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DETERMINANTS OF KNOWLEDGE TRANSFER FOR INFORMATION TECHNOLOGY PROJECT MANAGERS: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Aim/Purpose	The purpose of this study is to identify the key determinants hindering Knowledge Transfer (KT) practices for Information Technology Project Managers (ITPMs)
Background	The failure rate of IT projects remains unacceptably high worldwide, and KT between project managers and team members has been recognized as a significant issue affecting project success. Therefore, this study tries to identify the determinants of KT within the context of IT projects for ITPMs.
Methodology	A systematic review of the literature (SLR) was employed in the investigation. The SLR found 28 primary studies on KT for ITPMs that were published in Scopus and Web of Science databases between 2010 and 2023.
Contribution	Social Cognitive Theory (SCT) was used to build a theoretical framework where the determinants were categorized into Personal factors, Environmental (Project organizational) factors, and other factors, such as Technological factors influencing ITPMs (Behavioral factors), to implement in KT practices.

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Findings	The review identified 11 key determinants categorized into three broad categories: Personal factors (i.e., motivation, absorptive capability, trust, time urgency), Project Organizational factors (i.e., team structure, leadership style, reward system, organizational culture, communication), and Technological factors (i.e., project task collaboration tool and IT infrastructure and support) that influence implementing KT for ITPMs
Recommendations for Practitioners	The proposed framework in this paper can be used by project managers as a guide to adopt KT practices within their project organization.
Recommendations for Researchers	The review showed that some determinants, such as Technological factors, have not been adequately explored in the existing KT model in the IT projects context and can be integrated with other relevant theories to understand how a project manager's knowledge can be transferred and retained in the organization using technology in future research.
Impact on Society	This study emphasizes the role of individual actions and project organizational and technological matters in shaping the efficacy of KT within project organizations. It offers insight that could steer business owners or executives within project organizations to closely observe the behavior of project managers, thereby securing successful project outcomes.
Future Research	The determinant list provided in this paper is acquired from extensive SLR and, therefore, further research should aim to expand and deepen the investigation by validating these determinants from experts in the field of IT and project management. Future studies can also add other external technological determinants to provide a more comprehensive KT implementation framework. Similarly, this research does not include determinants identified directly from the industry, as it relies solely on determinants found in the existing literature. Although a comprehensive attempt has been made to encompass all relevant papers, there remains a potential for overlooking some research in this process.

Keywords	knowledge transfer, knowledge transfer determinants, project manager, information technology project

INTRODUCTION

This contemporary phase of technological evolution heavily depends on various components of Information and Communication Technology (ICT). Among these components, Information Technology (IT) projects stand out as crucial factors (Ayentimi & Burgess, 2019; Jones & Pimdee, 2017). This technological evolution has led to a significantly high number of IT projects being conducted by different organizations spanning various sectors like healthcare, education, and finance to mention a few. The primary objective behind executing IT projects is to develop technological solutions that empower organizations to compete in this era (Mtsweni & Gorejena, 2023). Technology facilitates effective and efficient strategies to execute organizational processes (Khan & Keung, 2016).

Organizations worldwide are moving towards technological advancements, actively driving digital transformation with the aim to enhance customer satisfaction, sales, and operational efficiency (Baiyere et al., 2020; Hess et al., 2016; Sebastian et al., 2020). The pursuit of digital transformation includes a wide range of projects related to IT and digital technology (Karimi & Walter, 2015). In each project, an Information Technology Project Manager (ITPM) takes the lead and oversees the coordination of activities, ensuring adherence to schedule, scope, and budget limitations to achieve the expected project performance and organizational objectives (Chai & Lebeaux, 2020; Kaleshovska & Pulevska-Ivanovska, 2019).

ITPMs are responsible for ensuring the timely and budgeted completion of IT projects within the project schedule. They oversee the successful execution of these projects and manage the employees involved concurrently. The role of an ITPM involves leading and coordinating the planning, execution, and delegation of tasks related to an organization's IT endeavors (Chai & Lebeaux, 2020). They are responsible for managing complex projects that involve the organization's IT infrastructure, such as implementing computer hardware, establishing networks, and implementing cybersecurity measures (Chai & Lebeaux, 2020). ITPMs must possess a diverse set of skills to effectively oversee an organization's projects, including communication skills, leadership, and administrative skills (Alvarenga et al., 2020; Yoon et al., 2020).

However, the biggest challenge associated with IT projects is the alarmingly high failure rate, which has been declared as a global crisis. This issue has been recognized internationally, acknowledged not only by academia but also by IT project organizations (Lehtinen et al., 2014; Niazi et al., 2016). According to the Standish Group's (2020) Annual CHAOS Report, 66% of IT projects (based on the analysis of 50,000 projects globally) end in partial or total failure. While larger projects are more prone to encountering challenges or failing altogether, even the smallest IT projects fail one in ten times (Faeth, 2022). In developed countries, such as the USA, 31% of ITPs were canceled outright, and the performance of 53% was so worrying that they were challenged (Standish Group, 2020). ITPs in developing countries such as South Africa and Nigeria are no exception in this aspect (Eberendu, 2015; Marnewick, 2016). This shows that the failure of IT projects is a real challenge and a global phenomenon for both developed and developing countries.

IT projects are usually knowledge-intensive in nature, whereby knowledge is essential when performing projects in sociotechnical tasks (Mtsweni & Maveterra, 2018). The term "knowledge" has been applied to refer to facts, procedures for carrying out a task, the circumstances under which it is suitable, and the rationale for its use (Chaudhary, 2005). Therefore, one of the key resources required in IT projects is knowledge, and a key strategy to attain success in IT projects is by ITPMs knowledge transfer (KT) since the knowledge and expertise is required to complete the project task (Srisuksa et al., 2022). KT is the process of transmitting knowledge from a source (i.e., ITPMs) to possible recipients (i.e., team members). It is crucial that the recipients completely understand and effectively use the knowledge to guide their actions in implementing project tasks (Mtsweni & Gorejena, 2023; Srisuksa et al., 2022). IT project team members require both tacit and explicit knowledge to perform project tasks successfully.

While explicit knowledge – the knowledge that has been codified, written down, or processed by an information system and protected by the organization (Smith, 2001) – is mostly available, ITPMs' tacit knowledge, which is the intuition, know-how, and practical-oriented knowledge (Brown & Duguid, 2001), is limited. IT project teams require tacit and explicit knowledge to successfully carry out project sociotechnical responsibilities throughout the IT project (Mtsweni & Gorejena, 2023). Sociotechnical tasks encompass both social and technical elements that are human-oriented in nature. These two types of knowledge complement each other throughout the project (Lee et al., 2020). The problem of accessing ITPM knowledge becomes apparent when team members are unable to effectively complete project sociotechnical tasks to the required level, contributing to the frequent failure of IT projects. The limited access to ITPM knowledge indicates that there are unknown obstacles to ITPMs KT within the IT project organization. Hence, the main objective of this study is to identify the key determinants of KT for ITPMs.

Despite extensive research on KT in various contexts (Jhamba & Steyn, 2021; Lindblom & Martins, 2022; Takahashi et al., 2018; Tshuma et al., 2022), there has been a limited focus on KT within the context of IT projects by researchers (Fatima et al., 2020; Mtsweni & Gorejena, 2023; Srisuksa et al., 2022). This is evident from the repeated failure rates of IT projects. Currently, there are no systematic investigations available that specifically examine the KT determinants for ITPMs, which could significantly impact IT project performance. Therefore, the main aim of the study is to conduct a Systematic Literature Review (SLR) to establish a comprehensive list of factors that influence KT for

ITPMs. The sections of this paper are organized as follows. The next section provides an overview of the background and related literature. Then the search methodology employed is detailed, and the findings from the Systematic Literature Review (SLR) and a thorough report of results are presented. Then, the related theories and conceptual framework are highlighted. Finally, the discussion, limitations, suggestions for further studies, and conclusion are highlighted.

LITERATURE REVIEW

In the past, several definitions of KT have been proposed by scholars such as Szulanski (1996), Argote and Ingram (2000), Carlile and Rebentisch (2003), and Singley and Anderson (1989). According to Quinn et al. (1998), KT is a stage in knowledge management that is circulated within an organization and takes place between individuals and groups. Szulanski (1996) added that KT entails knowledge providers and receivers who must transfer, gain, assimilate, and apply knowledge during their interaction. Davenport and Prusak (1998) proposed that KT comprises two types of actions: the knowledge provider transfers knowledge to the potential recipient, and the receiver assimilates the knowledge to enhance their performance or generate novel insights.

Nowadays, a popular approach in KT research involves using a universal model of "source and recipient" (Ko et al., 2005). KT is a process that involves the exchange of information, skills, expertise, and experience between individuals within an organization, and this transfer of knowledge is an invaluable and concrete resource for fostering sustainability, enhancing performance, and gaining a competitive edge (Yao Lartey et al., 2022). Srisuksa et al. (2022) defined KT as the transmission of experience and expertise from a sender to a receiver in a specific environment. In the context of a project setting, KT refers to the act of sharing information between organizations, projects, or individuals through a variety of channels (Zhou et al., 2020). The goal is for the project to serve as the main unit of production or operation, with the recipients receiving the transferred knowledge and utilizing it (Aerts et al., 2017; Zhou et al., 2020). The goal of this transfer is to equip the receiver with new skills and knowledge in that environment.

KT is crucial for effective and efficient processes and improved organizational performance (Dayan et al., 2017). Transfer and integrating knowledge can lead to reduced project costs, improved organizational learning, better project performance, avoiding rework and project failure, optimized project time, improved innovative capabilities, and retention of organizations' transactional memory (Fatima et al., 2019a; Gomes et al., 2018; Hussien et al., 2021; Nurye et al., 2019; Shaqrah & Al Maliki, 2018; Srisuksa et al., 2021; Yang & Yang, 2023); therefore, KT among ITPMs and team members can greatly benefit the project organizations. When ITPMs share their knowledge and prior experience, they can increase efficiency and the performance of projects, promote innovation, and enhance organizational learning while still retaining organizational project memory (Zhou et al., 2020), preventing mistakes and improving the quality of project outcomes (Lindgren et al., 2018). It can lead to the development of new ideas and solutions for IT project teams, encouraging creativity and innovation in the project (Rese et al., 2020).

Regardless of the above benefits of KT in project organizations, there are still some fundamental issues and challenges that are characterized by KT for ITPMs. IT projects are failing because team members do not have sufficient access to ITPM knowledge, which is essential to ensure that IT projects are conducted successfully. In a survey, it was found that documentation and transfer of project knowledge is the most burdensome tasks for project managers, and they express a strong desire to remove it from their to-do lists (Harrin, 2022). Several issues and concerns have been identified to influence ITPMs' unwillingness to share their experiences, expertise, and lessons learned from previous projects, such as reward and promotions (Chelagat et al., 2019; Jhamba & Steyn, 2021; Nakayama et al., 2021), communication barriers (Alwahdani, 2019; Ren et al., 2018), time urgency (Avença et al., 2023; Khoza & Pretorius, 2017; Zhao et al., 2015), job security (Khoza & Pretorius, 2017; Pietruszka-

Ortyl et al., 2021), resistance to change (Beste, 2023; Khoza & Pretorius, 2017), technological limitation (Mirzaee & Ghaffari, 2018; Nidhra et al., 2013; Pietruszka-Ortyl et al., 2021), and the need for technical expertise (Alwahdani, 2019; Chelagat et al., 2019; Liu et al., 2020).

Moreover, if the knowledge is not effectively transferred, this leads to undesirable consequences such as reduced work efficiency, increased failure probability for developing a new product, and delay in executing shared projects (Fatima et al., 2020). Scholars have investigated this phenomenon to understand the antecedent of effective KT in various contexts (Liu et al., 2020; Yang & Yang, 2023; Zhou, Deng, Hwang, & Yu., 2022; Zhou, Deng, Wang, & Mahmoudi, 2022;). However, there is a lack of SLR that specifically streamlines the papers and focuses on identifying the determinants of KT for ITPMs. Even if there are such SLRs, they have not comprehensively reviewed the prior knowledge related to ITPMs. To bridge this gap, this study aims to streamline the prior studies on knowledge transfer literature by conducting an SLR to identify the determinants of KT for ITPMs.

METHODOLOGY

The review of existing literature serves as a comprehensive approach that forms the foundation for each study, aiding in the progressive advancement of scientific knowledge based on previous discoveries (Kitchenham & Charters, 2007). SLRs present a technique for amalgamating empirical data to address a specific research query in a straightforward and replicable manner while aiming to encompass all published information on the subject and assess its authenticity (Okoli & Schabram, 2010). As a result, comprehending the frontiers of knowledge expansion becomes pivotal. By analyzing pivotal publications and identifying gaps, the extent and intensity of the current body of work become evident, guiding further investigation (Xiao & Watson, 2017). This approach effectively unveils pertinent references concerning the topic under review and adds to the research's significance. The systematic review adheres to the protocols endorsed by Okoli and Schabram (2010), which delineate a set of directives for conducting SLRs. The primary rationale for adhering to these guidelines is their provision of evidence-based support for the subject under scrutiny. Moreover, these principles have served as a well-established roadmap for numerous systematic reviews (Xiao & Watson, 2017).

The objective of the current study was to conduct an SLR to determine the critical determinants that influence ITPMs' involvement in a KT practice and to suggest a framework containing the interactions between those determinants. Figure 1 illustrates the methodological steps employed to develop the framework, which involved conducting SLR, evaluating results, and extracting determinants from SLR. The subsequent sections provide a detailed explanation of the procedure adopted in this SLR.

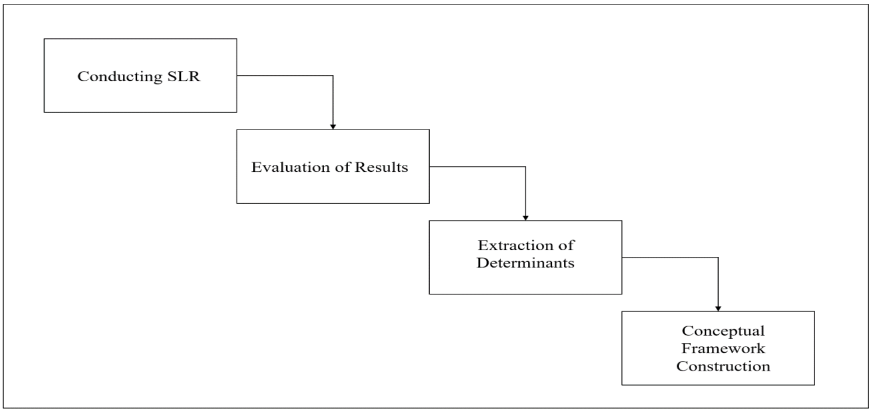

Figure 1. Methodological steps

DATA COLLECTION FOR SLR

In this research, six databases were selected as the primary sources of data, including AIS, Elsevier, Emerald, IEEE, Scopus, Springer, and Taylor & Francis. These databases were chosen for their comprehensive coverage of high-impact peer-reviewed journals. To conduct the study, a combination of keywords and search queries were employed, utilizing Boolean operators such as "AND" and "OR" as well as advanced search techniques: "Knowledge Transfer" OR "Knowledge Sharing" OR "Knowledge Exchange" OR "Knowledge Dissemination" AND "IT Projects" OR "Software Projects" OR "Technology Projects" OR "IT Initiatives" OR "IT Development" OR "Digital Projects" AND "Determinants" OR "Factors" OR "Elements" OR "Circumstances."

CRITERIA FOR INCLUSION

Only highly relevant and significant papers were carefully selected to be included in the review for this study. The focus was specifically on articles published between 2010 and 2023, ensuring that the study considers the most recent research in the field. The choice was determined based on the recognition that the IT project operates within a knowledge-intensive sector where constant advancements and innovations in technology are swiftly emerging (Anwar et al., 2017). To maintain a high level of quality, only publications from reputable journals indexed in Scopus or Web of Science were considered. The chosen articles specifically covered studies related to IT projects, such as software development projects. Additionally, only empirical or conceptual frameworks published in English were included, while other types of articles, like systematic reviews, were also included in the review.

DATA EXTRACTION AND SELECTION PROCESS

In the initial stage of the study, a thorough check for redundant data was conducted. The inclusion criteria were then applied to evaluate the relevance of the abstracts. Subsequently, the methodology and discussion sections of the articles that remained relevant were carefully read and summarized. Open coding was implemented using Excel and Mendeley tools. The applied SLR structure is depicted in Figure 2. Step 1 involved identifying 156 articles from various databases, such as AIS, Elsevier, Emerald, IEEE, MDPI Springer, and Taylor & Francis. Step 2 led to the exclusion of 49 articles due to reasons like non-English content, absence of abstracts or notes, and generic reports lacking relevant details.

In Step 3, the abstracts of the remaining 107 articles related to KT and IT projects were assessed, resulting in the removal of 50 articles. This left 57 articles for further analysis. Step 4 involved a thorough examination of the introduction and full text of each article against the inclusion criteria. Articles without IT non-projects or relevant to IT project organization aspects were excluded, leading to the rejection of 22 more articles. The quality of the remaining 35 articles was assessed based on their publications, resulting in the exclusion of 7 more articles. In Step 5, the final selection comprised 28 articles that fully met the inclusion criteria. To ensure consistency in the description of the determinants influencing KT for ITPMs, the definitions and measurement items used in the selected articles were examined. The pool of articles was matched based on the research question, aim, adopted frameworks, and findings.

The study carefully examined how well the chosen definitions aligned with the measurement used to ensure that the determinants of KT for ITPMs were consistent with previous research. From the 28 selected articles, which specifically explored the relationship between determinants and IT projects in various organizational contexts, we derived a list of key predictors that could potentially impact KT for ITPMs. Table 1 presents an overview of these 28 articles, categorized based on their quality as indexed in Scopus or Web of Science.

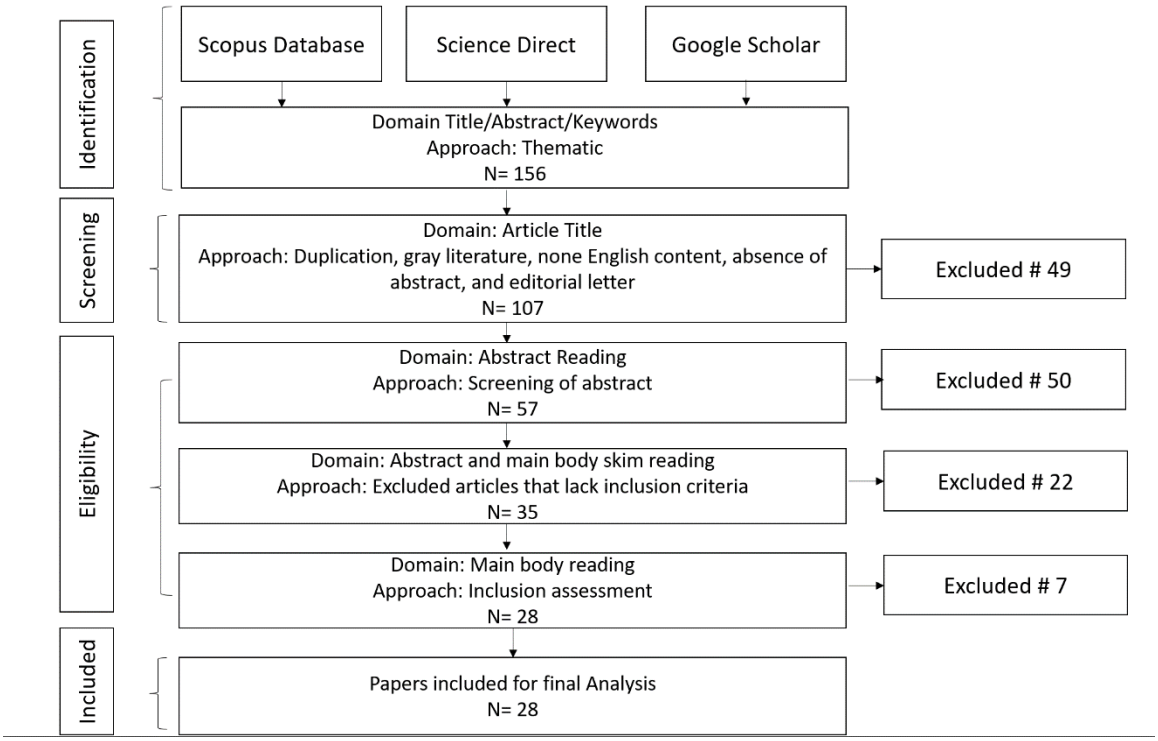

Figure 2. SLR Structure

Table 1. Overview of SLR

Authors	No. of selected papers	Database	Quality of papers
Avença et al. (2023), da Silva et al. (2022), Ghobadi (2015), Imam and Zaheer (2021), Jiang and Xu (2020), Nidhra et al. (2013)	6	Elsevier	Scopus & Web of Science
de Castro et al. (2022), Khoza and Pretorius (2017), Togola et al. (2019)	3	Taylor & Francis	Scopus & Web of Science
Binti Mohamad Sani and Binti Arshad (2016), Fatima et al. (2019a, 2019b, 2020), Khoza (2019), Matthew and Dhillon (2020), Razzak and Ahmed (2014)	7	IEEE Xplore	Scopus & Web of Science
Akgün et al. (2017), Biloslavo and Lombardi (2021), Karagoz et al. (2020), Rese et al. (2020)	4	Emerald	Scopus & Web of Science
Davidavičienė et al. (2020), Nurye et al. (2019), Pietruszka-Ortyl et al. (2021)	3	MDPI	Scopus & Web of Science
Alwahdani (2019), Srisuksa et al. (2022)	2	Scopus (EJMK, IADIT)	Scopus & Web of Science
Ghobadi and Mathiassen (2015, 2016), Shaqrah and Al Maliki (2018)	3	Wiley	Scopus & Web of Science

Determinants Extraction

The research investigated a total of 28 articles and identified 11 key determinants related to KT for ITPMs. These determinants complied from the SLR are summarized in Table 2 and include Motivation, Absorptive Capability, Time Urgency, Trust, Communication, Organizational Culture, Leadership Style, Team Structure, Reward System, Project Task Collaboration tool, and IT Infrastructure and Support.

Table 2. Summary of extracted studies and frequency of determinants from SLR

Past literature	Motivation	Absorptive capability	Trust	Time urgency	Team structure	Leadership style	Reward System	Organizational culture	Communication	Project task collaboration tool	IT infrastructure and support
Imam and Zaheer (2021)			*		*	*					
Avença et al. (2023)			*		*	*			*		
Davidavičienė et al. (2020)	*					*		*			
Fatima et al. (2019b)									*		
Fatima et al. (2019a)	*			*							
Jiang and Xu (2020)						*	*				
Karagoz et al. (2020)		*	*	*	*		*	*	*	*	*
Ghobadi and Mathiassen (2016)					*				*		
Matthew and Dhillon (2020)								*		*	
Nidhra et al. (2013)	*		*		*			*	*	*	
Akgün et al. (2017)	*	*	*			*	*	*			
Ghobadi (2015)	*		*		*	*	*	*	*	*	
Khoza and Pretorius (2017)	*						*		*		
Khoza (2019)	*		*	*	*						
Alwahdani (2019)			*						*		
Togola et al. (2019)									*	*	
Shaqrah and Al Maliki (2018)	*	*	*								
Razzak and Ahmed (2014)			*			*			*		
Ghobadi and Mathiassen (2015)		*			*				*	*	
Pietruszka-Ortyl et al. (2021)			*						*		
Nurye et al. (2019)	*	*	*								
Rese et al. (2020)	*										
Srisuksa et al. (2022)	*	*	*					*	*		*
Biloslavo and Lombardi (2021)			*	*							*
Anwar et al. (2019)	*		*	*		*	*	*	*		*
Binti Mohamad Sani and Binti Arshad (2016)	*				*					*	*
da Silva et al. (2022)	*		*								
Fatima et al. (2020)	*			*	*			*	*		

This paper provides a review of KT determinants in the context of IT projects. Barriers to KT for ITPMs have been categorized into three groups: project organizational, technological, and personal factors. To facilitate effective KT within IT project organizations, it is imperative for ITPMs to understand the dynamics of each category identified in this study. Figure 3 illustrates KT factors corresponding to each category. Notably, personal factors exhibit the highest frequency, succeeded by project organizational factors, while technological factors display the lowest frequency of occurrences, as reported in Table 3.

REPORTING RESULTS

DETERMINANTS OF KNOWLEDGE TRANSFER FOR ITPMS

The study findings revealed 11 specific determinants that influence knowledge transfer for ITPMs. To understand the determinants of knowledge transfer for ITPMs, there is a need for a comprehensive knowledge transfer framework that includes Personal factors, Project organizational factors, and Technological factors. Furthermore, identifying the data items, we analyzed the factors associated with IT projects that have an impact on KT for ITPMs. The data items were assessed to identify any instances of duplication within the same study or across different studies. We also took note of any relevant dimensions related to groups, classifications, or relationships among the literature variables. Following the guidelines provided by Hendrick (2013), comprehensive data coding, comparisons, and mappings were carried out. Consequently, the analysis of the primary studies in the SLR showed that determinants of KT for ITPMs belonged to three core categories, i.e., Personal factors, Project organizational factors, and Technological factors. Finally, a categorized list of determinants of KT for ITPMs was derived. These determinants have been categorized into three distinct groups (see Table 3).

Table 3 provides a comprehensive overview of the determinants influencing ITPMs in practicing KT. These determinants have been systematically categorized into three principal groups, aligning with established findings from prior research. The literature suggests that factors impacting KT behavior within IT project organizations can be broadly classified into personal, organizational, and technological categories (Kukko & Helander, 2012). Personal factors play a pivotal role, where individual behaviors significantly influence their actions. Motivation and willingness to share knowledge, coupled with a trust in team members' utilization of the shared knowledge for its intended purpose, are imperative. Additionally, ITPMs should demonstrate familiarity with the knowledge content and possess the ability to organize and prioritize it progressively.

Table 3. List of determinants of knowledge transfer for ITPMs

Category	Determinants	Descriptions	References
Personal factors	Motivation	The driving force behind a person's behavior.	Akgün et al. (2017), Anwar et al. (2019), Binti Mohamad Sani and Binti Arshad (2016), da Silva et al. (2022), Davidavičienė et al. (2020), Fatima et al. (2019a, 2020), Ghobadi (2015), Khoza (2019), Khoza and Pretorius (2017), Nidhra et al. (2013), Nurye et al. (2019), Rese et al. (2020), Shaqrah and Al Maliki (2018), Srisuksa et al. (2022),
	Absorptive capability	The ability to recognize, acquire, evaluate, understand, and apply new knowledge effectively within their project needs.	Akgün et al. (2017), Ghobadi and Mathiassen, 2015), Karagoz et al. (2020), Nurye et al. (2019), Shaqrah and Al Maliki (2018), Srisuksa et al. (2022)

Category	Determinants	Descriptions	References
	Trust	The confidence that people ITPMs) hold in the behavior of the capabilities of others (team members).	Akgün et al. (2017), Alwahdani (2019), Anwar et al. (2019), Biloslavo and Lombardi (2021), da Silva et al. (2022), Davidavičienė et al. (2020), Ghobadi (2015), Imam and Zaheer (2021), Karagoz et al. (2020), Khoza (2019), Nidhra et al. (2013), Nurye et al. (2019), Pietruszka-Ortyl et al. (2021), Razzak and Ahmed (2014), Shaqrah and Al Maliki (2018), Srisuksa et al. (2022)
	Time urgency	The pressure felt by ITPMs and team members to complete a specific task within a specific time.	Biloslavo and Lombardi (2021), Anwar et al. (2019), Fatima et al. (2019a, 2020), Karagoz et al. (2020), Khoza (2019)
Project organizational factors	Team structure	The role, composition, and dynamics of the project team, including their attitudes, behaviors, and collaboration toward knowledge transfer.	Avença et al. (2023), Binti Mohamad Sani and Binti Arshad (2016), Fatima et al. (2020). Ghobadi (2015), Ghobadi and Mathiassen (2015, 2016), Imam and Zaheer (2021), Karagoz et al. (2020), Khoza (2019), Nidhra et al. (2013)
	Leadership style	The role and impact of ITPMs in facilitating and promoting knowledge transfer within the project team through effective leadership practices.	Akgün et al. (2017), Anwar et al. (2019), Avença et al. (2023), Davidavičienė et al. (2020), Ghobadi (2015), Imam and Zaheer (2021), Jiang and Xu (2020), Razzak and Ahmed (2014)
	Reward system	It consists of various norms and practices aimed at encouraging individual ITPMs to engage in KT practices.	Akgün et al. (2017), Anwar et al. (2019), Ghobadi (2015), Jiang and Xu (2020), Karagoz et al. (2020), Khoza and Pretorius (2017)
	Organizational culture	It comprises a set of common values (beliefs and norms that are shared by all members of some social unit, such as project organizations.	Akgün et al. (2017), Anwar et al. (2019), Davidavičienė et al. (2020), Fatima et al. (2020), Ghobadi (2015), Karagoz et al. (2020), Matthew and Dhillon (2020), Nidhra et al. (2013), Srisuksa et al. (2022)
	Communication	The basic way of sharing and receiving information is through a form of interaction.	Alwahdani (2019), Anwar et al. (2019), Fatima et al. (2019b, 2020), Ghobadi (2015), Ghobadi and Mathiassen (2015, 2016), Karagoz et al. (2020), Khoza and Pietruszka-Ortyl et al. (2021), Khoza and Pretorius (2017), Nidhra et al. (2013), Srisuksa et al. (2022), Togola et al. (2019)
Technological factors	Project task collaboration tool	The specific technology or tools used in the IT project may impact the ease and effectiveness of knowledge transfer among project managers and team members.	Anwar et al. (2019), Binti Mohamad Sani and Binti Arshad (2016), Ghobadi (2015), Ghobadi and Mathiassen (2015), Karagoz et al. (2020), Matthew and Dhillon (2020), Nidhra et al. (2013), Togola et al. (2019)

Category	Determinants	Descriptions	References
	IT infrastructure and support	It consists of machinery, systems, and IT that support encoding and disseminating best practices that establish knowledge repositories and networks in the organization.	Biloslavo and Lombardi (2021), Binti Mohamad Sani and Binti Arshad (2016), Karagoz et al. (2020), Srisuksa et al. (2022)

It is noteworthy that the project organizational context introduces influential factors necessitating consideration by ITPMs engaging in KT practices. Factors such as organizational structure, culture, leadership style, reward systems, and communication strategies emerge as crucial determinants aligning with existing literature. Whereas extant studies predominantly emphasize personal and organizational factors influencing individual behaviors in KT practices, this study reveals a notable gap in the literature concerning technological determinants. The technological dimension, especially pertinent for developing countries, appears to exert a considerable influence on KT implementation. Studies incorporating technological determinants highlight the critical role of IT infrastructure and project task collaboration tools as key enablers in facilitating the effective implementation of KT within ITP organizations. This refined viewpoint emphasizes the need for a thorough analysis of personal, organizational, and technological factors to gain a comprehensive understanding and improve KT implementation practices for ITPMs.

MODELS AND THEORIES IN KT AND IT PROJECT STUDIES

Several models and theories were employed to investigate various KT phenomena based on the publications contained in this review. However, most of these studies focused primarily on the personal and project organizational factors hindering KT, and only a few studies highlighted the technological factors, as noted by Togola et al. (2019) and van Zyl et al. (2022). Furthermore, most studies investigated the diffusion of tacit to explicit knowledge and behaviors of individuals towards KT, with limited attention focusing on documentation and digitization of human experiences and knowledge for later use. The theories adopted in these studies include Nonaka and Takeuchi's (1995) knowledge creation theory, Polanyi's (1966) tacit knowledge theory, Bandura's (1986) social cognitive theory, Ipe's (2003) theoretical framework, Riege's (2005) knowledge sharing framework, Cummings and Teng's (2003) KT framework, Ajzen's (1991) theory of planned behavior, and Katz and Kahn's (1978) social exchange theory and organizational role theory.

However, in the context of KT implementation for ITPMs, the SCT is perceived as more suitable as its distinct advantage lies in its recognition that personal, behavioral, and environmental elements are interconnected and can exert reciprocal influences on each other (Carillo, 2015). Hence, based on our examination of various KT theories and models in the IT project context, SCT offers the theoretical foundations that support the interplay among personal factors, behavior, and the environment in establishing relationships (Sarkintudu et al., 2022). This theory recognizes human behavior as a dynamic interaction of individual elements (Personal factors), ethics, and the surrounding environment (Project organizational factors), as highlighted in Anwar et al.'s (2017) study. Personal factors encompass various cognitive and personality aspects that characterize an individual (Bandura, 1986; Carillo, 2015). We sorted the 11 identified determinants into three dimensions based on Nidhra et al.'s (2013) study: personal (comprising four determinants), project organizational (encompassing five determinants), and technological (including two determinants). These determinants were deemed important for implementing KT for ITPMs.

Similarly, Bandura's (1986) SCT focuses on the role of cognitive processes in learning and behavior change. In the context of this study, SCT can be applied to understand how ITPMs acquire, process, and transfer their knowledge within the project organization. The theory emphasizes the importance

of personal, behavioral, and environmental factors interacting with each other in a bidimensional manner influencing each other (Hsu et al., 2007). Therefore, SCT is believed to be a foundational theory that can be used to understand this phenomenon.

PROPOSED CONCEPTUAL MODEL

The model is developed by combining insights from the existing literature and considering the theoretical significance of the constructs under investigation. In the following paragraphs, we provide a definition and rationale of the three classified constructs required to develop the proposed conceptual model depicted in Figure 3.

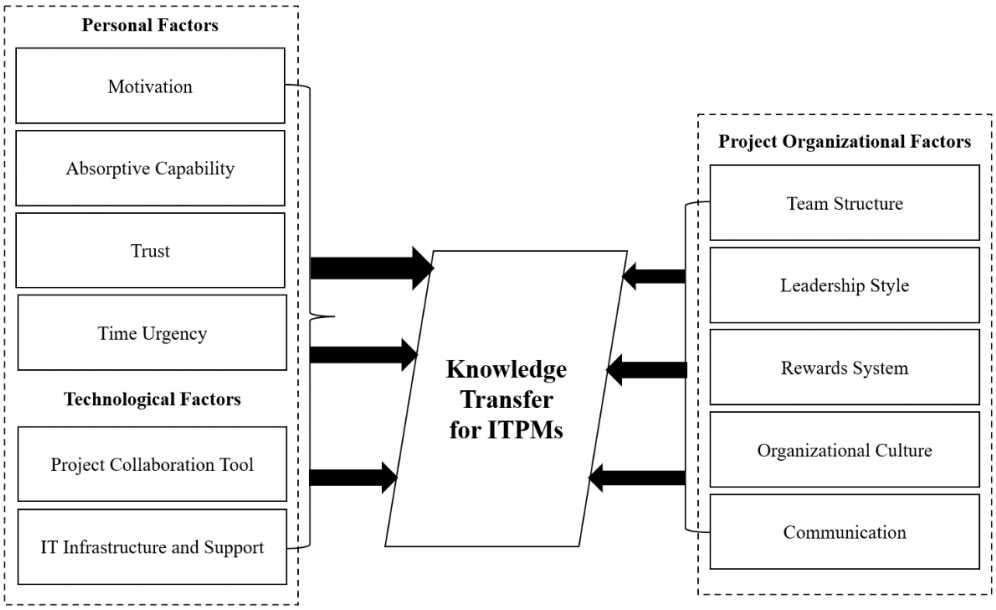

Figure 3. Proposed conceptual model

PERSONAL FACTORS

Personnel aspects pertain to the attributes of individual staff or ITPMs engaged in IT project management (Anwar et al., 2019). These determinants address challenges linked to humans and the personal proficiencies of employees (Davidavičienė et al., 2020; Nidhra et al., 2013). Furthermore, they are connected to human talents and their competencies. The personal determinants related to KT in this study include motivation, absorptive capability, trust, and time urgency. The theory of planned behavior illustrates a constructive connection between these personal factors and the act of sharing knowledge (Ajzen, 1991). This theory has frequently been adopted to scrutinize an individual's inclination to take part in KT actions (Abdelwhab Ali et al., 2019). An individual's attitude, the social norms they perceive, and their perceived control over their behavior all contribute to their intention to transfer knowledge. Lin (2007) suggests that researchers should persist in identifying and investigating additional factors that can enhance our comprehension of individuals who intend to transfer knowledge.

PROJECT ORGANIZATIONAL FACTORS

Project organizational aspects encompass various considerations related to the transfer of knowledge within the context of the project organization. These considerations involve a range of aspects, such as issues pertaining to the project manager's leadership style, motivation, supervision mechanism, the flow of information within the organization, project budget, scheduling of project deliveries, and the

availability of project resources (Abdelwhab Ali et al., 2019; Nidhra et al., 2013). The project determinants related to KT in this study include team structure, leadership style, reward system, organizational culture, and communication. All these predictors are believed to influence KT for ITPMs.

Technological Factors

Technology aspects incorporate a comprehensive array of elements that revolve around the utilization of various tools and technologies aimed at facilitating the process of knowledge transfer within the realm of IT projects. These determinants encapsulate a range of considerations that span from the selection and implementation of ICT solutions by the integration of tools that will contribute to the seamless exchange of knowledge and information within the project organization (Andreeva & Kianto, 2012; Nidhra et al., 2013). These aspects extend to the proficiency levels of the project manager and team members in effectively employing the tools and technologies at their disposal. It further encompasses the adaptability of the chosen tools and technologies to the specific needs of the project, ensuring that they align seamlessly with the project's objectives and requirements. Hence, project task collaboration tools and IT infrastructure facilitate KT for ITPMs. ICT acts as a sociotechnical system that allows employees to interact using different devices, such as voice mail, email, video conferencing, intranet, wikis, etc. (Davidavičienė et al., 2020).

Theoretical Implications

The conceptual framework was designed to comprehend KT within the context of IT project organization and aims to furnish an accurate portrayal of potential influencing factors and a precise forecast of the reasons behind project managers' reluctance to participate and share knowledge during IT projects. Furthermore, it contributes to the Social Cognitive Theory (SCT) by integrating predictors of KT to comprehend the behaviors of ITPMs. Considering that multiple interactions within the SCT framework remain unexplored and warrant additional research endeavors, the proposed framework would undeniably enhance the ongoing progress of SCT (Bandura, 1986; Carillo, 2015).

Several models and theories have been presented for KT on both individual and project organizational levels. Among these, this stands as one of the pioneering theoretical models that amalgamate psychological and behavioral components at the individual level with SCT frameworks for the implementation of KT for ITPMs in the project organization. Within the existing literature, these various contexts have been extensively deliberated upon and individually investigated. Nonetheless, there exists a scarcity of research that delves into the significance of ITPMs in comprehending the triumph of KT practices at the project level. Moreover, the conceptual and theoretical framework demonstrates the principles of KT between ITPMs and project team members. It shed light on KT determinants for ITPMs from three categories – personal determinants, project organizational determinants, and technological determinants – contributing to the body of knowledge in the field of IT project management. The new conceptual model can be generalized or modified to create new models and frameworks.

Implication for Practitioners

This article is built upon a systematic analysis of relevant research from scholarly publications. Subsequently, the outcomes present a compilation of potential factors. Within various project situations, these factors were employed as sources of motivation for involvement in KT practices within IT projects. Nevertheless, these very factors might lose their significance in alternative project contexts. As a result, the compilation of determinants based on the nature of the project becomes essential for fostering a more comprehensive understanding.

The study contributed to the IT project management body of knowledge and sustainable IT projects standpoint by recognizing the importance of KT for ITPMs. Precisely, this study has the potential to provide project managers and professionals in the project management domain who aim to initiate

efforts in preserving project knowledge with the aim of utilizing it when needed and to understand why ITPMs are reluctant to engage in KT practices. The insights pertain to how an individual's decision-making can impact the continuous success of IT projects. This research offers guidance to ITPMs on how to incorporate KT strategies within their organizations.

DISCUSSION

ITPM's KT within the IT project organization enables the team members to have sufficient access to their tacit knowledge, which complements explicit knowledge and enables the team members to perform project sociotechnical tasks. The lack of ITPM's KT within IT project organization became evident because of the high failure rate of IT projects that had been in existence for a long period of time. IT projects are failing because team members do not have sufficient access to ITPMs' knowledge, which makes the entire IT project team perform sociotechnical tasks to the required standard successfully. This suggests that ITPMs play a crucial role in facilitating the transfer of tacit knowledge and that team members depend on ITPMs' knowledge to successfully complete project sociotechnical tasks.

While extant literature on KT and IT projects has largely focused on team members' behavior toward KT practices, there is a need for studies that focus on ITPMs' behavior toward KT implementation. This is because ITPMs' intuitions, skills, and expertise are required to perform project tasks successfully. In the same regard, the majority of the studies focus more on personal factors, organizational factors, and how they influence an individual's behavior towards implementing KT, with only a few studies in the domain of IT projects empirically investigating technological factors and how they can influence an individual's KT behavior. However, technological factors are critical factors to consider in IT project organizations especially in the context of developing countries, that can influence an individual's behavior towards KT implementation.

The factors that determine the implementation of KT for ITPMs are connected, and each has a role to play in encouraging ITPMs to adopt KT. This suggests that rather than considering these determinants of KT as separate factors of ITPMs KT, they should be regarded as a cohesive unit. Their impact comes from a single issue – the limited transfer of ITPMs' knowledge, which prevents team members from having the necessary knowledge to execute project tasks. Given the interrelated nature of these factors, it is important to address all of them collectively rather than concentrating on specific ones to enhance the transfer of ITPM's knowledge within the IT project organization.

LIMITATIONS AND SUGGESTIONS FOR FURTHER STUDIES

Like other studies in this domain, this research carries certain limitations. First, the determinants under examination are rooted in theoretical research, introducing the possibility of a misalignment with real-world dynamics. Second, the study specifically focuses on IT project organizations, recognizing that determinants may exhibit variations in other organizational settings. While the study contributes a theoretical foundation for understanding the determinants influencing ITPMs' engagement in KT implementation, addressing these limitations calls for further empirical research to authenticate the insights garnered from this study. Third, most of the models identified are based on understanding individuals' behavior towards KT and measuring its success.

Unfortunately, many of them lack sufficient explanation on how technological factors influence an individual's behavior towards KT practices, limiting the codification of ITPM knowledge for later use. Thus, future studies can introduce theories that include technological characteristics to explain an innovative practice. Also, other external technological factors, such as security and privacy concerns, that might influence individual behavior toward KT implementation can be investigated. It is important to note that the determinant list provided in this paper is acquired from extensive SLR; therefore, further research should aim to expand and deepen the investigation by validating these de-

terminants from experts in the field of IT and ITPM. Similarly, this research does not include determinants identified directly from the industry, as it solely relies on determinants found in the existing literature. Although a comprehensive attempt has been made to encompass all relevant papers, there remains a potential for overlooking some research in this process.

CONCLUSION

This study investigates the practice of KT as a sustainable approach for ITPMs to reduce project failure. Specifically, it focuses on the determinants of KT practices for ITPMs, which involves the transfer of expertise and experience from the ITPMs to the project team members within the project environment until the team members acquire the new experience and expertise in that environment to meet with the IT endeavors of the project organization. The study conducted a thorough examination of the literature, investigating potential factors and theories influencing KT implementation for ITPMs within IT project organizations, covering the period from 2012 to 2023. This analysis resulted in the identification and inclusion of 28 pertinent studies. From these studies, a total of 11 determinants were identified and systematically categorized into three contexts: personal factors, project organizational factors, and technological factors. Recognizing and considering these determinations during IT project activities is crucial for achieving effective KT outcomes. The identified factors can act as a guide for enhancing the overall KT process in any IT project organization.

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