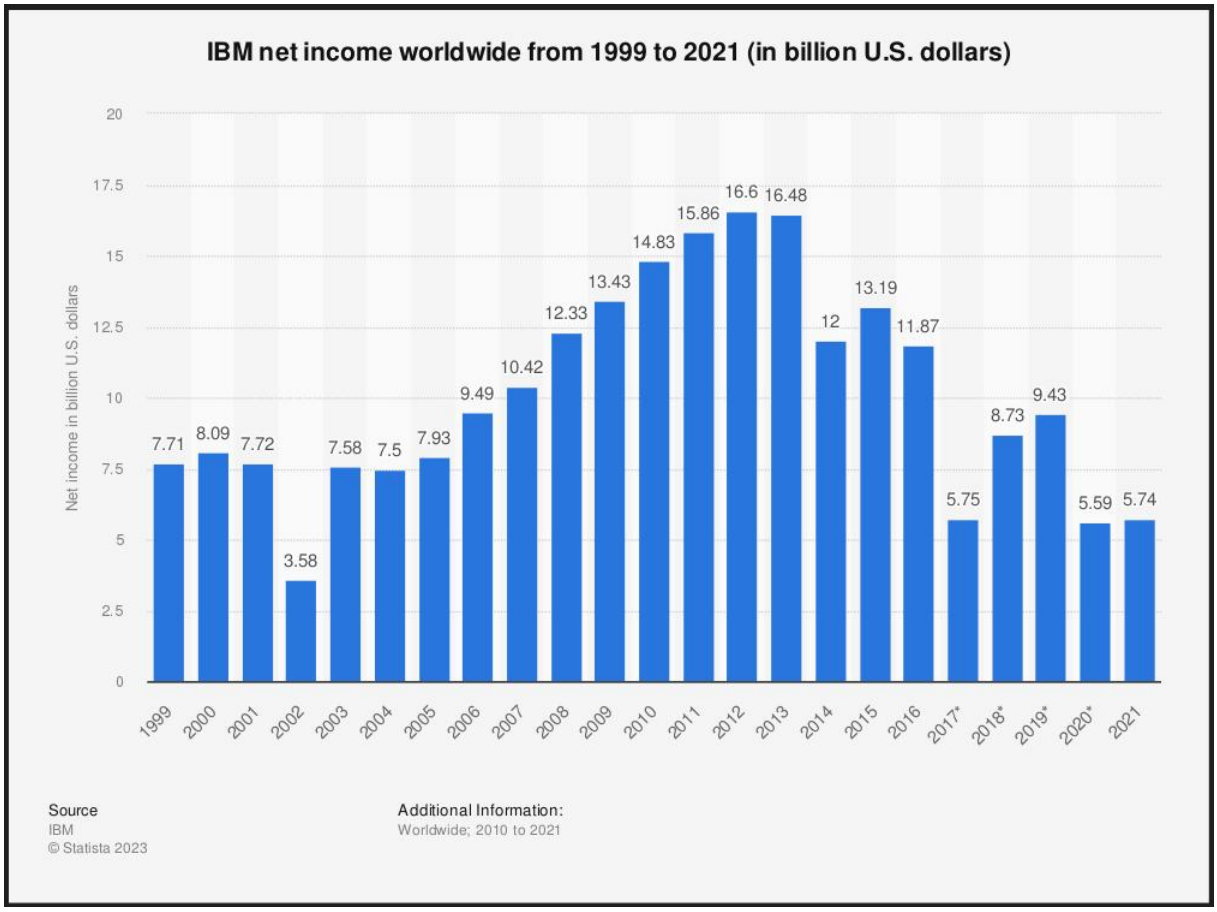


Figure 23: IBM Net Income 1999-2021

Simultaneously, IBM Global Business Consulting shifted away from traditional businesses such as ERP implementation (IBM, 2016, 2017). Today, IBM remains a company primarily focused on innovative services, including hybrid cloud and cognitive solutions, which offer significantly higher gross margins and market potential for its business (IBM, 2022). Within the span of a decade following the advent of cloud computing innovation, IBM's hardware business transformed from being a server leader to becoming a hybrid cloud computing provider.

3.2 Vietnam IT sector

3.2.1 High growth and hardware export dominant Vietnam IT sector

Starting late compared to other developing countries, Vietnam connected to the Internet in 1997. By the year 2006 when the collaboration project began, Vietnam's information technology industry was not yet a decade old. However, the IT market experienced rapid growth during the 2000s, driven by the swift development of modern telecommunications. In 2006, the Vietnam IT market generated revenue of 1.7 billion USD, reflecting a growth rate of 22.6%, which was more than three times the international average growth rate. Within this, the hardware segment saw an increase of 15.8%, while the software and services segment experienced a remarkable growth rate of 43.9% (Tung Le, 2007).

The most significant advantage of the Vietnam IT market in 2006 was its competitive labor costs. At that time, the average salary of programming engineers in Vietnam was half that of China, one-third of India, and only one-thirteenth of the United States. Additionally, the labor force was characterized by high stability. However, the industry's main disadvantage was its relative youth, as it had not yet reached the age of ten years. This youthfulness resulted in challenges such as a shortage of experienced IT engineers and project managers (Tung Le, 2007).

Furthermore, the legal protection system for intellectual properties in developing countries, including Vietnam, is generally weak. As an example, in Vietnam, the software piracy rate was alarmingly high, reaching 92% in 2004 (Tung Le, 2007).

The Vietnam ICT industry, with a total revenue of approximately 125 billion USD in 2020, consists of three main sectors: ICT hardware, Software and IT services, and ICT-Enabled business process outsourcing and digital content. Among these, ICT hardware has played a dominant role, contributing 88.5% to Vietnam's ICT revenue from 2009 to 2020. The revenue

from software and IT services, which amounts to around 13 billion USD, represents a relatively smaller portion when compared to ICT hardware.

Notably, a high proportion of the revenue in ICT hardware, software, and IT services comes from exports. In 2020, the export rates were 86% for ICT hardware, 85% for software, and 68% for IT services. The industry has experienced significant growth, with a revenue compound annual growth rate (CAGR) of 33% for ICT hardware and 31% for software and IT services during the period from 2009 to 2020.

Area	Metric	2009	2010	2011	2012	2013	2015	2016	2017	2018	2019	2020	CAGR rate 2009-2020
ICT Hardware	Firms	992	1,273	2,763	2,431	2,485	2,980	3,404	4,001	4,730	5,365	5,929	18%
	Revenue (USD Million)	4,627	5,631	11,326	23,015	36,762	53,023	58,383	81,542	91,516	100,338	111,034	33%
	Employment	121,300	127,548	167,660	208,680	284,508	533,003	568,288	678,917	717,955	760,097	842,458	19%
Software and IT Services	Firms	1,756	2,958	7,044	7,246	6,832	16,339	18,398	21,221	30,570	32,789	34,480	31%
	Revenue (USD Million)	850	1,064	1,172	1,208	1,361	7,055	8,116	9,211	10,632	11,377	12,757	28%
	Employment	64,000	71,814	78,894	80,802	88,820	144,261	165,992	187,696	203,785	202,630	204,433	11%
ICT-enabled Digital Content (BPO)	Firms	2,844	2,312	3,289	3,883	4,498	2,339	2,700	3,202	3,651	3,982	4,188	4%
	Revenue (USD Million)	690	934	1,165	1,235	1,407	638	739	799	825	851	888	2%
	Employment	41,000	50,928	60,200	63,242	67,680	44,320	46,647	55,908	51,952	42,479	34,377	-2%
Total	Firms	5,592	6,543	13,096	13,560	13,815	21,658	24,502	28,424	38,951	42,136	44,597	21%
	Revenue (USD Million)	6,167	7,629	13,663	25,458	39,530	60,716	67,238	91,552	102,973	112,566	124,679	31%
	Employment	226,300	250,290	306,754	352,724	441,008	721,584	780,927	922,521	973,692	1,005,206	1,081,268	15%

Table 5: Vietnam IT Industry: Number of Firms, Revenue, and Employment 2009-2020

(Ministry of Communication and Information, 2014, 2021).

Area	Metric	2016	2017	2018	2019	2020
	Total revenue (USD million)	58,383	81,542	91,516	100,338	111,034
	Export revenue (USD million)	57,737	74,936	78,586	87,294	95,760
	Total import	37,738	52,138	51,182	65,985	80,616
ICT Hardware	Export / Total revenue %	99%	92%	86%	87%	86%
	Total revenue (USD million)	3,038	3,779	4,447	4,932	5,439
	Export revenue (USD million)	2,491	3,301	3,743	4,406	4,643
Software	Export / Total revenue %	82%	87%	84%	89%	85%
	Total revenue (USD million)	5,078	5,432	6,185	6,445	7,318
	Export revenue (USD million)	-	-	-	-	4,965
IT Services	Export / Total revenue %	-	-	-	-	68%
	Total revenue (USD million)	739	799	825	851	888
ICT-enabled Digital	Export revenue (USD million)	661	734	771	705	710
Content (BPO)	Export / Total revenue %	89%	92%	93%	83%	80%
	Total revenue (USD million)	67,238	91,552	102,973	112,566	124,679
	Export revenue (USD million)	60,228	78,237	82,329	91,700	105,368
Total	Export / Total revenue %	90%	85%	80%	81%	85%

Table 6: Vietnam IT Industry Export Revenue 2016-2020

(Ministry of Communication and Information, 2014, 2021).

3.2.2 Key players in Vietnam IT market

With its low labor costs, proximity to regional suppliers, and a relatively stable investment climate, Vietnam has become a host to global leading firms in the manufacturing of ICT hardware. Companies like Samsung, LG, Foxconn, Jabil Circuit, Intel, and Microsoft have established a presence in the country. These global firms import intermediate electronic components, such as integrated circuits and LEDs, and leverage the low-cost Vietnamese labor

force for assembly. They then export final products, including mobile handsets, computers, storage devices, and automotive electronics.

Furthermore, these global leading firms often source intermediate goods from foreign suppliers who co-locate in Vietnam due to the challenges associated with local suppliers. For instance, Samsung heavily relies on Korean suppliers located in Vietnam. Among the 67 suppliers of Samsung in Vietnam, only four are Vietnamese packaging firms responsible for lower value-added tasks within the value chain.

However, due to limited collaboration between MNCs and local firms, knowledge transfer and spillover from MNCs to local firms in the ICT hardware sector remain weak or non-existent. To gain insights into the knowledge transfer process between MNCs and local firms, this thesis focuses more on software and IT services in Vietnam's domestic market, where collaboration between MNCs and local firms is more intense (Sturgeon & Zylberberg, 2017).

The landscape of Vietnam's software and IT services market underwent significant changes in the early 2000s, driven by the country's rapid economic growth. Key milestones during this period included the establishment of stock markets in Ho Chi Minh City in 2000 and Hanoi in 2005, the signing of the US-Vietnam bilateral trade agreement in 2001, and Vietnam's accession to the WTO in 2007.

Notably, major enterprises in the banking and telecom sectors increased their ICT spending to enhance their services and capacity in support of the growing economy. Simultaneously, with financial support from institutions like the World Bank and the Asian Development Bank, the public sector also allocated more resources to reform public services and enhance transparency for citizens and foreign donors. This shifting landscape led to a change in the requirements for software and IT services, transitioning from computerizing business operations to redesigning

business processes to create more added value. Consequently, the total revenue from software and IT services in 2006 reached approximately 1.74 billion USD (Tung Le, 2007).

The early 2000s witnessed a significant transformation in the IT industry in Vietnam, driven by the increasing demands of the growing economy. During this period, global IT software and hardware vendors such as IBM and Oracle recognized the need to provide industry-specific solutions that local firms were unable to deliver to meet these new requirements. This shift resulted in a broader spectrum of services, extending beyond hardware and software to encompass IT services.

These global IT companies adapted to the emerging market's low-cost structure by establishing a cost-effective business model for delivering IT services. They engaged in collaborations with local partners to provide these services to clients. In this collaborative model, the global companies assumed the upstream responsibilities, focusing on process and system design, while local partners handled the downstream aspects, including training, implementation, and support within the value chain.

This approach allowed the global companies to achieve higher profit margins, compensating for their substantial resources and research and development expenses. Furthermore, these collaborations with local firms enabled them to leverage the established relationships that local firms had with clients, especially those in the public sector. Simultaneously, the global firms gained valuable insights into local knowledge, including local requirements and business culture, through their partnerships with local firms. This strategic approach contributed to their success in the Vietnamese IT market during this period.

Prominent local IT companies in Vietnam, including FPT, CMC, HiPT, and others, entered the industry later but with ambitious goals to expand globally. They recognized that collaboration

with global companies offered valuable opportunities to enhance their project management capabilities, industry-specific business knowledge, technical expertise, and consulting skills. Concurrently, these local companies made investments in internal training, research, and development to bolster their resource capacity and close the gap with global competitors.

The combined efforts of internal and external learning processes significantly contributed to the enhancement of the resource capacity of these local IT companies. This proactive approach allowed them to grow and compete effectively on a global scale.

Over time, both global and local partners engaged in a reciprocal learning process, benefiting from each other's knowledge and expertise. They continued to pursue their own paths of learning and innovation to maintain their competitive edge and bargaining power in the industry.

Global software and hardware vendors maintained their core businesses of selling hardware or cloud services and software. Concurrently, they collaborated with local firms to provide premium IT services for significant IT investment projects in sectors such as public, banking, telecom, and oil and gas. Local firms, on the other hand, did not substantially develop their own software and hardware products for large clients. Instead, they continued to serve as distributors for global vendors' software and hardware while offering implementation, training, and support services for major projects where global vendors designed solutions and managed projects.

This collaboration between global vendors and local IT service firms has endured for over two decades, with both entities coexisting and evolving together within the industry. (IDC: The premier global market intelligence company, 2017, 2018, 2019, 2020).

PART VI: RESEARCH METHODOLOGIES

1. EPISTEMOLOGICAL APPROACHES

In this part, I am going to present key philosophy understandings in social research. The two main understandings are ontology – what is the nature of social world and epistemology – how we can learn about the social world. For each understanding, there are different schools of thought. And after presenting the schools of thought, I will explain the approach applied in this thesis.

1.1 Ontology

Ontology is concerned with the nature of reality and what there is to know about the world. The first key question of ontology is whether a social reality exists independent of human conceptions and interpretations. And the second ontological question is if there is a unique common social reality or multiple and context-specific ones (Ritchie, Lewis, McNaughton Nicholls, & Ormston, 2014) . There are two schools of thought to answer to the ontological questions: realism and idealism.

1.1.1 Realism

Realism school thinks that there is an external reality which exists independent of our beliefs and understandings. More particularly, this school considers that there is a distinction between the real world and the world interpreted by people.

1.1.2 Idealism

In contrast with the realism school, idealism people assert that reality is socially constructed by human minds. There is no independent social world which exists separately from the meanings given by people.

1.2 Epistemology

Epistemology concerns the ways to learn and acquire knowledge. It focus on issues such as how we can learn about reality and what forms the basis of our knowledge (Ritchie et al., 2014) . There are different ways of best acquiring knowledge:

1.2.1 Induction

Induction is the way to generalize knowledge, theories based on observation, data. The method is a bottom-up process.

1.2.2 Deduction

In contrast, deduction is a top-down process. It starts with theories to build hypotheses and the hypotheses are tested using collected data.

However, (Blaikie, 2007) , among others, argues that there is no research purely inductive or deductive. Inductive researchers need deduction based on previous works to build questions and analytical categories. After that, they can interpret data and generalize the findings to create theories. Inductive researchers could not build research with a blank mind. Blaikie introduced two further research strategies which are abduction and retroduction.

1.2.3 Abduction

Abduction involves analyzing data which fall outside the initial framework (S. B. Meyer & Lunnay, 2013). Abduction is a process of two levels of concepts (S. B. Meyer & Lunnay, 2013; Ritchie et al., 2014) . The first-order concepts are based on the activities, ideas or beliefs and categories of research participants. And the second-order concepts are categorized based on the knowledge and interpretation of researchers from the data and categories provided in the first-order concepts. The data analytical process is the same as the method of (Gioia, Corley, & Hamilton, 2013) . Abductive process allows to broaden existing initial theories the research is

built on. Abductive inference discovers particular circumstances and structures of empirical data which are not general and universal like in the initial theories (S. B. Meyer & Lunnay, 2013).

1.2.4 Retroduction

Retroduction logic involves to identifying the structures and mechanisms that may have produced patterns in the data (Blaikie, 2007) . The process includes technics such as counterfactual thinking, social and thought experiments, pathological circumstance, and comparisons of different cases (S. B. Meyer & Lunnay, 2013) . The technics help to reveal conditions or circumstances under which something (a concept) cannot happens (S. B. Meyer & Lunnay, 2013).

1.3 Positivism and Interpretivism

1.3.1 Positivism

The positivist school of thought believes that knowledge of the world is produced through testing hypotheses derived from scientific theories and evaluating them against observations. Reality is considered to be unaffected by the research process and the perspectives of researchers. In this way, reality can be known accurately or approximately(S. B. Meyer & Lunnay, 2013).

1.3.2 Interpretivism

The interpretivism school of thought considers that knowledge is constructed based on the meanings and interpretations of both research participants and researchers. Reality is seen as being influenced by the research process and the values of researchers. Purely objective research is considered impossible to achieve, as social reality cannot be captured accurately due to its dependence on the perceptions and understandings of researchers (S. B. Meyer & Lunnay, 2013).

1.4 Approaches applied in this thesis

1.4.1 Realism and Interpretation

I think that the social world exists independently. Researchers attempt to find various ways to understand it. The methods for uncovering reality may involve deriving theories, observing, interpreting, or constructing. In these approaches, the resulting reality or research outcome could be influenced by the research process, knowledge, and the researchers' perceptions.

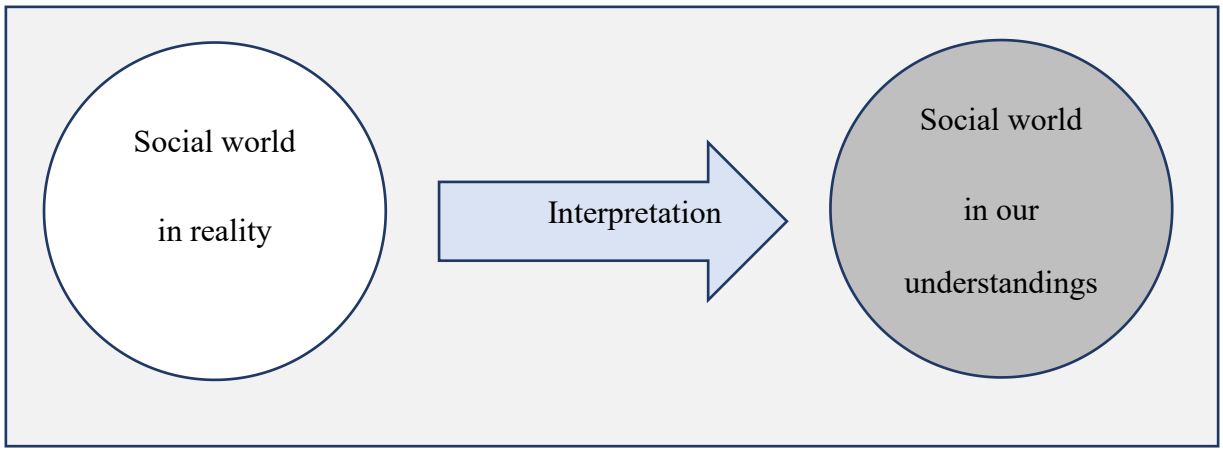


Figure 24: Realism and Interpretation

1.4.2 Deduction, Induction, Abduction, and Retroduction

To minimize bias and achieve a more comprehensive understanding of reality, I have chosen to employ a combination of different research approaches: deduction, induction, abduction, and retroduction. My research process consists of four stages: research design, data collection, data analysis, and research synthesis.

In the research design stage, I begin by observing social phenomena in daily life and reviewing existing literature. This deductive process allows me to identify research gaps, build a theoretical framework or hypotheses, and establish a plan for collecting data.

During the data collection phase, I aim to gather diverse data that accurately reflects the reality being studied. This may involve collecting secondary data or conducting semi-open interviews in qualitative research, allowing interviewees to freely express their perspectives in their own language.

In the data analysis phase, I adopt an inductive approach that allows the data to guide the interpretation process. The concepts and categories derived from research participants in qualitative research or preliminary results in quantitative research serve as the basis for further analysis.

Next, I draw upon the knowledge and related theories I have acquired from the existing literature to conceptualize, categorize, and identify causal relationships among the concepts. During this second step, any disparities between the observed reality and the initial theoretical framework become apparent through abductive reasoning.

In the final step of research synthesis, I aim to explain the disparities between the observed reality and the initial theoretical framework. To achieve this, I utilize techniques from a retroductive approach, which helps identify new factors or drivers that are essential conditions for the observed concepts or phenomena to occur. This final step allows for the confirmation or refinement of the initial framework to more accurately reflect the reality under study.

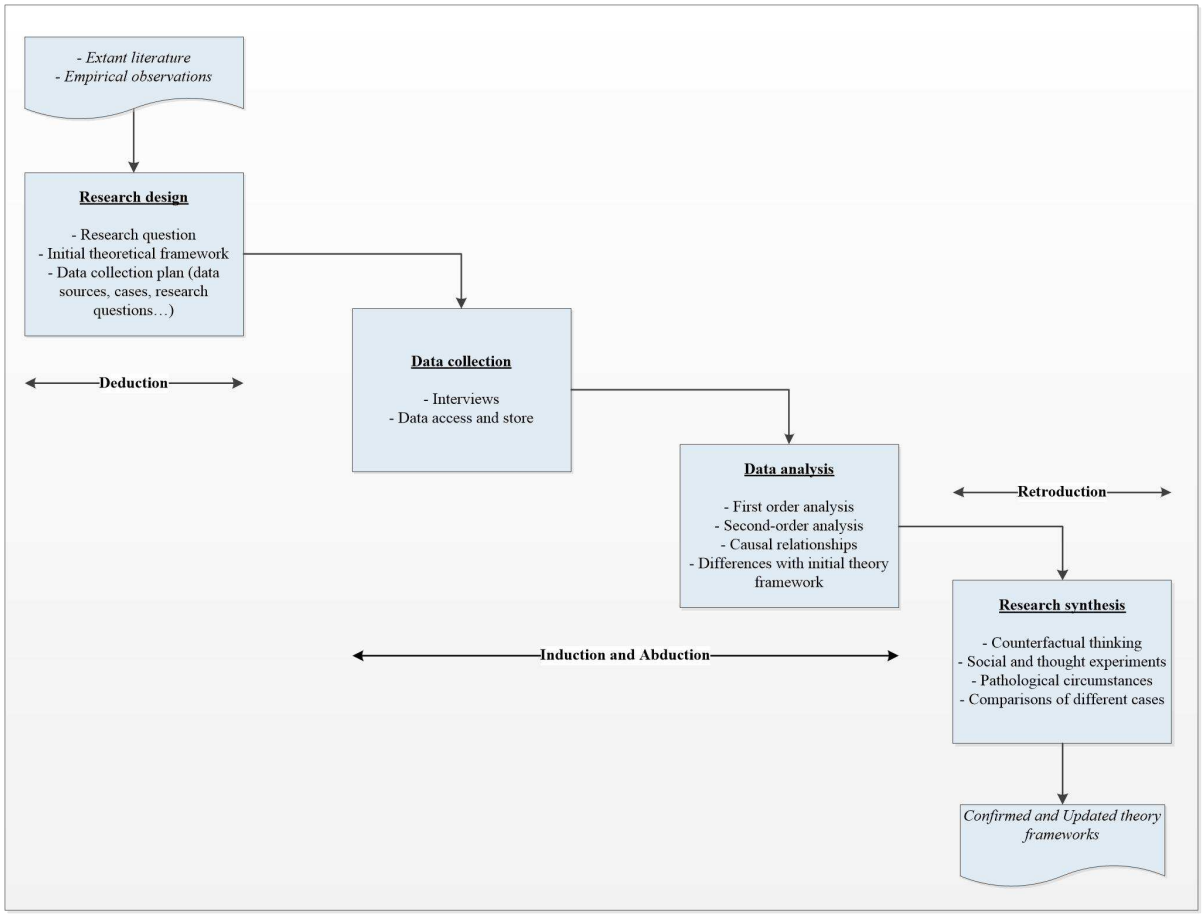


Figure 25: Research Approaches

1.4.3 Reflexivity and Rigour

I maintain a high level of neutrality throughout the data collection, interpretation, and presentation phases of my research. In my view, research rigor is achieved by meticulously designing and conducting the research process, relying on well-established and reliable evidence to support the findings. This commitment to a rigorous approach helps ensure the quality and credibility of the research outcomes.

2. CASE STUDY METHOD

To address the research questions, the case study research method will be utilized. An exploratory-explanatory case study method has been chosen, as recommended by Yin (2014),

who suggests that a case study is a suitable approach for developing theories that explain how and why phenomena occur. In the context of this thesis, the research questions primarily seek explanations for the relationships between knowledge sharing and protection mechanisms and the consequences of knowledge transfer through international alliances, with interpersonal knowledge transfer playing a mediating role. Therefore, the case study method is the most appropriate choice.

In this section, I will outline the case study design, data collection methods, and data analysis techniques employed in this research. These strategies and techniques are informed by the case study guidance provided by Yin (2014).

2.1 Case study designs and case selections

Considering the research questions and the relevant theoretical frameworks, we have identified the units of analysis. Given that the research questions are interrelated in a sequential manner, where the outcome of one question serves as input for the subsequent question, the research designs for all three research questions are inherently interconnected.

Research question	Theoretical framework	Unit of analysis
Question 1: In what ways do formal and informal sharing and protection mechanisms influence knowledge transfer at interpersonal level?	Social Exchange Theory (Blau, 1964). Social Exchange Theory of Emotions (Lawler & Thye, 2006). Self-Determination theory (Intrinsic and Extrinsic motivations) (Minbaeva et al., 2012; Ryan & Deci, 2000).	An interpersonal knowledge transfer in teams of between employees of the MNCs and local firms within the alliance chosen in unit of analysis of question 3

Research question	Theoretical framework	Unit of analysis
	Interpersonal learning model (Minbaeva, 2007; Myers, 2018). Framework of control mechanisms (Malmi & Brown, 2008). Task interdependence and knowledge transfer (Wageman, 1995). Team building (Klein et al., 2009; Payne, 2001), leader and member exchange (Graen & Uhl-Bien, 1995; Wayne et al., 1997) and knowledge transfer. Institution-Based view (DiMaggio & Powell, 1983; North, 1991; Peng et al., 2009; Scott, 2014).	
Question 2: How does selective knowledge transfer at interpersonal level aggregate to knowledge transfer at organizational level?	Organizational learning theories (Crossan et al., 1999; Inkpen & Crossan, 1995; Nonaka, 1994). Managerial support, organization culture and knowledge transfer (Connelly & Kevin Kelloway, 2003;	A learning firm which contains the interpersonal relation of knowledge transfer chosen in question 1 and belongs to the alliance chosen in question 3.

Research question	Theoretical framework	Unit of analysis
	Kim & Lee, 2006; Lee et al., 2008) Organizational communication and information systems (Cohen & Levinthal, 1990; Hamel, 1991; Kim & Lee, 2006) Dual institutionality (Kostova & Roth, 2002)	
Question 3: How do relative cooperative, competitive, and coopetitive positions of MNCs and local firms change after selective knowledge transfer in the collaboration between them?	Resource-Based View (Barney, 1991; Wernerfelt, 1984) Competitor analysis and dynamics (Bergen & Peteraf, 2002; Chen, 1996; Peteraf & Bergen, 2003). Resource Dependency (Casciaro & Piskorski, 2005; Emerson, 1962; Pfeffer & Salancik, 2003). Institution-Based View (DiMaggio & Powell, 1983; North, 1991; Peng et al., 2009; Scott, 2014). Industry-Based View (Porter, 1980, 2008).	An alliance of knowledge transfer between MNCs and local firms in Vietnam

Table 7: Summary of Research questions, Based theories, and Unit of analysis

Why to choose Vietnam and IT industry?

Vietnam is a fast-growing EM in ASEAN-5, attracting substantial FDI from advanced countries. It has become a 'China plus one' destination for foreign investors looking to diversify (Vietnam Briefing News, 2020) . Despite its rapid growth, Vietnam, as a developing country, still faces challenges related to technology and management capabilities. Consequently, the country aims to attract FDI, along with the associated knowledge and innovation transfer, to fuel economic development.

As part of their collaborations with local companies, which take various forms such as supply agreements or joint ventures, advanced economy MNCs inevitably transfer knowledge and innovation to their local partners (Liu & Zhang, 2014) . While MNCs often employ diverse protocols and Non-Disclosure Agreements to safeguard their knowledge, knowledge leakage remains a common issue. This leakage encompasses both explicit and tacit knowledge (Nonaka, 1994) and occurs through various means, whether voluntarily or involuntarily. Weak intellectual property protection and enforcement in EMs, including Vietnam, exacerbate the challenges MNCs face in managing and balancing knowledge transfer and protection simultaneously through various modes, either voluntarily or involuntarily.

Due to the scarcity of studies on the management of knowledge transfer and protection in the international business context, particularly within the EM context of Vietnam, an explorative-explanatory qualitative case study of Vietnam is appropriate to address these research gaps (Yin, 2014). While Vietnam shares common characteristics with other emerging economies, it differs significantly from countries like India and China in terms of its economic development status, national innovation system, and government intervention in economic activities, as discussed in

the previous section that presented a comparison of Vietnam's economy and institutions with other countries.

This case study on knowledge transfer in Vietnam represents empirical research aims at examining how various factors, including economic and institutional factors, impact the knowledge transfer process and outcomes. It also involves comparing these effects with available cases of knowledge transfer in China and India. Furthermore, studying the case of Vietnam provides an opportunity to generalize the findings to other countries in the group of low-middle-income countries, as Vietnam has recently held a leading position in the Global Innovation Index ranking among low-middle-income countries (Ministry of Science and Technology, 2021).

The IT industry is highly knowledge-intensive, as discussed in the previous section. It is characterized by rapid innovation and short product life cycles. Additionally, a significant portion of the knowledge within this industry is tacit in nature. These distinctive features set the IT industry apart from other sectors.

This research context provides an opportunity to examine how industry-specific factors influence the knowledge transfer process and its outcomes. This objective aligns with the focus of research question 3.

Case study designs

The research design involves a single longitudinal case with multiple embedded units of analysis. The cases will be presented in a structured manner, starting with the broader context at the country and industry levels before delving into the specific cases of partnerships, knowledge

transfer project, interpersonal knowledge transfer, and the tranformation of individual knowledge into organizational knowledge. This presentation order provides the audience with essential background information before delving into the details. It's worth noting that this order is inverted compared to the sequence of the three research questions, which address the research topic from the lowest to the highest level.

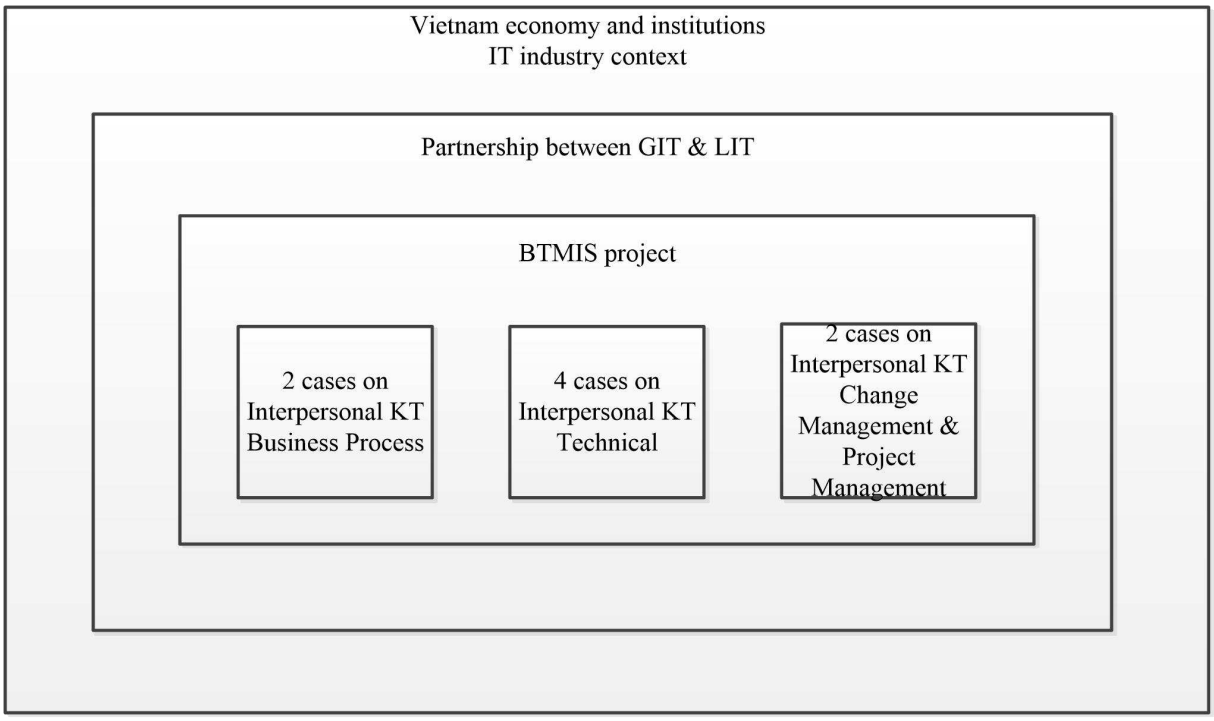


Figure 26: Longitudinal Partnership Case with a Milestone of Knowledge Transfer Project and Eight Embedded Cases of Interpersonal Knowledge Transfer

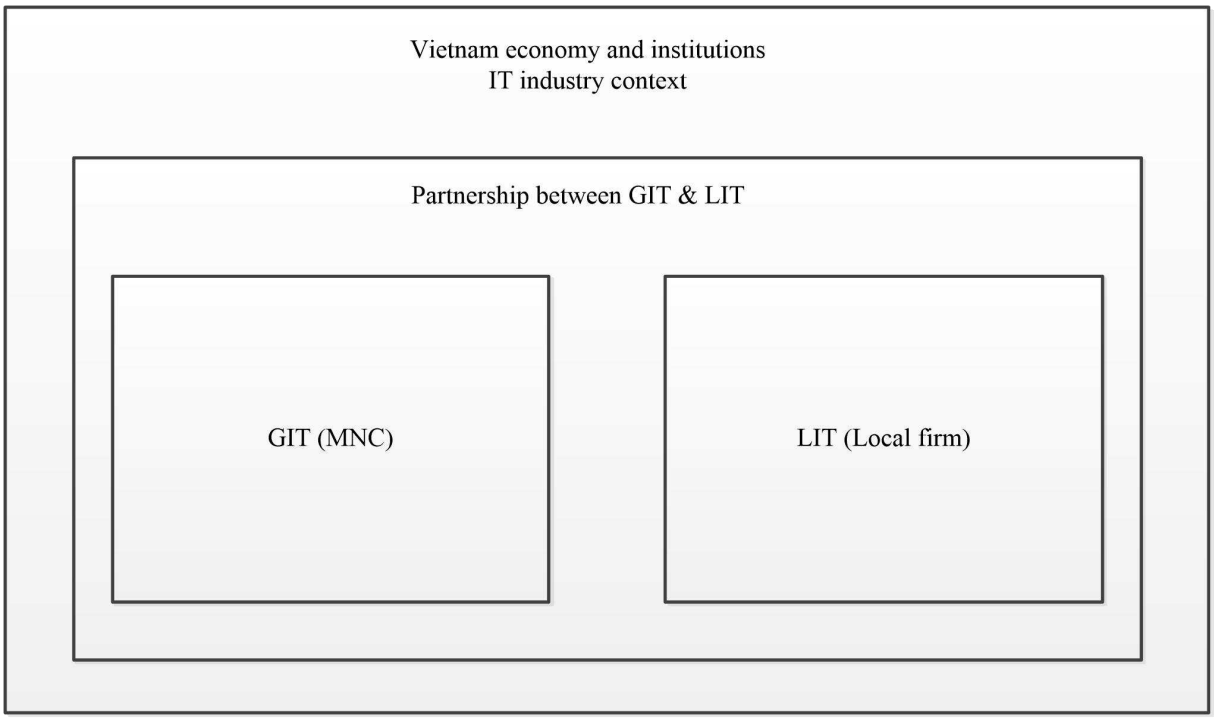


Figure 27: Two Embedded Cases of the Aggregation from Individual to Organizational Knowledge

Below are the details of the case designs.

2.1.1 A longitudinal partnership between a MNC and a local firm in IT industry in Vietnam and their collaboration knowledge transfer project

For research question 3, a comprehensive longitudinal case study will be conducted on a partnership between a global MNC (referred to as GIT Co) and a local firm in the IT industry in Vietnam (referred to as LIT Co). The primary focus of this longitudinal case study will be the largest collaborative project between GIT Co and LIT Co, which is identified as a significant knowledge transfer event. This event serves as a milestone for examining the subsequent changes in the dynamics of cooperation, competition, and coopetition between GIT Co and LIT Co. To maintain confidentiality, the collaboration project will be referred to as BTMIS.

2.1.2 Eight embedded cases of interpersonal knowledge transfer within the collaboration project

For research question 1, which pertains to interpersonal knowledge transfer, eight embedded cases will be examined, each corresponding to a typical interpersonal knowledge transfer sample occurring within the BTMIS project. These cases will encompass interpersonal knowledge transfer team members and team leaders in each of the eight teams across Business Process, Technical, Change Management, and Project Management Office workstreams. The selection of these eight cases is based on differences in joint task structure, team relationship, and individuals involved, enabling us to assess the impact of each factor on the interpersonal knowledge transfer process and its outcomes. Additionally, this approach facilitates the analysis and synthesis of findings across the eight cases. The primary focus is on understanding the driving factors, control mechanisms and outcome of interpersonal knowledge transfer between an employee from the MNC and an employee from the local firm within the collaborative context of the BTMIS project.

2.1.3 Two embedded cases of the transformation of individual knowledge to organizational knowledge in the MNC and the local firm

To comprehensively understand the outcomes of the knowledge transfer process between the MNC and the local firm for research question 2, it is essential to address the process of aggregating individual knowledge into organizational knowledge. To understand the process of aggregating individual knowledge into organizational knowledge, two parallel cases, one focusing on the MNC and the other on the local firm, will be thoroughly investigated. These two cases will illuminate the mechanisms employed by both companies to effectively convert the knowledge acquired by their individual employees into organizational knowledge. The use of multiple cases is considered a more compelling and robust approach (Yin, 2014).

2.2 Data collection

The collected data comprises both primary and secondary data sources. Notably, the researcher actively participated in the partnership between GIT Co and LIT Co. She served as an employee of LIT Co before the initiation of the BTMIS knowledge transfer project and subsequently joined GIT Co in the middle of roll out phase. This unique perspective affords the researcher the opportunity to observe, gather, and analyze sensitive data spanning individual, team, project, partnership, and organizational levels both before and after the knowledge transfer project.

In terms of primary data, a total of 56 semi-structured interviews were conducted. A research protocol was developed, along with a set of semi-structured questions, to systematically collect first-hand interview data from a diverse group of experts in the Vietnam IT industry, as well as individuals in leadership roles, project directors, project work stream leaders, working group leaders, and project team members representing the three partnering entities: LIT Co, GIT Co, and SOFT Co.

The interviews covered a wide range of topics, including the drivers of the Vietnam IT market, the key players and their relationships, the strategies of the three companies involved, details about the partnership, the project's context, organizational structure, and specific project activities. Additionally, the questions delved into the mechanisms used to protect and share knowledge, their effectiveness, and how these mechanisms influenced interpersonal knowledge transfer and its outcomes.

The interviewees were selected from different teams involved in the project to provide a comprehensive understanding of the perspectives, motivations, and behaviors of individuals from all three partner companies. This approach allowed for a more holistic view of the various technical and skill sets involved in an IT project.

To understand the process of integrating individual knowledge into organizational knowledge, interviews were conducted with individuals who participated in the knowledge transfer project, as well as CEOs and managers from both GIT Co and LIT Co to gain insights into the mechanisms employed by each company for knowledge aggregation.

Questions about the consequences of knowledge transfer were addressed by project team leaders, project managers, and CEOs from both GIT Co and LIT Co.

All interviews were recorded, transcribed, and securely stored in the case study database for further analysis.

The secondary data collected for this study encompass various aspects of Vietnam's economic development, education, national innovation, legal system, and national culture, which were compared with other countries. This information, highlighting economic, institutional, and cultural gaps, was sourced from technical reports from organizations like the World Bank, IMF, and the Ministry of Planning and Investment of Vietnam, as well as newspapers and previous research papers.

Data related to IT investments, market demands, and market players in Vietnam were extracted from reports such as Vietnam's Global Information Technology reports from the Ho Chi Minh City IT Association, annual rankings of top ICT companies from the Vietnam Software and IT Services Association (VINASA), and ICT whitepapers from the Ministry of Information and Communication.

Furthermore, reports on the ERP industry, global, regional, and country IT services markets from organizations like IDC and Gartner were consulted to gain insights into market size and the competitive positions of each partner at the global, regional, and country levels.

As the involved companies were public entities, published annual reports spanning from 2000 to 2022, which summarized information on their business activities, strategies, alliances, competitors, research and development, training, and knowledge management, were also collected.

Additionally, documents related to the collaboration project, including project plans, meeting minutes, and all project deliverables like technical and functional designs, training materials, were gathered to provide further details of the project and for triangulation purposes.

Below is the summary of data sources.

Data type	**Data source**
Vietnam in comparison with other countries: Economy Institutions (Education, Innovation, Legal systems)	World Bank Group IMF WIPO World Economic Forum Ministry of Planning and investment of Vietnam Newspapers and economics research papers
Vietnam IT market: Market development and key drivers including demands and spendings on IT Key players, their market share, trends,	Vietnam on the Global information technology of Hochiminh City IT association from the year 2005 to 2022 Annual top ICT companies of Vietnam Software and IT Services association

Data type	Data source
big projects, and relations between key players	(VINASA) from the year 2005 to 2022 ICT white books of Ministry of Information and communication from the year 2005 to 2022 Global, regional, and country IT Services market reports from IDC and Gartner from the year 2005 to 2022 Newspapers Interviews with industry experts in Vietnam
Companies (business activities and strategies; alliances and competitors; research, development, training, and knowledge management) and the partnership	Interviews with CEOs and employees related to the partnership. Annual audited reports from the year 2005 to 2022
BTMIS project (project, team, individual levels)	Project documents: project plans, meeting minutes and all project deliverables such as technical and functional designs, training materials Interviews with project directors, project managers, workstream leaders, team leaders,

Data type	Data source
	team members across the project

Table 8: Data Collection Sources

The interviews were conducted in two phases. The first phase took place in July and August 2019, while the second phase, aimed at confirming the findings after analysis, was conducted in 2020. Some additional interviews were carried out in 2023 in conjunction with the data analysis process. Here is the list of interviewees.

Company	Interviewees	Number of Interviews
Industry experts (8)	Other IT MNCs' technical and sales managers	3
	IT local firms' managers	4
	Partner -lawyer of an intellectual protection firm	1
GIT Co (20)	Country General Manager (CEO)	1
	Sales executives and partnership management	3
	Southeast Asia Regional/Country Consulting Practice Manager (Former Project Director)	1
	Project Manager	1
	Workstream Leaders	2
	Team Leaders	3
	Team Members	9
SOFT Co	Southeast Asia Regional/Country Consulting Practice Manager (Former Project Workstream	1

Company	Interviewees	Number of Interviews
(7)	Leader)	
	Team Leaders	2
	Team Members	4
LIT Co (21)	General Manager (Former Project Director)	1
	Deputy General Managers	2
	Deputy Director of LIT ERP	1
	Project Manager	1
	Workstream Leaders	5
	Team Leaders	7
	Team Members	6

Table 9: List of Interviews

2.3 Data analysis

Based on the guidance of data analysis from Yin (2014) and the researcher's analytical skills, the research has formulated a data analysis strategy as follows.

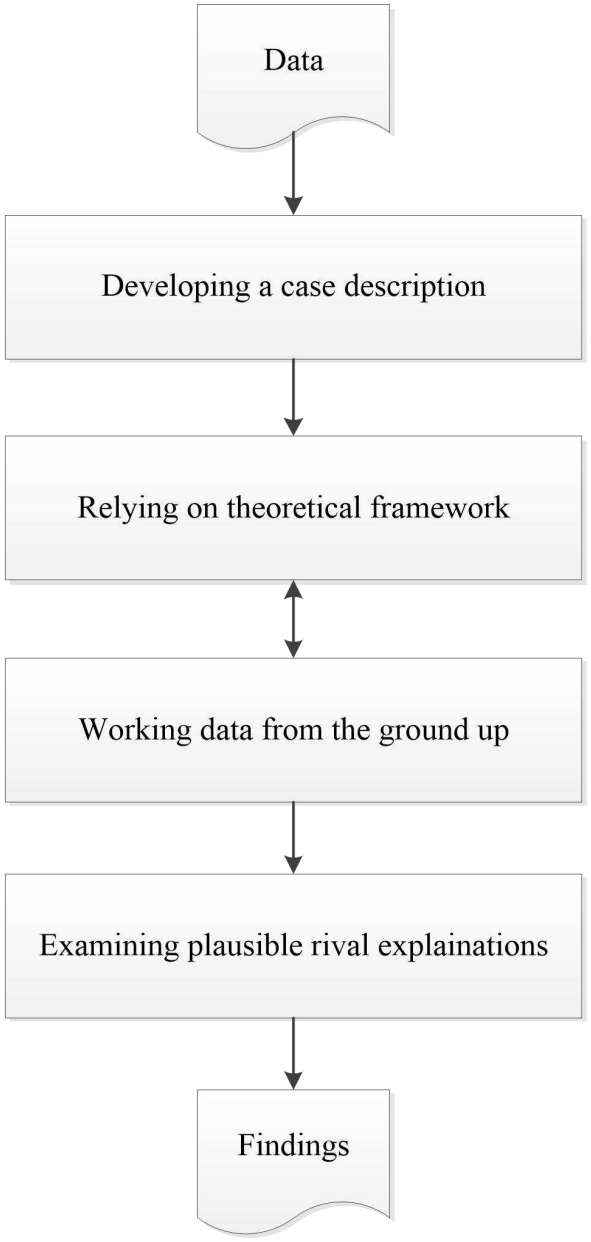


Figure 28: Data Analysis Strategy

First, the primary and secondary data were reviewed, and efforts were made to reconcile the primary and secondary data to gain a deeper and more accurate understanding of the research content. In cases where inconsistencies arose between the interviews that led to a misunderstanding of the content, the author engaged in short communications with the relevant interviewees through email, chat, or calls to seek clarification. Afterward, the case descriptions

were developed. Essentially, the author captured the facts of the case by accurately documenting the contents without personal interpretation. This step also served to summarize and recollect all the details of the cases obtained from the data.

Secondly, the author examined the research questions one by one, guided by the theoretical framework that implied propositions or answers to each research question. In this step, she utilized analytical techniques such as pattern matching and chronological event analysis. She delved into the case database to uncover evidence that reflected the patterns of the phenomenon outlined by the theoretical framework. Additionally, events and developments within the partnership and project were organized along a timeline to discern relationships between factors and outcomes.

Thirdly, the researcher adopted a grounded theory building approach, as outlined in the work of (Gioia et al., 2013) and (Mees-Buss, Welch, & Piekkari, 2020). This approach was employed to reduce subjectivity and ensure rigor in the process of theory development based on case studies. The author manually coded the data using an Excel spreadsheet. She thoroughly reviewed the entire set of interviews and secondary data multiple times to construct a preliminary coding structure that encompassed all categories of the collected data. Subsequently, she systematically copied and pasted each sentence of the interviews into the appropriate category within the preliminary coding structure. This preliminary code structure was continually refined and updated throughout the coding process. Additional categories were introduced to accommodate data that did not fit within existing categories, and adjustments were made through the merging and splitting of categories to create a more coherent data structure. The research findings and propositions were then derived from the coding results, with an emphasis on data-driven conclusions.

Once the coding process was independently conducted by the PhD candidate, a final stage of triangulation was undertaken. This triangulation involved comparing the propositions derived from two distinct approaches: the theoretical framework-based approach and the data-grounded approach. Any inconsistencies or discrepancies between the two sets of propositions prompted a detailed review of the underlying data to arrive at a consistent outcome. This iterative process was repeated numerous times as explanations were developed. Additionally, the empirical findings and propositions were subjected to comparison with contrasting or alternative explanations. Ultimately, the findings and propositions were substantiated and validated through supporting data.

Furthermore, triangulation extended to the interaction between the PhD candidate and her two supervisors. The supervisors thoroughly examined the data, reviewed the research outcomes, and engaged in critical discussions with the PhD candidate to challenge and refine the research results. The PhD candidate substantiated the research findings with supporting evidence during this process of validation with her supervisors.

The coding followed both the previous theoretical background and interview results. Below is the coding structure:

Question 1: Interpersonal knowledge transfer

Mechanism	Factor category	Factor	Process	Outcome
Formal mechanisms	Selective revealing design	Collaboration scope	Knowledge exchange interactions	Changes in individual knowledge
		Joint task		

Mechanism	Factor category	Factor	Process	Outcome
		structure		
Informal mechanisms	Team building	Team relation		
	Leader member exchange			
Sender' s characteristics	Host country market	Knowledge stock		
	Individual perceptions on knowledge sharing and protection	Openness		
	Collectivism culture			
Receiver' s characteristics	Absorbability	Technical and Management knowledge		
		English communication skill		

Table 10: Coding Structure (Research Question 1)

Question 2: Individual knowledge to organizational knowledge

GIT/LIT Co	Factor	Process	Outcome
LIT Co	Management supports and organizational knowledge sharing culture. Knowledge sharing systems Institutional duality	Individual interpreting	Organizational knowledge
		Group integrating	
		Organization institutionalizing	
GIT Co	Institutional duality	Organization institutionalizing	

Table 11: Coding Structure (Research Question 2)

Question 3: Relative competitive, cooperative, and coopetitive positions

Factor	Resource	Relative positions
Short innovation cycle National innovation system	Resource endowment	Comparative
		Cooperative
		Coopetitive

Table 12: Coding Structure (Research Question 3)

PART VII: EMPERICAL FINDINGS

1. THE LONG-TERM PARTNERSHIP BETWEEN GIT CO AND LIT CO AND THEIR COLLABORATION KNOWLEDGE TRANSFER PROJECT

1.1 The partnership between GIT Co and LIT Co before the knowledge transfer project

In this research, a partnership between a global MNC and one of the largest IT companies in Vietnam is examined to understand the consequences of knowledge transfer between them.

GIT Co is a leader in the IT industry with a long history of innovation and technology development. The company's business segments include hardware, software, and IT services. GIT Co's head office is located in the United States, and they have subsidiaries across different continents. GIT Co entered the Vietnamese market in the 1990s. Initially, their businesses in Vietnam focused on selling servers, operating systems, storage solutions, and collaboration software. The subsidiary in Vietnam operates under the management of the Southeast regional office located in Singapore.

LIT Co, on the other hand, is a relatively young but the largest Vietnamese IT company. The company was established in the late 1980s during the period when Vietnam's economy began undergoing significant changes and opening up to the world. LIT Co was originally founded by thirteen scientists who worked in a government research institute. Initially, the company operated as a state-owned enterprise with close ties to governmental organizations and officials. Over time, LIT Co experienced rapid growth and eventually became a publicly listed holding company on the Vietnam stock exchange. While they are involved in distributing telecommunications goods and services, their primary business revolves around providing IT services. LIT Co has also developed software to cater to the domestic market. While they do have some software to meet

domestic demands, a significant portion of their software development services are outsourced to major IT companies in Japan and the United States. In the domestic market, their main business involves implementing IT systems, including hardware and software, which are produced and developed by LIT Co's global partners.

The partnership between GIT Co and LIT Co dates back to the early 1990s and is built on resource complementarity. GIT Co offers hardware and software solutions, while LIT Co boasts low-cost human resources and strong client relationships but lacks software and hardware offerings. As a system integrator responsible for implementing IT systems for clients, LIT Co directly sells GIT Co's servers, storage solutions, and software to its clients. LIT Co plays a crucial role as a strategic partner for GIT Co in Vietnam, acting as a bridge or an extended arm to introduce GIT Co's products and services to the local market. LIT Co has been involved in core IT projects that have contributed to the development of Vietnam's economy in collaboration with GIT Co.

Discussing the relationship between GIT Co and LIT Co, the General Manager of GIT Co's Vietnam subsidiary stated that:

> *"Since the inception of LIT Co, GIT Co has made a lasting impression on them. LIT Co and GIT Co have been steadfast companions in all core banking system solutions, starting with the first significant projects in Vietnam's IT industry in the early 1990s. From selling personal computers to large-scale IT solutions, LIT Co has consistently partnered with GIT Co."*

LIT Co's primary role in its relationship with GIT Co is that of a distributor, responsible for bringing GIT's products to clients. In terms of IT services, GIT Co typically engages directly with clients to prevent the sharing of knowledge with LIT Co:

> *"In essence, GIT Co views LIT Co primarily as a distributor, likening their role to that of a "box mover." While LIT Co handles the distribution of GIT's hardware servers to clients, other services, particularly those related to larger IT systems, are managed directly by GIT Co. GIT Co's business model does not typically involve working with partners for IT services; instead, it focuses on hardware and software. GIT Co does operate some authorized service centers at LIT Co, primarily for personal computer maintenance. However, all hardware server maintenance and technical services are conducted exclusively by GIT Co and are not shared with LIT Co."* (General Manager of GIT Co Vietnam subsidiary).

1.2 BTMIS project as a milestone to transfer knowledge in IT services between GIT Co and LIT Co

1.2.1 Project context, timeline and functions

A collaboration project between GIT Co and LIT Co in Vietnam serves as a key milestone for knowledge transfer in IT services between the two companies.

In the early 2000s, the Ministry of Finance of Vietnam was implementing the Public Finance Management Reform Program. They secured substantial loans from the World Bank and other donors to enhance governmental accountability and transparency. The collaboration project between GIT Co and LIT Co represents the largest IT project in Vietnam to date. This project is a pivotal component of the Ministry of Finance of Vietnam's Public Finance Management

Reform Program, aimed at centralizing and standardizing fragmented state treasury and budgeting systems. For confidential reasons, this project is referred to as BTMIS.

This was a 10-year software implementation project designed to deliver a turnkey IT system. The project's bidding process commenced in April 2003. In 2005, the project was awarded to GIT Co as the primary contractor, in collaboration with the local subcontractor LIT Co and software package provider SOFT Co. The project progressed through various stages, including Bidding and Planning, Analyzing, Designing and Building, and Training, Rolling out, and Supporting. It was successfully completed in October 2013 after the nationwide rollout of the information system for budgeting and treasury management. Below is the project timeline (Figure 29: BTMIS Project Timeline).

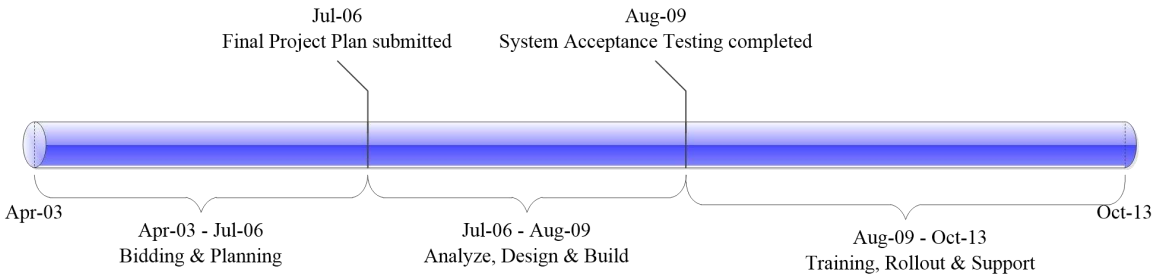


Figure 29: BTMIS Project Timeline

This IT system serves as a centralized platform that caters to over 1500 treasury offices, financial agencies, and ministerial agencies across all four levels of government, with a user base exceeding 10,000 individuals. The system is responsible for executing and reporting on budget allocation and spending transactions for 65,000 governmental spending units funded by the Vietnam state budget. Apart from the complex technical aspects associated with such a large-scale IT system, the project's considerable challenges stem from the need to redesign business

processes and transform the working structure and business practices of government users (Refer to Figure 30: BTMIS Project Work).

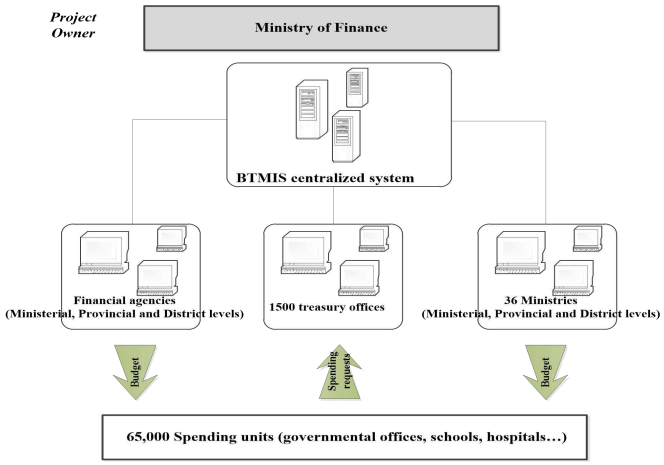


Figure 30: BTMIS Project Work

1.2.2 Resource complementary and knowledge transfer among the partners

Before embarking on the BTMIS project, GIT Co did not have an established IT Services business in Vietnam, which meant they lacked the necessary local human resources and knowledge regarding budget and treasury business practices, as well as the working culture in Vietnam. The GIT Co Project Director explained the motivations behind collaborating with LIT Co on the BTMIS project:

> *"Doing projects needs many levels. We need expertise, we need to understand the culture as well, the local culture, how people work, what is the way of making decisions. We need people to understand there. LIT Co is a local player. They have been doing projects at the local level. So, they should understand how they give advice to international players, how they should*

tailor the method more acceptable locally. That was why we went with LIT Co."

Collaborating with LIT Co not only helped address issues related to local culture and business practices but also made the project more cost-effective for the local client. The cost aspect was elaborated in an interview with GIT Co's Business Process Workstream leader, who emphasized that involving local resources contributed to cost savings:

"There were few things why we went for multi contractors. One of the key things was the cost saving. Second, it was the culture.

About cost, we have first tier, second tier, third tier companies. If you bundle all these first tier, second tier, third tier companies, the bundle rate will be very effective. The rate can be matched with the client's expectation." "Singapore is expensive, people rate is very high compared to Vietnam which is the developing country. They cannot afford the rate for all Singapore resources. But they need quality delivery. So, we mixed the first-tier company like GIT Co, the second tier like SOFT Co India or GIT Co India. Those had global experiences. SOFT Co also had international exposure. Then we went with the third tier, LIT Co could be in between the second and the third tier, we can say. But they knew the local culture, the way local people worked. They can synchronize and harmonize these three groups. It was a competitive model with the price to combine first, second and third tier. And they would not give up the quality of delivery."

For LIT Co, despite their prior experience in working with the Ministry of Finance and state treasuries' IT systems and personnel, they had never undertaken a project of such a large scale and high complexity, both in terms of technical solutions and change management. None of the three companies involved could have delivered this project on their own due to insufficient knowledge and resources. Regarding LIT Co's role and the reasons why they couldn't handle the project independently, GIT Co's BTMIS Project Manager commented:

> *"And if you look at LIT Co. The reason why we worked with LIT Co is that we knew that we had to manage the customer, language, and then in BTMIS project we had to roll out in so many provinces. And we cannot have so many people in Vietnam. Of course, we saw the reason why we worked with LIT Co. And of course, LIT Co saw the reason to work with us because they know that on their own, they cannot get this project. Because The World Bank was very clear that with this kind of project like this, such a big size… LIT would not be qualified."*

The collaborative effort between GIT Co and LIT Co in the BTMIS project highlights the importance of knowledge exchange and transfer in achieving project success (Refer to Figure 31: Value Chain Division Among Partners). By examining the knowledge transfer process in this project, we can gain insights into how both companies contributed to each other's knowledge stock and the resulting consequences of this knowledge transfer.

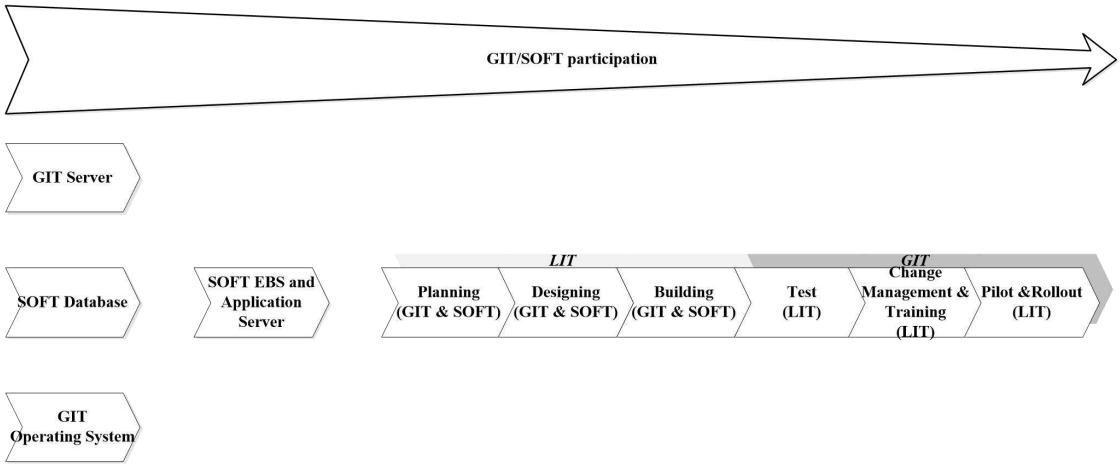


Figure 31: Value Chain Division Among Partners

In the BTMIS project, there was another subcontractor, referred to as SOFT Co, which provided ERP software packages. However, SOFT Co's role was primarily limited to providing software licenses, and there was not much knowledge transfer between SOFT Co and the other two partners, GIT Co and LIT Co. This observation was confirmed through interviews with GIT Project Director, GIT General Manager of Vietnam subsidiary, and LIT Project Manager, all of whom indicated that SOFT Co's role was primarily focused on providing software licenses rather than extensive knowledge transfer.

2. CONTROL MECHANISMS TO INTERPERSONAL KNOWLEDGE TRANSFER

In this section, we will explore the relationships between control mechanisms and interpersonal knowledge transfer, as outlined in the research model related to research question 1. We will delve into how various factors, including selective revealing scope and joint task structure, team building and leader-member exchange leadership, individual perceptions of knowledge sharing and protection, and economic and institutional mechanisms, influence the conditions that facilitate knowledge exchange. Additionally, we will examine how these factors impact the

motivations and characteristics of knowledge senders and receivers and drive their interpersonal interactions to facilitate knowledge transfer.

To investigate these relationships, we will analyze eight embedded cases that showcase both commonalities and differences in individuals and working conditions across different teams within the BTMIS project. The results presented below are derived from the synthesis of findings from these cases.

Team	Business Process workstream – Group I	Business Process workstream – Group II	Technical workstream – Infrastructure team	Technical workstream – Reporting team	Technical workstream – Enhancement team	Technical workstream – Interface team	Change Management workstream	Project Management Office
Functions	Designing business processes and business functional specifications in Budgeting, General Ledgers, and Fixed Assets Management.	Designing business processes and business functional specifications in Account Receivables, Purchase Order, and Account Payables Management.	Building and maintaining networks, servers, operating system, databases, applications, and client computers.	Coding and maintaining system operational reports based on designs and functional specifications given by Business Process Workstream	Coding and maintaining new system functions and processes based on designs and functional specifications given by Business Process Workstream	Coding and maintaining inbound and outbound interfaces between BTMIS system with other systems like Tax, Custom, Bank, Fiscal Planning… systems	Communicating changes, reorganizing the client's organization structure, and delivering training courses to users	Managing project plan, quality, resources, and budget

Table 13: The Embedded Cases of Interpersonal Knowledge Transfer

2.1 Formal and informal control mechanisms to conditions of individual actions

2.1.1 GIT Co's selective revealing, project collaboration scope, and team joint task interdependency

2.1.1.1 Selective revealing, collaboration scope, and project joint task structure

GIT Co employed a strategy of safeguarding its strategic knowledge by discreetly handling tasks that involved critical non-codified knowledge. For each project, the allocation of tasks between GIT Co and its partners was initially determined by the leaders within GIT Co's respective departments responsible for the project. In discussing strategies for safeguarding knowledge, GIT Co's Country General Manager highlighted the approaches taken by leaders in their various lines of service:

> *"The approach depended on each line of service... They were well aware of their position in the market. They recognized that certain business areas needed protection. With each proposal, it was necessary to carefully consider what tasks GIT Co needed to undertake and what tasks the local partners could handle."*

This approach allowed GIT Co to strategically allocate tasks in a manner that safeguarded their critical knowledge while leveraging the capabilities of their local partners when appropriate.

An employee in the Global Consulting Services department at GIT Co provided insights into the company's approach to protecting its knowledge in solutioning and project management. The GIT Co consultant explained:

> *"GIT Co focused on design and management, which were high-value-added components in the value chain. In this context, GIT Co provided the solution*

designs as outputs after GIT Co had completed the work. Partners were not privy to our design methodology. They only saw the final outputs, and they did not have insight into why the solutions were designed in that particular manner."

This approach allowed GIT Co to maintain control over its proprietary knowledge and methodologies while still delivering valuable solutions to its partners.

In the BTMIS project, GIT Co, as the main contractor, deliberately structured an integrated project model that involved the local firm across all workstreams of the project, fostering close collaboration between GIT Co consultants and their local counterparts (Refer to Figure 32: Integrated Project Structure). Simultaneously, GIT Co assumed a leading role in the solution design workstream (Business Process workstream) and placed their employees in managerial positions in other workstreams such as Technical, Testing, Change Management, and Implementation, to provide leadership in both technological and managerial aspects. GIT Co team leaders took responsibility for the primary, complex, and high-level solution designs, strategies, and plans, which demanded highly tacit and personal knowledge. Less complex tasks, such as detailed designs, communication, programming, training, and system rollout to local provinces, were delegated to employees of the local partner (Refer to Figure 33: Selective Revealing Task DesignFigure 33: Selective Revealing Task Design).

GIT Co shared only select codified information and document templates with their partners. Their standard practice involved GIT Co project team leaders selecting document templates from their knowledge management systems. They would then update and distribute only those document templates that were specifically relevant to the project at hand, rather than sharing all

the templates contained within their implementation methodology. When discussing these selective revealing policies, GIT Co's Business Process workstream leader commented:

> *"Before the project, we had gone through all the templates, which templates we should use, giving the ideas about the templates. ... If we had not given knowledge transfer about the methodology and templates then we could not have got things done by them (LIT Co). In order to facilitate, to get things done on time and with delivery quality, we had to share our templates, methodology even technology transfer. There was no issue. It was OK. We were not giving entire resources and technology transfer. Some parts of the components which were absolutely required for that service. What we shared was mainly industry specific for that client. No, it is not always applying those templates for all clients. Based on the global deliveries, we developed certain templates which we defined more specifically for the Ministry of Finance (the client). It does mean that we have given all templates or all methodologies of project management or solution methodology. We only shared with them what was specific to that client."*

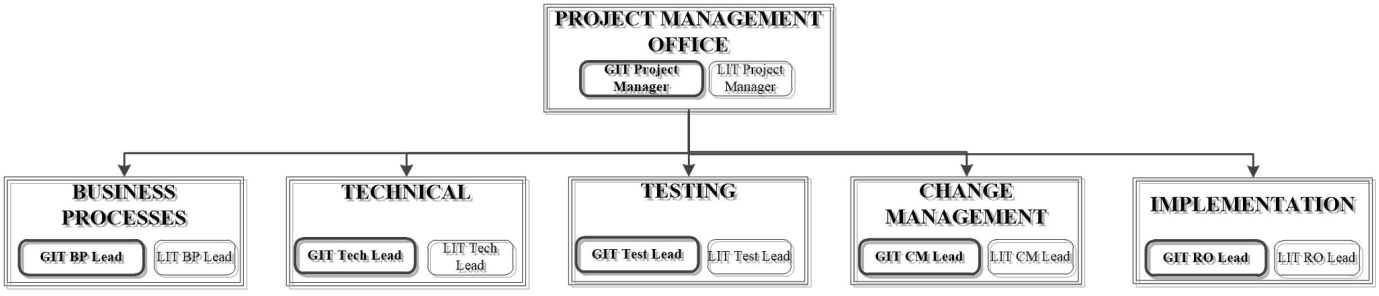


Figure 32: Integrated Project Structure

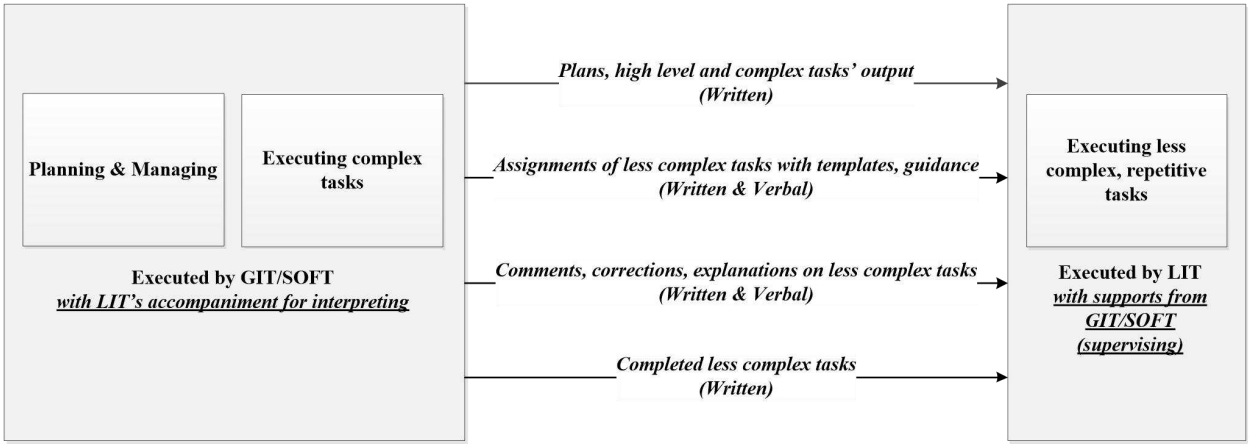


Figure 33: Selective Revealing Task Design

The integrated project design and selective revealing of project tasks allowed GIT Co to leverage a significant portion of local human resources, reducing project costs while maintaining the quality of project deliverables. Importantly, this approach also helped protect GIT Co's strategic knowledge in solution design and project management. In the following sections, we will explore how this integrated project design and selective revealing of tasks influenced interpersonal knowledge transfer between GIT/SOFT Co and LIT Co employees. Interpersonal knowledge transfer outcomes are influenced not only by the team's joint task structure but also by interpersonal relationships and individual factors.

2.1.1.2 Team joint task structure driving joint task interdependency and interpersonal knowledge transfer

Here are the details explaining how the team joint task structure factor impacted interpersonal knowledge transfer. We will examine the joint task structure in teams within the Business Process workstream and Technical workstream, where the structures in these two workstreams typically differed. These differences in structures led to varying levels of knowledge exchange interactions.

In the Business Process workstream, a one-to-one (Mentor-Mentee) structure was maintained between a GIT/SOFT Co senior consultant and a LIT Co junior consultant. (Refer to Figure 34: Business Process Workstream Structure).

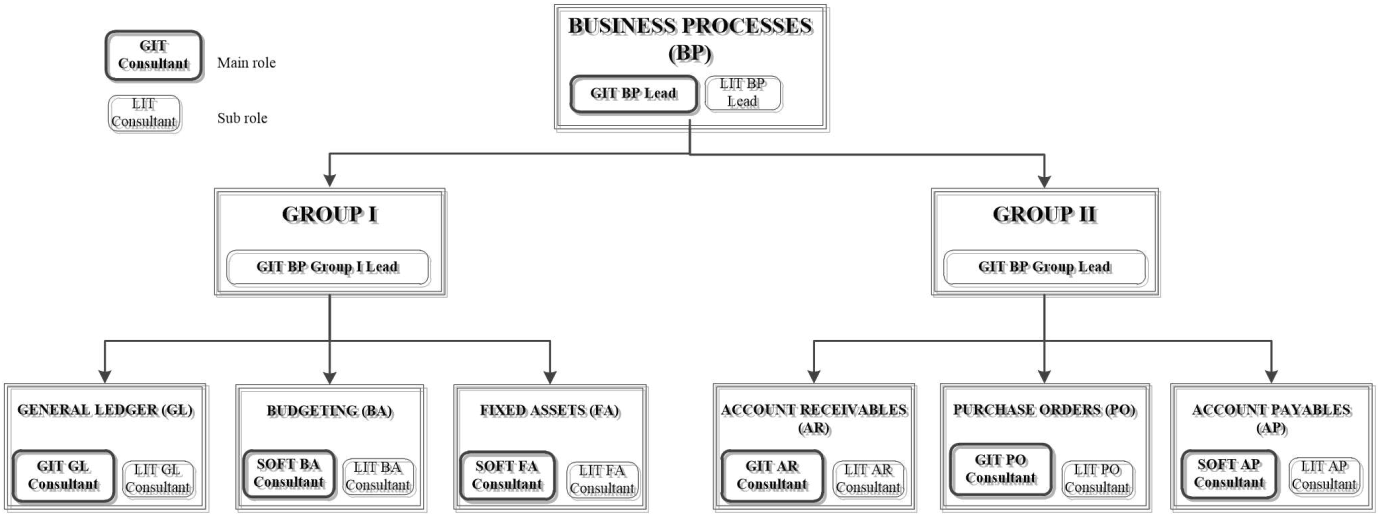


Figure 34: Business Process Workstream Structure

In the task structure of the Business Process Workstream, a SOFT/GIT Co consultant and a LIT Co consultant worked together on a common task simultaneously (Refer to Figure 35: Business Process Workstream's Structure and Interactions). They conducted workshops with their client's business owners to gather requirements and validate proposed designs, which they had prepared together. During the requirements gathering process, LIT Co junior consultants, who could speak Vietnamese, the local language, interacted directly with the client to understand their needs and then translated this information back to senior GIT/SOFT Co consultants. In terms of solution design, LIT Co consultants created detailed reports or functionalities based on the approaches, templates, and guidelines provided by GIT/SOFT Co consultants. GIT/SOFT Co consultants not only offered direction, guidance, and templates but also provided feedback and comments on the detailed work completed by LIT consultants. When it came to solution delivery, LIT Co

consultants acted as intermediaries, translating and explaining the solutions and designs to the client's business owners using local language and terminologies.

Explaining about the workflow in her team, LIT Co Receivable consultant who was in charged in In the Business Process workstream, a team member who was part of Group II, responsible for revenue collection functionalities, described their role and interactions as follows:

> *"I was working in the Business Process workstream. In my group, there was a group leader from GIT Co, and other team members were from LIT Co, who supported GIT Co consultants in completing project tasks. Our group's responsibilities included overseeing Account Receivables and Cash Management areas. The work was divided into several parts, starting with collecting business requirements and designing future business processes, followed by system building and data conversion. There were numerous tasks along the way. GIT Co consultants took the lead in assigning tasks, while LIT Co consultants, like me, executed the tasks based on the plan and assignments given by GIT Co consultants.*
>
> *For example, during the workshops aimed at collecting business requirements, LIT Co consultants played a crucial role in interpreting and gathering materials to prepare documents. Based on the templates designed by GIT Co consultants, LIT Co consultants filled out and completed the information to create documents. We conducted multiple rounds of workshops to collect business requirements and build future business processes.*

PN, a consultant from GIT Co specializing in Account Receivables, was a group member like me, but he wasn't the group leader or my direct boss. In our group, WP, a senior consultant from GIT Co, served as the group leader. Local team members, including LIT consultants, could effectively communicate with the client's business owners due to their knowledge of local treasury accounting. However, they lacked expertise in software package functionalities. PN's role was to join the team and contribute his knowledge of software package functionalities to help us complete the design of future business processes."

This description illustrates the joint task structure GIT Co and LIT Co consultants within the Business Process workstream. Theis joint task interdependence within the Business Process Workstream was confirmed by group leader WP, who managed responsibilities related to Account Receivables, Purchase Orders, and Account Payables in Group II. He provided insights into how the tasks were coordinated and interdependent:

"Of course, we had RA (Account Payables consultant from SOFT Co) and PN (Account Receivables consultant from GIT Co). They were the experts of the system. Then we worked in partnership with LIT Co who may not be so experienced. We guided them and told them how to work and passed some knowledge. And of course, LIT Co consultants were the main persons who interacted with Ministry of Finance (MOF), so they played a role of communicating with MOF and conducting a lot of workshops in the local language similarly like group I."

The task joint task structure between GIT/SOFT Co and LIT Co consultants was sequential and interdependent. While we, as GIT Co consultants, handled the high-level and complex solution designs independently to protect our strategic knowledge, the less complicated tasks were assigned to the LIT Co consultants. This structure facilitated interpersonal knowledge exchanges, except for tasks related to high-level and complex designs, which were executed independently by GIT/SOFT Co consultants for the purpose of knowledge protection.

The task joint interdependence structure within the Business Process Workstream fostered increased discussions, idea sharing, clarifications, and verifications among team members. The interdependent nature of the tasks meant that each person's actions served as inputs for the work of others, creating an environment conducive to intensive knowledge transfer. This knowledge transfer encompassed various aspects, including knowledge of business processes, system functionalities, and design principles.

SOFT/GIT Co mentor consultants actively shared their knowledge and expertise with the corresponding LIT Co mentee consultants. This exchange of knowledge was made possible by the collaborative and interdependent nature of their tasks. For instance, during workshops to collect business requirements and design future business processes, both SOFT/GIT Co and LIT Co consultants worked closely together. LIT Co consultants, with their understanding of the local language and culture, played a crucial role in facilitating communication with the client's business owners. SOFT/GIT Co consultants provided guidance, templates, and feedback to LIT consultants to ensure the successful completion of tasks.

While the interactions between LIT Co and SOFT/GIT Co consultants were intensive, some aspects of knowledge remained challenging to transfer. The tacit and personal nature of certain knowledge, particularly related to business design methodology, made it less amenable to

transfer. Design thinking, logical reasoning, and consulting skills often rely on individual experiences and personal capabilities, which are difficult to convey directly.

However, within the context of intensive interactions and collaboration, some personal consulting skills were transferred to LIT Co consultants. This transfer occurred when LIT Co consultants received guidance, feedback, and corrections from GIT/SOFT Co consultants. While the transfer of certain tacit knowledge remained limited, the collaborative work environment facilitated the exchange of practical consulting skills and expertise.

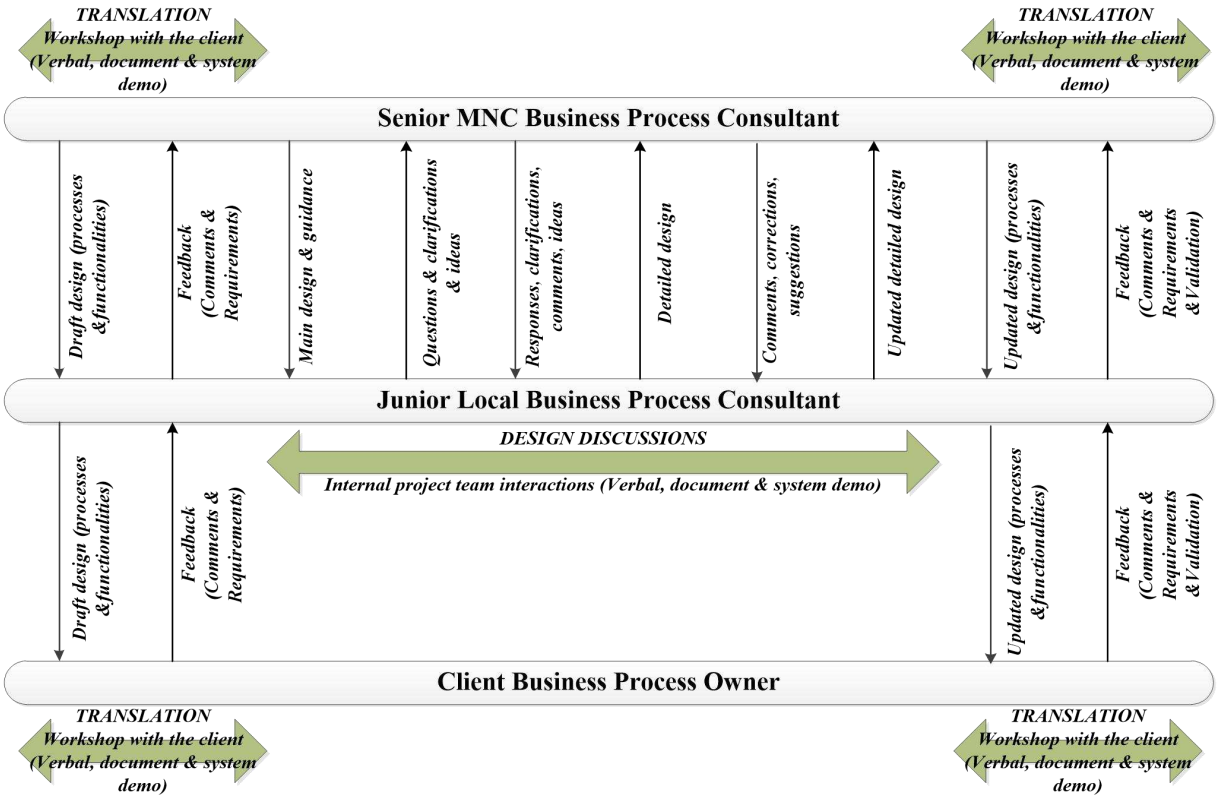


Figure 35: Business Process Workstream's Structure and Interactions

The LIT Co Receivable consultant highlighted several valuable skills and knowledge that she acquired through her collaboration with her GIT Co supervisor during the project:

> *"First, I significantly improved my English proficiency. Prior to joining this project, I had already obtained an English certification. However, working on this project provided me with valuable opportunities to practice writing in English, particularly for document preparation. GIT Co had a comprehensive set of document templates that I could utilize. Through the guidance of GIT Co consultants and by observing how GIT Co managed the project, I acquired a deeper understanding of various aspects. I genuinely appreciate everything I learned during my five years of involvement in the project. These lessons encompassed not only knowledge of the system, including software package*

functionalities but also crucial skills in communication, teamwork, and effective task organization."

Responding to the question how she learned when working with GIT/SOFT Co consultants, the LIT Co Receivable consultant explained that she learned through document templates, guidance, feedback, and comments from her GIT supervisor:

"I learned through training on job. When I finished a task, he (GIT Co team leader) showed me how the task should have been done if what I have done was not qualified. And he showed me clearly what had been expected for the task then I corrected accordingly. After work, he sometimes told me what I needed to do and improve for this role…What he had told me helped me to build my experiences. And I understood what were necessary for the work and what were my weak points.

I learned the standard implementation working process. The process was professional and completed from project kickoff to other implementation phases. For each phase, what were the tasks and details to each document template and training document. They trained me on jobs. They gave us the templates and corrected the work products after we submitted. In my next projects, I have applied that implementation process to create roles, assign people, design processes, tasks, and templates. It was efficient."

GIT Co consultants also learnt through working with LIT consultants. Sharing what he learned at individual level after working in the project, the Business Process group II leader said:

"Of course, I learned a lot about the Vietnamese culture. I mean when we go to a new country, new company you always learn a lot about the way the company works, the culture and the people. And of course, I learned about LIT Co as a company. And I learned how we should work together to deliver the solution."

Meanwhile, within the structure of the Technical Workstream, the one-to-one connection between LIT Co and SOFT/GIT Co was only at the team leader level, not at the team member level. In Technical workstream, all LIT Co technicians were directly managed by a LIT Co team leader. And the LIT Co team leader could discuss and exchange information with his corresponding SOFT/GIT Co team leader. There were limited interactions between a LIT Co team member and a SOFT/GIT Co team leader in Technical workstream (Refer to Figure 36: Technical Workstream's Structure).

Since the number of local technicians was significantly higher compared to the number of GIT technical staff in the project, the Technical Workstream leader needed to empower local technicians to manage the work themselves. He explained the structure of the Technical Workstream and his strategies for managing the workstream:

"We had only me and a few people from GIT Co. We had many people from LIT Co. The thing I did was that I tried to empower people. Because we cannot monitor 60 or 70 people. We cannot monitor all people. I identified some people from LIT Co and empowered them to make them lead. What we did was that we divided the track into four. I can say 5 including Infrastructure: Reporting, Conversion, Interface, Enhancement (Extensions) and Infrastructure."

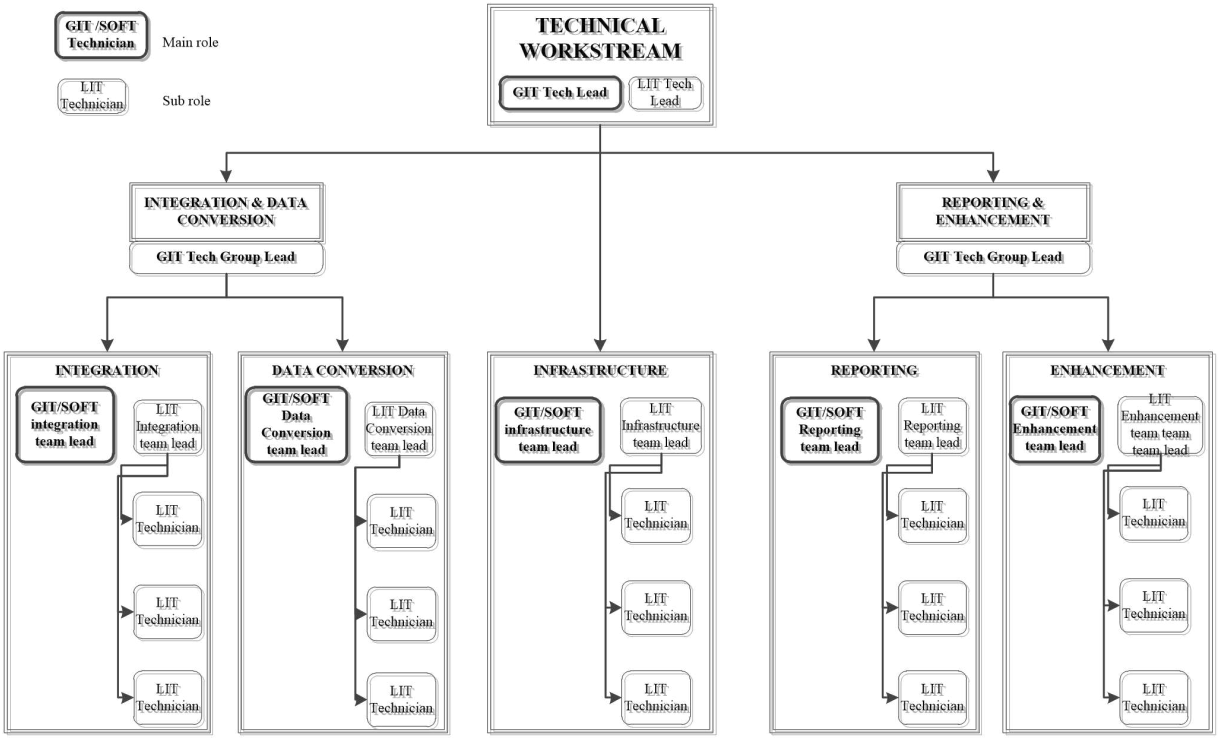


Figure 36: Technical Workstream's Structure

The joint task structure in Technical workstream was relatively independent (Refer to Figure 37: Technical Workstream's Task Structure and Interactions). Technicians worked in parallel, each of them on their own separate coding program. LIT technicians did not have many interactions with SOFT/GIT Technical team leaders. General discussions on working plans and results were held at the team leader level between the MNCs and the local firm.

Being consistent with the structure of Technical workstream explained by the Technical workstream leader, Infrastructure team leader managed his whole team through local team leaders (key architects and designers):

> *"I played the role of Infrastructure manager as well as architect role. I kind of worked with the core team. The core team was comprised of key architects from LIT Co and key architects from GIT Co team with kind of designing and*

validating. By and large, I did not manage actual implementation. I worked directly with a group of designers and architects. What were the things needed to do and planned out to work? And once the plan worked out already and then all the respective team leaders who worked directly with me would go and implement that."

A similar team structure with knowledge exchange interactions between foreign and local people was observed at the team leader level, not the team member level, in the Enhancement team. LIT Co Enhancement team leader said:

"SR (GIT Co Technical Workstream) had given a list of tasks. He met with me and TR (LIT Co Technical Workstream) to discuss the timelines for these tasks. Based on the discussed timelines, I allocated the tasks to the team members and maintained a timesheet for each member. RA (GIT Co Enhancement team leader) worked directly with me. He reviewed the code, received our work, and deployed the codes in the Production environment. RA also participated in discussions regarding the task timelines."

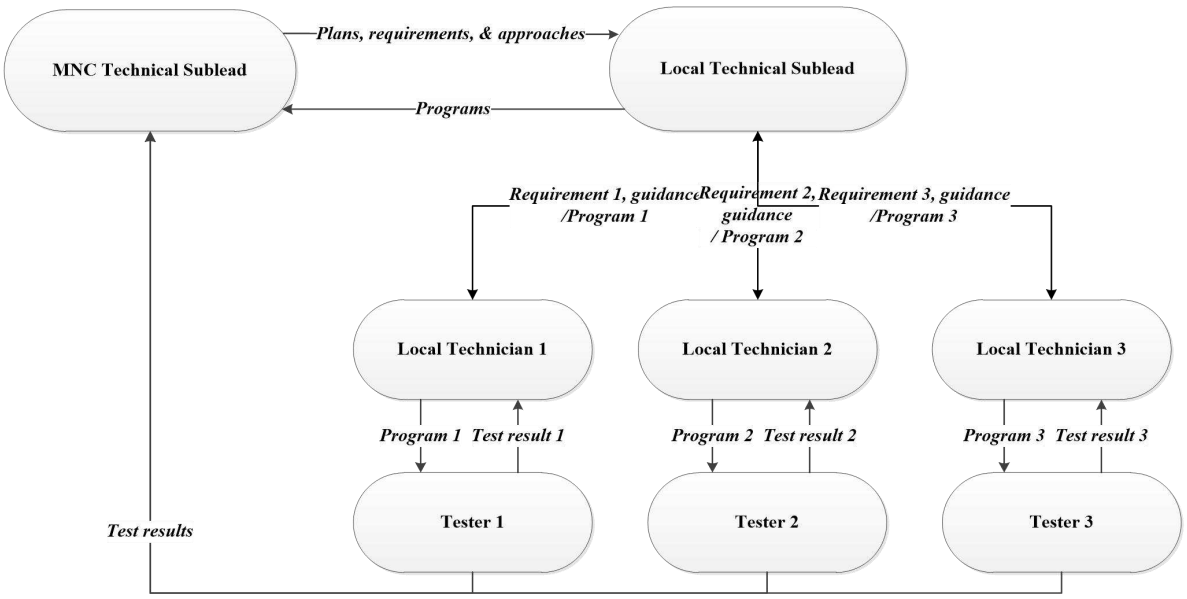


Figure 37: Technical Workstream's Task Structure and Interactions

With that structure, interpersonal knowledge transfer to LIT Co technicians was limited. The primary channel for knowledge transfer in Technical Workstream from GIT/SOFT Co to the local team was through the corresponding LIT Co team leaders. LIT Co team leaders in Technical Workstream gained insights into the working process, technical approaches, and knowledge related to system design and performance optimization when interacting with SOFT/GIT Co technical team leaders.

When it comes to what and how he learned through working with GIT Co technical leaders, the LIT Co team leader of the Reporting team explained:

> *"Normally, GIT Co were not the ones who directly wrote code. LIT Co technicians were coding. GIT Co gave us documents. We LIT Co technician team had internal discussions. And I had code review sessions with him (GIT team leader). For example, I sent him codes for a report after finished coding. He reviewed the codes and then both of us sat together to discuss. For many*

things, I found that I did not do well as he could do. AR (GIT Co Reporting team leader) specialized in reporting, so his codes were very optimal. LIT Co could make the report run. However, if GIT Co had done, they could have made the report optimized to the maximum level. The data could have been indexed to achieve the highest performance. What we did was needed to be gradually improved to optimize the performance… Especially, SR (GIT Technical Workstream leader) was knowledgeable both widely and deeply. He knew everything across different areas. When I was with him in code review sessions, he showed me why we should not do this but should do that."

2.1.2 Team building activities and leader-member exchanges influencing team relation between knowledge senders and knowledge receivers

GIT Co organized numerous workshops in various provinces in Vietnam and even in Singapore to discuss system designs. Apart from their work, the project team had the opportunity to spend a few days together in the same hotel and participate in team-building activities on those occasions.

At both the workstream and team levels, team-building activities were organized among team leaders from GIT Co, LIT Co, and SOFT Co. The participants often enjoyed team lunches or dinners together, introducing each other to the cuisines of Singapore, India, and Vietnam. They also engaged in conversations and shared aspects of their family lives. Actively listening, discussing, and providing guidance to junior consultants, they offered support not only in their professional lives but also in their personal lives. After seven years of working together, many friendships had blossomed among individuals from GIT Co, SOFT Co, and LIT Co.

In these team-building activities, only team members from the Business Process Workstream and Project Management Office, and not those from the Technical workstream and Change

Management workstream at LIT Co, were able to participate. They joined alongside team leaders from GIT Co, LIT Co, and SOFT Co. This distinction was based on the differences in team size and communication relations with foreign partners. The Business Process Workstream and Project Management Office had smaller teams, and their members had direct contact with foreign partners. Conversely, the Technical workstream and Change Management workstream had larger teams, with members who were not in direct contact with GIT/SOFT Co consultants. As a result, team-building activities for the Technical workstream and Change Management workstream within LIT Co were conducted exclusively internally.

Discussing the team-building activities, the leader of the GIT Technical workstream shared the following:

> *"At the project level, we conducted functional workshops in Do Son, which is located outside of the project office. What we aimed to do was to gather all the leaders in Do Son. In Hanoi, where the project office was located, work typically began at 9 AM and ended in the evening. However, in Do Son, there was a significant difference. We brought all the leaders to Do Son, where we had dinners together and spent more quality time bonding. This was team building at the team leader level. Additionally, we identified senior team members and organized dinners with them as well. Furthermore, LIT Co organized team-building activities for the entire team."*

Due to a lack of strong connections within the Technical workstream, it became apparent that the team lacked cohesion. The Database Administrator from LIT Co shared insights about this incoherence within the workstream:

"SR (GIT Co Technical workstream leader) asked people who he liked to go out, not all. Me and SR, both of us could drink, so we drank, chatted, and shared. So, everything became easier."

During the same period, knowledge sharing between the Database Administrator at LIT Co and their counterpart at SOFT Co was challenging. The SOFT Co Database Administrator During the same period, knowledge sharing between the Database Administrator at LIT Co and their counterpart at SOFT Co was challenging. The SOFT Co Database Administrator "did not respond and did not share documents."

The Database Administrator at LIT Co provided comments on the relationship between leadership, team building, and team relations, stating:

"It depended on each team. If a manager was more technically oriented, they might not excel in communication and socialization. In such cases, it was challenging because they did not foster an enjoyable and lasting camaraderie. If they had possessed good management skills, they could have created shared activities that would have brought team members closer together, leading to stronger mutual support."

A similar perspective on team building activities at the team leader level was shared by the LIT Co team leader responsible for Communication in the Change Management workstream:

"I believe that SA, the leader of GIT Co's Change Management workstream, genuinely cared about others. For instance, every two weeks, she would travel back to Singapore. Each time she returned to Vietnam, she brought gifts for us and even invited us to enjoy Thai and Indian cuisines. SA put a lot of effort into

team building. However, as the team expanded, with the addition of more team members alongside the team leaders, these team-building activities gradually became less frequent."

As a result, team-building activities had a notable impact on the emotional connections among those who participated in these activities. The positive influence of the extent of team-building activities on team relations was particularly evident in the case of the Change Management workstream. Initially, the team-building activities were robust within the Change Management workstream, fostering strong bonds among team leaders. However, as the frequency of team-building activities diminished, the connections among members weakened. The LIT Co team leader responsible for Communication in the Change Management workstream shared insights about the team relations:

"In the initial stages of the workstream, SA, the leader of GIT's Change Management workstream, facilitated connections among the team leaders, and as a result, we were very close. We often went out together. However, as the group expanded, numerous challenges emerged. People became less engaged, and the connections among them dwindled."

In addition to team-building activities, leader-member exchange (LMX) leadership also had a significant impact on the quality of team relations. The positive relationships between GIT Co group leaders and LIT Co team members in both Group I and Group II of the Business Process workstream underscored the importance of effective leader-member exchanges. These exchanges fostered positive emotions and facilitated mutual learning among team members.

The leader of Group I in the Business Process workstream discussed how he managed his team, emphasizing the incorporation of both formal and informal leader-member exchange activities. These activities included team outings and actively listening to his team members:

> *"More interactions, more communications, more frequent meetings, motivations. How to do motivate? Outing, taking for dinner, all these things happened. We went out sometimes. ...I went out with many people within the team ... Formal meetings, informal meetings, all. Understanding their issues, listening to their inquiries. You should be more a listener than a defender. You should not be defending, you had to listen to them. If you do more interactions, more frequent meetings, communications then you will understand more about them."*

The leader of Group II within the Business Process workstream emphasized the significance of reliability and the importance of respecting and showing genuine concern for team members in building relationship quality:

> *"Team building is definitely we also do in any organization. There is no doubt about that. But the key thing was really respecting them (LIT Co team members). Respecting who they were, showing concerns, showing care, and embracing them as a part of the team. I think those were the fundamentals. We can show that to people then in turn they would respect you and they would work for you."*

As a result, team members in both Group I and Group II of the Business Process workstream demonstrated their respect for their supervisors and leaders from GIT Co, along with a strong

emotional commitment to their teams. An exemplar of this is the LIT Co Account Receivable consultant. She held her leaders in high regard not only for their competence but also for their conduct:

> *"They were highly professional, possessing extensive knowledge, experience, and skills that I learned a great deal from... There was a complete absence of conflicts within my team. They were precise in task allocation and communication. They fostered connections among team members and a sense of happiness in our work... They acknowledged my contributions and showed respect, even though we were subcontractors. There was no discrimination whatsoever. They consistently cultivated strong relationships with project members. They actively listened to us and recognized our contributions... Beyond our professional duties, they organized events where we could participate and form friendships. From these friendships, we provided mutual support in our work."*

She expressed her deep gratitude and emotional connection to her supervisor and leaders from GIT Co by saying:

> *"Until this day, I continue to feel profoundly thankful to them and regard them not just as colleagues but as my mentors and teachers."*

2.2 Sender's knowledge stock and openness

2.2.1 Low cost affordability of Vietnam market influencing GIT Co's resouce endowment to the market and ultimately driving to low knowledge stock of GIT Co's knowledge senders

To adapt to the low-cost market in Vietnam, GIT Co had to integrate their resources with local resources to minimize delivery costs. Discussing the business model of GIT Co's subsidiary in Vietnam for IT services, the General Manager of GIT Co in Vietnam shared:

> *"I must emphasize that the business model involving collaboration with local partners is a common practice in Vietnam. However, in Singapore and other more developed countries, our Global Business Services do not operate in the same manner. In these developed countries, we deliver services using our own resources. Why? Firstly, because in developed countries, there is an abundance of resources available. Secondly, the cost structure in developed countries can accommodate GIT Co's delivery costs without the need to combine them with local resources."*

By partnering with local resources, GIT Co reduced the number of resources with embedded knowledge from the parent company, whereas they utilized a larger number of local resources from the partner company. The GIT Co Project Manager discussed the assumption regarding resources in a scenario where they hadn't collaborated with the local partner. From his comments, it's evident that GIT Co opted to utilize a significant number of local resources from LIT Co rather than bringing in their own foreign consultants to Vietnam:

"Instead of collaborating with LIT Co, GIT Co could have chosen to hire all these hundred people and have them work under my management."

The issue of limited resources from GIT Co was also highlighted by the GIT Co Technical workstream leader:

"We had only me and a few people from GIT Co team. We had many people from LTI Co ...If we had not shared knowledge to work with LIT Co, GIT Co would have put more people to do the work whereas we had limited budget."

Due to the limited budget for the project, GIT Co faced constraints not only in terms of the quantity but also the quality of resources they could allocate. GIT's permanent employees were appointed to hold leadership positions across various workstreams. However, for the Technical workstream, GIT Co relied on contractors hired through individual short-term contracts or mobilized from their delivery center and SOFT Co outsourcing center in India to fill the team leader positions. These contractors worked under short-term contracts, which meant that not only the quality of their knowledge but also their stability was relatively low. These resources changed every three or six months, leading to disruptions in team connections and affecting both team structure and the quality of team relationships. Consequently, resource constraints and instability resulted in reduced interactions and limited interpersonal knowledge transfer within the project.

Discussing the constraints of GIT Co's resource allocation, the LIT Co subleader of the Reporting team within the Technical workstream stated:

"GIT Co had a limited number of human resources allocated to the project. At the peak, there was only one person from GIT Co in each team. Initially,

during urgent or startup phases, they provided highly qualified individuals. However, they gradually replaced them. Every three or six months, new personnel were introduced as replacements."

Due to constraints in terms of quantity, quality, and stability of resources, the outcome of interpersonal knowledge transfer was impacted. In response to a question about whether he had learned any technical knowledge from foreign partners, the LIT Co Database Administrator in the Infrastructure team commented on the foreign technicians who worked under short-term contracts:

"No, I couldn't learn much from them. In fact, they were relatively new and lacked experience. They were not seasoned experts but were also in the process of learning while on the job."

2.2.2 Perceptions of cost and benefits of knowledge sharing influencing GIT Co sender's openness

The interviews with knowledge senders from GIT Co reveal that individual perceptions of the costs and benefits associated with knowledge sharing and protection played a significant role in shaping their motivations and, ultimately, their behaviors regarding the sharing and protection of GIT Co's knowledge. According to these knowledge senders, there were several reasons for sharing knowledge with local partners.

The first reason for sharing knowledge with local partners was the inevitability of knowledge transfer through practical experience and interaction while working closely together. This viewpoint was illustrated by the GIT Co Infrastructure team leader:

"When GIT Co architects and leaders designed, they designed the documents. The documents would be shared down because those ones to be translated. There was no way you can hide the information."

This highlights the organic nature of knowledge exchange that occurs naturally during collaborative work.

The second reason for sharing knowledge with the local partner was the necessity to ensure the project's success. Concealing knowledge could jeopardize the project's outcome, as highlighted by the GIT Co Technical workstream leader:

"If you want to do project effectively. Project has many parameters. Every project is like a marriage. If you hide something you cannot be successful. Certainly, I can develop things with LIT Co. GIT Co had less people. And GIT Co had more people. So, we needed to empower them (LIT Co people). So, we did all transparency, we shared all information with LIT Co. If we had not shared, GIT Co would have had to put more people to do the work whereas we had a limited budget. We shared everything with LIT Co so that they can do their job effectively."

This underlines the essential role of knowledge sharing in ensuring the project's efficiency and success.

The motivation to share knowledge deeply stemmed from the GIT Co project leaders' sense of responsibility within the project. Above all, their most significant responsibility was to ensure the project's success. This perspective was articulated by the GIT Co Project Manager:

> *"My job was project manager to make sure that the project was done properly with partners I had to work with. If GIT Co as such thing that they should not train LIT Co then GIT Co should have different strategy. Instead of working with LIT Co they should hire all these hundred people and they have given it to me. And I had to work with them, and it was not my decision. I was the project manager. So, I just made sure that project was done. As far as the project was concerned, LIT Co had to do certain tasks. And I had to make sure that they had enough knowledge to carry out those tasks. Now whether after the project, they use it with different context or competition, that was not my job or my problem. That is the problem maybe for GIT Co side but that is not what I will think about when we do the project."*

This perspective underscores the project leaders' primary focus on achieving the project's goals and objectives, with the understanding that the broader implications of knowledge sharing might be a concern for GIT Co the company level beyond the scope of the project itself.

Thirdly, GIT Co employees also benefited by acquiring knowledge about local business requirements, practices, and working culture from their counterparts at LIT Co. This knowledge sharing was reciprocal and a way for GIT Co to give back by sharing what they had learned from LIT Co. As expressed by the GIT Co Project Manager:

> *"And for GIT Co side, we also learned from LIT Co in term of how to do projects in Vietnam. We all learned from each other. To that extent, we had to share the knowledge."*

This highlights the mutual exchange of knowledge and the understanding that learning from each other was a crucial aspect of their collaborative efforts and reciprocal principle was respected.

Finally, the selective sharing of knowledge by GIT Co was not harmful but rather beneficial. The knowledge shared could also be utilized in future collaborative projects and was not exclusive to LIT Co alone. As articulated by the GIT Business Process Group I leader:

> *"This was a win-win situation. If we had not given knowledge transfer about the methodology and templates, then we could not have got things done by them. In order to facilitate, to get things done on time and delivered with high quality we had to share our templates, methodology even technology transfer. There was no issue. It was OK. We were not giving entire resources and technology transfer. Only some parts of the components were absolutely required for that service. What we shared was mainly industry specific for that particular client. It is not always applying those templates for all clients, No. Based on the global delivery, we developed certain templates which we defined more specifically to MOF (the client). It does not mean that we have given all templates or all methodologies of project management or solutioning. We only shared with them what was specific to that client. If they use those templates for tier-3 clients, the templates may not be suitable because tier-3 clients may not be interested in documents. Documentation is not a concern for them."*

This demonstrates the strategic and thoughtful approach GIT Co took in sharing knowledge that was relevant and beneficial to their collaborative projects while maintaining a clear understanding of the contextual nuances.

Moreover, in the field of IT services, the short innovation cycle means that shared knowledge tends to become obsolete relatively quickly. As articulated by the GIT Co Business Process workstream leader:

> *"Anyway, knowledge is always evolving. What is relevant today becomes outdated in just a few years' time. So, it doesn't really matter to share knowledge."*

This perspective underscores the dynamic nature of the IT industry, where staying up-to-date with evolving knowledge is crucial, and the focus is on adapting to ongoing changes rather than hoarding static information.

In summary, the perceptions of cost and benefits surrounding knowledge sharing and protection influenced the extrinsic motivations of GIT Co knowledge senders to share knowledge with their local counterparts. They shared the necessary knowledge for LIT Co to successfully complete their assigned tasks (Refer toTable 14:). An example of this behavior can be seen in the GIT Co Technical workstream leader, who was described as straightforward and willing to share knowledge without withholding information, even in challenging situations. This reflects a commitment to open and transparent knowledge sharing within the collaboration, as expressed by the LIT Co Interface team leader.

> *“In general, sharing was straight. He (GIT Co Technical workstream leader) did not hide, I remember that there was something so difficult that I could not do. SR (GIT Co Technical workstream leader) told me that it should be done in*

a different way. And he showed me how to do it. I think he did not hide anything." (LIT Co Interface team leader)

The management of knowledge protection was primarily handled at a high level by the leaders of IT Consulting Services when they designed the scope of work among partners. They ensured that what needed to be protected would be executed by GIT Co employees independently. Other information and knowledge that could be shared were within the scope of the collaboration with the local partner. In the BTMIS project, GIT Co project members were able to freely share knowledge within the defined scope of the collaboration, as they did not have to be concerned about protection. This was because knowledge protection had mostly already been taken into consideration during the project work design phase.

Project member	Perceptions on knowledge sharing & protection	Motivations	Knowledge sharing and protection behaviors
GIT Co Project manager	- Knowledge sharing was required to make the project successful when utilizing LIT Co's resources. The required knowledge for LIT Co to do their tasks in the project. - It was unavoidable that knowledge was transferred through doing and interacting when working together. and transferred knowledge was reused by the partner. - Knowledge sharing was reciprocal since GIT Co also learnt from LIT Co	Sharing knowledge because it was: - unavoidable - necessary for project success -reciprocal in return to local knowledge	- Did not think about knowledge protection at the project level - Shared knowledge with LIT Co in return to exchanged knowledge from LIT Co. - Shared required knowledge to achieve project success.
GIT Co Business Process Workstream leader	- GIT Co had an informal protection mechanism based on business decisions. - Knowledge leakage was unavoidable due to employee mobility and its natural reusability after the collaboration. - Innovation cycle was fast. Knowledge will be outdated in few years' time	Sharing knowledge because it was: - unavoidable - necessary for project success -not harmful due to short innovation cycle	- Intentionally designed team structure to transfer required knowledge to LIT Co to make project success. - Accepted the fact that LIT Co could learn more and reuse the transferred knowledge after the collaboration project.
GIT Co Business Process Group I leader	- Sharing required knowledge was necessary for LIT Co to complete their tasks with GIT Co's quality and timelines. - GIT Co transferred to LIT Co only required knowledge particularly applied to this project, this client not all. - Knowledge which was transferred was codified knowledge ("templates"). This codified knowledge combined with personal embedded tacit knowledge ("client exposure") which could not be transferred. - Knowledge transfer with LIT Co did not harm GIT Co since the market segment of LIT Co was different from the one of GIT Co. Particularly, the transferred templates could not be appropriated by LIT Co since it	Sharing knowledge because it was: - necessary for project success -not harmful due to selective revealing policies and non-appropriability of GIT Co's knowledge in LIT Co's business market segment.	- Shared document templates - Provided a lot of guidance on how to design forms, reports, made sure consistent and integrated. - Reviewed and corrected documents so that LIT Co could improve and provided decent work products to the client

Project member	Perceptions on knowledge sharing & protection	Motivations	Knowledge sharing and protection behaviors
	was not suitable for LIT Co's clients. The transfer even benefited GIT Co since they could reuse the trained resources of LIT Co in next collaboration projects.		
GIT Co Business Process Group II leader	- GIT Co had standard confidentiality (document compliance and monetary information protection) - Technical open sharing was required to make project successful. Not only document templates but a lot of guidance, review and correction were provided to LIT Co. - Knowledge transfer to LIT Co was expected	Sharing knowledge because it was: - necessary for project success -not harmful due to selective revealing policies	- Shared document templates - Provided a lot of guidance on how to design forms, reports, made sure consistent and integrated. - Reviewed and corrected documents so that LIT Co could improve and provided decent work products to the client
GIT Co Technical Workstream leader	- GIT Co had knowledge protection policy - Limited sharing leaded to project failure. So, knowledge protection cannot be applied.	Sharing knowledge because it was: - necessary for project success -not harmful due to selective revealing policies	- Shared knowledge with LIT Co when it is required for LIT Co to complete the work assigned to LIT
GIT Co infrastructure team leader	- There was standard confidentiality applied across the three partners. - Working together on a common document, it was impossible to hide the information. - It was learning process among the partners and the client as well	Sharing knowledge because it was: - unavoidable - necessary for project success -not harmful due to selective revealing policies	- Shared knowledge with LIT Co when it is required for LIT Co to complete the work assigned to LIT Co.

Table 14: Perceptions on Costs and Benefits of Knowledge Sharing - Motivations and Behaviors of Knowledge Senders

2.2.3 Low level of openness of Indian consultants

*I*n the BTMIS project, the project members hailed from various countries and backgrounds. Most of the senior consultants from GIT Co were Singaporean, with a few originally from Malaysia and India but having resided permanently in Singapore for over 15 years. In addition to permanent employees, GIT Co also employed short-term contract technicians from India and Malaysia to serve as team leaders in the Technical workstream. After the short-term contractors left, GIT Co mobilized technicians from SOFT Co, India's subsidiary, to work as technical team leaders and experts.

Among the project's diverse set of team members, it was noted that Indian consultants who were based in India displayed a lower level of openness. This was observed while working with RA, an Indian Database administrator expert from SOFT Co, as recounted by the LIT Co Database administrator:

> *"RA had a 'regional' (clan culture) approach. He possessed valuable experiences but seldom shared documents and was difficult to approach for information. He often did not respond to inquiries. When SR, the Technical workstream leader from GIT Co, requested that he share documents with us, he would provide some but not all the information. For instance, if we inquired about a specific document regarding system installations, he either did not share it or provided only a limited amount of information, which was insufficient."*

A similar observation regarding another Indian expert from SOFT Co India was shared by a GIT Co technician:

> *"When I asked the Indian expert from SOFT Co, he did not readily share information. He would provide only a limited amount. For example, when he arrived here, I asked if he had encountered any issues with the system. He mentioned that he had found some problems and would be reporting them to my boss. However, during informal conversations or when I asked specific technical questions, he would provide information. He generally wasn't very open with us, particularly when it came to technical matters."*

This reinforces the notion that some team members, particularly those with certain cultural backgrounds, may exhibit a more reserved or selective approach to knowledge sharing within the project.

In summary, LIT Co learned relatively little from SOFT Co because the SOFT Co team members who were Indian often worked independently, silently analyzing technical issues and providing general outputs without delving into the details or explaining the root causes of the problems. This limited the knowledge transfer and learning experience between the two organizations.

> *"About SOFT Co, we learned very little from them since only a few of their team members participated in the project. When they did join, they worked independently, providing general outputs. They collected system logs, analyzed them, and delivered general presentations. Consequently, our ability to gain knowledge from them was quite limited."*

The LIT Co Project Manager arrived at conclusions regarding the openness of Indian consultants after receiving extensive feedback from his employees who had been collaborating with Indian consultants:

> *"My subordinates reported that Indian project members were concealing their technical skills and knowledge. At that time, certain incidents led me to conclude that Indian team members were facing this issue. Many of the Indian team members exhibited this behavior of hiding knowledge and technical expertise. Based on the events that transpired during that time, both I and many others began to generalize that Indian individuals often displayed these characteristics. They tended to withhold knowledge and technical information, refraining from sharing openly."*

In summary, according to the perceptions of team members from both GIT Co and LIT Co, as well as LIT Co's project manager, it was observed that Indian consultants who were short-term contractors, based permanently in India, and were hired by GIT Co from the labor market or SOFT Co India subsidiary, tended to be less open in sharing knowledge and technical skills (Refer to Table 15: Level of Openness of Indian Consultants).

Project member	Level of Openness	Knowledge sharing and protection behaviors
SOFT Co Indian Technical experts	Over protective	- SOFT Co Technical experts executed tasks alone and presented a general presentation. In that way, LIT Co and GIT Co could not learn from SOFT Co. - Shared only few information or shared only in informal chatting
Indian Technical team (GIT's contractors & SOFT's technical	Over protective	Many LIT Co technicians reflected that Indian technician hided their knowledge. It could be cultural typical characteristic.

team leaders)		
SOFT Co Indian DBA expert	Over protective	The Indian DBA did not share full information on system setting. He did not respond to the questions or share only a little information.

Table 15: Level of Openness of Indian Consultants

2.3 Vietnamese consultants from LIT Co lacked technical, managerial knowledge and English language capability.

On the side of the receiver's knowledge stock, it was also limited. LIT Co was considered *"the largest"* local player, significantly more advanced than other major local players, being two or three times more advanced, as noted by GIT's General Manager of Vietnam subsidiary, GIT's Project Manager, and GIT's Infrastructure Subleader. They described LIT Co as *"the best"* in terms of resource skills in the Vietnam IT market. However, LIT Co's employees had low absorbability. They lacked updated industrial knowledge in technology and management, and their language capabilities for learning and communicating with foreigners were also limited.

LIT Co's resources had not had the chance to work on a significant project with a professional and efficient implementation process. Consequently, resources from LIT Co across different workstreams lacked managerial and technological knowledge and experience in handling large and complex IT projects. The General Manager of LIT Co, who also served as the Director of the BTMIS project from LIT Co's side, highlighted:

> *"Firstly, LIT Co lacked significant experience with large projects. Secondly, the implementation of a substantial project proved to be more complex compared to the projects we had previously undertaken. Thirdly, this project*

was characterized by its technical complexity, resulting in intricate phases ranging from requirement analysis and system design to building and rollout."

The general comments made by the Director of the BTMIS project from LIT Co were further supported by detailed insights from LIT Co leaders in the Business Process, Technical, and Change Management workstreams.

LIT Co's Business Process Group II leader mentioned that they lacked sufficient knowledge of the software package system's design, functionalities, and implementation methodology. While they had experience with common functionalities, they did not possess a deep understanding of the system's design and advanced functions. The leader expressed this as follows:

"So far, LIT Co was a renowned IT company in Vietnam. However, our expertise was not at a professional level. They (GIT Co) had a well-defined implementation process… We had experience in IT implementations for a long time, but we lacked a deep understanding of the original system design."

Similar sentiments were shared by LIT Co's Technical Interface team leader and Technical Reporting team leader. Notably, LIT Co had no prior knowledge of change management and its role in preparing individuals' mindsets to accept changes in organizational design and work behaviors. This lack of understanding stemmed from their limited experience with change management. LIT Co's Change Management workstream leader explained:

"We had mistakenly thought that change management was related to programming (coding). That's why I was assigned the role of Change Management workstream leader, as I had experience and skills in coding."

The limitations in the previous technological and managerial knowledge and skills of LIT Co employees, coupled with the knowledge distance between LIT Co and GIT Co, hindered the absorption of knowledge from GIT Co. Addressing this issue, the Change Management team leader at LIT Co, responsible for Communication in the BTMIS project, stated:

> *"In fact, Change Management was a very new concept in Vietnam, and LIT Co had no prior knowledge in this area... We encountered difficulties when working with SA (GIT Change Management leader). She provided on-the-job training, which involved giving us templates and guidance on how to fill them out, but she did not explain why we needed to perform these tasks and the methodologies behind them... This meant that we mechanically followed her instructions, but knowledge transfer did not occur... Later, in my subsequent projects, I had to teach myself how to work on change management."*

Because she lacked prior knowledge of Change Management, she couldn't grasp the rationale behind the tasks assigned by GIT Co's Change Management leader and couldn't learn the underlying approaches or methodologies chosen by them.

The limited prior knowledge posed a barrier to proactive knowledge acquisition when working with GIT partners, as expressed by members of the Business Process and Technical workstreams. They had not adequately prepared to identify what they needed to learn and instead only absorbed what GIT intentionally shared:

> *"I didn't know what he didn't share because it was a one-way flow; I learned only what GIT intentionally presented. I wasn't aware of many things to*

> *determine if there were other aspects that he didn't share,"* (LIT Co Account Receivables consultant in Business Process Group II)

Furthermore, in terms of communication skills, local employees struggled with effective English communication. Even in the Business Process workstream, where individuals had relatively better English skills compared to other workstreams, around half of them initially had difficulty understanding and expressing themselves when communicating with their counterparts:

> *"I was very scared at the beginning of the project. I was not able to understand when NI (Business Process Group I leader) said even though I was better in terms of English compared to others."* (LIT Co Fixed Asset consultant in Business Process Group I).

The limited English communication skills posed more significant challenges in the Technical workstream, where technicians had very low proficiency in English:

> *"The difficulty was a language problem. LIT developers (programmers)' English level was very bad. Especially when talking with Indian technicians who had an Indian accent, they (Indian and Vietnamese technicians) did not understand each other."* (LIT Co Project Manager).

Overall, the combination of limited prior knowledge and language capabilities significantly hindered the interpersonal absorption of knowledge when LIT Co employees collaborated with GIT Co and SOFT Co.

2.4 Summary of the relations between individual characteristics, team relation and structure driving interpersonal knowledge exchange interactions and outcomes

As a result of the varying input factors, team structures, relations, and individual characteristics, the change in individual knowledge as an outcome of interpersonal knowledge transfer varied across teams and individuals. These different outcomes can be categorized into three main groups: team members of the Business Process workstream, leaders (both workstream and team leaders) in other workstreams, and team members in other workstreams. Each of these categories experienced distinct changes in individual knowledge due to interpersonal knowledge transfer.

In the exceptional case of the team members within the Business Process workstream, several factors, including high joint task interdependency, strong team relationships, a substantial knowledge base, and the openness of GIT Co's permanent senior knowledge contributors, along with less bad English proficiency and prior knowledge among LIT Co's knowledge recipients, collectively facilitated the highest level of interactions. Consequently, this synergy ultimately led to the most significant knowledge increase among LIT Co's employees. Reflecting on the interpersonal knowledge transfer across workstreams within the project, the GIT Co Project Director expressed satisfaction with the knowledge sharing within the Business Process workstream, recognizing its pivotal role in the project's success:

> *"Knowledge transfer with LIT Co team started from the beginning. That was why we integrated the functional team (Business Process workstream) into the same team. So, we did the design, we worked side by side with LIT Co function team. So, LIT Co functional team members understood why we did certain things. So, from there we expected the functional team to be leading the*

knowledge transfer to roll out team subsequently to make the project successful."

Additionally, it is evident that strategic knowledge related to design and management was primarily protected. This protection stemmed from GIT Co's deliberate collaboration scope design aimed at concealing strategic knowledge, coupled with the tacit nature and personal stickiness of this knowledge. To elaborate on the tacit and personally adhesive aspects of design knowledge, the leader of GIT Co's Business Process Group I stated:

"What the knowledge transferred was specific to that client, for that project. They (LIT Co) cannot take entire knowledge. Even though working together 10, 20 years, my entire knowledge they cannot take. ... They took only the templates. But they (the templates) come with a lot of knowledge and exposure to the clients. We are always exposure to muti-national clients. Our consultants are also multi-national. They cannot take. They can take only some parts of our delivery model, only the templates. But overall, they cannot take. They took some project management model, but they didn't take end to end."

The General Manager of GIT Co Vietnam expressed a similar opinion, emphasizing that solution design and management knowledge were protected by GIT Co:

"In BTMIS, GIT Co designed the chart of accounts for Vietnam. LIT Co could take this chart of accounts to implement it in other countries like Cambodia. However, they could never understand why that chart of accounts had been designed in such a way. And if there were differences in Cambodia's requirements that necessitated changes to the chart of accounts to adapt to

those unique requirements, I don't think anyone at LIT Co could do that. So, while they could learn some aspects of project management methodologies or business analysis, LIT Co could not acquire the critical domain expertise knowledge – knowledge based on industry business practices – of GIT Co. Each client's design was unique."

In the second group including workstream and team leaders in workstreams other than Business Process, there was less interdependent joint task structure, lower levels of sender's knowledge stock, stability, and openness of short-term Indian contractors, and lower English communication skills among technicians. These factors led to fewer interactions and resulted in less significant changes in individual knowledge. LIT Co technical team leaders mentioned that they could learn about the implementation process and some technical knowledge from GIT Co technical leaders, but not technical skills.

As an example, a member of the LIT Reporting team leader shared their experience:

"Of course, I learned some techniques. However, techniques are personal skills. What I learned the most from GIT Co was the processes. They (GIT Co) have good processes. Not only me but also many others at LIT Co learned a lot from GIT Co's implementation processes. For example, people in the Business Process team or the Project Management Office could learn and apply GIT Co's implementation processes."

And in the last group of project members in other workstreams than the Business Process workstream, the knowledge transferred from GIT/SOFT Co to LIT Co was limited to the

implementation working process, without technical knowledge or skills, due to limited interactions between GIT/SOFT Co team leaders and LIT Co team members.

The observed results showed a significant difference in the outcome of interpersonal knowledge transfer between the Business Process workstream and the Technical workstream at the team member level. GIT Co Project Director expressed some disappointment with the interpersonal knowledge transfer in the Technical workstream at the member level. He added that:

> *"We expected them (LIT Co technical workstream members) to work with us in design and build stages before the roll out but unfortunately that part was not taken up very well by the technical team of LIT Co. That was why we had to spread our efforts. During the roll out, there were a lot of problems, we had to resolve the technical problems."*

The result of interpersonal knowledge transfer is summarized as the below (Refer to Figure 37: Technical Workstream's Task Structure and Interactions and Table 16: Table 16: Factors Impacting Interpersonal Knowledge Transfer).

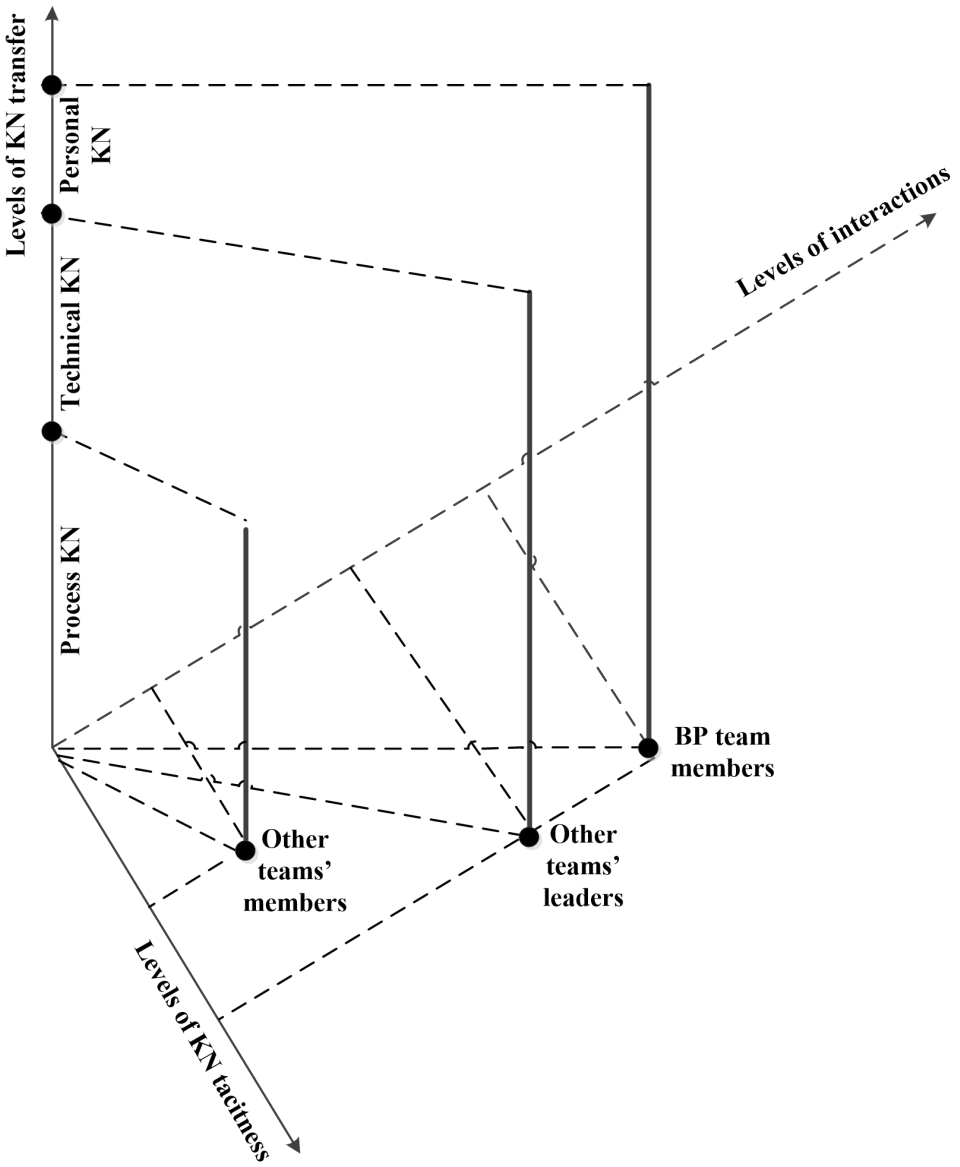


Figure 38: Level of Knowledge Transfer by Individuals

Factors	Business Process workstream	Other workstreams' leaders	Other workstreams' members
Physical structure	One to one (Mentor-Mentee)	One to one (Mentor-Mentee) between MNCs and local	One to many (One lead-Many) members) mainly within internal LIT
Task structure	More interdependent, doing a common task at a time (Workshop translation and detailed design discussions)	Relatively independent, each technician works in parallel on one separated program (General discussions at team leader level on working	Relatively independent, each technician works in parallel on one separated program (General discussions at

		plans and results)	team leader level on working plans and results)
Resource stability	Stability in both MNC and local teams	Frequent changes in both MNC and local teams	Frequent changes in both MNC and local teams
Relationship	Friendly and mutual respect Frequent team outing with the whole team.	Selectively friendly relationship and team outing (depend on person)	Selectively friendly relationship and team outing (depend on person)
Sender's knowledge	Good	Selectively good (depend on permanent employees or contractors)	Selectively good (depend on permanent employees or contractors)
Sender's openness	More sharing	Less sharing	Less sharing
Receiver's knowledge	Good	Selectively good (depend on person)	Selectively good (depend on person)
Communication language	Good English	Medium English	Limited English
Interaction process between MNCs and local	**High interactions**	**Medium interactions**	**Low interactions**
Knowledge tacitness	Very high	Medium High	Low High
Transferred knowledge	- Working processes with templates - Technical knowledge (Software's functionalities and design) - Some personal consulting skills (presentation, documenting, client management)	- Working processes with templates - Some technical knowledge (design and performance optimization)	- Individual working processes with templates

Table 16: Factors Impacting Interpersonal Knowledge Transfer

3. INTERPERSONAL KNOWLEDGE TRANSFER LEAD TO INTERFIRM KNOWLEDGE TRANSFER

3.1 Local firm integrated and institutionalized individual to organizational knowledge

As a result of interpersonal knowledge transfer, knowledge from GIT/SOFT Co to LIT Co included implementation process knowledge stages, technical knowledge pieces, and some

personal tacit skills that were scattered across the project team members from LIT Co. However, these scattered knowledge pieces were accumulated, complemented, and synergized with each other through LIT Co's internal knowledge consolidation processes. After 10 years of learning, working, and improving, LIT Co's implementation process was significantly upgraded. Furthermore, the technical and consulting skills of LIT Co's employees were substantially improved.

3.1.1 Factors influencing the conversion of individual to organizational knoweldge

3.1.1.1 Management supports and organizational knowledge sharing and learning culture

LIT Co was founded in 1988 by 13 ambitious young Vietnamese scientists. It was a company with an inquisitive and dynamic board of management and a youthful workforce eager to learn and expand the company globally. The company's founders cultivated a clan culture, fostering a sense of family among employees. They established and maintained their own cultural identity through various activities such as composing creative and humorous songs, poems, and performances. LIT Co also published a monthly journal to foster technical and emotional connections among employees. The company organized various events inspired by Vietnamese traditional occasions, inviting both employees and their families to participate. Through these events and gatherings, employees developed a deeper understanding and camaraderie with one another. Within the company, employees referred to their colleagues as friends, brothers, or sisters, depending on their age differences. The founders of the company were regarded as older siblings. This culture promoted genuine and familial interactions among employees.

LIT Co's managers proactively initiated and supported formal training and learning incentives for their employees. They established partnerships with international corporations such as SAP and Microsoft to provide training for their workforce. LIT Co boasted thousands of employees with certifications from technology groups like Oracle, SAP, and IBM. Additionally, the company had its own internal programming training center and LIT Co University dedicated to providing technology and management training for employees. In LIT Co, every employee was required to maintain their own learning program throughout the year. At the end of each year, they underwent exams to assess their learning progress. Annually, the company organized a competition reminiscent of the King's national exam from the past to recognize the top three employees in various technological and consulting skills. Those who secured the top three positions not only received substantial bonuses but also earned deep respect from their peers.

In addition to the formal training programs, LIT Co fostered a culture of learning and knowledge sharing. The company was renowned for its environment that attracted young and talented individuals. In this setting, experimenting with new ideas and knowledge sharing were common practices. Young employees were often challenged with demanding tasks and projects, allowing them to learn from their experiences as well as the experiences shared by their colleagues within the team and the company as a whole. LIT Co ERP Services conducted knowledge-sharing sessions every Saturday, where employees could share new knowledge and experiences gained during their project work and self-learning. This knowledge was documented and eventually integrated into the company's formal business processes.

3.1.1.2 Consulting handbook as an institutional knowledge sharing system

At LIT Co ERP Services, the processes for implementing an information system are meticulously documented in a handbook referred to as the "Consulting Handbook." This

handbook provides comprehensive guidance on the phases, steps, actions, and guidelines necessary to execute an ERP implementation project. It outlines the required inputs, expected outcomes, and detailed instructions for each step. Additionally, the handbook includes document templates for various purposes, such as business processes, technical designs, project management, and meeting minutes. Previous project deliverables serve as illustrative examples within the handbook.

The Consulting Handbook functions as a codified organizational knowledge system, directing the working processes of LIT Co ERP Services. New employees undergo training using this handbook upon recruitment. Moreover, the handbook serves as a reference guide for the company's quality controllers when conducting quality assessments on projects and products.

The handbook undergoes regular maintenance and updates in alignment with the projects undertaken by LIT Co ERP. Weekly meetings are held to report the status of ongoing projects within LIT Co ERP. Additionally, after each project's completion, a meeting is convened to review and extract lessons learned from the project. Based on the assessment of the current practices' efficiency in the reported projects, the Director of LIT ERP Services, who also serves as the General Manager of LIT Co group, and their management team take direct responsibility for maintaining and updating the handbook, implementing necessary improvements as needed.

3.1.1.3 Cognition of Vietnamese and norms on knowledge sharing and protection

Learning is deeply ingrained in the traditional norms and tendencies of Vietnamese culture. At LIT Co, this cultural trait is evident as employees, spanning from leaders to staff, embrace learning whenever they encounter something new and valuable. They do so naturally, often without considering intellectual property rights or ownership. It appears that they pay little

attention to confidential clauses included in project documents by GIT Co, which assert GIT Co's copyright over the documents and restrict their use to collaboration projects. LIT Co personnel freely share project document templates and adapt them for reuse in other projects or for their internal implementation processes, largely disregarding intellectual property copyright or ownership.

During interviews with LIT Co employees, none of them mentioned the confidential clauses in the documents. From their perspective and habits, adherence to these clauses and respecting document copyright was not a recognized practice. This cultural norm extends reciprocally to LIT Co's sharing of local knowledge and information with GIT Co. They view sharing with GIT Co as a habit.

> *"We learned a lot while working on a major project with a foreign partner. The foreign partner had processes that included many interesting and valuable aspects. They also had areas that needed improvement, and LIT Co shared and supported them."* (LIT Co General Manager - Director of BTMIS project at LIT Co)

A former LIT Co Project Manager shared a similar perspective on knowledge acquisition:

> *"These were tasks we hadn't tackled before. It was a large-scale project covering the entire country and extending to district levels. We learned from these experiences, as well as from observing GIT Co's negotiation techniques with the client. We truly needed to learn those skills."*

Furthermore, sharing with others is a fundamental aspect of Vietnamese culture, as explained by another LIT Co Project Manager:

> *"There's a Vietnamese proverb that tells the story of three grasshoppers walking on the same string. If one falls, the other two fall as well. So, transparent information sharing was central to the BTMIS project."*

He also highlighted how LIT Co openly shared rollout strategies with GIT Co, strategies that were suggested based on LIT Co's understanding of local culture and weather conditions in Vietnamese provinces:

> *"LIT Co completely revamped the rollout strategies, which diverged from what GIT Co had proposed. These strategies, proposed and shared by LIT Co, aimed to avoid the fiscal year-end closing period and the rainy and stormy seasons in Vietnam's mountainous regions."* (LIT Co Project Manager)

Sharing behaviors were not limited to leadership; they were also observed among LIT Co staff. The LIT Co Enhancement Technical team leader discussed how he shared knowledge with a GIT Co consultant:

> *"I shared many things with RA. Even now, we remain friends and remember each other fondly because of our extensive sharing. For example, I shared knowledge of workflow, particularly technical insights into the system workflow. At the time, he was amazed by how LIT Co accomplished these tasks. I shared with him and even provided substantial codes."*

3.1.2 Processes to convert individual to organizational knowledge

3.1.2.1 Interpreting

The changes in individual knowledge as the outcome of interpersonal knowledge transfer between GIT/SOFT Co employees and LIT Co employees were presented in the previous parts related to interpersonal knowledge transfer. In this part, I would like to add more learning methods that LIT Co individuals did to interpret incoming information, update, and enlarge their individual knowledge.

The knowledge transferred from SOFT Co and GIT Co to LIT Co individuals was integrated with their pre-existing knowledge and the knowledge they acquired on their own during and after the collaboration project. A significant part of expanding individual knowledge for those involved in the project was their experiential learning through executing project tasks; they learned by doing. For instance, LIT Co's Change Management leader initially had misconceptions about the concept of change management. She explained how her work on the project gradually improved her understanding:

> *"While working on tasks assigned by GIT Co, I initially developed an English version and then a Vietnamese version following their guidance. Subsequently, there were numerous changes and improvements, often resulting from reviews and discussions with the client's business owners. Through these iterative changes and improvements, I gained a deeper comprehension of the essence of change management."*

During their tenure on the collaboration project with GIT Co and SOFT Co, a LIT Co Project Management Officer, who initially served as an interpreter, took a training program and successfully passed exams to obtain Project Management Professional (PMP)® Certification.

The achievement was acknowledged by LIT Co's Business Process Group II leader, who noted, *"CU (LIT Project Management Officer) completed the training and earned PMP certification."*

And LIT Co individuals continued to learn and improve their individual knowledge after the collaboration project when they have been working on other projects assigned by LIT Co.

LIT Co individuals continued to enhance their individual knowledge even after completing the collaboration project while working on subsequent projects assigned by LIT Co.

For example, LIT Co's Change Management team leader, who was responsible for communication in the BTMIS project, took on a new role as a Change Management leader in another project. In this new project, she actively sought additional sources of information to deepen her understanding of Change Management methodologies and applied this knowledge to gain practical experience. She reflected on her journey:

> *"When working with SA (GIT Co Change Management leader) in the BTMIS project, we encountered some challenges. SA adopted an on-the-job training approach, providing templates and instructions to complete them. However, she didn't explain the 'why' behind these tasks or the underlying methodologies. Consequently, we mechanically followed her instructions without a full understanding of the context. Later on, I took it upon myself to learn more about change management. I discovered that there are various methods and schools of thought when it comes to change management. I delved into different approaches and identified the steps involved. I realized that there are diverse methodologies to execute change management effectively. My learning journey took place after the BTMIS project. During that project, I followed*

SA's guidance, but I didn't grasp the underlying principles. After BTMIS, I was tasked with managing the Change Management group in the PT project. At that point, I had to be self-reliant in acquiring the knowledge I needed. SA had left us with only a few document templates."

This exemplifies the ongoing commitment of LIT Co individuals to self-improvement and knowledge acquisition beyond their initial collaborative experiences.

Similarly, a consultant from LIT Co who had worked on the BTMIS project as a member of the Business Process workstream shared her experience of further expanding her knowledge. She achieved this by learning from the experiences of her fellow LIT Co colleagues who had also worked on the BTMIS project and then adapting GIT Co's templates to her new project:

"When I was part of the BTMIS project, I focused primarily on the tasks within the Business Process team. While I did have some interactions with colleagues from other workstreams, I didn't fully grasp their roles since my responsibilities were different. However, when I later joined the FM project, I found that the project implementation process has similarities to what I had experienced in the BTMIS project. While it wasn't an exact match due to differences in project scope, there were certain aspects in BTMIS that had seemed overly complex at the time and I hadn't fully understood. In the FM project, I simplified those aspects before applying them, allowing me to manage the work more effectively with a streamlined version. In the FM project, I took on the role of leading the Business Process workstream while also providing support to other workstreams. This compelled me to delve deeper into the BTMIS project's implementation process on my own. Through

this process, I gained a more comprehensive understanding. Initially, there were concepts I struggled to grasp, so I turned to 'brothers' and 'sisters' (colleagues) who had worked in different workstreams during the BTMIS project. They generously explained and provided guidance, which significantly contributed to my understanding. Subsequently, I was able to apply the BTMIS process to the FM project in a customized and adjusted manner to align with the specific management requirements and scope of the FM project."

With the different ways above, the increases in individual knowledge which had been transferred through BTMIS project were synergized and intensified (Refer to Figure 39: Expanding Individual Knowledge).

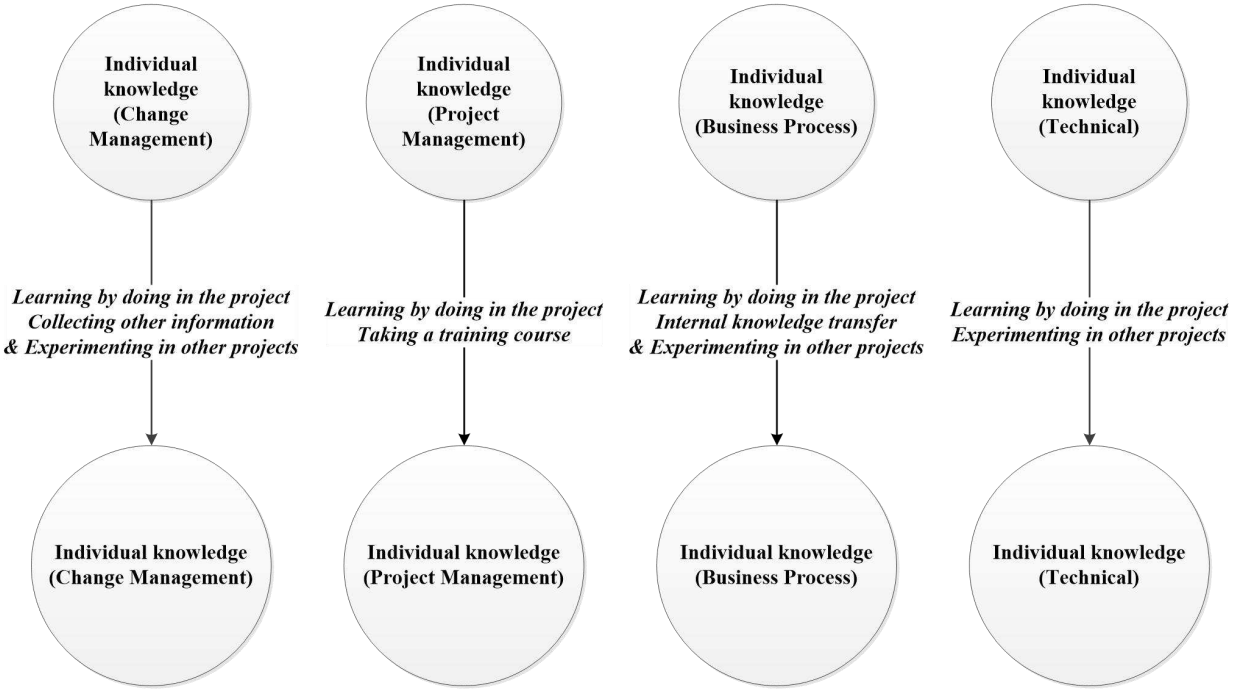


Figure 39: Expanding Individual Knowledge

3.1.2.2 Integrating individual knowledge

After combining with its owned knowledge and enlarging by different learning sources, LIT Co individual knowledge was discussed and shared to many other individuals in LIT Co through seminars or interpersonal knowledge transfer in following projects (Refer to Figure 40: Integrating Individual Knowledge).

The individuals who gained knowledge from GIT Co actively shared their insights through LIT Co's internal seminars, where they presented their knowledge to fellow employees. Furthermore, they took on roles as team leaders in LIT Co's other projects, allowing them to share their individual knowledge on processes, technical and system functions, and personal skills with their team members through interpersonal interactions.

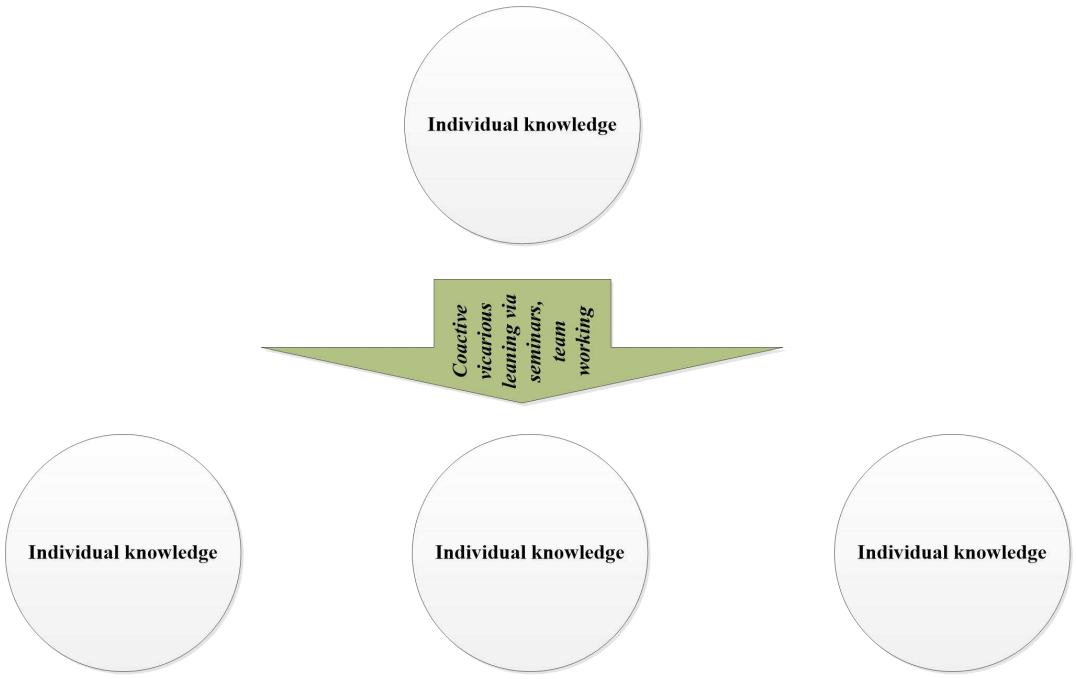


Figure 40: Integrating Individual Knowledge

When discussing how she shared knowledge within LIT Co after learning from the BTMIS project, the LIT Co Change Management leader mentioned:

"I conducted one or two workshops to share general insights about change management. Following that, I provided guidance to individuals in my project teams to execute change management tasks in subsequent projects. In these later projects, the team members responsible for change management were often those who had previously worked on the BTMIS project. For instance, myself and LNT. Additionally, individuals who were in charge of training users during the BTMIS project also contributed to training teams in other projects."

Similarly, the LIT Co Business Process Group leader highlighted:

"LIT Co offered numerous training courses, and those who possessed strong knowledge frequently organized training sessions to teach their colleagues. I believe that LIT Co excelled in its training initiatives."

She emphasized the culture of sharing within LIT Co:

"We cultivated a robust culture of knowledge sharing. For instance, when LNN had questions, I was always willing to share what I knew. When she joined a new project and needed guidance on how to start, she would ask for help. In general, we had a culture of open communication and readily shared our experiences with one another. Following knowledge-sharing seminars, whenever any issues arose, we didn't hesitate to seek input from our colleagues."

The interviews illustrate the strong culture of knowledge sharing within LIT Co.

3.1.2.3 Institutionalizing individual knowledge

Another mechanism to turn individual knowledge transferred to collective knowledge was institutionalizing (Refer to Figure 41: Institutionalizing Individual Knowledge). The individual transferred knowledge across different parts of the implementation process was combined through documenting and applied in LIT Co's later projects. The Consulting handbook on implementation was updated and improved to apply across the company. And the updated implementation process was executed by not only the individuals who got corresponding transferred knowledge but also people in other projects of LIT Co to experience and adjust the process to make it suitable for LIT Co and its clients.

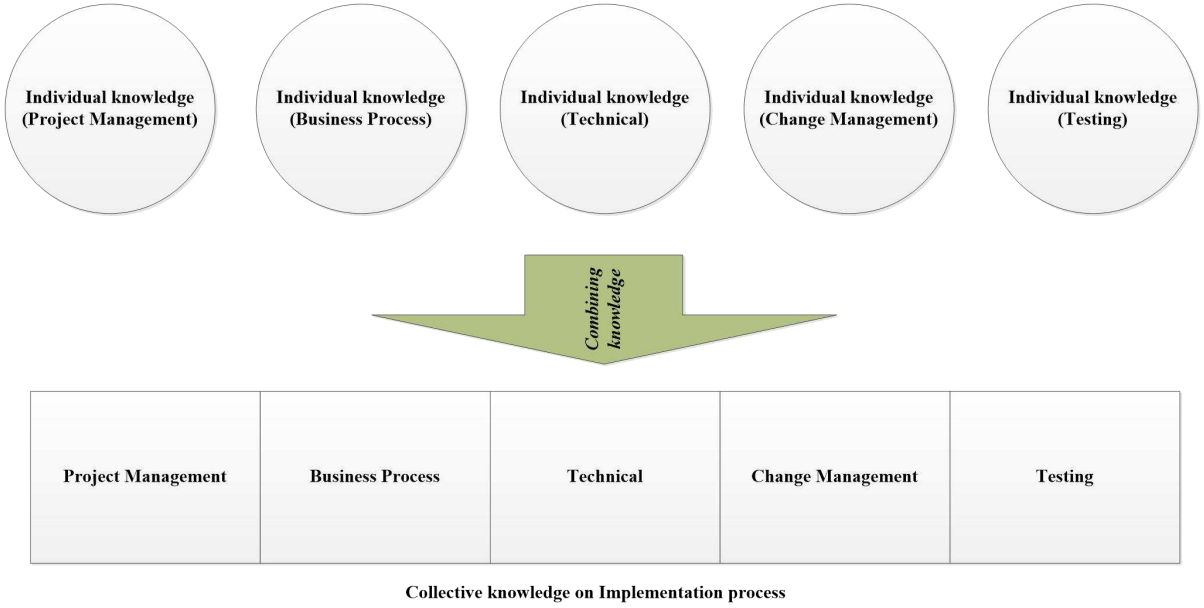


Figure 41: Institutionalizing Individual Knowledge

With the initiation of the BTMIS project, the leadership of LIT Co, including the Director of LIT Co group, who also served as the Director of the BTMIS project, and the Deputy Director of LIT ERP Services, who took on the role of Project Manager in the BTMIS project, had a clear intention to learn. They recognized this project as an invaluable opportunity to glean insights

from industry giants such as SOFT Co and GIT Co while collaborating on one of Vietnam's most extensive IT projects, known for its complexity and expansive scope.

Their learning objectives extended beyond technical and consulting skills; they were equally interested in acquiring management skills tailored to managing such a substantial project. The knowledge they gained was subsequently adapted to update LIT Co's Consulting handbook on the implementation process.

The Deputy Director of LIT Co ERP Services, who had played a pivotal role as the Project Manager in the BTMIS project, elaborated on their intention to learn and how they applied the newfound knowledge to refine LIT Co's Consulting handbook:

> *"Brother N (Director of LIT Co group and the Director of the BTMIS project) and I had the intention to learn. We aimed to undertake a substantial project to gain insights into its management. What did we learn from GIT Co? For instance, we delved into aspects such as project meeting minutes: What did the weekly and monthly meeting minutes look like, and what components comprised these templates? Similarly, concerning the implementation process, we explored how to organize a design workshop, conduct a communication roadshow, and handle change management. These were aspects we had not previously encountered, as we had never tackled projects of such scale, spanning the entire country with district-level rollouts.*
>
> *I implemented some of Brother N's suggestions to restructure our implementation process. However, we couldn't simply replicate all the*

templates because they weren't entirely suitable for the Vietnamese context. Instead, we adapted and incorporated certain templates and processes."

In FM project, the next project of LIT Co, all the workstreams including Business Process, Technical, Project Management, and Change Management were executed based on the adapted implementation process from BTMIS project's process. It was mentioned by LIT Co FM Technical workstream leader who was Reporting team leader in BTMIS project:

"We learned BTMIS implementation process. It was good. Not only me but also many people who participated in BTMIS learned a lot. In FM project, the process of BTMIS was applied in Technical or Business Process or Project Management."

Learning hard in different ways, LIT Co resources significantly upgraded. LIT Co Vice Director of ERP Services said:

"Through big projects with partners, many resources that had knowledge of technologies, products and implementation methodology were built. ... We built our resources and capabilities from that. In addition to formal training, we had seminars and review sessions every Saturday. ... So, the knowledge was distributed to other people. It was not only the knowledge of technical products but also the knowledge of business processes and practices applied for industries".

3.2 GIT Co subsidiary could not integrate local individual to organizational knowledge due to institutional duality.

Working closely with LIT Co for a long term, GIT Co individuals have learned about local business requirements, the local partner, and Vietnamese culture. Listen to GIT Co's individuals share what they individually learned after working with LIT Co.

> *"Of course, we learned a lot about the Vietnamese culture. I mean when we go to a new country, new company we always learn a lot about the way the company works, the culture and the people. And of course, we learned about LIT Co as a company. And we learned how we should work together to deliver the solution." (*GIT Business Process Group II leader)

GIT Co Technical workstream leader also shared:

> *"Before the project, GIT Co had not done services in Vietnam. This was the first project GIT Co did services in Vietnam. So, first they could understand how to work in Vietnam. Since we worked in this project, we were able to win other projects in Hai Phong, one of the ports of Vietnam. That was the benefit for GIT Co. Second, they know the governmental business practices. We had this (BTMIS) as a reference site, we tried to build similar projects oversea."*

Similarly, General Manager of LIT Co group who was the Director of BTMIS project from LIT Co side:

> *"First, GIT Co and SOFT Co learned about the facts in Vietnam where the economy is not well developed. The client's business processes were fragmented and not consistent. They needed to redesign and standardize the*

client's business processes. ... Second, they learned how to convince the client. MOF was a difficult client. The way how to convince the client, they also learned through observing how LIT Co had convinced the client in achieving decisions which brought benefits to the project."

A part of the knowledge GIT Co has gained from collaborating with LIT Co has been codified and stored in the BTMIS project's documents and software. These project documents and software can be utilized as future references when working on other projects in Vietnam or similar developing countries.

Additionally, the knowledge acquired has been retained by individuals who are still working at GIT Co's Vietnam subsidiary. Regarding this point, the GIT Co Infrastructure subleader, a key member of GIT Co's consulting team in Vietnam, remarked:

"GIT Co also learned a lot of things and working culture here. And you see that surviving members from GIT Co, four persons have been still working in Vietnam after 15 years here."

While individual LIT Co employees who worked alongside GIT Co did gain insights into Vietnamese working culture, GIT Co, at a certain point, faced challenges in fully integrating local business practices into their existing procedures. This fact was evident in interviews with LIT Co managers and was confirmed by the GIT Co General Manager in the Vietnam subsidiary.

In response to the question about how GIT Co's relationship with the client changed after observing LIT Co's approach to maintaining client relations, the LIT Project Manager, who also served as the Vice Director of LIT ERP, stated:

"The relationship between GIT Co and the client did not improve, particularly at the company level. I am not referring to individual interactions. However, at the organizational level, there was no significant improvement. This is not about assigning blame but rather acknowledging that GIT Co's approach was overly rigid. They did not fully grasp the nuances of the local working culture here in Vietnam. Vietnam's development status was such that not everything was very clear, and this sometimes led to issues in the workflow.

It's worth noting that the client's decision to continue working with LIT Co for maintenance after the project had gone live was not a matter of chance. It was because a formal maintenance contract couldn't timely address the new business requirements arising from changes in Vietnamese government policies Even though the system had already been implemented and was stable, there were numerous new business demands stemming from these policy changes. The client couldn't have anticipated these changes well in advance.

Obtaining budget approval, initiating project bidding for these business changes, and completing the necessary procedures could take up to a year. However, the need to update and modify the information system was pressing. Waiting for a year after signing a contract to update the system would have been too late. It's not that the client lacked the budget, but rather that they had to navigate a lengthy process to secure it.'

LIT Co displayed flexibility in addressing timing issues, allowing them to initiate system updates and modifications before the client obtained the approved budget for new business changes.

They were willing to start work even before having an official contract in place with the client. However, GIT Co operated differently, adhering to the common business practice in developed countries where work commences only after the contract has been signed. These distinctions in local and standard business practices played a role in the client's decision to select LIT Co as the contractor for the system support and maintenance contract following the BTMIS project.

The disparities between local business practices and GIT Co's practices, which were based on assumptions from a developed country's institutional profiles, created challenges for GIT Co in incorporating local practices into their company's procedures. In response to the question of whether GIT Co learned anything from LIT Co, another LIT Co Project Manager stated:

> *"It is difficult to say. During my time on the project, they placed a lot of trust in me. I handled deliverable acceptances and payments with the client at all project milestones. Why did they trust me? Because when C (GIT Co Business Process Workstream Leader) and K (GIT Co Project Director) needed something, I was able to deliver. However, for GIT Co to assimilate what I had done was challenging because GIT Co and LIT Co were fundamentally different. Some actions that were acceptable for LIT Co were not allowed within GIT Co, preventing them from replicating certain aspects of my approach. I did not engage in any illegal activities, but these practices could have contravened GIT Co's internal regulations."*

Furthermore, maintaining a close relationship with clients is of utmost importance in Vietnam. Establishing a strong rapport with a client can be instrumental in persuading them to sign off on deliverables that may not always align precisely with what's outlined in the contract. In practice,

it is impractical to encompass every detail of an information system within an official contract, and there can be significant differences between the contract and the actual implementation.

The relationship with clients was a crucial factor in GIT Co's decision to collaborate with a local partner. Another reason stemmed from the disparities between the business practices of the host country and those of the parent firm. Even the GIT Co General Manager in Vietnam, who had a clear understanding of local business practices, encountered challenges in incorporating these practices into the subsidiary's procedures. GIT Co's inability to fully integrate local practices and apply local knowledge underscored the necessity of having local partners. Consequently, local partners remained essential in GIT Co's relationships with them.

In the words of the GIT Co General Manager in Vietnam:

> *"To be honest, there is a sensitive reason to collaborate with LIT Co since they have local relationships with Vietnamese enterprises, especially state-owned enterprises and governmental organizations. It is evident that, at a certain level, GIT Co could not navigate the intricacies of these relationships on its own. Furthermore, we require local partners to bridge the gap between GIT Co's practices and those of our local clients. Take, for instance, payment terms: GIT Co Consulting typically requests payments in advance and in accordance with project progress. However, in Vietnam, payments are often made only after the contractor has delivered the work, and the client has accepted the deliverables, sometimes even after the warranty period. These differences are deeply ingrained in people's cognition and mindset. Collaborating with local partners helps streamline these processes, in addition to the cost-effectiveness aspect."*

4. RELATIVE COMPETITIVE, COOPERATIVE, COOPETITIVE POSITIONS OF GIT CO AND LIT CO IN THE PARTNERSHIP AFTER INTERFIRM KNOWLEDGE TRANSFER

4.1 Relative competitive, cooperative and coopetitive positions of LIT Co and GIT Co

4.1.1 Weak or non-competitors with different capabilities and market segments

Upon assessing the relative positions of GIT Co and LIT Co, individuals responsible for sales in GIT Co and other experts within the Vietnam IT market have asserted that these two companies are not direct competitors. They differ significantly in resource capabilities and target distinct market segments.

In response to inquiries regarding the competitive positions of GIT Co and LIT Co, a GIT Co sales executive explained:

> *"They are in different categories and are not directly comparable. GIT Co is a global vendor that provides hardware, software, and IT services on a global scale. It operates as a multinational corporation with revenues in the hundreds of billions of USDs, a workforce numbering in the hundreds of thousands, and a presence in over 100 countries. In contrast, LIT Co is a local system integrator primarily engaged in trading and IT services, with a total revenue of approximately one billion USDs and around 20,000 employees, primarily operating within Vietnam.*
>
> *While both GIT Co and LIT Co offer IT services for implementing IT projects, the term 'IT Services' encompasses distinct offerings from each. Evidently,*

when it comes to prestigious projects characterized by large scopes, high-quality service requirements, and substantial investment capital, LIT Co often falls short of meeting the criteria to participate. Conversely, in projects tailored to LIT Co and other local firms, criteria may be established to prevent GIT Co from participating.

There are opportunities available to both GIT Co and LIT Co. However, the significant disparities in bidding prices can make it challenging for project owners to select either GIT Co or LIT Co. In such cases, a solution often involves leveraging resources from both a multinational corporation and a local firm. For example, government projects are typically awarded to local contractors, with mandatory services provided by a prestigious multinational corporation. Projects funded by enterprises or joint-stock banks, on the other hand, are usually managed by a prestigious multinational corporation or a local vendor. In both cases, a substantial portion of human resources from a local firm is often utilized to reduce costs."

"LIT Co primarily focuses on the domestic market and provides outsourcing services to major multinational corporations in the IT industry. Furthermore, LIT Co is expanding its IT implementation services into less developed neighboring countries of Vietnam, such as Cambodia and Bangladesh, by undertaking larger projects. However, LIT Co's market focus continues to center on the cost-sensitive segment, where projects require less complex technical solutions and prioritize cost-effectiveness.

Regarding the reasons behind LIT Co securing projects in Bangladesh and Cambodia, the leader of GIT Co, responsible for IT services in Vietnam and other ASEAN countries, explained:

> *"The price is also different because Vietnam is still lower cost country than Singapore, than global SI (system integration) ...Cambodia and Bangladesh are less developed compared to Vietnam. They (the clients in Cambodia and Bangladesh) need to walk before running. That is why they don't want to engage and pay so much money for global SI like us or Accenture or McKenzie… It is not necessary."*

or GIT Co, the primary market segment comprises premium projects characterized by complex solutions, high pricing, and the incorporation of new technologies. Following the completion of the BTMIS project, GIT Co has moved up its position on the value chain by focusing on projects that involve cutting-edge solutions and technologies, such as big data, data analytics, artificial intelligence, and hybrid clouds.

Discussing GIT Co's market targets, a key figure at GIT Co Consulting Vietnam stated:

> *"For us, we move up the value chain. And we need to bring up the key things…For GIT Co, we try to move up the value chain and try to find the areas where we can provide unique prepositions. Like recently we acquired RH (a company who had managed a big opensource platform providing cloud computing solutions). RH had hybrid multi cloud strategy. Again, we also have GIT Co cloud…Now we have RH, we have helped customers to build their cloud strategy to move their work to multi clouds so they will not tie to one*

cloud provider. So, they have wider choices for these multi clouds. So, we try to look at the value prepositions and areas we can bring unique values.

We try to look at niche areas in terms of we can bring values for example Data analytics. Data analytics is quite advanced. In Vietnam right now, most people are at the… There are four stages of Analytics. The first one descriptive is pure reporting. Next level is diagnostic like Datamart where you can slide and dice 3-dimensional data. Mostly all players are at this stage. The next level of Analytics is called Predictive. This is developed advanced mathematics model to predict based on the massive amount of data. This is a space we think that there is room for growth. In Vietnam, it is serious lack of data scientists. It is difficult to convert a pure programmer to a data scientist unless the person understands business and mathematical models. It is properly difficult to find. You properly find an IT to know how program R, which is data science language. Again, this is like a developer. Then how to communicate with customers to understand their business and put their business into a model that you can trust to predict for you. It is an advanced area we think that we can bring values to customers."

4.1.2 LIT Co keeps being a long-term partner - an extended arm of GIT Co in Vietnam IT Services

Complementing each other's resources, GIT Co and LIT Co maintain their collaborative relationship. This partnership is affirmed by two market experts who have previously worked for GIT Co and are now employed by two prominent multinational corporations in the Vietnam IT market.

One market expert stated, "*In bidding situations where multinational corporations can participate, LIT Co assumes a co-bid position rather than acting as the prime contractor."*

The other market expert echoed similar sentiments:

> *"They are indeed collaborating. LIT Co personnel tend to handle simpler tasks while GIT Co takes on the more complex aspects. For instance, building IT infrastructure is highly intricate, and LIT Co's team may not have the capability to manage the most challenging components. Additionally, when it comes to project management, GIT Co employees, with their robust training, excel in effectively managing projects"*

GIT Co and LIT Co continue their enduring collaboration, offering automation, robotics, blockchain, cloud computing, data, and artificial intelligence solutions to clients in Vietnam. LIT Co has been a key local partner for GIT Co in the Vietnamese market for a significant duration. Notably, in 2017, LIT Co achieved the highest level of partnership with GIT Co, becoming the first Platinum partner in Vietnam. In 2019, LIT Co was honored with the 'Partner of the Year 2019 for GIT Co Data & Artificial Intelligence' award.

In a speech commemorating the enduring relationship between LIT Co and GIT Co, the GIT Co Director of Partnership Management in Vietnam remarked:

> *"This award is not only a recognition of our combined revenue but also a testament to the dedicated efforts of employees from both companies. It underscores the strong and intertwined collaboration between GIT Co and LIT*

Co, while also paving the way for future collaborations in emerging technologies."

The GIT Co Director of Partnership Management further emphasized:

"LIT Co has been our primary partner in Vietnam since our return to the Vietnamese market in 1996. Over the past two decades, LIT Co has consistently served as our extended arm, facilitating the delivery of our IT solutions to the Vietnamese market and supporting local businesses in their innovation and growth. We have full confidence that LIT Co will continue to stand with us, providing high-value IT solutions and services, including offerings in cloud computing and cognitive computing."

4.1.3 LIT Co and GIT Co are Partnering coopetitors

Due to resource incompatibility and limited market overlap, GIT Co and LIT Co do not directly compete with each other. They cater to distinct market segments, offering different price points and varying levels of service quality. While there are instances where they may compete for the same projects and customers, these opportunities are relatively infrequent.

Discussing the relationship between GIT Co and LIT Co, the leader of GIT Co, responsible for managing IT services in Vietnam and several other Southeast Asian countries, aptly explained:

"We can compete, and we can work together. It is very simple. Just like Samsung, Samsung is a subcontractor of Apple. Apple depends on Samsung. If Samsung stops then they die as well. Screens and everything are subcontracted. And Samsung also produce their own phones, so they collaborate they as well compete. It is the same, LIT Co and GIT Co case, it is the same."

The Deputy Director of LIT Co's IT Services shared a similar perspective on the relationship between GIT Co and LIT Co:

> *"The relationship is wonderful. The majority of our interactions are cooperative, but there are instances where competition comes into play. Cooperation primarily occurs when we sell GIT Co's hardware and software products. Conversely, competition arises when we market our proprietary software products. LIT Co has developed a few software products of its own. In those competitive scenarios, GIT Co may collaborate with another local partner to promote their products, effectively positioning us as competitors."*

He also affirmed that competition occurs when LIT Co sells its own software or offers ERP implementation services in industries where they have accumulated extensive expertise over time. However, he noted, *"The revenue generated from competitive endeavors remains relatively small."*

In summary, LIT Co and GIT Co are principally different classes, and they provide services to different market segments. So, they could be coopetitors whose capacity equivalences and market needs correspondences are both significantly different. With high complementary resources and low market overlapping, LIT Co and GIT Co are in the coopetition relation with partnering status. They depend on each other to sell their products and services. LIT Co could sell GIT Co's hardware, software products and solution consulting when LIT Co has direct contracts with clients. And reciprocally, GIT Co could utilize LIT Co human resources in their projects to reduce costs and adapt to local requirements. This partnership, spanning over two decades, has yielded synergistic benefits and built mutual trust between both parties.

4.2 Country and industry factors

It has been demonstrated that the relationship between GIT Co and LIT Co is predominantly cooperative with a slight competitive element. They find themselves in a situation of 'partnering coopetition' characterized by high resource complementarity and minimal market overlap. Empirical evidence also indicates that they have mutually benefited from their involvement in the BTMIS project, which served as a milestone for knowledge transfer.

Is it plausible that their mutual learning has led to a reduction in resource complementarity and, consequently, a decrease in mutual dependency? Simultaneously, could their resources and capacities have become more similar due to the effects of mutual learning? And is it the knowledge transfer within the BTMIS project that has given rise to a competitive dimension in their relationship?

The interviews conducted with individuals from both GIT Co and LIT Co sides shed light on the significant role played by the innovation cycle of ERP systems and the disparities in the national innovation systems between Vietnam and developed countries. These factors act as moderating influences on the impact of the outcome of interfirm knowledge transfer on the changes of relative positions between GIT Co and LIT Co, rendering that impact less significant.

4.2.1 Innovation cycle of ERP implementation service

As previously presented, LIT Co has acquired and significantly improved their knowledge and resources pertaining to the ERP implementation process and skills. However, an interview with the GIT Co Leader of IT Services, who also served as the Business Process workstream leader in the BTMIS project, suggests that the knowledge transfer to LIT Co is not the primary factor driving LIT Co's emergence as a competitor to GIT Co. In response to the observation that "*We*

saw the lesson that in the BTMIS project, LIT learned from GIT. We can see somehow that they've expanded into the regional market and started competing," he stated:

> *"No, no. This one is different. Because Bangladesh and Cambodia are they more developed than Vietnam? No, of course not. That is why Vietnam is more developed. So, by doing all these, they have value in contributing to less developed countries. So, the gap is different, and the price is also different because Vietnam is still lower cost country than Singapore, than global SI (system integration). So, for them provide that service is just enough because …. Let's say, for a baby, you must know how to walk before you run. So, no point I teach you to run. If you to engage GIT Co, a global SI or Accenture in Bangladesh, they don't need. Because they still want to walk first before running. Walking, they can take from Indonesia SI, Vietnam SI. Why do they want to engage and pay so much money for us or Accenture or McKenzie? No need."*

LIT Co expands into less developed countries, providing value tailored to their needs. Pricing reflects the economic distances, with LIT Co's lower costs compared to global firms. LIT Co focuses on basic services for these markets, akin to learning to walk before running, bypassing the need for global giants like GIT Co or Accenture. Local providers suffice in the early stages.

He further elaborated on the ERP market in Vietnam, describing it as a mass market where ERP implementation has become commoditized. Numerous service providers offer ERP implementation at competitive prices.

> *“Nowadays, even ERP becomes more commoditized. Now LIT Co has its own competitors. Many people left LIT Co to form their own companies including NGS, Si-Tech, and many other smaller companies. In some of the smaller projects, LIT Co will not be able to win. Because they (small companies) can do cheaper and better, this (ERP Services) become commodity.”*

The Vice Director of IT Services at LIT Co also acknowledged the changing landscape of the ERP market, stating:

> *"Now, the ERP market has evolved into a different situation. Many individuals have departed from LIT Co, and numerous competitive companies have emerged, founded by former LIT Co members who started their own ventures. The market now features numerous such smaller companies."*

Amidst a commoditized market with reduced prices and profits, GIT Co globally divested from ERP Implementation services in 2012, Vietnam included. Leveraging their remarkable innovation capabilities, GIT Co redirected their attention toward niche markets such as big data, data analytics, artificial intelligence, and hybrid clouds, where they have introduced novel innovations. GIT Co's strategic approach involves shedding businesses that have transitioned into commodities and focusing on generating innovations in new domains to secure premium profits.

GIT Co brought their knowledge of high standard ERP implementation process to Vietnam. GIT Co's protection of its strategic knowledge in solution design and project management created a hurdle for LIT Co in swiftly acquiring this knowledge. While collaborating with GIT Co, LIT Co managed to internalize certain codified implementation templates and enhance its processes and

workforce quality. However, mastering ERP implementation, including possessing high tacit knowledge in solution design and project management, required a significant amount of time for LIT Co. During this LIT Co's learning period, GIT Co transitioned to new areas and ceased ERP implementation work. This scenario reflects the short innovation cycle in IT Services, particularly ERP implementation, which led to GIT Co and LIT Co operating in different market segments and not directly competing in the ERP implementation domain.

In conclusions, the short innovation cycle in IT industry makes the impact of knowledge transfer and imitation become not significant as it was stated by GIT Co Leader of IT Services:

> *"Knowledge always keeps changing. What is now is outdated in a few years' time. So, it doesn't matter (to transfer knowledge) … In IT, it is about knowledge and people. Knowledge and people can always move. So whatever rule or policy you state (legal contracts to protect knowledge) will not be practical."*

The short innovation cycle works like a natural protection mechanism to help innovators to appropriate their innovation result and left imitators behind. And transferring knowledge to local partners is *"a win-win situation. Because you trained them for this project, you can also get help with other projects. There is no need to train again for future."* (GIT Co Business Process Workstream Group I leader).

4.2.2 Firm innovation capacity and national innovation system

In addition to the short innovation cycle in the IT industry, GIT Co's innovation capabilities, stemming from their well-developed national innovation system, are another factor that moderates the impact of knowledge transfer on the relationship between GIT Co and LIT Co.

GIT Co stands as a global pioneer in both technological innovations and service excellence. As per GIT Co's annual report, the company's remarkable track record in patent innovation leadership spans over 25 consecutive years, where it has consistently outperformed all other companies in receiving US patents. GIT Co's dedication to fostering service innovations is evidenced by its collaborations with clients worldwide. Their global projects are not solely underpinned by advancements in core technologies but also by inventive approaches to business services. This synergy of innovations, coupled with their well-established brand name and a diverse global talent pool, empowers GIT Co to continually explore new domains, targeting niche markets to maximize profitability. This case study underscores GIT Co's strategic shift away from ERP implementation towards emerging technologies such as big data, data analytics, artificial intelligence, and hybrid clouds..

Talking about their innovation capabilities working as a protection mechanism for GIT Co from imitation of local partners, GIT Co General manager of Vietnam subsidiary said:

> *"In services, the fact that someone learns your service offerings and they offer something similar is unavoidable. If LIT Co had not imitated, then other companies would have done. In GIT Co, we have one thing called service engineering science, which is science to create new services. We are always the leader and discover such new services. Innovation culture is the source to generate innovation for solutions and new business models."*

In addition, in the IT industry knowledge could be spilled over to others by nature, due to high human mobility and demonstration effects. And the innovation capacities of GIT Co could help them to keep the leading position in the industry.

What could make GIT Co have high innovation capabilities? GIT Co is an MNC originally from the United States? A local Vietnamese company could have high innovation capabilities like GIT Co? Sharing from LIT Co Vice Director of IT Services shows that innovation capacities of firms significantly depend on the national innovation system where the firms locate. In case of Vietnamese IT firms, they could not be able to design and develop good IT software containing advanced business processes due to limitation of economy development and management knowledge:

> *"Basically, in the IT industry the most important thing is products. Products are systems including software, solutions, and business processes. This is the weak point of Vietnam technology. Big systems in Vietnam are not many. The systems built by Vietnamese we have but not many. In fact, to build those systems it is required to have people with deep and wide business domain (industry knowledge). In Germany and United States, why they could build huge and great software? Because, they have a long history of developed economy and society. With that background, their management knowledge and experience have helped to design and build software that could meet the business requirements of clients and to handle different dimensions like market changes and development stages. Vietnam economy has started opening since 1989. Vietnam economy is still young and does not have much experience.*

Vietnamese people do not enough knowledge and experiences to design such great software."

And in that case, MNCs could afford to openly share knowledge on the mature technologies and management with partners since they could move fast to new technologies and innovations.

In conclusions, selective revealing knowledge to the local firm did not harm much to the MNCs due to the relatively low competitive positions of MNCs and the local firm, fast innovation speeds of MNCs and slow learning speeds of the local firms, and short innovation cycles in the industry. Once the local firm learns more to be a master from the scattered pieces of transferred knowledge, the knowledge becomes mostly obsolete and the MNCs have moved to new technologies.

Even though LIT Co's implementation process and human resources were significantly upgraded, the resource capabilities of LIT Co are not compatible with GIT/SOFT Co's resource capabilities. Innovation capabilities, resource quality and complementary global resource pool of GIT Co and SOFT Co keep them superior to LIT Co in terms of resource capabilities.

PART VIII: DISCUSSIONS, CONCLUSIONS, AND CONTRIBUTIONS

1. DISCUSSIONS

1.1 Control mechanisms driving individual characteristics and conditions to interpersonal knowledge transfer

The empirical results regarding the interpersonal knowledge transfer process between GIT Co's and LIT Co's employees are consistent with the theoretical framework integrated from Myers (2018) and Minbaewa (2007). The four groups of factors driving knowledge exchange interactions and ultimately influencing the degree of changes in individual knowledge due to interpersonal knowledge transfer are structural factors, relationship quality, sender's characteristics, and receiver's characteristics.

The Business Process workstream, marked by high interdependencies in the joint task structure, closer relationships between leaders and members, a more substantial knowledge stock, and the stability of GIT Co's permanent employees, along with the strong communication skills of LIT Co's functional consultants, exhibited the highest degree of individual knowledge changes resulting from interpersonal knowledge transfer effects. These significant changes were a direct outcome of the intense interactions between them. Back to the root cause, the level of interactions between LIT Co and GIT Co employees within the Business Process workstream was also the highest, as they collaborated closely on tasks such as collecting requirements and delivering solutions, with the exception of complex approach and solution design.

Additionally, we observed that the tacitness and personal attachment to design knowledge in the Business Process contributed to the protection of knowledge in the context of high interactions.

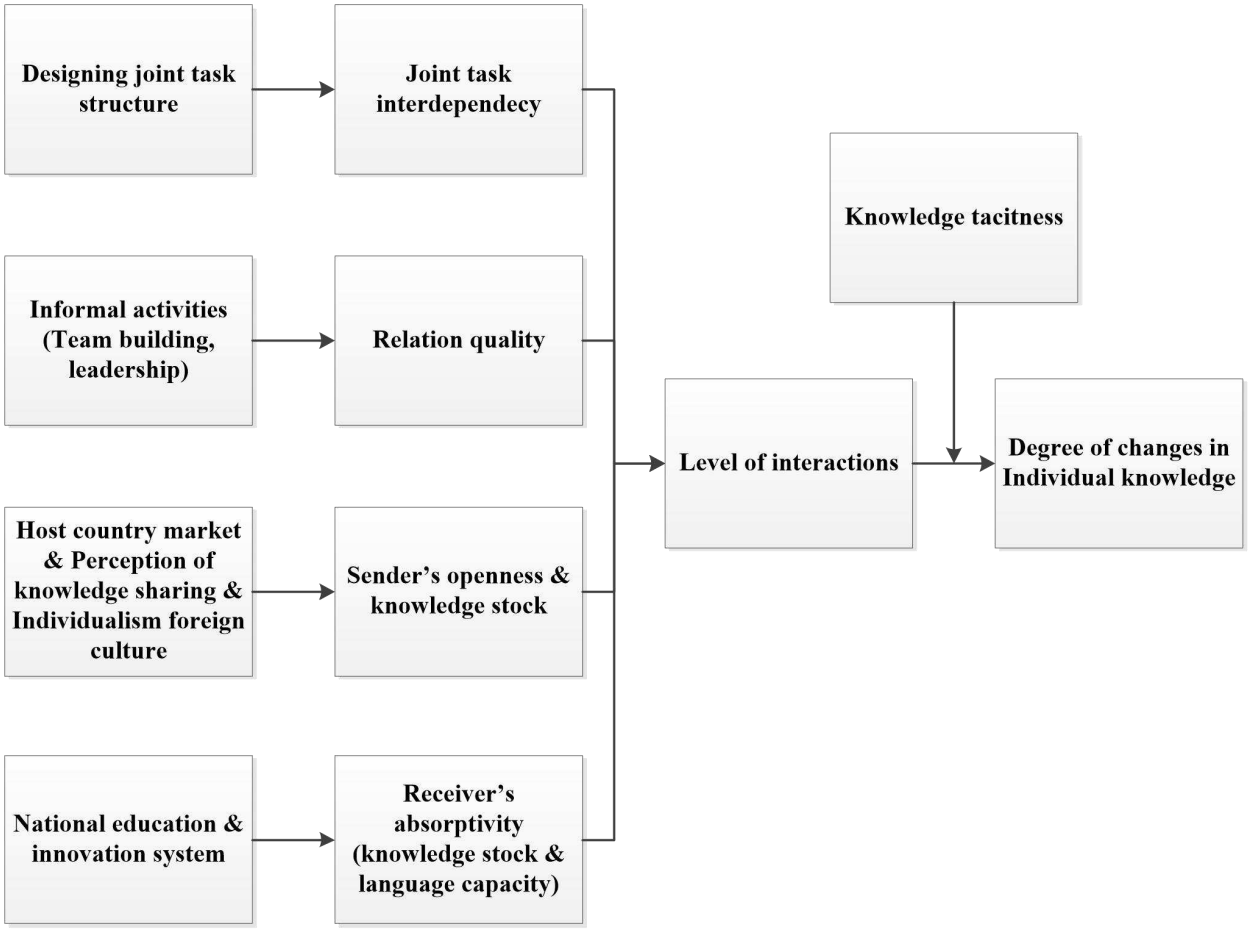


Figure 42: Summary of Control Mechanisms and Factors Influencing Interpersonal Knowledge Transfer Process

Based on the empirical findings and in conjunction with the theoretical framework, we put forth the following propositions to confirm the antecedents of the interpersonal knowledge transfer process in the context of international alliances:

<u>Proposition 1:</u> In a team that includes members from different international alliance partner firms, joint task interdependency, team relationship quality, the knowledge sender's knowledge stock, openness, and the knowledge receiver's knowledge stock and language capacity drive knowledge exchange interactions. These factors, through knowledge exchange interactions,

ultimately influence the degree of changes in individual knowledge, which is the outcome of interpersonal knowledge transfer between employees from MNCs and local firms.

In the following parts, we are going to review control mechanisms, their impacts on the four groups of antecedents, knowledge exchange interactions, and eventually the interpersonal knowledge transfer outcome.

1.1.1 Formal and informal control mechanisms to conditions of individual actions

1.1.1.1 Joint task structure and its impacts on interpersonal knowledge transfer

The differences in the joint task structure between the Business Process Workstream and the Technical Workstream led to varying levels of task interdependence and knowledge exchange interactions between GIT Co and LIT Co employees in the project.

In the Business Process Workstream, both Group I and Group II had junior LIT Co employees working closely under the supervision of their corresponding GIT/SOFT Co senior consultants. Each pair, consisting of a LIT Co junior consultant and a GIT/SOFT Co senior consultant, collaborated on a common functional area. Throughout the project phases, both the LIT Co junior consultant and GIT/SOFT Co senior consultant in a pair worked on the same tasks, which could involve collecting business requirements, designing system functions, processes, or reports, delivering designs verbally or in writing, configuring, and testing information systems. These common tasks were divided into planning, designing approaches, execution, and communicating details to the client. GIT/SOFT senior consultants were responsible for planning and designing approaches, while LIT Co junior consultants executed and communicated the details. Knowledge exchange interactions, including explaining approaches and designs, questioning the designs and approaches provided, responding to detailed designs, reviewing, providing feedback on detailed

designs, and clarifying original ideas when interpreting them into the local language, occurred in both directions within a pair, involving a LIT Co junior consultant and a GIT/SOFT senior consultant. The tasks of GIT/SOFT senior consultants and LIT Co junior consultants were interdependent, with each depending on the completion of the other's task to proceed, leading to frequent knowledge exchange flows between them.

In contrast, the joint task structure in the Technical Workstream and other workstreams exhibited greater independence between GIT/SOFT Co employees and LIT Co employees. Within LIT Co only, LIT Co technicians worked closely with LIT Co team leaders, and there was minimal direct interaction between LIT Co team members and GIT/SOFT Co team leaders. Periodic communications between LIT Co team leaders and GIT/SOFT Co team leaders revolved around working plans, deliverables, and technical issues, allowing LIT Co team leaders to learn about planning, technical approaches, and some technical skills from GIT/SOFT Co team leaders.

The empirical evidence demonstrated that knowledge transfer interactions and learning outcomes of LIT Co members in the Business Process Workstream, as well as at the team leader level in the Technical Workstream, and technicians in the Technical Workstream corresponded with the joint task structure design and the level of interdependence within each team. This finding regarding joint task structure in the context of a working team formed by members from different international alliance partners aligns with the findings in the context of an internal working team within an organization (Wageman, 1995).

Based on the empirical results, the following proposition is proposed:

Proposition 1.1: ***In a team that includes members from different international alliance partner firms, the joint task structure drives joint task interdependency, knowledge exchange interactions, and ultimately influences interpersonal knowledge transfer outcomes.***

1.1.1.2 Team building activities and leader member exchanges and their impacts on interpersonal knowledge transfer

The cases of Business Process Groups I and II, the Technical Infrastructure team, and the Change Management workstream demonstrated that team-building activities and leader-member exchanges had a positive impact on team connections, coherence, and affection. Consequently, this led to increased knowledge sharing and mutual support among team members.

Interviews revealed that in Business Process Groups I and II, team-building activities brought the entire team together. Moreover, both group leaders invested time and effort in communicating, understanding, showing respect for, and supporting their team members. In contrast, team-building activities and exchanges were less prominent in the Technical and Change Management workstreams. Consequently, Business Process Groups I and II exhibited higher levels of coherence and connectivity. Team members in these groups were emotionally engaged with their teams, and importantly, knowledge sharing was more efficient.

These empirical findings align with the implied hypotheses of the theoretical framework. The findings confirm the applicability of team-building (Klein et al., 2009) and leader-member exchange (Graen & Uhl-Bien, 1995) theories in the new context of knowledge exchange within a team comprising members from different international alliance partners. As a result, we propose the following proposition:

Proposition 1.2: ***In a team that includes members from different international alliance partner firms, team-building activities and leader-member exchanges positively contribute to team relationship quality, knowledge exchange interactions, and ultimately influence knowledge sharing among team members.***

1.1.2 Perceptions to individual motivations and knoweldge sharing behaviors

Based on interviews with GIT Co project members, it was determined that knowledge sharing did not incur significant additional costs. Knowledge transfer occurred naturally when team members worked closely together. Additionally, GIT Co shared only the specific knowledge required for the collaborative project, which could not be readily applied by LIT Co due to their focus on different customer segments. Furthermore, it did not negatively impact GIT Co's business, as knowledge in the IT industry can become obsolete quickly. On the positive side, knowledge sharing was crucial for the success of the common project. Sharing knowledge with LIT Co was seen as a reciprocation for what GIT Co had learned from them. Considering these costs and benefits, the net benefits were positive. The motivation to share knowledge in this case was primarily extrinsic, driven by the desire for reciprocal knowledge from the local partner and the success of the common project. These findings align with the theories of motivation (Ryan & Deci, 2000) , theory of social exchange (Blau, 1964) and the extrinsic motivations for knowledge sharing (H.-F. Lin, 2007a; H.-F. Lin, 2007b).

In the context of alliances, where conflicts of interest can arise, the project's success, which directly impacted the individual benefits of GIT Co project leaders, was prioritized. When assigned to a project, GIT Co's project leaders were accountable for its success. The outcome of the project could directly influence their bonuses, penalties, and future career prospects. Therefore, they tended to prioritize their individual benefits over the company's benefits, as indicated in an interview with a GIT Co Project manager who expressed a willingness to transfer required knowledge to LIT Co to ensure the project's success, rather than considering the potential impact on GIT Co's competitive advantage.

Based on the empirical results and a reconciliation with existing literature, the following proposition is formulated:

Proposition 1.3: ***In the context of interpersonal knowledge sharing and protection in international alliances, individual perceptions of the costs and benefits of knowledge sharing and protection, particularly individual benefits, influence extrinsic motivations for knowledge sharing and ultimately drive the knowledge sender's openness.***

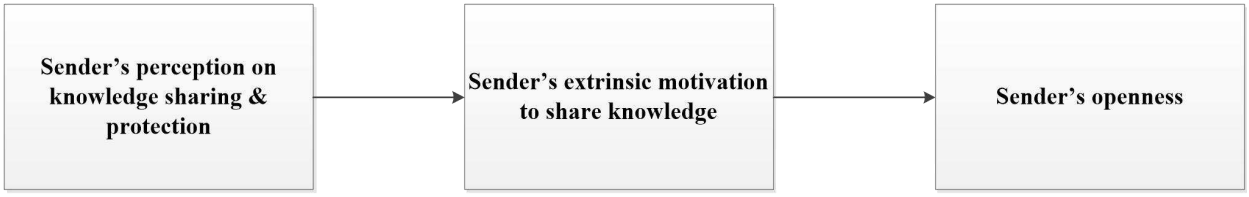


Figure 43: Perceptions, Motivations, and Knowledge Sharing Behaviors

1.1.3 Institutional control mechanisms to individual characteristics

1.1.3.1 Host country economy and institutions influencing knowledge stock of MNC's knowledge senders

The interviews with GIT Co managers revealed that GIT Co had limited its own human resources for projects in Vietnam to reduce costs. By integrating local resources from their partner, GIT Co aimed to align their costs with the lower-cost market in emerging economies such as Vietnam. This practice is consistent with findings related to the limited resource endowment of MNCs in developing countries, owing to the lower economic and institutional status of these markets (Tihanyi & Roath, 2002; Vernon, 1966).

Due to budget constraints within the project, GIT Co hired short-term contractors with lower quality and stability to supplement their limited number of permanent employees, who generally had higher quality and stability. As a result of this resource endowment strategy, the quality of

knowledge senders, particularly in Technical workstream, was not consistently high. Not all project members in the workstream from GIT Co possessed strong technical knowledge and skills, as evidenced in the case. The empirical findings suggest the following proposition:

Proposition 1.4: ***In an international alliance between an MNC from advanced economies and a local firm in an emerging economy, the host country's low-income affordability influences the MNC's resource endowment for collaboration, resulting in a reduction in the knowledge stock of the MNC's resources, ultimately impacting interpersonal knowledge transfer between the MNC's employees and the local partner's employees.***

1.1.3.2 Level of collectivism of national culture influencing knowledge senders' openness

The low level of openness observed among Indian technicians was consistently reflected in the experiences of both LIT Co and GIT Co technicians who collaborated with them. Those Indian technicians who were less open to sharing knowledge tended to come from either SOFT Co's India subsidiary or were short-term freelancers hired by GIT Co. However, within the same BTMIS project, three other Indian consultants who were permanent employees of GIT Co, originally from India but living long-term in Singapore, did not exhibit overly protective behaviors. Additionally, during interviews with two SOFT Co Indian technicians, they expressed their willingness to share knowledge with LIT Co technicians for the common collaboration objectives as well as in response to working requests from GIT Co, the main contractor.

Previous research has shown that the level of individualism in national culture can negatively impact an individual's openness to sharing knowledge employees (Hofstede, 2001; Michailova & Hutchings, 2006; Olander & Hurmelinna, 2015) . Among the technicians from various countries, including Vietnamese, Singaporean, Malaysian, Indian technicians were perceived to

be more protective in sharing knowledge in this study. When comparing the individualism index of these countries, India had the highest score at 48, while Vietnam and Singapore both had 20 points, and Malaysia had 26 points (Hofstede Insights, 2023+00:00). This suggests that one of the reasons why Indian technicians tended to be more protective may be attributed to cultural norms.

However, it's important to note that knowledge-sharing behaviors are directly driven by individual motivations, which are influenced by perceptions of costs and benefits. In the case of SOFT Co technicians, their closer competitive position with LIT Co could make them more cautious about the potential costs of sharing knowledge with a potential competitor. Short-term freelancers may also be concerned about the loss of time, effort, or future working opportunities. Moreover, SOFT Co technicians and freelancers were not directly responsible for the success or failure of the BTMIS project, unlike GIT Co's permanent employees. These varying perceptions of costs and benefits can result in different motivations and sharing behaviors.

In this scenario, it may not be sufficient to conclude that Indian national culture alone leads to knowledge protection behavior. Further research is needed to explore the factors that impact individual perceptions of the costs and benefits of knowledge sharing and protection, as well as the cultural differences among individuals who originate from the same country but live and work in their country of origin or in different countries.

1.1.3.3 National education and science technology innovation systems of host country influencing absorbability of local firm's knowledge receivers

The interviews revealed that LIT Co, despite being the largest IT company in Vietnam, still lacked resources with high technological, managerial, and communication skills. One clear example of misunderstanding the concept of change management as programming highlighted LIT Co's limited knowledge of managing changes, a critical management skill required for implementing IT systems. Another common issue in all workstreams of the BTMIS project was communication skills in English. Even in the Business workstream, team members with management backgrounds, expected to communicate better in English, faced difficulties understanding English when communicating with the group leader initially.

These interviews shed light on the reality of the national education system in Vietnam, which places more emphasis on theoretical knowledge and less on applied and soft skills, including communication and management skills (World Economic Forum, 2019) .Organizations in Vietnam struggle to hire employees with the required levels of managerial and leadership skills (73%), socio-emotional skills (53%), foreign language skills (58%), and technical and vocational skills (68%) (Akhlaque et al., 2021). Additionally, the country faces a shortage of scientific and technological knowledge due to inadequate investment in R&D (Akhlaque et al., 2021), resulting in weak innovation capacities among Vietnamese firms.

As a result of the developing education and national innovation system, the workforce produced by the education and innovation system possesses lower technical, managerial knowledge, and communication skills. This leads to the consequences of low absorbability in technology transfer. As illustrated in the case, LIT Co employees were not proactive in their learning efforts. They struggled to identify what they should target and prepare to learn, often passively absorbing what

GIT Co consultants delivered. Furthermore, during interactions with GIT Co knowledge senders, they primarily listened to guidance and mechanically executed tasks without seeking additional knowledge on methodologies and experiences. Consequently, knowledge exchange interactions were limited, and, subsequently, the learning outcomes were restricted.

When reconciling the interview results with the data on Vietnam's national education and innovation system, the following proposition emerges:

Proposition 1.5: ***The national education and science technology innovation systems of the host country significantly influence the individual absorbability of the local firm's knowledge receivers and, ultimately, impact knowledge exchange interactions and interpersonal knowledge transfer outcomes***.

1.2 Individual knowledge to organizational knowledge processes

The empirical findings confirm the proposed model for converting individual knowledge into organizational knowledge. In the case of LIT Co, individual knowledge was shared among group members, leading to the formation of group knowledge through seminars and group work. This group knowledge in various areas was consolidated and documented in the Consulting handbook. The processes and routines updated in LIT Co's Consulting handbook were then distributed to all employees within the company. These processes align with the conceptual knowledge integration and institutionalization processes proposed by Crossan et al. (1999) and Inkpen & Crossan (1995).

Moreover, we observed interactions between explicit or codified knowledge and tacit knowledge to enhance organizational knowledge, akin to the Spiral knowledge creation process suggested by Nonaka (1994). Individual knowledge and skills of LIT Co employees, treated as tacit knowledge, were shared among colleagues. This shared knowledge underwent conceptualization,

validation, and adjustments through application in LIT Co's working projects. Subsequently, the validated knowledge was documented to become codified organizational knowledge in their Consulting handbook. Through this process of converting individual knowledge to organizational knowledge, individual tacit knowledge was transformed into codified organizational knowledge. Conversely, the updated codified organizational knowledge was distributed to all employees, further enhancing their individual tacit knowledge. This continuous loop of knowledge exchange and conversion led to the expansion of organizational knowledge through updates and the creation of new knowledge.

To enable these processes of converting individual knowledge to organizational knowledge, certain conditional factors were necessary. The example of LIT Co illustrates that management support, organizational culture, and knowledge-sharing systems play crucial roles in facilitating these knowledge conversion processes. LIT Co's managers initiated and maintained formal training programs, fostered a culture of sharing, and utilized the Consulting handbook to drive individual knowledge interpretation, group knowledge integration, and organizational knowledge institutionalization processes.

The empirical findings on the factors influencing knowledge integration processes align with existing literature concerning management support, organizational culture (Lee et al., 2008; Liao, 2008; H.-F. Lin, 2007a; H.-F. Lin, 2007b; Wang & Noe, 2010) , and knowledge management system factors (Cohen & Levinthal, 1990; Hamel, 1991; Huber, 2009).

Furthermore, the empirical findings related to the factor of institutional duality provide new insights into situations and consequences associated with dual institutionality. Both LIT Co and GIT Co faced dual institutionality situations. In both cases, new practices could not be internalized or accepted if they were inconsistent with existing cognitive, normative, and

regulative institutions. These findings highlight the importance of aligning practices with the values and beliefs of those involved for successful internalization (Scott, 2014).

For LIT Co, the strict practice of knowledge protection based on individualism and regulations from a developed country, as introduced by GIT Co, was inconsistent with the open knowledge-sharing and intellectual property protection practices of LIT Co which located in a collectivist developing country. LIT Co employees did not adequately acknowledge intellectual property rights, resulting in the transfer of individual knowledge from GIT Co not being well-protected within the collaboration project. Instead, it continued to transfer to other LIT Co employees and was eventually internalized, becoming LIT Co's organizational knowledge after adjustments. This behavior regarding knowledge sharing by LIT Co employees is similar to that observed among Chinese employees, who tend to share knowledge openly and may not be sufficiently aware of confidentiality issues (Olander & Hurmelinna, 2015). Such behavior could be attributed to the lack of specific rules and intellectual property officials to investigate and prosecute infringements in Vietnam (Akhlaque et al., 2021).

On the other hand, GIT Co struggled with local practices in Vietnam, which were relational and flexible in business, as they did not align with GIT Co's reliance on legal contracts as a basis for their operations. Consequently, the individual knowledge learned from LIT Co was not effectively transformed into GIT Co's organizational knowledge. This finding resembles situations faced by Japanese MNC subsidiaries overseas when the host country's institutions significantly differ from those of the parent firm (Yiu & Makino, 2002).

Based on the empirical findings and in conjunction with the existing literature, the following propositions are proposed:

Proposition 2: ***Management support, organizational culture, knowledge management systems, and dual institutionality between host and home countries influence the processes involved in transforming individual knowledge into organizational knowledge in both MNCs and local firms.***

Regarding dual institutionality factor:

Proposition 2.1: ***Due to limited awareness of intellectual property protection, collectivism culture, and weak enforcement of intellectual property rights, codified knowledge learned from a MNC partner at the individual level is not well-protected within the collaboration scope but is shared within the local firm at the organizational level.***

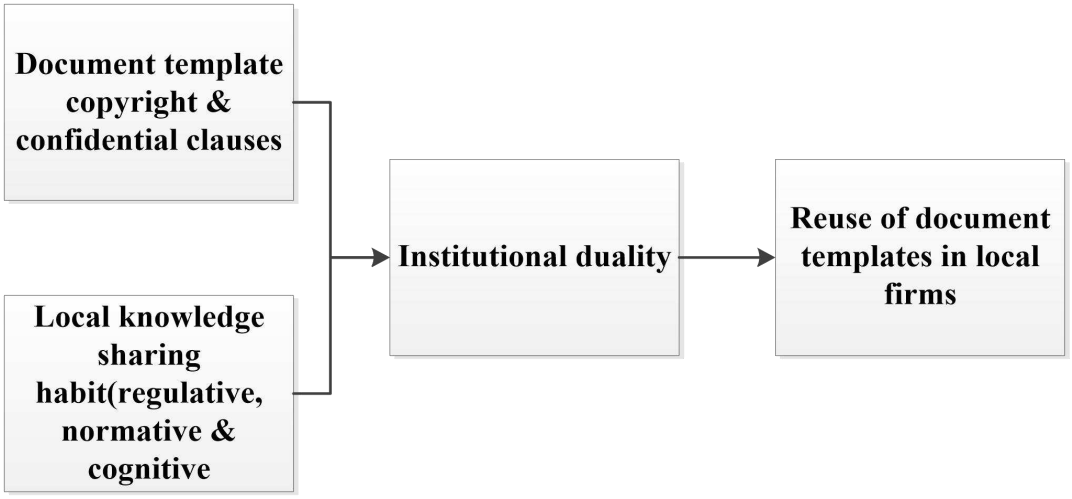


Figure 44: Institutional Duality and Knowledge Institutionalization of LIT Co

Proposition 2.2: ***Due to differences in institutional profiles (regulative, normative, cognitive) between the host country and the MNC's original country, certain local business practices may not be internalized at the MNC's organizational level, even though individuals within the MNC may acquire knowledge of these local practices.***

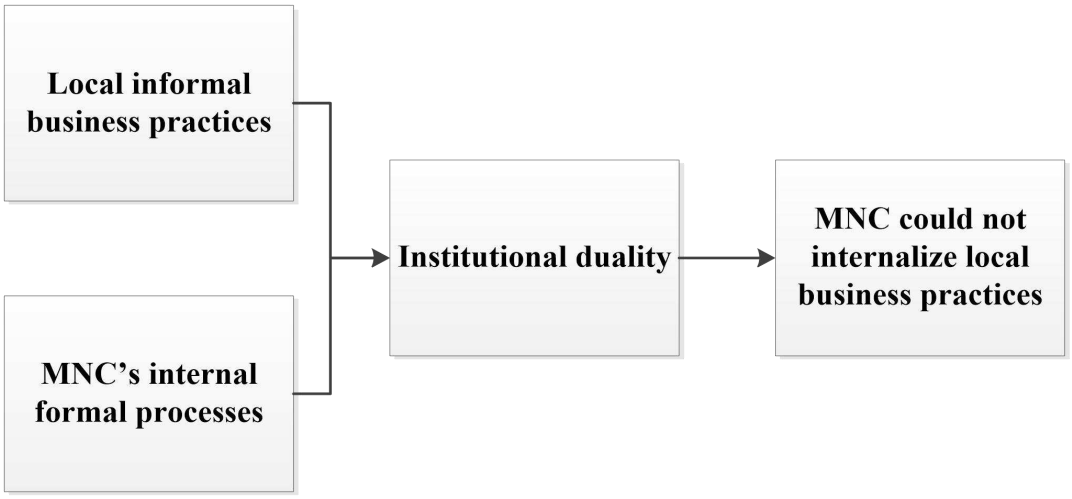


Figure 45: Institutional Duality and Knowledge Institutionalization of GIT Co

1.3 Competitive, cooperative and coopetive positions

"The empirical findings show that LIT Co and GIT Co have learned from each other. Due to the design of the joint task structure, relationship quality, openness, knowledge stock of knowledge senders, absorbability, and knowledge stock of knowledge receivers, and the tacitness of knowledge, primarily codified knowledge (rather than strategic tacit knowledge related to designing, solutioning, and management), could be transferred from GIT Co to LIT Co employees. Futhermore, individual knowledge learned from GIT Co has been enlarged, adapted, and transformed into organizational knowledge at LIT Co because of the management support, open sharing culture, and knowledge management systems at LIT Co. As a result, LIT Co's resources have significantly improved over time. GIT Co employees have also learned about local markets, business requirements, practices, and culture through their collaboration with LIT Co. The differences in the institutional profiles between the host country and the home country hindered GIT Co from fully internalizing some local business practices into their working procedures and routines. Nevertheless, GIT Co did learn from LIT Co, even though it appears that the final impact on organizational knowledge was more substantial for LIT Co

Mutual learning increases knowledge overlapping and eventually weakens mutual interdependency, as seen in the case of the collaboration between Germany's Vodafone and France's Vivendi Universal (Luo, 2007) . Learning from partners could change the relation between the partners from cooperative to competitive, as shown in the relationship between a Germany-based supplier and a Finland-based buyer firm. After the German firm had learned a product concept from the Finnish partner, produced, and sold its own product to compete with the Finnish partner (Tidström & Hagberg-Andersson, 2012). Observing empirical results, Dussauge (2000) concluded that mutual learning reduces mutual dependence and leads to alliance instability. Particularly, asymmetric learning leads to a change in both relatively cooperative and competitive positions (Hamel, 1991)

The impact of interfirm learning on changes in the relative positions of the partners can be elucidated through the Resource-based view and resource dependency theory.

On the competitive side, the Resource-based view (Barney, 1991; Wernerfelt, 1984) explains the relationship between firm resources and its competitive position. According to this view, when a knowledge resource is imitated by others, it loses its rarity and value, which in turn diminishes the firm's competitive advantage. An increase in the availability of similar knowledge resources intensifies competition between firms (Peteraf & Bergen, 2003).

On the cooperative side, the resources contributed by a partner to an alliance determine its bargaining power and the level of dependency its partner has on it (Casciaro & Piskorski, 2005). When a firm acquires the knowledge possessed by its partner, the level of dependency on that partner decreases. Consequently, mutual dependency and the overall strength of the collaborative relationship also diminish after the partners have learned from each (Bacharach & Lawler, 1981).

According to the theories, mutual learning between LIT Co and GIT Co should have reduced their mutual dependency and potentially led to a decrease in their collaborative relationship if they hadn't introduced additional resources into the collaboration. Moreover, since LIT Co acquired knowledge and improved its capabilities to a greater extent, this should have increased its bargaining power in the relationship with GIT Co, unless GIT Co had contributed significantly more resources to the partnership. Under these circumstances, the collaborative relationship between LIT Co and GIT Co might have transformed into a competitive one, with LIT Co becoming a direct competitor to GIT Co. Given that both firms learned from each other, they would have struggled to maintain their competitive advantages if they couldn't create new knowledge or resources. However, the interviews reveal that they have maintained a strong cooperative relationship.

While LIT Co has engaged in some competition with GIT Co on occasion, this competition is relatively weak compared to their collaborative efforts. The competition revenue generated is not substantial when compared to the revenue generated through collaboration. They typically compete when LIT Co sells its own software or offers ERP implementation services in industries where LIT Co has developed extensive expertise over the long term. Interestingly, this competition does not stem from LIT Co merely learning from GIT Co and using that knowledge to compete, as confirmed in the interviews. The light competition is originally based on the software or services which LIT Co has built based on long-term working in the local market.

In summary, the relationship between them can be characterized as "partnering coopetition," where resource complementarity and synergy are the primary characteristics.

Indeed, there are two key reasons that contribute to the stability of their relationship, even though interfirm knowledge transfer has occurred, which differs somewhat from what existing theories predict. These reasons were identified through interviews:

Saturation and Rapid Technological Changes

The knowledge transferred from GIT Co to LIT Co became saturated and less valuable in the market once LIT Co fully assimilated it. Several factors contributed to this, including the lower absorbability of LIT Co's employees, GIT Co's efforts to protect certain knowledge, and the tacit nature of some of the knowledge. As a result, LIT Co couldn't fully exploit this knowledge as a competitive advantage. Moreover, the IT industry in which they operate is characterized by rapid technological changes and short product cycles. This fast-paced innovation makes it challenging for firms to maintain a competitive edge solely based on existing knowledge. GIT Co, recognizing this, shifted its focus to new services and innovations rather than relying on mature knowledge. Consequently, the industry's high innovation speed and short product life cycle moderated the impact of knowledge transfer on their relative positions.

Innovation Capabilities and Local Advantages

GIT Co's strong innovation capabilities, backed by the advanced national innovation system of their home country, a developed country, played a crucial role in maintaining their bargaining power and competitive advantage in the relationship with LIT Co. GIT Co continually added new knowledge derived from their innovations in technology and management to the partnership. These robust innovation capabilities allowed GIT Co to share mature knowledge with local partners while still remaining attractive and competitive in the market. On the other hand, LIT Co leveraged its local advantages, such as low-cost resources, familiarity with local business

practices, and strong relationships with clients and government entities. These advantages helped LIT Co prevent obsolescence in their relationship with GIT Co.

In summary, the differences in their resources and capacities, which ultimately influence their relationship, stem from the disparities in economic, educational, regulatory, business culture, science, and technology systems between a developed country like the United States (GIT Co's home country) and a developing country like Vietnam (LIT Co's location). These factors, along with the dynamic nature of the IT industry, have played pivotal roles in shaping the outcomes of their interfirm knowledge transfer and maintaining a cooperative relationship with elements of competition, known as "partnering coopetition".

The empirical findings related to the consequences of knowledge transfer via international alliances in the IT industry in Vietnam are consistent with extant research on the moderation of country factors in the relationship between interfirm knowledge transfer outcomes and the relative positions of the partners.

In cases of alliance learning among partners who are all originally from developed countries (Hamel, 1991; Inkpen & Beamish, 1997; Luo, 2007; Tidström & Hagberg-Andersson, 2012), the distances between developed countries are not as significant as the gaps between a developing country and a developed country. Consequently, the moderation effect of these distances on the relationship between the interfirm learning and the subsequent changes in relative bargaining power and competitive positions of the partners may not be as pronounced. In these cases, asymmetric learning does indeed result in changes in relative bargaining power and competitive positions of the alliance partners (Refer to Table 17: List of Cases of Interfirm Knowledge Transfer via International Alliances), as clearly predicted by Resource-based view (Barney,

1991; Wernerfelt, 1984) and Resource dependency theory (Casciaro & Piskorski, 2005; Emerson, 1962).

Cases	Consequences	Host country– Origin country	Industry
11 companies concerning nine international alliances (Hamel, 1991)	Asymmetries in learning changed relative bargaining power within the alliance and may shift a relative competitive position and advantage between the partners outside the alliance. When a Japanese firm's speed of innovation out-ran the partner's pace of absorption, the firm could be very open to the partner. Their R&D speed was the ultimate protection mechanism against partner encroachment	Europe -United States - Japan	Aerospace, chemicals, semiconductors, pharmaceuticals, computers, automobiles, and consumer electronics.

Cases	Consequences	Host country– Origin country	Industry
International joint ventures in China, Japan, and United States (Inkpen & Beamish, 1997)	Foreign partners could learn better and shift relative bargaining power. For example: Foreigner firms in Japan made local Japanese partners obsolete after learning local knowledge	Japan – United States - China	Automobiles, fishery, and fast foods
Germany's Vodafone and France's Vivendi Universal (Luo, 2007)	Mutual dependence weakened. And competition significantly increased.	France - Germany	Telecommunication
A German firm & its Finland supplier (Tidström & Hagberg-Andersson,	The relation changed from cooperative to competitive after German firm had learned a product concept from the partner.	Finland - Germany	Packing industry

Cases	Consequences	Host country– Origin country	Industry
2012)			
4 joint ventures between United States and Chinese firms in China (Yan & Gray, 1994)	Chinese firms did not gain bargaining power through international alliances with US partners because MNCs protected their knowledge and learnt from the local firms. MNCs continued to add new knowledge to the international alliances to maintain their bargaining power. The relaxation of prohibitions on foreign direct investment allowed a foreign firm to acquire a local company formerly owned by its Chinese partner. So Chinese	China – United States	Electronic office equipment, industrial process control, personal hygiene products, and pharmaceuticals.

Cases	Consequences	Host country– Origin country	Industry
	partner's bargaining power diminished significantly when one of its wholly owned companies was acquired by the joint venture.		
A joint venture in China between an innovative Australian manufacturer and a Hong Kong-based partner (McGaughey et al., 2000)	The tacitness of its strategic knowledge of product design protected the strategic knowledge itself. And the firm kept continuously creating new knowledge by innovation to leave the imitator behind.	China - Australia	Manufacturing and designing high-speed ferries.
69 joint ventures in India between MNCs and local	Changes in relative bargaining power in favor of MNCs since the MNCs	India - United States	Chemicals, pharmaceuticals, engineering,

Cases	Consequences	Host country– Origin country	Industry
companies (Kale & Anand, 2006).	learnt better, obsoleted the local partners, and turned joint ventures to fully owned subsidiaries. The changes in governmental regulations allow MNCs to convert a joint venture to fully foreign owned subsidiary.		information technology, and consumer goods
Six Taiwanese technological firms and their international alliance partners (Liu & Zhang, 2014)	Firms could design a task structure that allowed them partially to share product-related knowledge but seldom shared core marketing-related knowledge.	Taiwan – United States, Japan, Europe	Manufacturing IT products including PC systems, communications, semiconductors, and display solutions.

Table 17: List of Cases of Interfirm Knowledge Transfer via International Alliances

The case of the alliance between LIT Co and GIT Co, along with other cases in China, India, and Taiwan (Kale & Anand, 2006; Liu & Zhang, 2014; McGaughey et al., 2000; Yan & Gray, 1994), confirms the role of country institutions in influencing the relative relationships of the partners who are from countries with significant distances in economies and national innovation systems.

In cases of international alliances between MNC partners coming from advanced countries and local partners in developing countries, the outstanding innovation capabilities of the MNCs reduced the impacts of asymmetric learning on the changes in the relationship between the partners. Stronger innovation capabilities of the MNCs from advanced economies worked as a mechanism in protecting the MNCs' bargaining power and competitive (McGaughey et al., 2000; Yan & Gray, 1994) . This factor has been confirmed in the case of GIT Co. GIT Co has still maintained their bargaining power and competitive position against LIT Co even though LIT Co has outlearned them.

Furthermore, the local firms lost their bargaining power in the alliances in India and China since the relaxation of foreign investment regulations by the governments reduced the importance of the local partners. As a result, the MNCs in India and China were allowed to acquire local firms and were not required to stay in the joint ventures with the local firms after outlearning local knowledge (Kale et al., 2000; Yan & Gray, 1994).

While in the case in Vietnam, the gaps in business practices prevented GIT Co from making LIT Co obsolete. If LIT Co had not maintained their relationship with local clients, and GIT Co had internalized local business practices, then LIT Co could have lost their bargaining power and competitive position.

The case in Vietnam also shows the importance of normative institutions in moderating the relationship between interfirm learning outcomes and the subsequent changes in relative relationships of the partners. The fact that the distances between Vietnam and the United States or Singapore in national innovation systems and business practices moderated the relationship between interfirm knowledge transfer outcomes and the subsequence changes in relative positions of LIT Co and GIT Co is consistent with the Institution-based view (Scott, 2014) . It

highlights the role of the Institution-based view in analyzing and forming strategies for firms, especially in the context of international business in emerging economies.

Furthermore, this study adds knowledge on the impact of industry factors on the relationship between interfirm knowledge transfer outcomes and the relative positions of the partners. The extant literature has mentioned the short product life cycle in the IT industry. The product life cycle in the IT industry has been minimized, and high speed to market requires alliance partners to be more open in sharing knowledge (Liu & Zhang, 2014). It has also been shown that the lead time strategy is more important compared to legal mechanisms in appropriating innovations in the IT industry (Hipp et al., 2003). However, it has not been clear why in the IT industry the time dimension could be used as a mechanism to ensure innovation appropriation. The case of knowledge sharing between LIT Co and GIT Co and the consequences reveal that it is safe to share mature knowledge in the IT industry because it will soon become outdated, as GIT Co's Leader of IT Services said. In the IT industry, continuous innovation is the key mechanism to protect competitive advantage and positions, as GIT Co's General Manager in Vietnam shared in the interview. This result is consistent with the competitive situation in industries with high technological complexity. MNCs use strong technological and marketing capacities to protect their competitive advantage and position in industries where technological complexity and market heterogeneity are high (S.-J. Chang & Park, 2012).

The findings related to the relative competitive positions of LIT Co and GIT Co after interfirm knowledge transfer are consistent with the literature on knowledge spillover and competitive dynamics in emerging markets. From 66 research papers on interfirm knowledge transfer and spillover, K. Meyer & Sinani (2009) conducted a quantitative meta-analysis to investigate the benefits and costs of foreign direct investment for firms in host countries. The results of the

analysis revealed that competition between foreign entrants and local incumbents in low-income countries is limited due to institutional barriers and differences in market segment competition (K. Meyer & Sinani, 2009). This finding from K. Meyer & Sinani (2009) is confirmed by the case of LIT Co and GIT Co. While LIT Co is focused on the mass market segment, GIT Co is concentrating on premium projects with high prices, complex solutions, and high quality.

Regarding competition dynamics, Mutlu et al. (2015) proposed a theoretical framework consisting of three stages to describe the longitudinal competitive dynamics between MNCs and domestic firms. In the current situation in Vietnam, competitive dynamics are situated somewhere between the first and second stages of this framework. During these stages, domestic firms are working diligently to enhance their capabilities and ensure their survival after the entry of MNCs into the local market. However, it's important to note that domestic firms in Vietnam have not yet reached the level of development where they can effectively compete with MNCs, whether on a local or international scale, as has been observed with Chinese and Indian firms. The competition between Chinese or Indian firms and MNCs has progressed further within the framework proposed by Mutlu et al. (2015), reaching a stage where domestic firms from these countries have established robust capabilities to compete with MNCs across various markets.

To explain why the findings in the case of LIT Co and GIT Co do not align with MNCs experiencing significant losses in developing countries, as mentioned by Contractor (2019), two possible reasons can be considered.

First, the losses experienced by MNCs in developing countries, as highlighted by Contractor (2019), were often attributed to illegal issues such as counterfeiting, piracy of tangible goods, software piracy, and trade secret theft (National Bureau of Asian Research, 2017). These losses

were not necessarily linked to knowledge transfer via international alliances, which are typically formed voluntarily by the partnering firms.

The second reason may be related to the differences in economic and institutional factors between Vietnam and other countries, such as China, where technology transfer may have been forced by government policies (Prud'homme & Zedtwitz, 2019; Wei & Davis, 2018). In contrast, in Vietnam, the government has provided more support to foreign firms in the form of tax incentives, governmental subsidies, land allocation, loans, and streamlined administrative procedures, compared to domestic firms (Truong Le, 2019). This favorable environment may have encouraged many foreign firms to enter the market, compete actively, and potentially outcompete local partners in joint ventures (Nhóm PV Kinh tế , 2021; Tran, 2013).

Reconciling the empirical findings of the case of GIT Co and LIT Co with the existing literature leads to the following propositions:

Proposition 3: ***The shifts in cooperative, competitive, and coopetitive relations due to interfirm knowledge transfer between an MNC and a local firm in an international alliance are moderated by country and industry factors.***

Proposition 3.1: ***The significant economic and institutional distances between the MNC's home country and the local host country reduce the impact of interfirm knowledge transfer on the shifts in cooperative, competitive, and coopetitive relations between the MNC and the local firm.***

Proposition 3.2: ***The high speed of innovation and short product life cycle in the industry where the MNC and the local firm are working reduce the impact of interfirm knowledge***

transfer on the shifts in cooperative, competitive, and coopetitive relations between the MNC and the local firm.

2. CONCLUSIONS

The following are three main findings derived from the case of the knowledge transfer between a MNC and a local firm in the IT industry in Vietnam, shedding light on the process of interpersonal knowledge transfer, the transformation from individual to organizational knowledge, and the evolving relationship dynamics between the MNC and the local firm within this longitudinal partnership. The findings also answer to the three research questions in the context of IT industry in Vietnam.

2.1 Conclusion for Research Question 1

An analysis and comparison of driving factors, knowledge transfer interactions, and outcome across the eight teams involved in the collaboration project unveil the key drivers, process, and result of interpersonal knowledge transfer. These driving factors encompass the joint-task structure, the quality of relations, motivation, and the knowledge stock of knowledge senders, as well as the motivation and absorptivity of knowledge receivers. These factors influence interpersonal knowledge transfer interactions between senders and receivers, ultimately leading to changes in knowledge of individuals from both parties. Additionally, the tacitness level of knowledge moderates the relationships between these antecedents and the outcome of interpersonal knowledge transfer.

More particularly in the knowledge transfer project, empirical findings across the eight teams indicate that the changes in individual knowledge resulting from interpersonal knowledge transfer between the MNC and the local firm were constrained by several factors. These constraints included the joint task structure, designed to safeguard the MNC's strategic

knowledge; the limited knowledge stock and instability of short-term contractors from the MNC; the local firm's employees having limited knowledge in technology, management, and foreign languages; and variations in relation quality among different teams.

Nevertheless, individuals from the local firm were able to acquire codified knowledge related to implementation methodology and some tacit knowledge concerning project management and solution design. Simultaneously, MNC employees who collaborated with their local counterparts gained insights into local business knowledge, practices, and working culture.

We conclude that:

Conclusion 1: ***In the case of knowledge transfer between an MNC and a local firm in the IT industry in Vietnam, codified knowledge can be transferred between MNC's and the local firm's employees. However, strategic tacit knowledge is primarily protected at the interpersonal level due to the following factors:***

- Limited knowledge stock and openness of the MNC's employees.
- Limited absorbability of the local firm.
- Joint task dependency structure designed to protect strategic knowledge.
- Not always good team relation quality.
- The IT industry has a heavy tacit knowledge structure.

2.2 Conclusion for Research Question 2

The two embedded cases focusing on the transformation of individual knowledge into organizational knowledge shed light on the contrasting processes of the MNC and the local firm in assimilating the knowledge acquired from their partner.

Individuals from the local firm, benefiting from a robust culture of knowledge sharing and strong management support, actively disseminated the knowledge acquired from the MNC within working groups and through knowledge sharing seminars. They effectively merged this newfound knowledge with their existing knowledge derived from practical experience and other learning sources. This adaptation and enhancement of knowledge allowed the local firm to align seamlessly with their business requirements. Moreover, this adapted knowledge was meticulously documented and incorporated into the operational guidelines of the local firm, extending its applicability to other projects.

Conversely, due to disparities in business practices between the local environment and the MNC, even though MNC employees learned local practices from their local partner, some of this knowledge could not be transformed into the MNC's organizational knowledge. Instead, the knowledge of some local practices remained at the individual or working group levels within the MNC.

These two cases illustrate that while individuals at the local firm may not have access to strategic or critical tacit knowledge from the MNC, their ability to integrate and adapt acquired codified knowledge with their existing knowledge from diverse sources significantly enhances the local firm's organizational knowledge and capabilities.

Here is the conclusion related to Research Question 2:

<u>Conclusion 2:</u> The local firm could significantly improve its knowledge and resource capacities with support from management, a knowledge-sharing culture, and knowledge management systems. However, the MNC could not fully integrate local knowledge due to institutional duality.

2.3 Conclusion for Research Question 3

The longitudinal case study of the partnership between the MNC and the local firm, featuring an important knowledge transfer project, can be divided into two distinct periods: before and after the knowledge transfer. This case demonstrates that there was an increase in overlapping knowledge between the two partners due to a mutual learning effect. Drawing from existing theories, the growth in knowledge overlap was expected to reduce mutual dependency and enhance resource compatibility. Consequently, it was anticipated to reduce cooperation, elevate competition, and initiate a coopetitive relationship.

However, intriguingly, the empirical evidence did not conclusively show significant changes in the relative relationships as posited by the theories. The shifts in cooperative, competitive, and coopetitive relations were relatively modest. In the high-speed innovation environment of the IT industry, the product life cycles for IT software products and services were short. Meanwhile in the context of low absorbability and limited transparency, the local firm required time to acquire and effectively integrate the knowledge gained from the MNC. While the local firm was taking time to master this acquired knowledge, the MNC, being from an advanced economy supported by a rapid national innovation system, shifted its focus towards new products and services through fresh innovation. Consequently, the knowledge initially acquired by the local firm became outdated for the MNC. Leveraging their exceptional innovation capabilities, the MNC replenished their resource base with new knowledge, thereby sustaining their bargaining power within the partnership and competitive position against the local firm.

For the local firm, as the MNC was unable to fully integrate local practices into their organizational knowledge due to dual institutional challenges, the MNC continued to rely on collaboration with the local firm to bridge gaps in local knowledge and relationships. In

summary, both the MNC and the local firm managed to maintain their competitive advantages, resulting in insignificant changes in their relations, as mutual resource interdependence and resource compatibility remained relatively unchanged.

***Conclusion 3**: Under the moderation effects of institutional and industry factors, the relative cooperative, competitive, and coopetitive positions between the local firm and the MNC have not significantly changed due to:*

- The MNC protects their strategic knowledge through selective sharing, the tacitness of knowledge, and the short innovation cycle in the IT industry.
- The MNC's ability to maintain a high innovation capacity to add new technology and management knowledge to the collaboration.
- The local firm's ability to maintain its competitive advantage by focusing on local relations and adapting to customers.

In conclusion, this case study research provides insights into the safety of selective knowledge sharing for MNCs in the IT industry when collaborating with local partners in Vietnam. It demonstrates that, with a robust learning culture and effective integration mechanisms, a local firm can enhance their knowledge resources, even when interpersonal knowledge transfer from MNCs is constrained. However, the knowledge gaps between the MNC and the local firm persist, as the MNC continues to add new technology and management knowledge into the partnership, while the local firm maintains their strong local relationships, adapt to local business practices, and be flexible to local clients' needs and preferences. The case result is the answer to the fundamental research question if it is safe to it for MNCs to selectively share knowledge with local firms in international alliances in IT Industry in Vietnam. Yes, it is safe to for MNCs to

collaborate and transfer knowledge with local firms in IT industry in Vietnam since they are protected by the gaps in economic and national innovation system, the tacineness of the knowledge and innovation speed of IT industry in addition to their organization selective revealing protection. These findings are likely to be applicable to industries characterized by high innovation speed in the context of low- and medium-income emerging economies, where substantial economic and institutional gaps exist in comparison to advanced economies.

3. CONTRIBUTIONS

3.1 Theoretical contributions

Theoretically, this research makes a significant contribution by introducing a novel multilevel research approach to the literature on interfirm knowledge transfer through international alliances. This multilevel approach, grounded in micro-foundations, delves into the intricacies of the interpersonal knowledge process. It then connects this process to the organizational level by establishing a link through individual knowledge, which emerges as an outcome of the interpersonal knowledge process and serves as an antecedent to organizational knowledge. Furthermore, this study extends its focus to the interfirm level, scrutinizing the shifts in relative positions of partner firms following interfirm knowledge transfer.

Through this approach, the research elucidates the relationships between driving factors including team joint task structure, team relation, and individual motivation, openness, and knowledge stock to interpersonal knowledge transfer process. It unveils how these driving factors influence individual behaviors within the interpersonal knowledge transfer process, ultimately shaping the outcome of interpersonal knowledge transfer.

Moreover, this research delves into the control mechanisms employed to manage the driving factors within the interpersonal knowledge transfer process, emphasizing the crucial role of

individuals as knowledge agents in connecting these mechanisms to interpersonal knowledge transfer and, ultimately, interfirm knowledge transfer.

Furthermore, this research explores the processes involved in the transformation of individual knowledge into organizational knowledge, shedding light on the factors influencing these processes within the contexts of both a MNC and a local firm.

Lastly, this research deepens our comprehension of the transformations in relationships between an MNC and a local firm arising from interfirm knowledge transfer, particularly in the context of economic and institutional disparities between a developed country and a developing one within the IT industry. The research confirms the moderation role of country and industry context factors of interfirm knowledge transfer literature.

In conclusion, these contributions expand and enrich the current literature on interpersonal knowledge transfer, organizational knowledge transformation, interfirm knowledge transfer through international alliances and the strategies employed by MNCs in emerging markets.

3.2 Managerial contributions

From a managerial perspective, this research offers valuable insights into the knowledge transfer process, the driving factors behind it, and the mechanisms for control. Specifically, at the team level, the study provides practical guidance for team leaders, illustrating effective approaches to manage team task design, implement team-building activities to enhance the quality of interpersonal relationships, and motivate individuals to actively participate in interpersonal knowledge transfer interactions.

At the firm level, managers can draw from research to cultivate a conducive organizational culture, promote group knowledge sharing activities, and establish robust organizational

knowledge sharing systems. These efforts can facilitate the transformation of individual knowledge into organizational knowledge, maximizing its utility within the organization.

Lastly, based on the research findings regarding the outcomes of interfirm knowledge transfer, MNCs' leaders in knowledge-intensive industries, such as IT, characterized by rapid innovation cycles, can confidently consider alliance strategies with local firms in low- and middle-income countries. Such strategies have the potential to yield cost reduction benefits, reduce foreign liabilities, harness local knowledge advantages, and expand market presence, all while ensuring a competitive advantage in a dynamic industry landscape.

This research stands at the forefront of knowledge management studies within EM contexts, offering substantial contributions both from a theoretical perspective and in advancing our understanding of internationalization by MNCs in EM settings. It extends our comprehension of the knowledge management paradox within the intricate landscape of international business.

Furthermore, this research is intricately linked to and holds relevance for three other European Union (EU) funded projects, namely ENTICE, KITFEM, and EM4FIT, operating under the auspices of FP7 and Horizon 2020. These projects collectively emphasize the domains of knowledge, innovation, and entrepreneurship in the realm of international business, with a specific focus on emerging markets. The synergy between this research and these EU-funded projects underscores the multifaceted significance of the findings and their potential to inform policy and practice within the broader context of international business and knowledge management.

3.3 Research limitation

There are two limitations to this research.

Firstly, the study applied a case study methodology that uses analytic generalization to extrapolate the findings. Even though the empirical results have been reconciled and discussed with secondary data, theoretical frameworks, and extant literature, future studies could investigate interfirm knowledge transfer between MNCs and local firms in different emerging economies and industries to validate the research propositions, especially those related to the effects of country and industry factors.

Secondly, concerning the factors influencing the interpersonal knowledge transfer process and the process of transforming individual knowledge into organizational knowledge, and the mechanisms to control those factors, future quantitative research could examine a larger number of samples and use statistical generalization to confirm the propositions of this study.

FRENCH TRANSLATION

RÉSUMÉ

Les économies émergentes sont des ~~nations~~ économies à revenu faible, à croissance élevée, qui utilisent la libéralisation économique pour favoriser leur développement et contribuent de manière significative à l'économie mondiale. Les entreprises multinationales (EMN) sont attirées par ces marchés, établissant des partenariats avec des entreprises locales pour accéder aux ressources et aux connaissances, améliorant ainsi leurs performances financières. Le défi réside dans le transfert efficace des connaissances tout en préservant les actifs stratégiques.

Il existe deux lacunes théoriques cruciales dans la littérature existante. Tout d'abord, il existe des résultats contradictoires concernant les conséquences du transfert de connaissances interentreprises au sein d'alliances internationales dans les marchés émergents. Deuxièmement, il y a un manque de recherche à plusieurs niveaux et d'une approche basée sur les micro-fondements ~~micro~~ pour comprendre en profondeur le transfert de connaissances, qui est influencé par des facteurs à divers niveaux, notamment individuel, d'entreprise, interentreprise, de l'industrie et du pays.

Pour combler ces lacunes, cette étude doctorale pose la question fondamentale suivante : Est-il sûr pour les EMN de partager sélectivement leurs connaissances avec des entreprises locales au sein d'alliances internationales dans les économies émergentes ? Cette question globale est subdivisée en enquêtes spécifiques à différents niveaux :

Premièrement, examen de l'impact des mécanismes formels et informels de partage et de protection des connaissances sur le transfert interentreprises de connaissances, et la fuite de connaissances.

Question 1 : Comment les mécanismes formels et informels de partage et de protection influencent-ils le transfert sélectif de connaissances au niveau interpersonnel ?

Question 2 : Comment le transfert sélectif de connaissances au niveau interpersonnel s'agrège-t-il pour influencer le transfert de connaissances au niveau interorganisationnel ?

Deuxièmement, enquête sur l'évolution de la dynamique de la relation entre les EMN et les entreprises locales après un transfert sélectif de connaissances.

Question 3 : Comment les positions concurrentielles relatives des EMN et des entreprises locales évoluent-elles après un transfert sélectif de connaissances au sein de leurs collaborations ?

La recherche empirique est menée dans l'industrie des technologies de l'information au Vietnam, en se concentrant particulièrement sur un partenariat à long terme entre un leader mondial de l'informatique et la plus grande entreprise du secteur au Vietnam. L'étude explore les positions relatives de l'EMN et de l'entreprise locale avant et après un projet de transfert de connaissances, examine les antécédents et les processus de transfert de connaissances interpersonnelles à travers huit cas intégrés, et analyse la transformation des connaissances individuelles en connaissances organisationnelles à la fois au sein des EMN et des entreprises locales à travers deux cas intégrés.

Les résultats de la recherche mettent en évidence que divers facteurs, tels que la structure des tâches communes, les relations au sein de l'équipe, le stock de connaissances et les motivations des employés, servent de contraintes aux résultats du transfert de connaissances interpersonnelles. L'étude démontre également l'assimilation efficace des connaissances par les entreprises locales en provenance des EMN, tandis que ces dernières rencontrent des défis pour intégrer les connaissances locales dans leurs processus organisationnels. De manière importante, la relation

globale entre les EMN et les entreprises locales ne connaît pas de changements significatifs après le transfert de connaissances en raison de la persistance des écarts de connaissances. Les EMN continuent d'introduire de nouvelles connaissances, tandis que les entreprises locales maintiennent leurs solides relations locales et leur adaptabilité.

En conclusion, cette recherche apporte une contribution substantielle à la compréhension du transfert de connaissances au sein d'alliances internationales, en particulier dans les économies émergentes. Les résultats ont des implications théoriques pour la recherche sur le transfert de connaissances à plusieurs niveaux et fournissent des perspectives pratiques aux gestionnaires engagés dans le partage de connaissances au sein de collaborations internationales dans les marchés émergents. Dans l'ensemble, cette étude éclaire les dynamiques complexes du transfert de connaissances et son impact sur le pouvoir de négociation et la position concurrentielle des entreprises dans les économies émergentes.

1. EMPIRIQUEMENT, POURQUOI L'ÉTUDE EST-ELLE IMPORTANTE ?

Les économies émergentes sont des pays à faible revenu connaissant une croissance rapide, utilisant la libéralisation économique comme moteur principal de leur développement. On peut les diviser en deux groupes : les pays en développement en Asie, en Amérique latine, en Afrique et au Moyen-Orient, et les économies de transition dans l'ancienne Union soviétique et en Chine" (Hoskisson, Eden, Lau, & Wright, 2000). Ces économies contribuent de manière significative à l'économie mondiale (Anand, McDermott, Mudambi, & Narula, 2021). Selon le FMI (2021), 20 pays des marchés émergents représentent 34 % du PIB nominal mondial en dollars américains et 46 % en termes de parité de pouvoir d'achat (Duttagupta & Pazarbasioglu, 2021).

Les marchés émergents (ME) sont très attrayants pour les entreprises multinationales (EMN) qui cherchent à s'étendre à l'échelle mondiale et à maintenir leur compétitivité (Kumar, Gaur, Zhan,

& Luo, 2019). Le partenariat avec des entreprises locales peut être une stratégie principale des EMN pour accéder aux connaissances locales, aux ressources et pour améliorer leurs performances financières (Hitt, Dacin, Levitas, Arregle, & Borza, 2000 ; Luo, Zhang, & Bu, 2019). Les entreprises locales recherchent des actifs financiers, techniques et immatériels supérieurs de la part de partenaires en provenance d'économies développées. Les entreprises mondiales recherchent des compétences uniques, des connaissances du marché local et un accès pour sélectionner leurs partenaires (Hitt et al., 2000). En conséquence, les ME sont des laboratoires d'apprentissage idéaux pour les acteurs locaux et les entrants étrangers. Le transfert de connaissances par le biais de la collaboration avec des partenaires est l'une des principales sources d'apprentissage à la fois pour les entreprises locales et les EMN (Hitt, Li, & Worthington, 2005). La question de savoir comment transférer efficacement les connaissances aux partenaires de collaboration pour co-créer de la valeur est une question importante pour les alliances entre EMN et entreprises locales. En même temps, les deux partenaires doivent protéger leurs connaissances stratégiques pour maintenir leur pouvoir de négociation et leur position concurrentielle (Luo & Rui, 2009, 2009 ; Yang, Fang, Fang, & Chou, 2014).

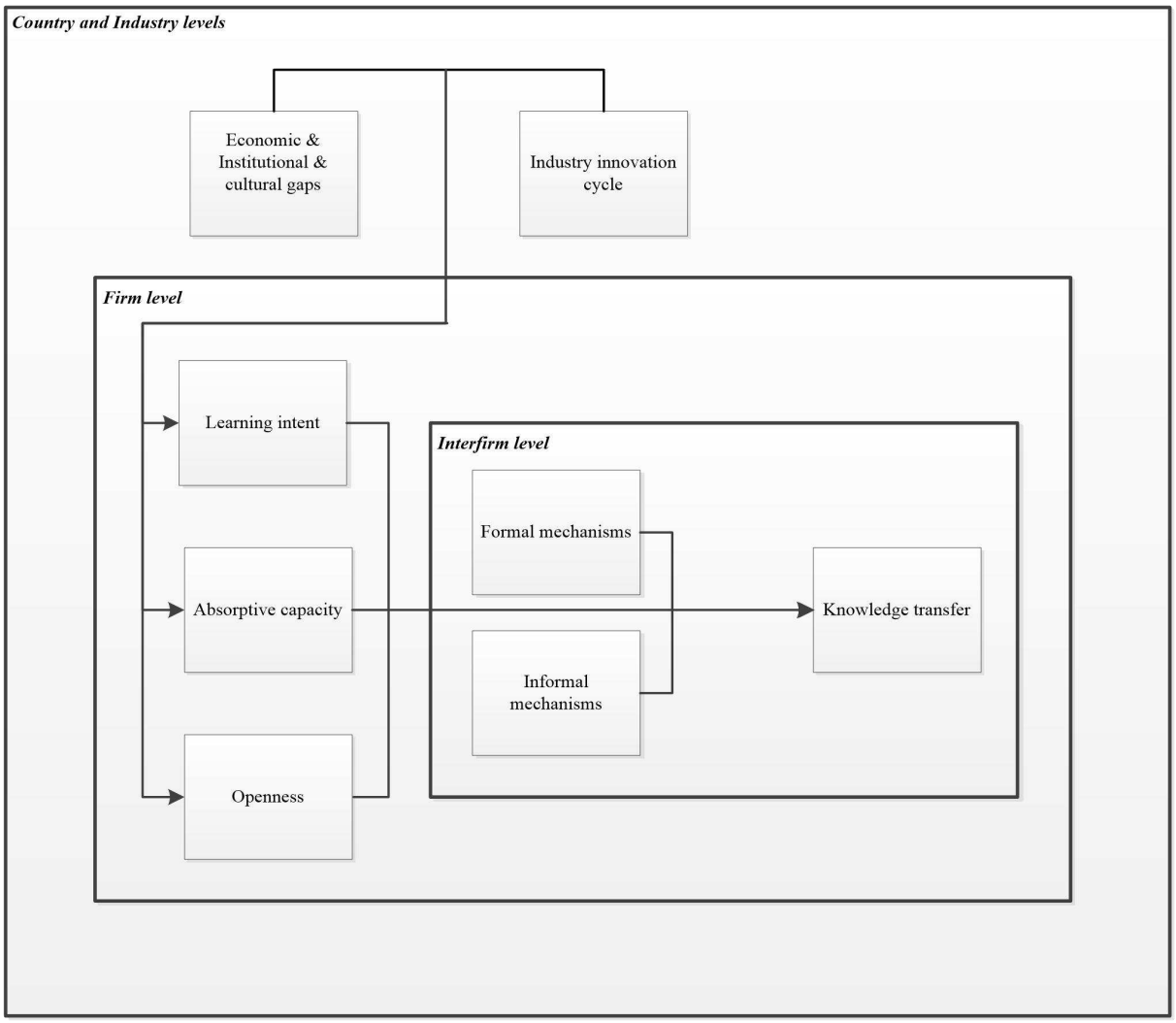
Par conséquent, comprendre les facteurs qui influent sur le processus de transfert de connaissances, ses résultats, ses conséquences et ses limites est essentiel pour les EMN et les entreprises locales. Avec ces connaissances, les entreprises peuvent concevoir des organisations de collaboration et des mécanismes de contrôle pour atteindre leurs objectifs de collaboration et leurs conséquences souhaités.

2. REVUE LITTÉRATURE

Les recherches existantes abordent divers facteurs influençant le transfert de connaissances à travers des alliances stratégiques. Dans la recherche existante, il est implicitement démontré que

les facteurs inter-niveaux aux niveaux des pays, industries et entreprises ont une relation directe ou indirecte avec le transfert de connaissances au niveau de l'alliance, ou qu'ils ont un effet de modération sur les relations entre le transfert de connaissances au niveau de l'alliance d'un côté, et ses facteurs dérivés de l'autre côté. Cependant, l'aspect inter-niveaux n'est pas explicitement expliqué. ~~Le~~ niveau dle es Les facteurs déterminants et ses résultats dans les modèles de recherche ne sont pas clairement identifiés dans la définition et ~~différencié~~ distingués ~~dans la mesure~~ entre les mêmes concepts à travers les niveaux. De plus, les théories ou les mécanismes sous-tendant les relations, visant à expliquer comment et de quelle manière les facteurs inter-niveaux influencent le transfert de connaissances au niveau de l'alliance, ne sont pas complètement compris.

Ci-dessous se trouve un résumé des antécédents multiniveaux et de leurs relations avec le transfert de connaissances dans les alliances stratégiques internationales dans la littérature existante (Référez-vous à la Figure : Résumé des antécédents et du processus de partage de connaissances interentreprises).



Résumé des antécédents et du processus de partage de connaissances interentreprises

3. LACUNES DE LA RECHERCHE ET QUESTIONS DE RECHERCHE

La revue de la littérature existante révèle deux lacunes théoriques liées au transfert de connaissances via des alliances internationales dans les économies émergentes.

La première lacune concerne les résultats contradictoires en ce qui concerne les conséquences du transfert de connaissances interentreprises, qui ont été récemment discutés dans le Journal of Business Studies. D'un côté, il est argumenté que la fuite de connaissances est inévitable, car elle se produit naturellement dans le cadre des relations interentreprises, de la colocalisation et de la

mobilité des employés (Inkpen, Minbaeva, & Tsang, 2019). Les connaissances ~~de valeur~~ sont souvent complexes et tacites, ce qui les rend difficiles à absorber pour les partenaires. Étant donné que la fuite de connaissances s'accompagne souvent d'autres connaissances et d'actifs complémentaires pour générer un avantage concurrentiel, les connaissances divulguées ont peu de valeur lorsqu'elles restent isolées. Par conséquent, la divulgation de petits morceaux de connaissances nuit rarement aux EMN. De plus, la révélation de connaissances aux partenaires renforce la relation de collaboration et initie des échanges réciproques de connaissances ~~de valeur~~ (Inkpen et al., 2019). Des recherches antérieures ont prouvé que le transfert de connaissances est un élément important pour les EMN afin d'accéder aux marchés, de performer efficacement et de remporter un avantage concurrentiel dans les EM (H. Li, Zhang, & Lyles, 2013).

D'un autre côté, Contractor (2019) montre que la fuite de connaissances crée de graves dommages aux EMN. Les EMN ont perdu des centaines de milliards de dollars en frais de commission sur la propriété intellectuelle en raison de la fuite de connaissances vers les partenaires locaux. De plus, la fuite de connaissances conduit les EMN au bord de la faillite (Contractor, 2019). Cependant, jusqu'à présent, on en sait peu sur les capacités des EMN à protéger les connaissances des entreprises locales (Contractor, 2019 ; Faria & Sofka, 2010 ; Perri & Peruffo, 2016 ; Sofka, Shehu, & Faria, 2014) tout en transférant des connaissances pour gagner en compétitivité, notamment dans les marchés émergents où la protection et l'application des droits de propriété intellectuelle sont souvent faibles (Cavusgil, Ghauri, & Liu, 2021). Contractor (2019) conclut que la divulgation des connaissances comporte à la fois des coûts et des avantages. Par conséquent, nous devrions rechercher une théorie du niveau optimal de divulgation pour équilibrer l'ouverture et la confidentialité et maximiser les avantages nets pour

les EMN (Contractor, 2019). Il suggère de trouver des cas où les EMN pourraient minimiser la fuite de connaissances et des cas où les EMN pourraient révéler sélectivement des connaissances, dans le cadre de la théorie du niveau optimal de divulgation.

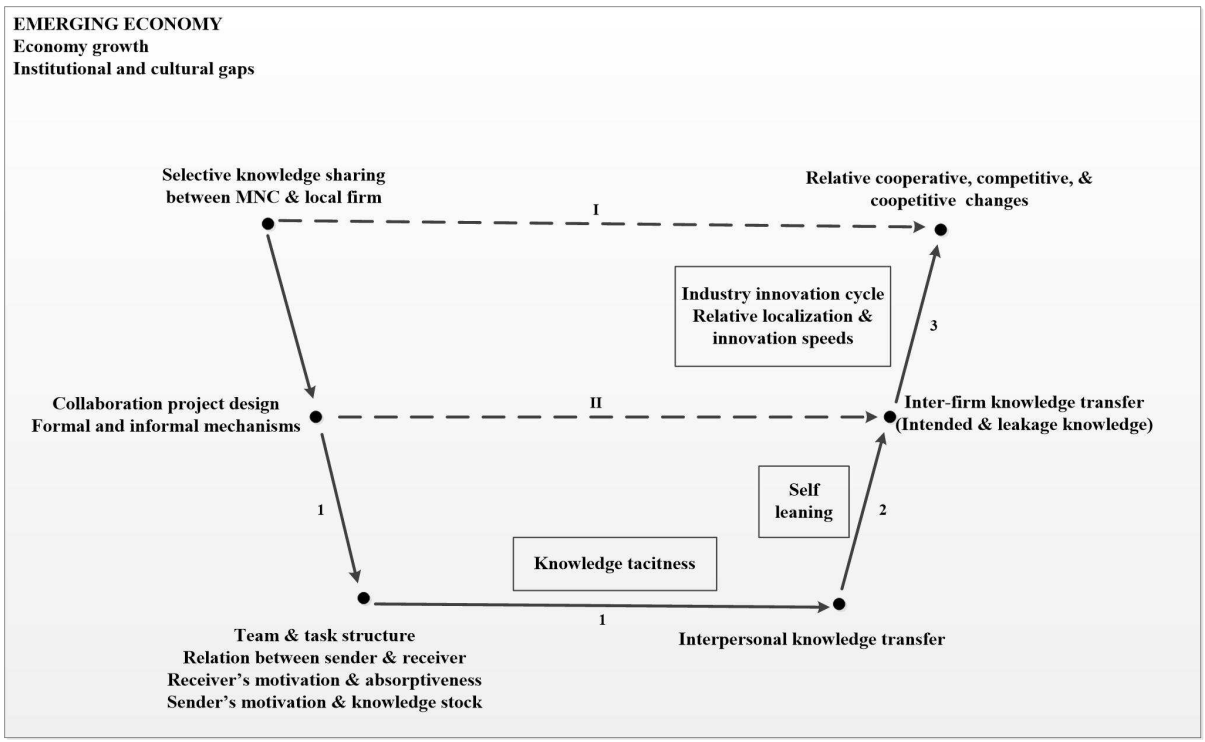
La deuxième lacune concerne le manque de recherche basée sur des fondements multi-niveaux ? multinationaux et microscopiques sur le transfert de connaissances. Le transfert de connaissances est un phénomène multiniveau (Andersson, Cuervo-Cazurra, & Nielsen, 2014 ; Andersson, Dasí, Mudambi, & Pedersen, 2016 ; Foss & Pedersen, 2004, 2019). Le transfert de connaissances est influencé par des facteurs au niveau du pays (économie et commerce, niveau technologique, éducation, régimes de protection intellectuelle, culture, normes) ; des facteurs au niveau de l'industrie (vitesse de l'innovation, durée de vie du produit) ; des facteurs au niveau de l'entreprise (intention d'apprentissage, réceptivité et ouverture) ; des facteurs interentreprises (structure, relation) ; des facteurs individuels (base de connaissances, motivation des expéditeurs et des destinataires) ; et des caractéristiques des connaissances. Par conséquent, le transfert de connaissances doit être étudié en tenant compte de plusieurs niveaux simultanément. Les facteurs des différents niveaux interagissent les uns avec les autres pour conduire à des résultats divergents. Dans la littérature existante sur le transfert international de connaissances, les facteurs aux niveaux macro tels que le pays, l'industrie et les facteurs de l'entreprise ont été analysés séparément (Faria & Sofka, 2010 ; Perri & Andersson, 2014). Il y a un manque d'études qui intègrent les différents niveaux d'analyse (Andersson et al., 2014 ; Andersson et al., 2016 ; Foss & Pedersen, 2004, 2019). Il est nécessaire d'étudier le transfert de connaissances dans une perspective multiniveaux pour comprendre en profondeur les phénomènes et obtenir des résultats de recherche plus précis.

De plus, les études au niveau micro ou individuel sont largement négligées dans la littérature existante sur la gestion des connaissances, malgré le fait que les individus sont les agents du transfert de connaissances (Andersson et al., 2016 ; Foss & Pedersen, 2004, 2019 ; Perri & Peruffo, 2016). Les connaissances sont stockées, absorbées et transférées par des individus, tandis que les processus de gouvernance et de gestion des connaissances sont au niveau interentreprises et de l'entreprise. Il est donc nécessaire de comprendre les liens entre les mécanismes de contrôle, les processus de transfert de connaissances et les comportements individuels. Le lien entre la gouvernance et les individus, qui est lié à la question de l'impact des contrôles managériaux sur les comportements individuels, fait largement défaut dans la littérature existante. De plus, il existe un manque de recherche sur le lien entre les activités individuelles et les processus de connaissances organisationnelles (Foss & Pedersen, 2019). L'absence de ces liens conduit non seulement à des lacunes théoriques, mais a aussi des implications managériales. Des explications théoriques approfondies sur la manière dont les mécanismes de contrôle influencent les processus de connaissance organisationnelle par le biais des comportements individuels n'ont pas été trouvées. Par conséquent, les gestionnaires ne savent pas comment ils peuvent appliquer en pratique les conceptions organisationnelles et les mécanismes de contrôle pour influencer les processus de connaissance, en particulier la protection des connaissances (Foss & Pedersen, 2019).

En résumé, le transfert de connaissances dans les EM est un phénomène important à étudier du point de vue de la théorie et de la gestion. Il pose des questions aux chercheurs universitaires et aux gestionnaires des EMN et des entreprises locales :

Est-il sûr pour les entreprises multinationales (EMN) de partager sélectivement leurs connaissances avec des entreprises locales dans le cadre de leurs alliances internationales dans les économies émergentes ?

- Comment les mécanismes formels et informels de partage et de protection influencent le transfert et la fuite de connaissances au niveau interentreprises ? (Référez-vous à la flèche I de la Figure : Modèle de recherche de haut niveau)
    - ✓ **Question 1 :** De quelle manière les mécanismes formels et informels de partage et de protection influencent-ils le transfert sélectif de connaissances au niveau interpersonnel ? (Référez-vous à la flèche 1 de la Figure : Modèle de recherche de haut niveau)
    - ✓ **Question 2** : Comment le transfert sélectif de connaissances au niveau interpersonnel s'agrège-t-il pour influencer le transfert de connaissances au niveau interorganisationnel ? (Référez-vous à la flèche 2 de la Figure : Modèle de recherche de haut niveau)
- **Question 3 :** Comment évoluent les positions relatives de coopération, de compétition et de coopétition des EMN et des entreprises locales après un transfert sélectif de connaissances dans leur collaboration ? (Référez-vous à la flèche II de la Figure : Modèle de recherche de haut niveau). Cette question trouve sa réponse en examinant les résultats du transfert intentionnel et de la fuite de connaissances au niveau interentreprises sur le pouvoir de négociation relatif, les positions de coopération, de compétition et de coopétition des EMN et des entreprises locales, sous l'effet modérateur du cycle d'innovation de l'industrie, des vitesses relatives d'apprentissage comparatif et d'innovation (Référez-vous à la flèche 3 de la Figure : Modèle de recherche de haut niveau).



Modèle de recherche de haut niveau

4. CADRE THÉORIQUE

Pour chaque question de recherche, il existe un niveau de théorie et un cadre théorique correspondant différent. Voici des résumés des principales théories et articles de recherche basés sur les phénomènes correspondant aux trois questions de recherche (Référez-vous au Tableau : Résumés du cadre théorique).

Research question	Theoretical framework	Level of theory
Question 1: In what ways do formal and informal sharing and protection mechanisms	Social Exchange Theory (Blau, 1964). Social Exchange Theory of Emotions (Lawler & Thye, 2006). Self-Determination Theory (Intrinsic and	Team (Interpersonal)

Research question	Theoretical framework	Level of theory
influence knowledge transfer at interpersonal level?	Extrinsic motivations) (Minbaeva, Mäkelä, & Rabbiosi, 2012; Ryan & Deci, 2000). Interpersonal learning model (Minbaeva, 2007; Myers, 2018). Framework of control mechanisms (Malmi & Brown, 2008). Task interdependence and knowledge transfer (Wageman, 1995). Team building (Klein et al., 2009; Payne, 2001), leader and member exchange (Graen & Uhl-Bien, 1995; Wayne, Shore, & Liden, 1997) and knowledge transfer. Institution-Based View (DiMaggio & Powell, 1983; North, 1991; Peng et al., 2009; Scott, 2014).	
Question 2: How does selective knowledge transfer at interpersonal level aggregate to knowledge transfer at	Organizational learning theories (Crossan, Lane, & White, 1999; Inkpen & Crossan, 1995; Nonaka, 1994). Managerial support, organization culture and knowledge transfer (Connelly & Kevin	Firm

Research question	Theoretical framework	Level of theory
organizational level?	Kelloway, 2003; Kim & Lee, 2006; Lee, Kim, & Kim, 2008) Organizational communication and information systems (Cohen & Levinthal, 1990; Hamel, 1991; Kim & Lee, 2006) Dual institutionality (Kostova & Roth, 2002)	
Question 3: How do relative cooperative, competitive, and coopetitive positions of MNCs and local firms change after selective knowledge transfer in the collaboration between them?	Resource-Based View (Barney, 1991; Wernerfelt, 1984) Competitor analysis and dynamics (Bergen & Peteraf, 2002; Chen, 1996; Peteraf & Bergen, 2003). Resource Dependency (Casciaro & Piskorski, 2005; Emerson, 1962; Pfeffer & Salancik, 2003). Institution-Based View (DiMaggio & Powell, 1983; North, 1991; Peng et al., 2009; Scott, 2014). Industry-Based View (Porter, 1980, 2008).	Interfirm

Résumés du cadre théorique

Pour la question 1, l'accent est mis sur le transfert de connaissances interpersonnelles au sein d'une équipe. La théorie de l'échange social (Blau, 1964), la théorie de l'affectation (Lawler &

Thye, 2006) et la théorie de la détermination (Ryan & Deci, 2000) sont les principales théories de base qui régissent les motivations, les relations et les règles d'échange entre les individus au sein d'une équipe. Le modèle des quatre principaux groupes de facteurs qui stimulent directement les interactions d'échange de connaissances et décident finalement des changements dans les connaissances individuelles en tant que résultats du transfert de connaissances interpersonnelles s'appuie sur les modèles théoriques du processus de transfert de connaissances intra-entreprise de Minbaeva (2007) et de l'apprentissage vicariant co-actif de Myers (2018). Les principes et les mécanismes de contrôle visant à gérer les quatre facteurs déterminants du transfert de connaissances interpersonnelles sont liés au cadre des mécanismes de contrôle (Malmi & Brown, 2008), de l'interdépendance des tâches d'équipe (Wageman, 1995), de la constitution d'équipes (Klein et al., 2009 ; Payne, 2001), de l'échange entre le leader et les membres (Graen & Uhl-Bien, 1995 ; Wayne, Shore, & Liden, 1997), et des institutions pour orienter les caractéristiques individuelles (DiMaggio & Powell, 1983 ; North, 1991 ; Peng, Sun, Pinkham, & Chen, 2009 ; Scott, 2014).

La question 2 concerne le processus d'une entreprise pour convertir les connaissances individuelles acquises grâce aux alliances internationales en connaissances organisationnelles. La théorie de la création de connaissances organisationnelles de Nonaka (1994) sert de base. Les processus de conversion des connaissances individuelles en connaissances organisationnelles reposent sur des processus d'intégration et d'institutionnalisation dans les articles de Crossan, Lane et White (1999) et Inkpen & Crossan (1995). Les facteurs qui influencent les processus d'intégration et d'institutionnalisation des connaissances individuelles en connaissances de groupe et organisationnelles comprennent le soutien managérial, la culture organisationnelle et le transfert de connaissances (Connelly & Kevin Kelloway, 2003 ; Kim & Lee, 2006 ; Lee, Kim, &

Kim, 2008) ainsi que la communication organisationnelle et les systèmes d'information (Cohen & Levinthal, 1990 ; Hamel, 1991 ; Kim & Lee, 2006). Le concept de dualité institutionnelle appliqué dans le contexte de l'institutionnalisation des connaissances à la fois par les EMN et les entreprises locales est adapté du concept original de dualité institutionnelle dans le contexte d'une filiale d'EMN pour intégrer les profils institutionnels du pays d'accueil et de la maison mère (Kostova & Roth, 2002).

La question 3 porte sur les changements dans les positions relatives de coopération, de compétition et de coopétition des EMN et des entreprises locales en raison du transfert interentreprises de connaissances via des alliances internationales. Les résultats de l'apprentissage via les alliances entraînent des changements dans les ressources des entreprises partenaires et de leurs contributions relatives en ressources aux alliances, et finissent par changer les avantages concurrentiels et le pouvoir de négociation des partenaires (Inkpen & Beamish, 1997 ; Kale & Anand, 2006 ; Yan & Gray, 1994). Cependant, la valeur des ressources d'une entreprise et ses contributions en ressources à une alliance, qui décident principalement de la relation de l'entreprise avec ses partenaires, ne sont pas seulement influencées par l'apprentissage, mais aussi largement par l'hétérogénéité des capacités de l'entreprise elle-même (Barney, 1991 ; Wernerfelt, 1984), l'industrie (Porter, 1980, 2008) et les facteurs contextuels institutionnels (DiMaggio & Powell, 1983 ; North, 1991 ; Peng et al., 2009 ; Scott, 2014).

Les hypothèses implicites sont également présentées correspondant aux trois questions de recherche.

5. CONTEXTE DE RECHERCHE EMPIRIQUE - FACTEURS PAYS ET INDUSTRIELS

Cette partie fournit des informations sur le contexte de recherche qui influence le processus de transfert de connaissances et ses résultats. Dans cette étude, nous allons examiner une étude de cas au Vietnam, une économie émergente faisant partie d'un groupe de pays à revenu faible et moyen. Cette partie résume les profils économiques et institutionnels du pays. De plus, l'industrie de la technologie de l'information, caractérisée par une vitesse d'innovation exceptionnelle, est présentée.

6. MÉTHODOLOGIES DE RECHERCHE

Après avoir résumé les approches épistémologiques, cette partie présente la conception de l'étude de cas, les protocoles de collecte et d'analyse des données correspondant à chaque question de recherche.

Une étude de cas longitudinale explore un partenariat à long terme entre un leader mondial de la technologie de l'information et la plus grande entreprise de technologie de l'information au Vietnam, en mettant l'accent sur le projet de collaboration en tant qu'étape clé du transfert de connaissances. L'analyse des positions relatives de l'EMN et de l'entreprise locale avant et après l'étape du transfert de connaissances est appliquée (Question 3). La relation entre les antécédents et les processus de transfert de connaissances interpersonnelles est examinée à travers huit cas intégrés (Question 1). Le processus de transformation des connaissances individuelles en connaissances organisationnelles est également étudié à la fois dans l'EMN et dans l'entreprise locale à travers deux cas intégrés (Question 2).

Les structures de codage et les stratégies d'analyse des données sont également présentées dans cette partie.

7. RÉSULTATS EMPIRIQUES

Les trois principales conclusions tirées de l'étude de cas sur le transfert de connaissances entre une EMN et une entreprise locale de l'industrie des technologies de l'information au Vietnam mettent en lumière le processus de transfert de connaissances interpersonnelles, la transformation des connaissances individuelles en connaissances organisationnelles, et l'évolution des dynamiques relationnelles entre l'EMN et l'entreprise locale au sein de ce partenariat longitudinal.

Tout d'abord, une analyse et une comparaison des facteurs déterminants, des interactions de transfert de connaissances et des résultats au sein des huit équipes impliquées dans le projet de collaboration révèlent les principaux moteurs, le processus et le résultat du transfert de connaissances interpersonnelles. Ces facteurs déterminants englobent la structure de la tâche commune, la qualité des relations, la motivation et le stock de connaissances des expéditeurs de connaissances, ainsi que la motivation et l'absorptivité des récepteurs de connaissances. Ces facteurs influencent les interactions de transfert de connaissances interpersonnelles entre les expéditeurs et les récepteurs, conduisant finalement à des changements dans les connaissances des individus des deux parties. De plus, le niveau de tacite des connaissances modère les relations entre ces antécédents et le résultat du transfert de connaissances interpersonnelles.

Plus particulièrement dans le projet de transfert de connaissances, les résultats empiriques au sein des huit équipes indiquent que les changements dans les connaissances individuelles résultant du transfert de connaissances interpersonnelles entre l'EMN et l'entreprise locale étaient limités par plusieurs facteurs. Ces contraintes comprenaient la structure de tâche commune, conçue pour protéger les connaissances stratégiques de l'EMN ; le stock de connaissances limité et l'instabilité

des contractants à court terme de l'EMN ; les employés de l'entreprise locale ayant des connaissances limitées en technologie, en gestion et en langues étrangères ; et des variations de qualité relationnelle parmi les différentes équipes.

Néanmoins, les individus de l'entreprise locale ont pu acquérir des connaissances codifiées liées à la méthodologie de mise en œuvre et certaines connaissances tacites concernant la gestion de projet et la conception de solutions. En même temps, les employés de l'EMN qui ont collaboré avec leurs homologues locaux ont acquis des connaissances sur les pratiques commerciales locales et la culture de travail.

Deuxièmement, les deux cas intégrés axés sur la transformation des connaissances individuelles en connaissances organisationnelles mettent en lumière les processus contrastés de l'EMN et de l'entreprise locale dans l'assimilation des connaissances acquises de leur partenaire.

Les individus de l'entreprise locale, bénéficiant d'une culture robuste de partage des connaissances et d'un solide soutien de la direction, ont activement diffusé les connaissances acquises auprès de l'EMN au sein des groupes de travail et lors de séminaires de partage des connaissances. Ils ont efficacement fusionné ces nouvelles connaissances avec leurs connaissances existantes issues de l'expérience pratique et d'autres sources d'apprentissage. Cette adaptation et cette amélioration des connaissances ont permis à l'entreprise locale de s'aligner parfaitement sur ses besoins commerciaux. De plus, ces connaissances adaptées ont été soigneusement documentées et intégrées aux directives opérationnelles de l'entreprise locale, étendant ainsi leur applicabilité à d'autres projets.

En revanche, en raison des disparités dans les pratiques commerciales entre l'environnement local et l'EMN, même si les employés de l'EMN ont appris les pratiques locales de leur partenaire local, certaines de ces connaissances n'ont pas pu être transformées en connaissances

organisationnelles de l'EMN. Au lieu de cela, les connaissances sur certaines pratiques locales sont restées au niveau individuel ou au niveau des groupes de travail au sein de l'EMN.

Ces deux cas illustrent que, bien que les individus de l'entreprise locale n'aient peut-être pas accès aux connaissances tacites stratégiques ou critiques de l'EMN, leur capacité à intégrer et à adapter les connaissances codifiées acquises avec leurs connaissances existantes issues de sources diverses améliore considérablement les connaissances organisationnelles et les capacités de l'entreprise locale.

Troisièmement, l'étude de cas longitudinale du partenariat entre l'EMN et l'entreprise locale, mettant en vedette un projet important de transfert de connaissances, peut être divisée en deux périodes distinctes : avant et après le transfert de connaissances. Cette étude de cas démontre qu'il y a eu une augmentation des connaissances communes entre les deux partenaires en raison d'un effet d'apprentissage mutuel. En se basant sur les théories existantes, la croissance du chevauchement des connaissances était censée réduire la dépendance mutuelle et améliorer la compatibilité des ressources. Par conséquent, on s'attendait à ce que cela réduise la coopération, élève la concurrence et initie une relation coopétitive.

Cependant, de manière intrigante, les preuves empiriques n'ont pas clairement montré de changements significatifs dans les relations relatives tels que le prévoyaient les théories. Les changements dans les relations de coopération, de concurrence et de coopétition étaient relativement modestes. Dans l'environnement d'innovation à grande vitesse de l'industrie des technologies de l'information, les cycles de vie des produits logiciels et des services informatiques étaient courts. Pendant ce temps, dans un contexte d'absorbabilité limitée et de transparence limitée, l'entreprise locale avait besoin de temps pour acquérir et intégrer efficacement les connaissances acquises de l'EMN. Pendant que l'entreprise locale prenait le

temps de maîtriser ces connaissances acquises, l'EMN, provenant d'une économie avancée soutenue par un système national d'innovation rapide, se concentrait sur de nouveaux produits et services grâce à l'innovation. Par conséquent, les connaissances initialement acquises par l'entreprise locale devenaient obsolètes pour l'EMN. En exploitant leurs capacités exceptionnelles en matière d'innovation, l'EMN renouvelait leur base de ressources avec de nouvelles connaissances, maintenant ainsi leur pouvoir de négociation au sein du partenariat et leur position concurrentielle par rapport à l'entreprise locale.

Pour l'entreprise locale, étant donné que l'EMN ne parvenait pas à intégrer pleinement les pratiques locales dans ses connaissances organisationnelles en raison de défis institutionnels doubles, l'EMN continuait de s'appuyer sur la collaboration avec l'entreprise locale pour combler les lacunes en matière de connaissances locales et de relations. En résumé, tant l'EMN que l'entreprise locale ont réussi à maintenir leurs avantages concurrentiels, ce qui a entraîné des changements insignifiants dans leurs relations, car l'interdépendance mutuelle des ressources et la compatibilité des ressources sont restées relativement inchangées.

En conclusion, cette étude de cas fournit des informations sur la sécurité du partage sélectif de connaissances pour les EMN dans l'industrie des technologies de l'information lorsqu'elles collaborent avec des partenaires locaux au Vietnam. Elle montre qu'avec une culture d'apprentissage robuste et des mécanismes d'intégration efficaces, une entreprise locale peut renforcer ses ressources en matière de connaissances, même lorsque le transfert de connaissances interpersonnelles en provenance des EMN est limité. Cependant, les écarts de connaissances entre l'EMN et l'entreprise locale persistent, car l'EMN continue d'ajouter de nouvelles connaissances en technologie et en gestion dans le partenariat, tandis que l'entreprise locale maintien de solides relations locales, s'adapte aux pratiques commerciales locales et est flexible

pour répondre aux besoins et aux préférences des clients locaux. Ces conclusions sont susceptibles de s'appliquer à des industries caractérisées par une forte vitesse d'innovation dans le contexte des économies émergentes à revenu faible et moyen, où d'importants écarts économiques et institutionnels existent par rapport aux économies avancées.

8. DISCUSSION, CONCLUSIONS, ET CONTRIBUTIONS

Dans cette dernière partie, les résultats empiriques sont discutés par rapport aux cadres théoriques, à la littérature existante et aux facteurs de contexte de recherche. Des propositions de recherche sont formulées, et la section se conclut par une discussion des conclusions générales, des contributions de la recherche et des limitations.

D'un point de vue théorique, cette recherche introduit une nouvelle approche multinationale du transfert de connaissances interentreprises par le biais d'alliances internationales, en mettant l'accent sur le rôle des agents de connaissances individuels et en établissant des liens entre les niveaux interpersonnel, organisationnel et interentreprises. Elle examine comment les facteurs déterminants tels que la structure de l'équipe, les relations et les motivations individuelles influencent les résultats du transfert de connaissances interpersonnelles. De plus, l'étude se penche sur les mécanismes de contrôle, explore les processus de transformation des connaissances au sein des EMN et des entreprises locales, et améliore la compréhension des changements relationnels résultant du transfert de connaissances interentreprises, notamment dans le contexte des disparités économiques et institutionnelles au sein de l'industrie des technologies de l'information. Dans l'ensemble, ces contributions enrichissent la littérature sur le transfert de connaissances, la transformation organisationnelle et les stratégies des EMN sur les marchés émergents.

Sur le plan managérial, cette recherche offre des perspectives précieuses sur le transfert de connaissances, ses facteurs déterminants et les mécanismes de contrôle. Elle offre des conseils pratiques aux chefs d'équipe pour gérer les tâches, améliorer les relations interpersonnelles et stimuler le transfert de connaissances au niveau de l'équipe. Au niveau de l'entreprise, elle suggère de favoriser une culture organisationnelle favorable au partage des connaissances et de mettre en place des systèmes robustes pour transformer les connaissances individuelles en connaissances organisationnelles. Pour les industries intensives en connaissances telles que les technologies de l'information, les conclusions soutiennent les dirigeants des EMN dans la réflexion sur les stratégies d'alliance avec des entreprises locales dans les pays à revenu faible et moyen, offrant des avantages en termes de réduction des coûts, d'avantages liés aux connaissances locales et d'expansion sur le marché.

La recherche contribue de manière significative aux études sur la gestion des connaissances dans les marchés émergents, abordant le paradoxe de la gestion des connaissances dans le contexte des affaires internationales. De plus, elle s'aligne avec des projets financés par l'UE axés sur la connaissance, l'innovation et l'entrepreneuriat dans les affaires internationales, en mettant l'accent sur ses implications politiques et pratiques plus larges.

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