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Abstract

With the advent of multinational corporations (MNCs), it is more important than ever to understand how parent companies oversee their subsidiaries' activities and transfer knowledge to them. Japanese corporations have led the way in this field, employing approaches such as the Toyota Production System (TPS) to transfer the Japanese manufacturing ethos while maintaining quality and control in their international operations. While much has been said about the process of transferring Japanese multinational's subsidiary, which included three significant manufacturing initiatives (or philosophies): "TPS," "TPM," and "TS." Case data were acquired using 52 in-depth interviews with project participants, documentation, and moderate-participant observations. Using the subsidiary's procedures, forming the complete process, and, most importantly, utilizing and developing episodes in snapshots to comprehend the process, we gain a better grasp of knowledge transfer. This article further elaborates how adaptation is a major element in episodic knowledge transfer.

Keywords: Knowledge Transfer, MNC Subsidiary, Episodes Development, Adaptation, Malaysia.

INTRODUCTION

Over the last four decades, multinational corporations (MNCs) have expanded tremendously. Scholars have recently shifted their focus to the subject of knowledge, specifically how multinational companies (MNCs) manage their information. They have also investigated the existence and evolution of economic stimulus components (Gupta & Govindarajan, 2000).

Given the increasing growth of multinational corporations (MNCs), understanding how parent organizations manage and convey expertise to their subsidiaries is critical (Alias et al, 2008a). This is especially important for industrial enterprises who are developing worldwide. Japanese firms have been at the forefront of the development of techniques such as Kaizen and TPS components such as Kanban, which can be useful tools for transmitting Japanese manufacturing philosophy and maintaining quality and control in international operations (Alias et al, 2008b).

Knowledge transfer is described as "the process through which one unit (e.g., group, department, or division) is affected by the experience of another" (Argote and Ingram, 2000: p. 151). According to Argote and Ingram (2000), changes in the receiving units' performance or knowledge indicate the transfer of organizational knowledge, such as standard operating procedures or best practices. Knowledge transfer is becoming increasingly important, particularly for multinational businesses (MNCs). As a result, for efficient management to occur in these dispersed businesses, information must be transferred from one individual, group, department, or geographic division to another (Alias, 2013).

Multinational firms frequently run operations across multiple countries from their headquarters. A home office corporation's (HOC) headquarters is commonly referred to as the "parent," while enterprises with facilities abroad are referred to as "subsidiaries." In addition to making big direct investments overseas and actively managing and integrating businesses in multiple other countries, subsidiaries frequently provide major financial support to multinational corporations (MNCs) (Birkinshaw, 1996).

Understanding how parent businesses transfer their expertise to and manage their subsidiaries' operations is critical given the fast rise of multinational corporations (MNCs) (Alias et al, 2008b). Production companies are very interested in this, particularly Japanese multinationals with many overseas industrial units. Japanese

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corporations, in particular, have been at the forefront of inventing practices such as Kaizen and Toyota Production System (TPS) components such as Kanban. These can be effective instruments for communicating the Japanese manufacturing mindset to abroad affiliates while also maintaining quality and control (Alias et al, 2008b).

The Japanese multinational corporation provides a great forum for doing research on knowledge transfer. Scholars have expressed an increasing interest in the role of knowledge management in businesses, particularly multinational corporations (MNCs) (Ghoshal and Bartlett, 1988; Kogut and Zander, 1995; Szulanski, 1996; Gupta and Govindarajan, 2000; Eisenhardt and Santos, 2002), where a wide range of projects involving various types of knowledge are undertaken. This position allows for additional research on the subject, particularly in connection to subsidiaries with international locations, such as Malaysia (Alias et al, 2008a).

As a result, this study takes the subsidiary's perspective to investigate how knowledge of manufacturing processes is passed from a parent firm to its subsidiaries, focusing on projects within the subsidiary. According to Blackler (1995) and Koskinen (2003), projects frequently involve people from many organizational levels as well as cross-sectional flows inside a company's structure and subsidiaries. Nonaka and Takeuchi (1995), Alavi and Leidner (2001), and Bender and Fish (2000) argue that the bulk of knowledge is created, shared, and transferred across projects. As a result, information transfer is easier to perceive and understand, and the research's validity is ensured (Alias et al, 2008b). Researching knowledge transfer in a micro setting is critical for gaining a better understanding of the operations that occur within an MNC subsidiary, including the responsibilities that individuals play in the process of information transfer (Alias, 2013).

When it comes to knowledge transfer between MNCs and their subsidiaries, the two most typical strategies are replication and adaptation to fit in with the local context (Szulanski et al, 2002; Williams, 2002; Chini, 2005). "Replication" refers to the process of copying or duplicating information from its original source. On the other hand, "adaptation" of knowledge occurs when an individual (the recipient) modifies the information.

According to the recommendations regarding the need to understand how local managers and operatives apply information to their working practices from a practical standpoint, the microenvironment of an MNC subsidiary will provide an opportunity to gain a deeper understanding in this regard (Alias et al, 2008a). Since researchers have recently become more interested in the role of knowledge management in organizations, particularly multinational corporations (e.g., Szulanski, 1996; Szulanski, 2000; Gupta and Govindarajan, 2000; Eisenhardt and Santos, 2002; Birkinshaw, 1996; Oliver et al, 1998; Minbaeva and Michailova, 2004), the Japanese multinational corporation is an appropriate context for a study of knowledge flow.

Kostova (1999) states that effective top-down and bottom-up communication are required to make the organization's current knowledge accessible. Nonetheless, communicating successfully across hierarchies can be difficult, complicating knowledge transmission (Davenport and Prusak, 1998; Schlegelmilch and Chini, 2003; Edwards et al, 2005). If an organization allows open communication networks where information producers and information seekers can evaluate information and knowledge in faster and more effective ways, the amount of knowledge transmission inside the organization will increase (Alias et al, 2008a; Alias, 2008c). Furthermore, the employment of multiple layers of hierarchy and the flow of order in an organization have been observed since the early days of MNC programs, such as quality circles and the zero-defect program (Bennett, 1986; Kenney and Florida, 1995)

If the organizational structure is intended to support initiatives that require information flow from numerous sources and are specified by the projects, it becomes even more important. This is relevant to the debate over the relative importance of in-person interactions and meetings between members of an organization versus knowledge found in manuals, databases, routines, and procedures, as well as the ongoing investigation of any alternative forms of communication flows in related fields (Alias et al, 2008b; Alias et al, 2020).

These perspectives, which have been presented in several studies, are influencing the course of this research and providing new insights into the operation and variations of various information flow processes, as well as their involvement and occurrence (Alias et al, 2008b; Alias et al, 2020; Alias and Mat, 2022). The justification or motivation for this study stems from the fact that it advances our understanding of knowledge transfer by

implementing strategies used in the subsidiary, producing the entire process, and, most importantly, using episodes as snapshots to understand the associated process. As a result, the key goals of this study are as follows:

to understand how multinational corporations (MNCs) transfer manufacturing capabilities to their subsidiaries.

to investigate how MNC subsidiaries replicate and adapt knowledge from their parent company.

to understand the process of adaptation in episodes development in knowledge transfer.

Research Setting of An Mnc Subsidiary

The Gambatte* Corporation, also known as Gambatte in this article, is a leading distributor of innovative automotive systems, parts, and technology to all major manufacturers worldwide (Alias et al, 2008b; Alias et al, 2020). With activities in 32 countries and territories, it employs about 112,000 people in the automotive industry as a whole. For the fiscal year ending March 31, 2007, the Corporation's global consolidated revenues totaled \$30.6 billion. This was made possible by efforts in sales, product development, design, and production, as well as collaboration with area automakers and suppliers to provide the best solutions for regional demands (Alias 2013).

Each Gambatte associate (employee) must embody the Gambatte spirit of creativity in thought and steady in action, cooperation and pioneering, as well as trustworthiness, in order to uphold the company's management principles, which are focused on customer satisfaction through the provision of quality products and services, global growth through anticipating changes, environmental preservation and harmony with society, corporate vitality, and respect for individuality (Alias, 2013; Alias et al, 2008b; Alias et al, 2020; Alias and Mat, 2022).

Gambatte (Malaysia), the research site for this paper, was founded in 1980 and has since evolved to become the country's largest manufacturer of automotive components, as well as a substantial supplier of automotive components to both local vehicle projects and Japanese cars manufactured in Malaysia. It is Gambatte Corp.'s wholly owned subsidiary (Alias et al, 2008b; Alias et al, 2020). Gambatte, a quality-driven brand, selects and implements CTI initiatives that have the greatest impact on the most critical business plans and objectives. This is accomplished by prioritizing efficiency and quality while also enhancing product design, reducing waste, and changing the way manufacturing activities are carried out (Alias et al, 2008b; Alias et al, 2020).

Gambatte (M) has always shown initiative and innovation. As one of the first enterprises in the Gambatte Group of Companies to acquire the coveted ISO/TS 16949 accreditation from SIRIM and the worldwide automakers and suppliers' association, the "International Automotive Task Force (IATF)," Furthermore, as proof of the company's commitment to and efforts in environmental preservation, it holds ISO 14001 Environmental Management System accreditation (Alias et al, 2008; Alias et al, 2020).

While this factory is working on other projects, three significant ones have been carefully chosen to coincide with the three main production goals (philosophies), providing a more complete understanding of their communication.

The Initial Case-Setting – Gambatte TPS (Toyota Production System)

Gambatte TPS has a long history, having been founded in 1973 at GJP (Gambatte Japan, the Gambatte Group's headquarters). Toyota Motor Corporation led a Kaizen Activity that resulted in the invention of the Toyota Production System (TPS). It is a widely accepted manufacturing standard, particularly with regard to lean production initiatives in the automobile sector (Alias et al, 2008b; Alias et al, 2020). Since 1996, kaizen programs, also known as individual line improvement projects, have been carried out. "Individually" in this context should be seen as referring to each member's individual efforts in the many departments to which they were allocated, which had little bearing on the organization as a whole, rather than as referring to a single person in and of themselves (Alias et al., 2008b).

In 2002, a TPS team - previously known as the Kaizen Project Team - was formed for the entire company. It brought everyone together to start the Thermal System Plant's Condenser Line refurbishment. When the manager from Japanese headquarters came to GMY to give the first Kanban Simulation training, strict transfer supervision was necessary.

In 2003, the Kaizen Project Team was renamed the TPS Project Team, which consisted of eight people and was directly supervised by the MD. In 2004, the TPS Team was divided into two sections: Improvement and Small Fabrication. The former focuses on streamlining the process, whereas the later focuses on machinery or equipment. The TPS project team was eventually promoted to the department level in 2005, establishing the TPS Department as an enterprise-wide undertaking (Alias et al, 2008b; Alias et al, 2020).

The researcher's principal empirical site was the TPS Department Project, where he conducted in-depth interviews with key figures and observed their formal and informal relationships at meetings.

The Subsequent Case-Setting – Gambatte TPM (Total Productive Maintenance)

Total Productive Maintenance is abbreviated as TPM. The Gambatte TPM Project began 40 years ago at the Gambatte Group's headquarters, GJP (Gambatte Japan). TPM is considered an international activity, hence it differs from what is written in textbooks in Gambatte Malaysia (GMY). Instead, it is primarily focused on management-related tasks or activities, with an emphasis on how to coordinate them in order to benchmark against global activity. TPM aims to improve total machine maintenance by investigating who maintains the machines, what systems do so, and how to expand machine knowledge—which, of course, necessitates education and training (Alias et al, 2008b; Alias et al 2020). TPM is focused with machines and their general upkeep or maintenance.

The TPM that was introduced to us from GJP to GMY is more in the Gambatte style of TPM. TPM in Gambatte is a unique activity in and of itself; it is not the same as standard TPM in the international market, which has pillars, elements, and so on. TPM in GMY includes performing and coordinating all of these operations "as a system."Mr. M, the GM (TPM coordinator), stated, "It is a very unusual activity since we are looking at a very specialized area, maintenance management, in TPM the Gambatte manner" (Alias, 2013).

The Third Set of Case – Gambatte TS Project

A brand-new international standard, TS16949, was developed specifically for the automotive sector. Similarly to TPS and TPM, the researcher was able to conduct an in-depth interview with Mr. N, the GMY Quality Director and project coordinator. The TS team consists of middle management from all GMY departments. In the middle of the hierarchy, they are comparable (Alias et al, 2008b; Alias et al, 2020).

Since 1994, the well-known ISO9000 and 9001 standards have been replaced with a new system known as TS16949. In contrast to the others, TS imposes additional standards on top of the ISO requirements that the Gambatte team is already aware of. GMY was forced to recruit an outside consultant to train the team on the system's expectations and how to apply them (Alias et al, 2008b; Alias et al, 2020).

METHODOLOGY, RESOLUTIONS AND QUESTIONS

Even though knowledge transfer in multinational corporations (MNCs) has been thoroughly researched in the literature, as the previous review demonstrates, there is still a lack of understanding about how subsidiaries integrate manufacturing process expertise from their parent companies.

As a result, the goal of this research is to better understand the ways that parent companies use to teach their subsidiaries about industrial processes. Another important

How do parent companies transfer their experience in manufacturing operations to their subsidiaries, and how does the knowledge spread inside the subsidiary?

The methodological approach employs a qualitative case study that includes three instances from three distinct projects in a subsidiary of a multinational firm (GMY) involving three key manufacturing endeavors (philosophies).

This case study is an empirical research of a contemporary phenomenon inside actual occurrences where the distinction between the phenomenon and the environment is not always clear (Eisenhardt, 1989; Strauss and Corbin, 1998). once "the investigation has little control over events and when the focus is on a contemporary phenomenon within some real-life context and its generalisability is determined by the strength of the description of the context" (Yin, 1984, p. 23). This strategy is recommended.

The case study approach may be useful when a phenomenon is large and complex, necessitates a detailed analysis, and cannot be researched outside of its natural setting. In addition to quantitative data such as surveys and time series data, a case study typically includes a variety of qualitative data collection approaches such as observations, documentation, and interviews (Crabtree and Miller, 1999).

Using an inductive methodology and qualitative techniques, the study collected data from three GMY examples: TS, TPM, and TPS. The data was compiled via 52 one-on-one interviews with project participants, moderate-participant observations, and supporting documentation.

Findings And Discussions on Knowledge Transfer Replication Episodes

The total data collection procedure consists of 52 60-90 minute interviews, nine meetings (formal and ad hoc), one open seminar, two staff training sessions, three plant tours, five lunches and informal gatherings, and project documentation. The data gathering process was lengthy, involving a series of e-mails and phone calls. The transcript of the interview and meeting materials was around 900 pages long. Pictures, papers, and photographs were also collected during the data collection process. More crucially, the data is collected throughout a number of incidents.

An episode is a collection of crucial moments and events from the knowledge transfer process that are captured in real time, depending on what information is being communicated and how. In reality, it can take anywhere from 15 minutes to an hour. The importance of these stories resides in their capacity to demonstrate the uniqueness of each process and explain how the subsidiary gathers information and then implements manufacturing practices into its day-to-day operations.

Thematic analysis was performed on the content using Boyatzis' (1998) methodology. Every interview was taped, and the transcripts were analyzed using Boyatzis' (1998) inductive coding (themes gleaned from interviews) and deductive coding (based on prior research), in accordance with Crabtree and Miller's (1999) template organizing technique. The textual data from interview transcriptions was evaluated using the identified general themes and patterns (Alias, 2013; Alias et al. 2020).

Qualitative research requires both data collection and analysis. Following coding, codes with comparable characteristics were merged to establish categories, and coded data sections were classified according to the data collection methodologies utilized (Hall, 2006). Some codes have been assigned to various categories. The classified data was printed and physically sorted into folders labeled by category. Each research topic was then surrounded by the categories provided by the different data collection methods (Alias et al, 2008c; Alias et al, 2020).

The related motifs were fused to produce sub-themes, which were then gathered. The issue analysis was further validated by studying the literature and, on occasion, soliciting feedback from responders, which greatly enhanced its substance. The saturation points for the constant-comparative technique employed to analyze qualitative data were reached, and further findings supported the results. This technique was essential for answering the research questions (Alias et al, 2008c; Alias et al, 2020).

The associated patterns were then joined to form sub-themes, which were then grouped together. Additional validation was obtained by reviewing the literature and, on occasion, asking respondents for feedback, resulting in a much more specific theme analysis. The qualitative data were further evaluated using a constant-

comparative technique, and saturation points were measured to confirm the new findings. This technique was crucial for resolving the research questions (Alias et al, 2020; Alias and Mat, 2022).

More importantly, the episodes technique is effective in this study because it provides a thorough comprehension of the information transmission process by having respondents describe what actually occurs during the process. The episodes are offered to recognize the acknowledged importance of employing narratives in organizational research. This approach has acquired popularity in education, psychology, medicine, and leadership, and it can aid in the translation of real-life circumstances into words and visuals (Polanyi, 1998; Broner et al, 2001; Jashapara, 2004; Davenport, 1998).

By providing a comprehensive picture of how manufacturing practices knowledge is transferred and emphasizing the precise reality of the context, the episodic analysis contributes to the research goal of identifying the "circumstances" in knowledge transfer so that replication and adaptation can be distinguished. The categories are inductively formed from data episodes collected at the Gambatte site as part of the researcher's evaluation of the three initiatives (Alias and Mat, 2022).

The episode structure is significant in this study because it symbolizes the locations, settings, and events where the majority of information is generated, exchanged, and transmitted in real life. As a result, the information transfer process is straightforward to examine and comprehend, giving the presentation a high level of authenticity and distinction in terms of how knowledge transfer occurs in the real world. This is a distinguishing feature of the research.

An episode, depending on what and how the information is presented, is a memory of events from the knowledge transfer process that were recorded as they occurred. It truly lasts from 15 and 80 minutes. These occurrences show how unique each process is and how the subsidiary acquires information before implementing manufacturing techniques into its regular operations, making them critical for understanding the knowledge transfer process (Alias and Mat, 2022, 2023).

Each episode includes a setting, conversation, and summary. The action is depicted in detail during the episode's key sequence. The entire program concludes with a summary following a more in-depth study of the data in an attempt to address the research question. The 16 carefully chosen episodes, titled Plant 101, Plant 102, and Plant 103, are intended to cover every plant and manufacturing philosophy involved.

As a result, it is prudent to show the events using "the plant times across the lines" (i.e., the production plant times (X) lines) of manufacturing facilities across the three Japanese Manufacturing Initiatives philosophies (TPS, TPM, and TS). This allows for a more comprehensive and evenly distributed illustration of the case throughout the series.

The presentation and descriptions of the episodes are provided from the perspective of the issue or the persons involved. To augment and strengthen information collected from interviews, observations are joined with additional interviews, increasing the data's validity and dependability. Table 4.1 below shows how the plants and lines are placed.:

	Gambatte (M)	Manufacturing Systems / Philosophies		
Shopfloor	Production Lines	TPS	TPM	TS
Plant 101	Condenser	Eps 2		
	Evaporator		Eps 8	
	Piping	Eps 3		
	Compressor	Eps 9		Eps 14
	Learning Area	Eps 10		
	Office of Restoration		Eps 16	
Plant 102	Ventilator & Heater	Eps 11	Eps 5	
	Cooling Unit & Blower			Eps 4
	Radiator			Eps 1
	Learning Area	Eps 12		
	Office of Restoration		Eps 15	

Table 4.1: Plant and Line Arrangements Within Episodes

		Eps 6
	Eps 7	
		Eps 13
Six	Five	Five
	Six	

The episodes are shown here, with numbers denoting their place throughout the production lines as per Table 4.1. There are 16 carefully chosen episodes that cover all the plants and production philosophies involved, including:

Episode No 1: Gemba & Irregularities Treatment

Episode No 2: TPS Activity Panel

Episode No 3: Champ

Episode No 4: Super-Operator & Picturization

Episode No 5: Trainings – both theoretical & practical

Episode No 6: Charts with Various Pen Colors

Episode No 7: Daily Maintenance & Five Ss

Episode No 8: TPM Corner & "Why Why Analysis"

Episode No 9: System of Kanban Cards

Episode No 10: Simulation of a Production Line

Episode No 11: Gambatte Ownership Culture & TPS Design in Action

Episode No 12: Asean Jeshuken

Episode No 13: Complaints from Customer

Episode No 14: Production Line Process Control

Episode No 15: Machine Spare Parts Control

Episode No 16: Pre-emptive Maintenance

An episode is a recollection of knowledge transfer events that are captured in real time based on the content presented and the method used. It could take the shape of five to fifteen-minute trailers for movies or documentaries. Each episode lasts anything from 15 to 60 minutes. These examples are critical for understanding the knowledge transfer process and demonstrating how the subsidiary collects data before applying manufacturing procedures to day-to-day activities (Alias, 2013). Each episode demonstrates further information transfer qualities such as medium, mechanism, and participant roles (Alias, 2013; Alias and Mat, 2022).

The Scene serves as the episode's primary emphasis, describing a "component of a process or an activity." It is similar to a five to fifteen-minute movie trailer, except that instead of using pictures, the information is communicated vocally. The "real situations" in each scene are "telecast" to reveal the episode's broader plot (Alias, 2013). Each scene's sub-contents are coupled with genuine actors, perspectives on events, and surroundings to ensure that the plot runs smoothly, and the knowledge transfer scenario is rationally understood (Alias and Mat, 2022, 2023).

The corpus of knowledge transfer literature demonstrates two primary information transfer strategies: replication and adaptation. In summary, "replication" refers to the process of duplicating information from an identical copy of the original source. In contrast, "adaptation" refers to the process of changing one's knowledge without altering its meaning (Szulanski, 1996; von Hippel, 1994). In this study, adaptation involves adjusting

knowledge to meet the requirement for comprehension, and explanations are required. According to Williams (2002), replication involves a more discrete approach, whereas adaptation necessitates a greater understanding.

Among examples of how adaptation was found in the episodes are as below:

Interview	Code	Sub-Categories	Categories	Theme
"when we want to implement new knowledge of manufacturing techniques which is transferred into here, not all of them could be directly apply as it is, we need to <u>make our operators understand</u> what they are and this requires <u>some minor change</u> " [Fadhil]	Make people understand Minor changes	Keep the same understand	Need of Understanding	Adaptation
" For different levels of audience, we provide different type of materials so that they could acquire and absorb the knowledge smoother. The materials that we got from the Japanese parent were <u>adapted to suit with the</u> <u>audience's level of understanding</u> "[Zack]	Suit understanding	Same level understanding		
"although the new systems of TS have listed the details of all items to follow, we also <u>need to ensure that all the personels</u> , plant- wide from top management to operators at the shop-floor <u>could understand and</u> <u>comprehend what they actually are</u> . This requires <u>some adaptation</u> " [Nasser]	Ensure all levels understanding	Understand and comprehend		

Table 4.2: Samples Of Developing Code, Sub-Category, Category, And Theme of Adaptation

The 16 episodes illustrate the results of the activities, showing that direct replication (replication) or adaptation (adjustment) depends on the subsidiary's preference when using the same TPS system or lean manufacturing. TPM implementations and TS systems are comparable. The identification of episode-related actions offers yet another fascinating element. The more conceptual, robust, open, and flexible the manufacturing techniques transferred from the parent, as in the TPS project, the more innovations are used (Alias and Mat, 2022; Alias and Mat, 2023). More significantly, exploring facts through episodes and learning how knowledge is presented is a critical first step in comprehending the larger picture. This also relates to how the knowledge need more understanding consistently regardless some minor changes implied to it. This follows the following detailed characteristics of adaptation:

Adaptation				
Characteristics	Need of Understanding			
	Explanation Required			
	Additional Jobs & Tasks			
	Need for Adjustment			
Tacit	Coherent Experience			
	Unambiguous Understanding			
	Expertise Inheritance			
	Teamwork - Cohesiveness			
Intensity	Quality			
	Quantity			
Place	Defined			
Place	Undefined			
Mechanism	Meeting			
mechanism	Training			
Medium	Language			
Medium	Communication			

CONCLUSION

This study adds to the existing knowledge transfer literature. This study employs an inductive qualitative case study and thematic analysis to look into knowledge transfer within an MNC subsidiary during project execution. This study contributes to the body of knowledge transfer research by directly assessing the dimensions and components of knowledge transmission.

The study's findings provide a framework for better understanding the process of knowledge transfer in a project setting, specifically within a multinational business subsidiary. This understanding clarifies the consequences for practice, as well as future research recommendations. The study's findings indicated the usage of episodic snapshots to better understand the process and occurrences of knowledge transfer.

Finally, this study shows that adaptation can take a variety of shapes depending on the situation. It also means that adaptation may occur in a specified order, although this may alter over time. Furthermore, episodes are important for understanding the entire process. Overall, these findings would improve both the knowledge transfer component and the knowledge management corpus. To conclude, this study will provide valuable insight into knowledge transfer within MNC subsidiary contexts and how MNCs might use it to improve future operations.

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