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Experienced Barriers to Tacit Knowledge Sharing in Anglophone West Africa

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Abstract

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by

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Abstract

Public sector projects in Africa fail because of the absence, poor quality, and inadequate exchange of tacit knowledge through the project life cycle. The purpose of this research was to understand the barriers team members experience in sharing their ideas, skills, and know-how that is necessary to prevent waste and achieve successful projects. The conceptual framework for this interpretative phenomenological study was from the theory of reasoned action and the theory of planned behavior. The framework served as the lens to identify and interpret the lived experience on tacit knowledge sharing of 13 project managers on public sector projects in Nigeria and Ghana. Data collected through semi-structured interviews were analyzed to delineate barriers introduced by the organization, individual, team dynamics, technology, and knowledge sharing process. Three new barriers peculiar to the study were bureaucracy, corruption, and loyalty to the parent organization. Findings indicate that organizational culture is a significant factor responsible for these unique barriers, and a fundamental shift is, therefore, necessary for positive social change. Awareness of this result may catalyze the design of appropriate project and knowledge management strategies and frameworks, such as the creation of ethical guidelines to manage corrupt practices, address interference and mitigate the risk associated with bureaucratic bottlenecks. Ultimately the design of appropriate contextual based interventions, workplace protocols, training, and institutionalizing of best practices would aid in addressing and enhancing tacit knowledge sharing barriers on public sector projects in Anglophone West Africa creating social change.

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Chapter 1: Introduction

Developing countries in Africa cumulatively accommodate the largest number of failed, abandoned, and ill-conceived projects globally (Damoah & Akwei, 2017; Gbahabo & Samuel, 2017; Nzekwe, Oladejo, & Emoh, 2015). These countries are less industrialized with lower per capita income as compared to developed countries and are characterized by the low standard of living, insecurity, issues with gender inequality, poor health services, inadequate infrastructure and institutions, and a weak economy (Gbahabo & Samuel, 2017; Klynveld Peat Marwick Goerdeler [KPMG], 2013). To address these challenges, projects, which are considered the vehicles of development that drive positive change in societies, are adopted by the government through the use of resources (i.e., human, financial, and time) to provide the infrastructure that improves the socioeconomic well being of the populace. Ensuring the successful realization of the benefits and sustainability of these projects through knowledge sharing is therefore crucial to prevent the waste of these resources and subsequent economic stagnation or retardation.

Multi-organizational project teams on public sector projects are strategically constituted to bring together the requisite skills, talents, and competencies needed to deliver the necessary products. These project teams comprise members from distinct parent organizations that possess skills that are integral in achieving the objectives and goals of the project (Winch, 2010). Information flow, communication, and knowledge dissemination in a project team are critical for the execution of tasks to the triple constraints of time, cost and quality as well as to ensure realization of benefits to be

deemed successful. Collaboration by these different stakeholders on the project enables knowledge sharing, which in turn improves organizational performance, gives a competitive advantage, and ensures innovation, learning (Jolaee, Nor, Khani, & Yusoff, 2014), new knowledge creation, and knowledge reuse (Zaglago, Chapman, & Shah, 2016). These benefits can only be accrued if there is seamless interaction between all parties involved in the process.

Project teams have a common goal or primary deliverable that they are expected to work together to achieve. However, team members may also have diverse interests and expectations as represented by their respective parent organizations. These different perspectives and motivations within multiorganization teams result in stress, strain, conflict, and the reluctance to share information (Office of the Government of Commerce [OGC], 2009). The diverse interests may affect the quality of interactions between team members, resulting in conflict and subsequently hindering the flow of information pertinent to ensuring the success of the project. Therefore, it has been argued that the propensity of an individual to share knowledge and experience on the job is dependent on their perceived personal benefit and cost of the action against the team alignment (Navimipour & Charband, 2016). This proposition could also be extended to mean that the willingness of a representative of a permanent organization on the team to share knowledge with co-members in the temporary project team would depend on several factors, which are not necessarily tangible. The organization type, knowledge type, and prevailing culture could all contribute to the dynamics involved in the flow of knowledge within the temporary organization. The psychological and social effect of multiple

interactions of these factors and implications on the critical process of tacit knowledge sharing in the public sector is therefore worthy of investigation.

Public sector projects are executed with federal funds obtained from taxes and other forms of duties, and unlike private businesses, public projects may or may not generate revenue (Bos-Nehles, Bondarouk, & Nijenhuis, 2017). As such, there is scant motivation to ensure the successful execution of projects. This scenario may explain why developing countries in Africa are adjudged to have the highest rate of failed government projects (Nzekwe et al., 2015). Other factors that have been attributed to the failure of projects in Africa include corruption, lack of capacity, poor governance and planning, abridged project aid and project complexity (Ika & Saint-Macary, 2014), all of which can be decreased when knowledge is shared on the project. Knowledge sharing on public sector projects has been shown to affect project outcomes, as the absence of information flow results in the waste of public funds, human resources, and ultimately project failure (Kissi, Boateng, Adjei-Kumi, & Badu, 2017; Osei-Kyei & Chan, 2017; Williams, 2017). Knowledge sharing in project teams is an integral factor that ensures project success (Andrews, 2015; Khoza & Pretorius, 2017). It is therefore pertinent that a seamless sharing process is ensured to harness the associated benefits.

Two kinds of shared knowledge occur through the project life cycle. These are tacit and explicit knowledge sharing. Interestingly, of the two types of shared knowledge, tacit knowledge sharing is considered a preferred method for knowledge sharing in Africa projects (Akude & Keijzer, 2014). Tacit knowledge sharing occurs through communication, which has been positively correlated with project success by research

(Diallo & Thuillier, 2005). Although sharing tacit knowledge is important for project teams to achieve success (Navimipour & Charband, 2016), this method is not an adopted norm (Akude & Keijzer, 2014). The explanation for this lack of adoption is not far removed from the lack of capability, interest, and other factors, which this research will uncover through the lived experience of project team members in two developing countries in West Africa.

Research has established that knowledge-sharing intentions vary with context. Jolaee et al. (2014) found that organizational support, social networks, and self-efficacy influenced knowledge sharing intention and attitude in an academic setting. Unlike other scholars, the researchers found that trust and the possibility of a reward did not serve as factors that promote knowledge sharing among academics (Jolaee et al., 2014). In consonance, Chong and Besharati (2014) found that although trust, knowledge as power, communication, organizational hierarchy, and technology-impacted knowledge sharing in the petrochemical industry in the Middle East, reward and recognition did not. Ghobadi and Mathiassen (2016) found seven barrier constructs to knowledge sharing in agile software teams: team perception, project communication, team diversity, team capability, project organization, project setting, and project technology. Zaglago et al. (2016) identified complex knowledge nature, reward derivation illusion, culture, restrictions, time constraint, evaluation apprehension, sharing efficiency and effectiveness, trust, and project complexity as responsible for creating barriers to sharing in design teams.

Considerable research has been done to identify the barriers to tacit knowledge sharing in different contexts. Researchers such as Navimipour and Charband (2016)

contend that culture (e.g., ethnicity, gender, and nationality) may negatively affect knowledge sharing adversely. Each member of the multi-organizational project team brings into the group their individual and organizational culture, value, ethos, and approach to knowledge sharing of the parent organization. Research has shown that deep-rooted cultural values have a strong influence on the behavior of project teams (Jetu, Riedl, & Roithmayr, 2010). These values could influence the knowledge sharing inclination of team members as was identified in this study. Researchers have also suggested that diverse perspectives and motivations within multiorganization teams result in stress, strain, conflict, and the reluctance to share information (OGC, 2009). Confrontational relationships on project teams also have a negative impact and are extremely detrimental to the progress of the project with implications on time cost of completion, and employee morale (Wu, Zhao, & Zuo, 2017).

However, there is little research supporting this assertion for teams on public sector projects in developing countries in West Africa. Although similar human dynamics that occur in individuals working in more developed societies may also occur in developing countries, the environment may also alter the dynamics among team members. Pioneer researchers on knowledge sharing barriers like Riege (2005) showed that challenges differed between multinational corporations, private, public sector, and not-for-profit organizations, thereby highlighting that the obstacles and solutions to knowledge sharing barriers cannot be generalized. Given this, it is argued that recent issues and solutions proffered for managing this challenge in developed societies do not take into consideration the peculiarities of the African culture and context (Ika, 2012;

Papadopoulos & Blankson, 2018). Context-specific problems must, therefore, be identified so that appropriate solutions can be designed. However, there are a few relevant research-based studies on knowledge practices in developing countries, which can contribute to this subject. This literature will be extensively reviewed in the literature review in Chapter 2. Appropriate cases and their applicable interventions, findings, research methods, and population will be identified and highlighted in that chapter.

Interventions designed for facilitating tacit knowledge sharing for project teams on private sector projects in developing countries may be a poor fit for teams on public sector projects in developing countries, perhaps in part due to the limited study of tacit knowledge sharing on public sector projects to understand the needs of that population. The conceptual foundation, built on the theory of reasoned action (TRA) and the theory of planned behavior (TPB) may guide an understanding of the barriers to tacit knowledge sharing in multi-organizational project teams in sub-Saharan Africa, and aid the understanding this phenomenon. This framework is also discussed in Chapter 2.

Background

Developing countries execute infrastructural projects, such as the construction of roads, dams, public buildings and industries, and technology, to aid national development, improve the socioeconomic well-being of their citizenry and promote economic growth and productivity (Pereira & Gonçalves, 2017); however, most end in dismal failures (Aziz, 2013; Damoah & Akwei, 2017). Despite Africa being considered as the “next frontier” in wide range of economic activities (World Bank 2017), the infrastructure projects in sub-Saharan Africa lag the global average by 30%, resulting in

economic growth loss by 2 basis points annually and increases the cost of doing business in the continent by 40%, thereby reducing its attractiveness to investors (Gbahabo & Samuel, 2017). The reason for the dismal statistics is that 85% of project employees gather new knowledge through experience gained in the project process, but without proper management of the knowledge learned, no value will be added to the project (Todorovic, Petrovic, Mihic, Obradovic, & Bushuyev, 2015). Therefore, projects fail because of the low, poor quality, or lack of information shared through the project life cycle (Prinsloo, van Waveren, & Chan, 2017; Todorovic et al., 2015). However it is also known that Africa is taking advantage of technology to address infrastructure gaps (George, Corbishley, Khayesi, Haas, & Tihanyi, 2016).

Some classic project failures that are directly or indirectly attributed to poor planning and information management in Africa include the $10 billion STX building project in Ghana, $90 billion Egyptian South Valley project for job creation and agricultural production (Okereke, 2017), and the Ghana National Housing project (Damoah & Akwei, 2017). Others include the $22 million Lake Tukani fish processing plant in Kenya donated by the Norwegian government, the $300 million Office du Niger, Mali, funded by the French government and the $4.2 billion Chad-Cameroon oil pipeline connected to the Atlantic Ocean financed by the World Bank in 2003 (Associated Press, 2007). The cumulative costs of failed and abandoned projects in developing countries are particularly worrisome, given that funding is supported by both taxpayers and international donors (Damoah, Akwei, Amoako, & Botchie, 2018). The associated serial waste due to abandonment and failure could have been prevented if the information had

been exchanged among stakeholders. The failure to give or acquire pertinent information had resulted in the commencement of projects that should never have been conceived and execution of those that should have been terminated. Some instances are the case of the $22 million Lake Tukani fish processing plant in Kenya or the $130 million Nelson Mandela Bay Metropolitan Municipality buses (Associated Press, 2007). These scenarios present a bleak picture to potential investors and donors on the viability of the continent for industrial growth and returns on investments.

Another more present and alarming trend is the spate of building collapse in emerging countries in West Africa. Between the years 2011 to 2016 a total of 41 buildings collapsed in Nigeria with the total number of lives lost put at 244 (Omenihu, Onundi, & Alkali, 2016). By June 2019, a total of 13 building collapses with resultant loss of 29 lives and 76 injuries were reported in Nigeria. Although there is a plethora of reasons attributed for this spate of destruction and loss on completed projects, no behavioral explanation from the standpoint of organizational psychology has been offered. Three of the highest rated reasons identified from research are structural failure (24.9%), poor quality of materials used (13.2%), and the quality of workmanship (12.2%; Omenihu et al., 2016) all of which have associated behavioral constituents as the root cause. The primary reason for these issues is therefore worth identifying from research to help proffer appropriate interventions that could prevent the malaise from future reoccurrence.

Seven of the 10 fastest growing world economies are claimed to be in Africa (Gates, 2014), and two of the emerging nations with the largest economies; Nigeria and

Ghana are both located in West Africa (World Bank 2017). Furthermore, one-half of the two-thirds intra- Africa investment is targeted primarily at seven Sub Saharan Africa (SSA) countries with two Ghana and Nigeria in Anglophone Africa (Papadopoulos & Blankson, 2018). Given this, foreign direct investment (FDI) into the continent is on the rise from $46 billion in the year 2012 to $55 billion in 2013 and a gross domestic product growth average of 6% per year (Ika & Saint Macary, 2014). Africa has an abundance of natural resources, a burgeoning consumer market resulting in increased FDI that has seen remarkable growth from the US $18 billion in 2005 to US$66.5 billion in the year 2015 (FDI Intelligence, 2016). These trends indicate that developing countries in Africa ought to be rightly positioned to take advantage of rapid economic growth. The African Development Bank (ADB) estimated that given the rapid population growth in most developing countries in Africa, an average of $93 billion is required for infrastructure development in each year (KPMG, 2013). However, The World Bank (2019) noted that the FDI into sub-Saharan region of Africa, which increased by 72% since 2000, has recently suffered a sharp decline due to issues related to poor infrastructure provision and insecurity (Dadzie, Owusu, Amoako, & Aklamanu, 2018; Estache, Serebrisky, & Wren-Lewis, 2015).

The project management approach has been heralded as the best management method for delivering infrastructure projects in developing countries. These projects require a considerable capital outlay for their execution, and since the bulk of these funds are raised from the public, proper project management is necessary to ensure shareholders get value and that benefits are realized (Damoah et al., 2018; Yang, 2014).

Once tailored to local cultures, most African countries adopt the project management methodology to meet developmental goals (Ika & Saint Macary, 2014) and deliver projects efficiently based on set matrices. Project team members have the responsibility to transfer and share knowledge for the collective benefit of the project, as this information when harnessed will enable the success matrices to be attained.

Knowledge sharing on projects is achieved either in the tacit or explicit form or the combination of both through the SECI process of socialization, externalization, combination, and internalization (Nonaka, 1994). It is tacit knowledge that is captured and documented as explicit knowledge which is thereafter stored and later used on future projects as lessons learnt to mitigate the risk of repeated mistakes. However, tacit knowledge sharing on projects, although a traditional method of information dissemination in Africa is not always formally used on projects (Akude & Keijzer, 2014) and project members on public sector projects may not have the same motivation to share knowledge as those on private sector projects. The project managers experience on tacit knowledge sharing on public projects in developing countries have not been widely researched despite evidence that the high rate of failed government projects has been traced to the effect of poor or ineffective knowledge sharing (Prinsloo et al., 2017).

Conversely, research abounds on knowledge sharing practices in developed countries and a few dimensions of the phenomena in developing countries. There is some research on knowledge practices in developing countries such as project knowledge dissemination (Prinsloo et al., 2017) and knowledge enablers (Owira & Ogollah, 2014). Other researchers have studied knowledge sharing in Ghana (Boateng, Dzandu, & Tang,

2016) and knowledge sharing behaviors predictors in Nigeria (Igbinovia & Osuchukwu, 2018). However, no study has considered the dynamics of the interaction of multi-organizational teams and its impact on tacit knowledge sharing on public sector projects. Therefore, this study adds to the body of scholarly knowledge by enabling that understanding.

The experiences of multi-organizational project team members in West Africa have not been comprehensively documented in the literature. This study provides a better understanding of experiences and provides insight into the barriers that impede tacit knowledge sharing on the team. This understanding is necessary to contribute to future research on informed interventions that could lead to a change in the knowledge sharing behavior of team members and consequently result in improvement of the performance of project delivery in developing countries in West Africa. A conceptual model that may provide a better understanding of their experiences and their behavior is founded in the theory of planned behavior (TPB) and the theory of reasoned action (TRA). Both theories are said to predict the most human response (Bock, Zmud, Kim, & Lee, 2005) and as such, is a good fit for this research. This model will be summarized later in this chapter and detailed in Chapter 2.

Problem Statement

Research on the barriers to tacit knowledge sharing on projects in developing countries has not been done. Although there has been growing interest in knowledge sharing behavior in organizations, research contributing to the subject is very small, especially in the public sector (Castaneda, Fernández Ríos, & Durán, 2016). Again, no

study has addressed how the dynamics in the interaction of multi-organizational team members in developing countries can impede knowledge sharing. This gap exists despite calls for further research to identify obstacles to knowledge sharing in other fields and cultures (Akgün, Keskin, Ayar, & Okunakol, 2017). This call is particularly important for the African society where there is evidence of the negative impact of the dearth of knowledge sharing on projects, resulting in inefficiency and waste of government resources. Finally, I am also from this culture and have lived experience of the phenomena and its impact on the society, and therefore I appreciate the dire need for research that will foster social change. Given this gap in the literature, researchers such as Prinslow, van Waveren & Chan (2017) have explicitly called for further research into the factors that constitute barriers to knowledge sharing among project team members in Africa.

Multi-organizational project team members on public sector projects in emerging countries in Africa find it arduous to share tacit knowledge and leverage the benefits to prevent project failure (Akude & Keijzer, 2014; Massaro, Dumay, & Garlatti, 2015). About 90% of organizational information required for project success is tacit knowledge, which is "embedded and synthesized in the heads of employees" (Peroune, 2007, p. 245) but difficult to access and shared due to its intangible nature (Boateng et al., 2016; Nooshinfard & Nemati-Anaraki, 2014; Oluikpe, 2012). Generally, challenges such as the exit of baby boomers from the workforce (Sumbal, Tsui, See-to, & Barendrecht, 2017) and the temporary and transient nature of human resources of projects (Brookes, Sage, Dainty, Locatelli, & Whyte, 2017; Sydow & Braun, 2018) contribute to the rapid erosion

of pertinent project knowledge before it is shared. With such prevailing concerns, organizations, where the culture of knowledge sharing persists, should be able to manage this risk of knowledge erosion and knowledge hoarding. Knowledge hoarding occurs when the individual remains in the organization but is reluctant to share all or some of their knowledge for various reasons (Evans, Hendron, & Oldroyd, 2015; Serenko & Bontis, 2016). However, although the oral tradition of the emerging countries in Africa favors tacit knowledge sharing rather than hoarding, this type of sharing is not typically practiced effectively on public projects (Akude & Keijzer, 2014).

There is evidence to suggest that the dearth of knowledge sharing on public sector projects contributes immensely to dismal project performance, failure, and waste of government revenue (Kissi et al., 2017; Osei-Kyei & Chan, 2017; Williams, 2017). Developing countries have recorded high rates of failed government projects (Nzekwe et al., 2015) with 90% experiencing time overrun attributed mostly to poor management (Damoah & Akwei, 2017; Ika, 2012), as well as institutional and contextual issues (Ika, 2012). Studies abound with evidence of the failure of projects in the public and private sectors due to inadequate knowledge sharing (Prinsloo et al., 2017). For instance, the report by the Abandoned Projects Audit Committee in Nigeria showed that 11,886 public projects awarded from 1971 to 2011 were abandoned (Okereke, 2017). The root cause has been traced to incomplete project information, poor financing, and planning (Ubani, & Ononuju, 2013). Similar project failures are well documented in Egypt, South Africa, Ghana, Senegal, Uganda, and Tanzania (Aziz, 2013; Damoah & Akwei, 2017; Mtega, Dulle, & Benard, 2013; Nzekwe et al., 2015; Okereke, 2017; Sambasivan, Deepak,

Salim, & Ponniah, 2017). These statistics show that there is a persisting problem of project implementation in developing countries in Africa and given scant research in that area; further research is required to uncover the issues plaguing project delivery.

Different perspectives and motivations within multiorganization teams result in stress, strain, conflict, and the reluctance to share information (OGC, 2009). Research shows that conflicts in project teams result in the loss of about 3% - 5% of the total business investment (Wu, Zhao, & Zuo, 2017a). Indeed, there has been a plethora of studies on the knowledge sharing process in the project management field, especially due to its impact on organizational innovation and effectiveness. However, the aspect of knowledge sharing between departments, functional teams, and project teams has suffered some neglect (Mueller, 2015).

The current research on understanding the experience of project team members in sharing tacit knowledge sharing is necessary as little is known about this subject, including its impact and peculiar interventions for developing countries in West Africa. Akhavan, Ebrahim, Fetrati, and Pezeshkan (2016) cautioned against the “one size fits all” solution from the Western world being extended to other countries with different cultures, and therefore advocated for contextualized contributions, such as the impact of team culture on team performance (Jamshed & Majeed, 2019). It is further argued that recent issues and solutions proffered through research for developed societies have not taken into consideration the peculiarities of the African culture and context (Ika, 2012), and as such cannot be universally adopted (Ibrahim, 2015). Proffered Western models do not recognize the diverse ethno-cultural groups in non-Western societies; therefore, a

cultural understanding of developing countries and their "fluid multicultural environment," is encouraged to aid effective management (Kamoche, Siebers, Mamman, & Newenham-Kahindi, 2015).

Lastly, investments in the promotion of knowledge-based economies, policy, and economic development in the continent, where tacit knowledge can be harnessed and applied to enable project success, have been dismal (Akude & Keijzer, 2014), so it is necessary to understand whether this lack of investment has any association with the reluctance to share knowledge, given its direct association to achieving project success. To forge a way forward to address the myriad of challenges facing public sector projects in the continent, a fundamental understanding of the issues contending the adoption of a resourceful means of gaining competitive advantage through tacit knowledge sharing is expedient. Knowledge sharing is a deliberate action taken based on an individual's decision, intention, attitude, and subjective norm. Therefore, a comprehensive understanding of all reasons that impede the intention and ultimate knowledge sharing behavior is necessary from an organizational psychological perspective and appropriate conceptual framework such as the TRA and TPB.

There is some research on knowledge practices in developing countries; however, nothing specific to tacit knowledge sharing on multi-organizational project teams has been done. Researchers have called for the identification of antecedents, which would aid in enhancing the occurrence of knowledge sharing in organizations (Masa'deh, Almajali, Alrowwad, & Obeidat, 2019); Pinho, Rego, & Pina e Cunha, 2012). Therefore, this study adds to the body of scholarly knowledge by enabling an understanding of the challenges

multi-organizational project team members in Anglophone West Africa experience in sharing tacit project knowledge with other team members.

Purpose of the Study

The purpose of this qualitative study was to understand the barriers to tacit knowledge sharing experienced by members of multi-organizational project teams on public sector projects in emerging countries in Anglophone West Africa. This study was in response to the call for further research on the factors that affect knowledge sharing in project teams in Africa (Prinslow et al., 2017). This research focused on understanding the challenges project team members representing diverse organizations ascribe to TPKS from their lived experiences. Although the literature review in Chapter 2 shows how interactions in different organizational types and contexts affect tacit knowledge sharing, the experience of team members on public sector projects in West Africa were investigated using an interpretative phenomenological analysis methodology (IPA). The IPA would aid in the identification of themes that would lend themselves to future research on the factors that inhibit knowledge sharing in Africa and dissemination as called for by Prinslow,Waveren & Chan (2017).

This approach is used to gain an increased understanding of the dynamics that impede knowledge sharing in multi-organizational project team setting with scant tradition for systemized knowledge sharing (Muller, 2014). Findings from this study may aid in the development of an appropriate project knowledge management framework peculiar to the culture and work ethics of project team members on such teams in emerging countries in Anglophone Africa. The method for investigation, population

criteria, and identification specific interview questions, and process data collection and analysis will be provided in Chapter 3.

Research Questions

The methodological framework for this study is IPA, which has been used to formulate questions on how teams view the phenomena of tacit knowledge sharing, understand their social identity and make sense of their team ethnicity (Pietkiewicz & Smith, 2014). Therefore, the primary research question that guided this study was this: What are the barriers to tacit knowledge sharing experienced by members of multi-organizational public-sector project teams in West Africa? The following sub questions enabled further exploration of the challenges project team members experience when sharing tacit knowledge on public sector projects.

1. RQ1- How do multi-organizational project team members on public sector projects engage in the process of tacit knowledge sharing?
2. RQ2- How do project team members explain the tacit knowledge sharing gaps experienced on public sector organization projects?

These two questions have been designed to enable the identification of the factors that inhibit the sharing of tacit knowledge sharing as experienced by project team members in Anglophone West Africa and thereby answer the main research question. The research sub questions allowed me to confirm how tacit project knowledge is shared, as well as the type of tacit knowledge sharing (formal or informal) that is undertaken and why, and enabled an understanding of what prevents this kind of sharing. This question contributes to the main research question by showing what constitutes a barrier to team

member's intention to share. RQ2 enabled an understanding of the particular challenges team members have to contend with when sharing the type of knowledge adopted by the team and directly answers the main research question.

Conceptual Framework

This study's focus is to uncover the barriers to knowledge sharing on public projects from the experience of multi-organizational project team members as perceived and conveyed by the research respondents using a phenomenological methodology. This method enables subjective interpretation of the phenomena as personally experienced. The conceptual framework of this study is driven by two theoretical models; the TRA (Fishbein & Ajzen, 1975) and the TPB (Ajzen, 1991). Both theories provide a basis for explaining the phenomena of tacit knowledge creation and sharing. These theories aided the formulation of the research questions, guides, data collection, and analysis (Ravitch & Carl, 2016).

Knowledge creation and sharing commence with individual experiences, mental models, skills, and perspectives that form tacit knowledge and then shared through the socialization process. This idea is consistent with the ontological dimension of learning that socialization must occur between individuals for tacit knowledge to be shared (Nonaka, 1994). The TRA postulates that people are motivated to share based on attitude, intent, and subjective norm, (Fishbein & Ajzen 1975). The TPB strengthens the TRA by adding perceived behavioral control (PBC) to address situations where the individual perceives that there are constraints to behave in a certain way (Al Qeisi & Al Zagheer, 2015). The model afforded by the TRA and the TPB are said to predict most human

behavior (Ajzen, 1991; Sheppard, Hartwick, & Warshaw, 1988; Skaik & Othman, 2015) and as such can be used to understand the barriers to tacit knowledge behavior of multi-organizational project team members.

Concepts from the TRA have been used in research to conceptualize social networks, trust, and shared goals (Chow & Chan, 2008), factors that impact knowledge creation and behavior, (Ryu, Ho, & Han, 2003; Suorsa, 2015; Tsai, Chen, & Chien, 2012), personal, and cultural factors (Huang, Davison, & Gu, 2008). In this study, both the TRA and TPB aided in understanding the behavioral constraints responsible for preventing the efficient sharing of tacit knowledge between the loops of individual groups and organization and the motivations of team members to share tacit knowledge. The conceptual framework therefore built on the components of both theories to explore the barriers to the intention to share tacit knowledge. Given this, the research questions were also designed to elicit the concepts from the TRA and TBP if any otherwise reveal new concepts peculiar to the context being researched. The IPA approach of this research necessitated a "dual hermeneneutic" or "dual interpretation" (Pietkiewicz & Smith, 2014) process where participants lived experience is obtained through in-depth open-ended semistructured interviews. Analysis and interpretation of findings were then done for each participant's description (see Smith & Osborn, 2015) through the lens of the conceptual framework. In essence, understanding of the barriers to tacit knowledge sharing experienced on the project, came from the participant's view of their experience as interpreted through the framework.

Nature of the Study

The study was an inductive one, which adopts a transcendental phenomenological qualitative design inquiry to investigate the phenomena of tacit knowledge sharing. The specific research design was an IPA approach that enabled the contextual interpretation of events with consideration of applicable variables such as culture, organizational dynamics, and other internal and external factors to enable in-depth understanding of the phenomena (Matua & Van Der Wal, 2015). The IPA has its foundations in phenomenology by Husserl and hermeneutics put forward by Heideggar, who considered a "true" phenomenological study as one that has dual interpretation by both the participant and the researcher (Pietkiewicz & Smith, 2014). Qualitative research, unlike quantitative, enables interaction within a natural setting and acquisition of detailed information on participants lived experience of tacit knowledge sharing in a multi-organizational environment (Creswell, 2013; Hatch, 2002; Leedy & Ormrod, 2005). Merriam (1998) supported this assertion by positing that the understanding of the world is subjective, and the human interpretation is in their perception and intentionality.

The philosophical basis of this research to understand tacit knowledge sharing behavior based on the reflections of participants' lived experience is epistemology. Epistemological reflexivity is an important aspect of the qualitative research design as it informs the formulation of the research questions, the research design, problem formulation, and data analysis (Pietkiewicz & Smith, 2014) of the study. My epistemological stance guiding this study was necessary to gain an understanding of how team members perceived and interpreted the world around them through an idiographic

investigation as prescribed by IPA (Smith, 2014). Finally, the IPA approach does not require a formal hypothesis to commence the research (Pietkiewicz & Smith, 2014). I used multiple sources such as interviews and documents to collect reported experience of tacit knowledge sharing.

Tacit knowledge sharing, the primary construct of this research, is defined as the distribution of intangible information obtained from individual experience, intuition, job skills and other undocumented information beneficial to the organization's success (Olaniran, 2017; Polanyi, 1966). The study was empirical, with primary sources of data obtained from in-depth interviews to gain understanding. I interviewed project team members who have or are currently engaged in public sector projects in an emerging country in Anglophone West Africa. Respondents were also certified project managers, with a minimum of 2 years of project management experience with a minimum of one project management certification. I used a conversational protocol guide to direct the interviews and keep the conversation on track (see Rubin & Rubin, 2012).

Participants were recruited using purposeful sampling, and the snowballing strategy would have been used in the event data saturation was not achieved. Participants granted informed consent, and I informed them of their right to leave the interview at any time. All necessary precautions were taken to safeguard their identity and maintain confidentiality. All interviews were recorded digitally following the consent of participants, and I took handwritten notes during the sessions. Transcription was done using the Temi app, and the data were imported into the NVivo software for analysis and presentation of results. All participants were identified by alphanumeric code to preserve

their confidentiality (see Gibson et al., 2013). In analyzing the data, there was immersive engagement of the data through multiple readings; coding, connecting information across

The results of this study may contribute to the advancement in knowledge on the challenges inherent in the team dynamics within specific context and environment. The integration or convergence of disciplines aids in broadening research interest in academia and would also create more value for practice (Khoza & Pretoria, 2017). In this study, multidisciplinary constructs were used through the integration of information from the fields of project management, knowledge management, and organizational psychology to identify and proffer solutions to cultural and contextual issues as shown in research by Akhavan, Hosseini, Abbasi, and Manteghi (2015), Chang and Lin (2015), and Edmondson and Harvey (2018). The findings from this research will contribute to the body of project management knowledge, information that can be referenced in future research and act as a catalyst to produce an appropriate knowledge management strategy and policy change in infrastructure delivery in developing countries in Anglophone West Africa.

Significance to Social Change

Ultimately, the study will contribute to positive social change, as it will enable an increased understanding of the barriers to tacit knowledge sharing on multi-organizational project teams in Anglophone West African countries. This knowledge will aid in the design of interventions, workplace protocols and training modules that address conflict and other barriers to tacit knowledge sharing. The ultimate result is to reduce workplace friction, ensure harmonious collaboration, improve workplace morale and

productivity, which in turn increase the chances of achieving successful projects (Kissi et al., 2017; Osei-Kyei & Chan, 2017; Osei-Kyei, Chan, Yu, Chen, & Dansoh, 2019; Williams, 2017). Given the transient nature of projects, succession planning through careful knowledge sharing and transfer is critical to prevent disruption of the project midstream (Ganu & Boateng, 2012). The findings of this research will, therefore, benefit governments, as the results can be used to capture knowledge during and after the project. This action will aid in preventing disruption due to turnover, attrition, and change in government that all result in loss of un-captured tacit knowledge. Programs and interventions can be designed that enable the retention of project knowledge through sharing and thereby prevent re-invention of processes and procedure. This action will ultimately lead to a reduction in waste of resources and improve the odds of successful project delivery.

Summary

Diverse stakeholders from varied groups characterize multi-organizational project teams focus on delivering a product or achieving a common goal. The knowledge and information possessed by each member are unique and requisite for the success of the team endeavor. It is, therefore, vital that there are collaboration and seamless knowledge transfer to achieve project success. However, the desired result is not always attained as it has been identified that there are specific barriers that inhibit multi-organizational team members from sharing some or all of their tacit knowledge while working on government projects in developing countries. Research has identified several barriers to knowledge

sharing in general to industries and geographic locations; however, findings cannot be generalized or transferred because the context differs.

This study is unique for several reasons. First, research on tacit knowledge in general is rare perhaps because of the intangible nature, which is difficult to define, capture, and measure. Second, research on knowledge management in developing countries is also exceptionally scarce as the concept is at best abstract, the benefits are not readily apparent, the value unappreciated, and as such, there is minimal organizational capacity on the process. With the direct correlation of knowledge sharing to project the success, this study was necessary to uncover the experiences of project team members in multiorganizational teams in developing countries with sharing tacit knowledge on the project. This foundational chapter will be followed by a comprehensive review of recent pertinent literature on the subject as aligned to the theory, documented in Chapter 2.

Chapter 2: Literature Review

Introduction

The poor performance of government projects in developing countries has been attributed in part to the reluctance of multi-organizational project team members to participate in tacit knowledge sharing. The purpose of this research, therefore, was to understand what the barriers are that impede the sharing of this kind of knowledge as experienced by the team member. Comprehension was enabled by interviews and from the extant literature. The goal of the literature review is to examine, analyze, and synthesize current literature on knowledge sharing on project teams. This chapter gives an overview of the literature search strategy, discussion on the conceptual framework, and an in-depth review of the extant literature on project delivery in Africa, project knowledge management, tacit and explicit knowledge sharing.

The literature review structure comprises discourse on knowledge sharing within the specific confines of the public-sector project environment in Africa, the peculiarities of multi-organizational projects, and the barriers to knowledge sharing in general and tacit knowledge sharing. This approach to the review is critical in establishing a foundation for subsequent discussion and ultimately aid in identifying the gaps in knowledge sharing literature.

A broad review of knowledge management will precede a narrowed discussion of TPKS and the particular phenomena that is the research focus. For clarity, the chapter begins with the literature search strategy, followed by the conceptual framework of the study. Next is the discussion on the peculiarities of the target population and the project

team members on public projects in Africa. Following this discussion is a focus on the primary concepts of the study of project knowledge management, TPKS, a comprehensive examination, and analysis of the differences that present barriers to knowledge sharing. The review takes into cognizance sample characteristics, measurement approaches, research designs, and methodologies in the context of knowledge sharing. This review closes with a discussion on the variances in the barriers to knowledge sharing identified from extant literature and ultimately present the gap in the literature that the research sets to address.

Literature Search Strategy

The selection of empirical literature for this review was obtained from peer-reviewed journals, published books, published professional guides, and government documents. Website accounts of projects derived from conference proceedings, nongovernmental organizations, the World Bank, and the United Nations were used to substantiate the reasons for the challenges posed to project knowledge sharing. Specific databases explored include Academic Search Complete, EBSCO, ProQuest Central, PsycINFO, Science Direct, Sage Journals, Science Direct, and Emerald Management Journal. Electronic databases were the primary tool used in accessing information. The Walden University Library, Google search engine, EBSCO (Academic Search Premier and Business Search Premier), Walden Scholar Dissertations in the Thesis -Full-Text databases were also used to research the relevant literature on the subject. In conducting the search, I adopted a subject-based approach. The articles considered were peer-reviewed educational material that focused on project knowledge

management, and knowledge sharing specifically, in public sector government projects in developing and nondeveloping countries. Other articles on the same topics were from trade journals and periodicals, project management body of knowledge, official documents, conference papers, and nongovernmental articles. As regards methodology, studies conducted with qualitative, quantitative, or mixed method designs were examined although the focus was predominantly on qualitative research articles on tacit knowledge sharing.

The Google search engine was used to uncover additional information and statistics on government projects in Africa. The journals that yielded the most information on the subject include *Journal of Knowledge Management, Knowledge Management and Research Practice, International Journal of Business and Management, Psychology, Journal of Knowledge Management, Journal of Applied Social Psychology, Journal of Project Management, Academy of Management Review, Journal of Information and Knowledge management Systems, Knowledge Management Research and Practice, International Journal of Academic Research in Business and Social Sciences, The Business and Management Review,* and *Journal of Business and Economics*.

The keywords and phrases used as search terms included *project knowledge management, tacit knowledge, knowledge sharing, multi-organizational projects, developing countries, tacit knowledge sharing, knowledge sharing in Africa,* and *barriers to tacit knowledge sharing.* Others were *knowledge management, public sector projects,*

tacit knowledge management, developing countries, project knowledge sharing and knowledge transfer, the theory of planned behavior, and *theory of reasoned action*.

About 90% of the articles identified and selected for review were written in the past 5 years (2014–2019) and published in peer-reviewed journals. They provided insight and sound scholarly research about tacit knowledge sharing. However, the range was extended by 2 years to 2012, based on the findings from the counting and bibliometric analysis by Goswami & Agrawal (2018). The analysis showed that the highest number of papers on knowledge management was published between 2007 and 2011, while those on knowledge sharing were published between 2008 and 2016. It can therefore be surmised that the bulk of recent literature on the subject would span the last eight years from 2012 to date. Literature reviewed from earlier periods served to provide theoretical background and context to the study. A literature review matrix was used for the analysis of each article, where the methodology, design, population and sample, results, findings, and recommendations for future research were identified and documented. Other relevant articles were identified from the references and citations in the selected documents. These new articles also yielded additional themes, models, frameworks that are germane to the research.

Just as Akhavan et al. (2016) found, the Journal of Knowledge Management contained the most significant number of articles on the subject of tacit knowledge sharing used for this study. Essays by Nonaka (1994) and Polanyi (1966) pioneer the fields of knowledge management and tacit knowledge sharing, respectively and their work provided material for foundational reviews. Ajzen (1991) and Fishbein and Ajzen

(1975) both provided the theories used to build the conceptual framework for the study in the next section. These theories provide plausible explanations for the behavioral factors responsible for the experienced barriers to project knowledge sharing. Bock et al. (2005) and Riege (2005) provided foundational materials on the barriers to knowledge sharing while Hanisch, Lindner, Müller, and Wald (2008), Ramhost (2004), and Villa (2012) provided background on project knowledge management. All other cited articles had built their research from these foundational studies.

Conceptual Framework

The conceptual framework for this study on tacit knowledge sharing as experienced by project team members was based on the concepts from the TRA propounded by Fishbein and Ajzen (1975) and the TPB by Ajzen (1991). The TPB is construed as the most adopted and most influential framework for the study of human intentions and actual behavior in the past two decades (Ajzen, 1991; Huang & Chen, 2015), whereas the TRA is alleged to provide a conceptual framework for knowledge sharing behaviors (Goswami & Agrawal, 2018; Youssef, Haak-Saheem, & Youssef, 2017). Given this, both theories are ideal for studying and aiding the understanding of the barriers to the project manager's behavioral intention and action towards knowledge sharing.

The TPB accounts for 27% of the variation observed in an individual's behavior and 39% of the accompanying intention, which would indicate that the balance 61% variance for intention and 73% for behavior is mostly unexplained (Huang & Chen, 2015). Understanding what could constitute barriers to knowledge sharing intention and

actual behavior could present further explanations. The core concepts of the TRA are attitude, intention, and subjective norm. The TPB introduces the fourth dimension of PBC, which is the perception of ease or difficulty in performing the behavior (Huang & Chen, 2015). However, Ajzen and Fishbein (1980) argued that the TRA provides compelling evidence that explains automatic responses for attitudes and behaviors and that attitudinal expressions would vary based on context. Given this, the two-factor components of TPB and TRA, other than the traditional factors are also adopted to explain the unknown variance of factors that promote intention and behavior in different contexts. Examples of two-factor components of the conventional constructs are affective and cognitive attitude (i.e., attitude), injunctive and descriptive norm (i.e., subjective norm), and self-efficacy and perceived controllability (i.e., PBC; Huang & Chen, 2015).

The TPB, being an improvement of the TRA, extends the explanation from intention to PBC (Ajzen, 1991). The primary distinction between the TRA and the TPB is that the latter put forward an explanation for behavior that is within an individual's locus of control (Mafabi, Nasiima, Muhimbise, Kasekende, & Nakiyonga, 2017). TPB extends the boundaries of volitional control beyond intention as proposed by the TRA to actual action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Madden, Ellen, & Ajzen, 1992). TPB proposes that positive attitude, with the positive subjective norm and positive behavioral control, would most likely result in strong behavioral intention (Huang & Chen, 2015). What these two theories contribute to this research is the identification of factors that stimulates intention, informs the behavior to share, and conversely gives an understanding of what could prevent the actual behavior of tacit knowledge sharing. In

sum, in addition to the three primary constructs of the TRA (i.e., attitude, subjective norm, and intention), the TPB introduces PBC as a factor pertinent in influencing an individual's decision to share. Al Qeisi and Al Zagheer (2015) posited that PBC, which enables planned behavior, applies to situations in which there is total control over the expected behavior. Here, a significant antecedent of intention to engage in a behavior such as tacit knowledge sharing is PBC (Ajzen, 1991). However, to gain a better appreciation of the driving factors of knowledge sharing, an understanding of the TPB and TRA concepts as described in the extant literature is necessary.

Attitude refers to the salient behavioral beliefs about an action. Ajzen (1991) described attitude as the degree an individual has either a "favorable" or "unfavorable" view of specific behavior (Ajzen, 1975, 1991; Ajzen & Fishbein, 1980). An individual's attitude indirectly influences their intent to perform and is a strong determinant of actual execution. An individual's attitude determines their willingness to engage in a behavior and is also based on their behavioral beliefs on the expected consequence and the eventual favorable or otherwise consequence of indulging in that act (Chennamaneni, Teng, & Raja, 2012; Shahzadi, Hameed, & Kashif, 2015). Previous empirical research has shown the positive association between an individual's attitude and intention to share knowledge (Bock, Zmud, Kim, & Lee, 2005; Skaik & Othman, 2015). This construct is valuable for this research to understand if there are certain factors that influence the team member's beliefs, attitude, thereby constituting a barrier to their willingness and intention to share their tacit knowledge on the project.

PBC, introduced by the TPB, refers to the perception of seeming ease or difficulty in which an individual executes an intended behavior (Ajzen, 1991). The perception is primarily influenced by past experiences or envisaged impediments, self-efficacy, confidence, and ability to perform (Ajzen, 1991; Macovei, 2015). The greater the perception of ease to perform possessed by an individual, the greater their intention to exhibit the behavior (Mafabi et al., 2017). A significant component of PBC is self-efficacy, which moderates an individual's ability to choose, prepare, embark on, and perform tasks correctly (Bandura, 1978; Razak, Pangil, Zin, Yunus, & Asnawi, 2016). Low self-efficacy can, therefore, be said to constitute a barrier to knowledge sharing.

Self-efficacy is the self-belief that one can achieve what they set out to do. Castaneda et al. (2016) opine that this self-belief is unrelated to the skill-set of the individual but more on their capacity to act. Self-efficacy influences the ability to share knowledge as it is observed that individuals who possess high self-efficacy are more inclined to share as compared with others who possess low self-efficacy (Castaneda et al., 2016; Shahzadi et al., 2015). Self-efficacy also drives self-motivation, boosts an individual's confidence to share knowledge with others and is therefore considered a mediator to knowledge sharing behavior (Brooke, Rasdi, & Samah, 2017). Shahzadi et al. (2015) study based on the TPB confirmed that motivational factors such as outcome expectations, altruistic factors like enjoyment in helping others and self-efficacy have a significant and positive relationship on knowledge sharing attitudes and behavior. Professionals possess self-efficacy, which enables knowledge sharing. Skaik and Othman (2015) also found that self-efficacy has a substantial effect on the knowledge sharing

behavior of professional academics. Project team members are also professionals and should possess high levels of self-efficacy, which in turn should enable tacit knowledge sharing. It is therefore worthy of research to understand what factors moderate their self-efficacy and thereby constitute barriers to tacit knowledge sharing on projects, given that researchers like Chatzoglou and Vraimaki (2009), had identified a weak correlation between PBC and the behavior of knowledge sharing.

Self-efficacy motivates people to contribute their knowledge, as they believe it will be useful and be of value to the recipients (Bock & Kim, 2002; Wang, Zhang, Hao, & Chen, 2019). Self-efficacy has been associated with an individual's motivation to share and expectation of a reward by sharing knowledge. The possibility of a reward attached to action is expected to stimulate activity. Wang et al. (2019) classified motivators of knowledge collaboration into two types; Situational level motivators classified into extrinsic (incentives) or intrinsic (personal satisfaction/pleasure), and community motivators, which are contextual. Extrinsic rewards are more tangible physical rewards used to stimulate and reward desired behavior (Wang et al., 2019). Intrinsic motivators like self-efficacy are said to be a more powerful motivator than the extrinsic ones (Wang et al., 2019). Community motivation factors are grouped into three elements; the sense of belonging, community identity, and community satisfaction (Wang et al., 2019). Concerning the current research, it is hypothesized that the absence of these three motivators would create a barrier to tacit knowledge sharing on multi-organizational project teams. Research findings of the effect of rewards on knowledge sharing behavior have been mixed as such; it can be surmised that other variables exist which moderate the

effect of both extrinsic and intrinsic rewards on knowledge sharing attitude. While several studies have associated knowledge sharing with extrinsic reward (Razmerita, Kirchner & Nielsen, 2016) for others, the prospect of extrinsic reward was found to hurt the attitude towards knowledge sharing (Bock et al., 2005).

Research differs about the ability of self-efficacy to motivate knowledge sharing. Castaneda et al. (2016) found from their survey of 188 knowledge employees of a public-sector organization in Columbia that there exists a strong interaction between the factors of self-efficacy and knowledge sharing intention, subjective norm and knowledge sharing behavior. They also found a strong relationship between perceived organizational support on knowledge sharing behavior. Some research has related the disparity in intention and actual behavior to the environment and the organizational culture. For instance, where there is a hierarchy, and power orientation such as in public sectors, the employee's knowledge sharing intention may be adversely affected (Amayah, 2013).

A subjective norm refers to the normative belief about the perceived social influence, perception and pressure emanating from major influencers to engage in a behavior, either positive or negative (Ajzen, 1991), and the motivating factors propelling compliance to those beliefs (Fishbein & Ajzen, 1975). An individual's subjective norm is a factor of an individual's perception of a behavior and what others within their sphere think about it (Macovei, 2015). In the project environment, major influencers could be internal or external stakeholders that include sponsors, parent organization, regulators, vendors, team members, and cohorts. Given this, subjective norm could be positive or negative as such, when the subjective norm is positive; the intention to share knowledge

is higher. As regards tacit knowledge sharing, project managers would consider how influencers or members of their community of practice, the parent organizations, direct superiors, and peers expect them to act. Studies abound which have shown the positive relationship between subjective norm and knowledge sharing (Bock et al., 2005; Huang & Chen, 2015; Skaik & Othman, 2015) inferring that negative subjective norm would reduce the tendency to share. Two sub-constructs of subjective norm related to the knowledge sharing behavior are organizational climate/ culture and social interaction (Igbinovia & Osuchukwu, 2018). Where positive climate or culture exists within the team or the parent organization, the more willing individuals will be to share.

The organizational culture and climate effect on the knowledge sharing ability of an individual is demonstrated by the congruence hypothesis that suggests individual's effectiveness is enabled when their competence is in sync with the culture of the organization especially as knowledge sharing requires a supporting organizational culture to thrive (Al-Adaileh & Al-Atawi, 2011; Huang & Chen, 2015; Wang, Su & Yang, 2011). Multi-organizational team settings are temporary organizations made up of human resources drawn from diverse cultures. It is, therefore, possible that there could be no congruence between the prevailing culture of the parent organization and the culture that exists within the temporary project organization. A culture that supports knowledge sharing would ensure that information flows unhindered through the promotion of supporting values, and norms (Abbasi & Dastgeer, 2018; Jamshe & Majeed, 2019). However, if the prevailing culture is not in active support of knowledge sharing, it will not be practiced. It is, therefore, worthwhile to identify from the lived experience of

project team members if the congruence hypothesis is applicable on multi-organizational project teams in West Africa. Thus, the TRA and TPB can aid in understanding the role of subjective norm on tacit knowledge sharing in the multi-organizational context.

Intention to act refers to the willingness, readiness or preparedness to embark or indulge in an action such as tacit knowledge sharing, and is a forecast of behavioral action (Shahzadi et al., 2015). The intention is considered a significant determinant and influencer of human behavior (Ajzen & Fishbein, 1980; Ajzen, 1991). As it relates to tacit knowledge sharing, the project manager's intention to share knowledge would drive their actual behavior. Intention is influenced by the attitude, subjective norm, and perceived behavioral control of the individual. Studies that show the relationship between intention and knowledge sharing behavior abound (Al-Kurdi, El-Haddadeh, & Eldabi, 2018; Burnette, 2017; Rahman, Osmangani, Daud, & AbdelFattah, 2016).

The positive relationship between intentions to share and actual knowledge sharing the behavior of academics in United Arab Emirate (UAE) Universities (Skaik & Othman, 2015) has been shown by research findings using the TPB. Intention to share is also affected by perceived ability and expertise to exhibit the behavior and is considered a good predictor of future behavior (Castaneda et al., 2016). Knowledge sharing intention is also influenced by self-efficacy, which in turn, mediates anxiety. Qadir and Farooq (2018) studied 222 call customer service representatives in Pakistan to test the relationship between anxiety or evaluation apprehension, which signifies the lack of self-efficacy, and subsequently, knowledge sharing intention. The researchers found that anxiety or evaluation apprehension negatively impacted the intention to share knowledge

and that attitude moderates the relationship between stress and intention to share. PBC was also found to mediate the relationship between evaluation apprehension and intention to share (Qadir & Farooq, 2018).

Early researchers about knowledge sharing such as Bock et al. (2005) had reviewed and formulated a cohesive interpretation of the elements, which affect and motivate the individual's knowledge sharing intentions. The researchers conducted a survey of 154 managers from 27 organizations in Korea and found that attitudes, subjective norms, and organizational climates cumulatively impact an individual's knowledge sharing intention. This study confirmed the role of these two constructs to determine behavior. Furthermore, the researchers found that anticipated reciprocal relationships increased the willingness and attitudes towards knowledge sharing and that subjective norm was increased by the self-worth and organizational climate.

Research on knowledge sharing in general, interpreted through the lens of the TPB in developing countries has yielded similar results. Igbinovia and Osuchukwu (2018) research of the knowledge sharing the behavior of librarians in Nigeria found that attitude, PBC, and subjective norm all influenced sustainable development goal actualization of the librarians. The cross-sectional study carried out by Mafabi, Nasiima, Muhimbise, and Kasekende & Nakiyonga (2017), was to assess the mediating role of behavioral intentions in the association between the attitude, intention, PBC, subjective norm and knowledge sharing behavior among nurses and doctors in Uganda. The researchers found both positive and significant relationship between all variables indicating that the intention to carry out a behavior can predict the planned behavior

(Mafabi et al., 2017). Further study is therefore necessary to confirm this trend on a commune of diverse professionals working in a multi-organizational project team.

In summary, the constructs from the TRA of attitude, subjective norm, and intention and the TPB's PBC provide a framework to evolve an understanding of the barriers multi-organizational project team members face in sharing tacit knowledge. It is also deduced that individual factors such as rewards/motivations, benefits and reciprocity, organizational factors of culture, structure, leadership, and team (Fullwood & Rowley, 2017) and technological factors would affect the attitude, intention, subjective norm and ultimately their knowledge sharing behavior. A summary of these constructs as related to the conceptual framework adapted for this study is illustrated in Figure 1.

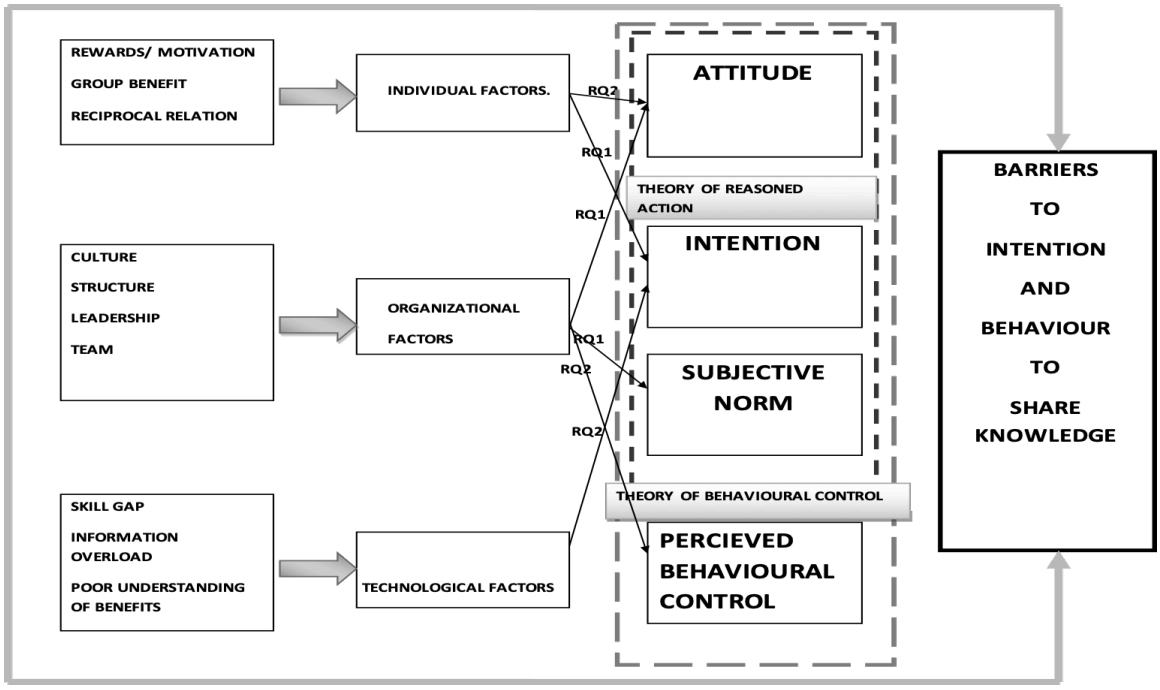

Figure 1. Conceptual framework of the research.

Literature Review Related to Key Concepts

This literature review is in three distinct sections relating to the concepts of the study but forms a cohesive whole. The first section contextualizes the study beginning with a synopsis of public sector projects in Africa. It opens with an overview of the what, how, and why of project delivery in developing countries; the peculiarities of government projects in Africa and a review of multi-organizational project teams for project delivery in Africa. The next section focuses on the concept of project knowledge management, and an analysis and synthesis of research on knowledge sharing and tacit knowledge sharing barriers conclude the review. The last section of the literature review describes the recommendations proposed in extant literature to eliminate the barriers to tacit knowledge sharing on projects. This literature review adopts a counting technique and bibliometric methodology to identify impactful papers published in recent times within the relevant fields of study for review to give a comprehensive and concise overview of current findings and gaps in the field of study.

Project Delivery in Developing Countries

This section focuses on the discussion on project delivery in developing countries in Africa. It begins with a highlight on the role public projects play in a developing society and the distinguishing features of public and private projects. It also expands on the peculiarities of multi-organizational project teams in Africa and contains treatise on the interaction on multi-organizational project teams. This section is essential as it provides the general context for the study, enables an appreciation of the peculiarities in

African society, public projects and multi-organizational teams, thereby framing the discussion on tacit knowledge sharing on project teams in Africa.

The Role of Public Projects in Developing Societies

Public projects are mostly developmental projects targeted at enabling societal change by ensuring better living conditions through the provision of infrastructure. Projects are vital to economic growth, aid in improving the socio-economic welfare of the citizenry, and motivating change (Haveman, Blank, Moffitt, Smeeding, & Wallace, 2015). These projects are those formulated and embarked upon by the government of a country based on policies at either the federal, national, or local level (Damoah et al., 2018). Public sector projects affect the overall economic indices and gross domestic product (GDP) of countries as they provide not just essential services but also employment and are a primary tool for information sharing, innovation, and learning (Winch, 2010). With the provision of infrastructure, there is the stimulation of direct investment in the economy, prevention of capital flight, reduction in the cost of production and growth of small and medium scale industries leading to an increase in GDP. Governments have the challenge of delivering quality service with stretched resources to a diverse population having different needs and shifting demands; ranging from physical, psychological, social and security; and partnering with diverse organizations to meet those needs (Brinkerhoff & Brinkerhoff, 2015).

Public projects are executed through various strategies and models, depending on several factors, including the scope, complexity, policy, and availability of resources to implement the plan. Outsourcing, partnerships, contract sourcing, and traditional - bid are

some methods adopted for project execution, however not without each unique merits and challenges. For instance, weak public institutions, lack of competition in the procurement process, resulting in defective selection of vendors, use of unsolicited proposals and immature financial markets are some significant constraints affecting the successful use of the public, private partnership as a project delivery method in developing economies in Africa (Osei-Kyei & Chan, 2017). One apparent consequence of the poor vendor selection process is the engagement of many stakeholders with different expectations and knowledge sharing capabilities at project initiation, to partner together on a project, causing a significant amount of problem in project execution (Osei-Kyei, Chan, Yao & Mazher, 2019; UNDP, 2017; Zou, Kumaraswamy, Chung, & Wong, 2014.).

Public sector projects are typically executed by a myriad of stakeholder, all of whom come into the process with various contributions, expectations, and values (Damoah et al., 2018). The higher the congruence of expectations of all stakeholders to enable maximum collaboration, the more chances of project success. Besides poor congruence, several factors have been cited as being responsible for the failure of projects in Africa. These include cultural, political, financial, corruption, leadership, and poor planning, among others (Damoah et al., 2018). Other factors include weak institutions, inadequate finances, culture, tradition, and poverty (Mamman, Kamoche, Zakaria, & Agbebi, 2018; Osei-Kyei & Chan, 2017). Lack of knowledge sharing is one more factor that could be added to this list as it has been shown to contribute to an organizations

success and the lack thereof results in failure (Goswami & Agrawal, 2018; Xiao, Zhang, & Ordonez de Pablos, 2017).

Public sector services are executed in a highly complex framework and politicized environments (Osei-Kyei & Chan, 2017; Yeboah, Asamoah, Bawole, & Musah-Surugu, 2016). Unlike the private sector, the motive behind service delivery is not primarily for profit but to maximize resources and ensure change through added value (Buunk, Smith, & Hall, 2018). With growing reforms to further reduce waste and provide value for money, knowledge sharing through the transfer of information, and ethical practices within and outside the service as well as among the internal and external stakeholders has come to the fore as crucial for improvement of the public sector. Public organizations are considered active normative contexts where human behavior is only partly affected by self, while the other part is influenced by the events in the environment (Castaneda et al., 2016). Therefore there is a strong possibility that the normative considerations leading to organizational conformance would influence the knowledge sharing intentions of individuals associated with public organizations (Amaya, 2013). The findings in the study by Castaneda et al. (2016) showed a strong influence of internalized norms on the knowledge sharing behavior of public sector employees; as such subjective norm within the organization plays a crucial role in influencing knowledge sharing behavior.

Research has shown that the process of knowledge sharing in public sector organizations is fraught with difficulty given the act is associated with power and promotion opportunities (Amaya, 2013). Parting with knowledge in such an environment is akin to the loss of leverage, and as such, knowledge hoarding is the norm. In this

scenario, Lupilya and Park (2015) found that trust and reward were the most substantial motivating factors of knowledge sharing in e-governments. The absence of these factors, especially between the leadership and employees, would create a barrier. Theories like organizational justice (procedural and distributive), social exchange, Leader-member exchange (LMX), and the psychological contract theory all highlight the importance of trust in ensuring a positive relationship between members of an organization or team. Chen and Hseih (2015) found that altruistic motivation; such as public service motivation (PSM) play a pivotal role in knowledge sharing in public sector organizations. PSM, which occurs, based on the mechanisms of rationality, norm, and affectivity, exhibits in four dimensions of policy-making attraction, public interest commitment, compassion and self-sacrifice (Perry & Vandenabeele, 2015)

In summary, the benefits of knowledge sharing for any organization (public, private, non-governmental) cannot be overemphasized (Martínez, Ferreira, & Can, 2016; Ferreira Peralta & Francisca Saldanha, 2014). Sharing of tacit knowledge creates a competitive advantage and increase innovation when leveraged in any organization. However, research carried out on the sharing of tacit project knowledge within public sector organizations is scanty in comparison with the private sector. This dearth of study in this sector has led to the call for a "distinct research agenda", which takes into full cognizance the peculiarities of the public-sector context (Buunk, Smith & Hall, 2019, p. 2). Again, of the studies on knowledge sharing carried out in the public sector, very few can be generalized to the African society. It is, therefore, necessary to conduct a focused

study that aims to understand the peculiarities associated with delivering projects within that population.

Peculiarities of Government Projects in Africa

Government projects are defined as public sector projects undertaken by the administrative arm of a country which could be executed at either the Federal, National, or Local level (Damoah et al., 2018). The performance of government projects is a critical indicator of economic growth (Alzahrani & Emsley, 2013). Freedman and McGavock (2015) opine that projects, which have been implemented, based on the government's initiatives aid in ameliorating persisting narrative of economic disadvantage and aids in achieving equality among the citizens. These initiatives have been shown by historical research not only to be responsible for the massive infrastructural growth in developed countries (Adaku, 2014; Eichengreen, 1994;) but also in emerging countries as well (Adaku, 2014; Damoah & Akwei, 2017).

Globally, governments procure services from vendors to execute projects in order to promote accountability, ensure transparency in the process and to minimize corruption (Neupane, Soar & Vaidya, 2014; Ochrana & Pavel, 2013). Public procurement is a significant economic activity undertaken by Governments globally as it accounts for 15% - 20% of the global procurement and 70% of procurement in developing countries (World Bank, 2017). While it is established that governments must execute projects to stimulate the economy and improve social, business, and investment climates of the nations, they must do this transparently and accountably. Accountability is achieved when projects are

executed in line with laid down policies and procedures to ensure "value for money" while managing risks and stakeholder issues.

A significant challenge with executing public procurement is the reported lack of transparency, alleged corruption, no competition, and unethical practices of officials (Ameyaw, Mensah, & Osei-Tutu, 2012; Neupane et al., 2014). A global survey on public sector procurement puts the bribery and corruption in sub-Saharan Africa at $148bn out of the $390 - $400bn recorded annually, given that there is a 20% -30% increase in costs of 70% of all contracts awarded (Ameyaw et al., 2012). Corruption is expressed in government projects through extortion, fraud, abuse of power, embezzlement, conflict of interest, nepotism, unfair practices, bribery, collusion, and cronyism (Dza, Gapp, & Fisher,2015; Locatelli, Mariani, Sainati, & Greco, 2017). Hirvi and Whitfield (2015) allege that in developing countries in Africa; the policies are geared towards "clientelism", where political support is exchanged for material benefits, like unjust recruitments, which subsequently result in inefficiency in project delivery.

Bureaucracy is another peculiarity of all government organizations. In developing countries, bureaucracy is adopted primarily to ensure transparency and accountability. However, government policy programs have been described as wasteful and bureaucratic, devoid of technical rationality, openness, and transparency (Hirvi & Whitfield, 2015). This view is contrary to the bureaucratic mindset of stability, seniority, hierarchy, low-risk taking, and compliance with rules (Ho & Im, 2013). Hirvi and Whitfield (2015) opine that the ruling classes in developing countries adopt bureaucracy as a tool to increase formal employment of unskilled labor. In stark contrast, private organizations,

where a bulk of the services required by the public organization to execute projects is obtained, has a lot less “red tape”. The aim and objective of private organizations is to make a profit and meet the “bottom line” through increased market share and competitive advantage As such private organizations are continually reinventing themselves, are explorative rather than conservative, highly competitive, and possess zero tolerance for inefficiency (Kallio & Lappalainen, 2015). The peculiarity of the current researched organization is that it is a temporary collaborating organization with members from the private sector working for a bureaucratic public organization. This intersection throws up a whole lot of issues, including the potential conflict in management, if communication through knowledge sharing is not managed correctly (UNDP, 2017). Understanding how the elements of bureaucracy introduced by the public projects influence the intention or actual act of sharing tacit knowledge on the project team is, therefore, the necessary first step to achieving this objective.

In summary, aside from governance, governments exist to execute public projects and provide public service. Government agencies are, therefore, public service organizations that exist in political environments and whose practices are performed in tandem with laid down policies (Kallio & Lappalainen, 2015). Given this, the culture of government organization is described as somewhat conservative, with a penchant for supporting knowledge conservation rather than exploration, with minimal error tolerance, low-risk appetite, and risk-averse (Kallio & Lappalainen, 2015) and this translates to how they execute projects. Aboelazm (2018) comparative analysis of public financial management (PFM) systems in three African countries of Ghana, Central African

Republic, and Ethiopia found that three factors of government structure, socio-cultural values, and economic variables combine to affect public procurement and PFM systems. public procurement requires high levels of public disclosure, centralized purchasing structure, and lack of competition (Aboelazm, 2018; Johnson, Leenders, & McCue, 2017). The implication of this type of organizational culture and climate on the attitude, intention, and behavior of private sector service providers and team members towards tacit knowledge sharing is worth investigating.

Overview of Multi-Organizational Project Team Interactions

Projects have been procured and executed through diverse methods by organizational strategy. Governments may not possess the requisite internal resources to outsource project execution to organizations that possess the necessary skills and competencies to collaborate and deliver the desired product. The resultant collaboration has been known by various terminologies such as inter-firm project team (von Danwitz, 2018); interorganizational project team (Hollen, Van Den Bosch, & Volberda, 2013; Wu et al., 2017a; Wu et al., 2017b; multi-partner project teams (Dietrich, Eskerod, Dalcher, & Sandhawalia, 2010); integrated teams (Franz, Leicht, Molenaar, & Messner, 2016) and multi-organizational project teams (Yang et al., 2018).

Information flow is vital in every project team as each member is employed to provide critical information that would aid in ensuring a successful project. Information flow occurs in four primary directions on projects; from the client that is the government organization to the project team, from the parent organization to their representatives in the group, between the client and the parent organization and lastly between the members

of the team. The nature of the interaction between these groups is essential to appreciate the role it plays in promoting or hindering knowledge from being shared.

Teams are groups of people with a common purpose and a goal, such as project delivery. Team members possess complementary skills and through collaborative efforts, create synergy to perform an interdependent and highly complex task (Navimipour & Charband, 2016). The people, stage, and culture inform the dynamics of every team. Yang, Sun, Zhang, and Wang (2018) argues that team performance has two components; the contextual based on social facilitation and task performance, which results in performance driven product delivery. However, multi-organizational project teams are characterized by several attributes, which impede the flow of knowledge. First, team members represent diverse industry, communities of practice (von Danwitz, 2018) and organizations which have different cultures, climate, ethos, interests, targets and values and by coming together introduce a new dynamics and diversity to the team which could breed conflict (Wu et al., 2017b).

Secondly, projects, defined as temporary activities with a specific beginning and end are designed to deliver products (Project Management Institute, 2017; Sareminia, Shamizanjani, Mousakhani, & Manian, 2016). By this definition, projects are temporary endeavors where once these products are provided, the project, technically comes to an end. The team is, therefore, a temporary unit that only exists for the duration of the project and for the sole purpose of delivering a unique product (Project Management Institute, 2017). However, a high performing project team, whether temporary or otherwise, goes through the forming, storming, norming, performing, and mourning stage

(Tuckman & Jensen, 1977). Therefore, it is normal for projects with a temporary workforce (Sareminia et al., 2016) to be disbanded or experience loss of members before the norming or performing stages (Jiang, Flores, Leelawong, & Manz, 2016). Members may be recalled by their parent organization, terminated by the client organizations or just exit the project by virtue of retirement or resignation. In the event the project losses a resource before the performing stage where knowledge is majorly shared and applied, there would be challenges, especially when their tacit knowledge is not captured before their exit. Given this, the premature dissolution or exit of members of the team results in the loss of vital knowledge necessary to the progress or ultimate success of the project.

Projects are executed using a combination of human and material resources and an acknowledgment of the external factors, impediments and limitations to foster a culture change initiative in tandem with the knowledge enterprise (Ramhorst, 2004). Given these, resources are not only temporary, but also on loan from parent organizations, most of which private organizations, for the duration of the project, and they could be withdrawn and replaced at any time (von Danwitz, 2018; Yang, Sun, Zhang, & Wang, 2018). The effect of this withdrawal is the lack of loyalty and commitment to the temporary organization (Leufkens & Noorderhaven, 2011) and loss of knowledge. Short-term gains and independent goals of individual organizations are pursued rather than the long-term objectives of the client and the entire team due to clashing interests (Leufkens & Noorderhaven, 2011). High turnover also results in the rapid loss of information, specifically undocumented or un-captured tacit knowledge on the project (Sareminia et al., 2016).

Furthermore, the dynamics involved in project teams differ and could impact interactions in the group. The temporary nature of projects makes it difficult to build trust, ensure satisfaction, improve performance, and build cohesion necessary to provide successful collaboration (Yang et al., 2018). In a construction project, where team members are from diverse professional groups, the relationships between members have been termed adversarial (Wu et al., 2017a; Wu et al., 2017b). This type of relationship can result in poor project communication (Ahimbisibwe & Nangoli, 2012), poor knowledge flow, and ultimately dismal performance and project failure (Franz et al., 2016). Lastly, projects are unique, short term, and combine a plethora of expert knowledge to create a single product (Sareminia et al., 2016). It is this short-term state of projects that inhibits organizational learning, which is a long term and continuous process (Susana, Montes, & Camilo, 2004).

These attributes of multi-organizational project teams complicate the project delivery process. The distribution of project activities over several organizations and the temporal nature of projects make learning difficult (Leufkens & Noorderhaven, 2011). Hanisch et al. (2008) summarize the challenges of the practice of knowledge management in project environments as influenced by the temporal nature of projects, the peculiarity of uniqueness and singularity, characterized by linkage of changing workforce and constellation of co-workers. Other attributes of the projects are the short- term orientation of projects, the requirement of quick adaptation, integration of internal and external experts, and lack of organizational memory (Hanisch, Lindner, Müller, & Wald 2008). The objectives between knowledge management and project management are at

best conflicting (Grillitsch & Trippl, 2014). While projects are temporary, short term with definite beginnings and an end, knowledge management initiatives are long-term endeavors, which are ongoing. It, therefore, means that knowledge management processes should be integrated into project initiatives to enhance its usefulness (Hanisch et al., 2008).

In the next section of this review, the historical antecedents of the concepts of project knowledge management, knowledge sharing, and detailed analysis of the barriers to knowledge management are discussed. This section examines in detail the core concept of tacit knowledge sharing and analyzes the research conducted on the concept. This analysis is done to appreciate the current position and findings in research as well as to identify the gap in tacit knowledge sharing and properly situate the current research.

Project Knowledge Management

Project knowledge management refers to the process required for the acquisition, processing, and application of the information necessary for the successful delivery of a product to the triple constraint of time, cost, and quality and to ensure benefits realization (Lindgren, Packendorff, & Sergi, 2014). It can also be referred to as the knowledge required by Project team managers to complete their task and activities in the short run (Lech, 2014). Research publication on project knowledge management started in the year 1987, with papers by Gulliver (1987). Relevant books, articles, standards, methodologies, and competency standards on the subject have been published by professional bodies such as the Association of Project Managers (APM) 2006; Project Management Institute, Project Management Body of Knowledge (PMBOK) 2017, International Project

Management Association (IPMA) 2006; and Office of the Government of Commerce (OGC), 2005. The project knowledge possessed by an organization, team, or group is known as their collective knowledge assets and is their competitive advantage (Gasik, 2011).

Project knowledge management stems from the broad concept of Knowledge management discipline that has been around since 1962 but became formally recognized in the 1980's (Lambe, 2011). Knowledge management is the practice adopted by organizations to identify, create, store and distribute relevant information for re-use, the creation of awareness and development of the learning process in an organization (Todericiu & Boanta, 2017). The pioneering proponent of knowledge management is Nonaka (1994) that advocated a paradigm shift in organizational knowledge management to the creation and utilization of the Socialization, Externalization, Communication, and Internalization (SECI) spiral model to manage knowledge. This model was vital for illustrating the contribution of tacit and explicit knowledge-to-knowledge creation, The combination of tacit gained through individuals' joint activities and explicit (formally gained through codification) knowledge results in the 'spiral of knowledge' (Boje, Baca-Greif, Intindola, & Elias, 2017; Nonaka, & Toyama, 2015).

The importance of knowledge management cannot be overemphasized as is a "systemic and organizationally specified process for acquiring, organizing, and communicating both tacit and explicit knowledge of employees that other employees may make use of to be more effective and productive in their work" (Chang & Lin, 2015 pp.435). Knowledge management is considered a primary driver for economic growth

and development (Xiao, Zhang, & Ordóñez de Pablos, 2017) as well as a strategic resource, which can be leveraged by organizations to meet their current, and future needs (Goswami & Agrawal, 2018; Syed & Fytton, 2004). It is the acquisition or 'gleaning' of information, which invariably translates to new opportunities for groups, teams, and organizations (Gasik, 2011). The success of knowledge management in any organization has been attributed to the knowledge sharing maturity of the organization (Kruger & Johnson, 2011; Razak et al., 2016). The benefit of knowledge sharing in organizations includes the cross-fertilization of ideas, improved response time, faster solutions, innovation, and awareness of solutions (Bulchandani, 2015; Jain, Sandhu, & Goh, 2015).

Polanyi (1966) describes two types of knowledge, known as the tacit (intangible) and explicit (tangible). While tacit knowledge is said to inhabit people, is imperceptible and difficult to express and capture, explicit knowledge is easily captured, codified, and transferred (Goswami & Agrawal, 2018). Michael Polanyi, a scientist, philosopher and developer of the concept of tacit knowledge postulates his epistemological view in the famous quote 'we know more than we can tell' (Polanyi 1983, p.4) implying that not all knowledge was explicit and could be shared through explicit means (Muñoz, Mosey, & Binks, 2015). Tacit knowledge has been described as subjective and is based on experience, including 'cognitive and technical elements' (Nonaka &Takeuchi, 1995, p. 60). Cognitive elements are summarized as mental models, perspectives, dogmas, and outlooks that aid in one's worldview, perception, and definition. The technical elements alluded to by Nonaka and Takeuchi (1995) refer to personal competencies, concrete skills, habits, practices, and crafts (Villa, 2012); simultaneous and context-sensitive,

analogical and not easily transferred. Villa (2012) opines that tacit knowledge is an intrinsic part of project knowledge management even though this is not explicitly stated in the project management body of knowledge (PMBOK). However the 7th edition of the guide identifies knowledge application as the bedrock of the project management practice (Project Management Institute, 2017; Olaniran, 2017); The potential of tacit knowledge once embedded in the project delivery process is significant, and by consciously identifying, uncovering and sharing it, projects managers could improve their project performance and create new knowledge for reuse on similar projects (Villa, 2012; Virtanen, 2010).

While some researchers assert that the more valuable form of knowledge is in tacit form (Bloice & Burnett, 2016), and argue that its difficulty to imitate, grants competitive advantage to organizations (Boateng & Narteh, 2015); others like Wu, Lee, and Tsai, Chen, & Chien (2012) contend that the benefit depends on the context. The researchers found that in high technology information firms in China, formal sharing of tangible knowledge among peers had a positive effect on financial performance, while the sharing of more intangible knowledge such as experience through storytelling had a more positive effect on operational performance (Wu, Lee, & Tsai, 2012). Villa (2012) agrees by stating that explicit knowledge holds a dominant place in project management with its use necessary in the production of project documents such as the work breakdown structures, project charters, and management plans.

Todericiu and Boanta (2017) cite three significant distinctions between tacit and explicit knowledge as relates to the coding and mechanism of transfer, central

acquisition, and accumulation, and finally aggregation potential and learning modes. Firstly, tacit knowledge is intuitive, difficult to capture, and requires understanding and trust for its transmission. Tacit knowledge is personal to the individual; context-specific, and includes cognitive (paradigms, viewpoints, and beliefs) and technical elements (experience, skills, and artistry) (Eskerod & Skriver, 2007; Razmerita, Kirchner & Nielsen, 2016). This type of knowledge is unlike explicit knowledge, which is easy to transfer and can be encoded. Secondly, while tacit knowledge is acquired primarily through practical experience, explicit knowledge is acquired through logical deduction and practical experience of the individual (Pitrowsky, da Costa, & Ribeiro Salles, 2014). Lastly, explicit knowledge can be easily captured and stored through the coding process. However, tacit knowledge can only be transferred through training or acquired from experience (Todericiu & Boanta, 2017).

Tacit knowledge is mostly ignored or at best, left unmanaged. The subjective nature and non- verbal form of tacit knowledge make it difficult to communicate or articulate (Selamat, Saad, Murat, & Soon, 2017) and this has been attributed to four factors of perception, language, value and distance and time. Extant literature has identified four significant tacit knowledge-sharing behaviors as communications and personal interaction, tutoring, mentoring, and willingness to share knowledge freely (Suppaih & Sandhu, 2011). Methods of tacit knowledge sharing include; one-on-one conversations, storytelling, peer interaction and training.

Project knowledge management has been described as the management of knowledge in projects through the interaction of ideas and the principles of project

management and knowledge management concepts (Hanisch et al., 2008). The success or failure of projects resides in the management of knowledge through the course of the project. Gasik (2011) describes two basic types of project management knowledge (PMK), as micro knowledge, which is information required for performing single tasks and macro knowledge, possessed collectively by all individuals in an organization. There are four different stages at which project knowledge is achieved; Gasik (2011) opines that these are at the individual, project, organization, and global levels. Ren, Deng, and Liang (2018) distinguish between Knowledge within projects (PM methodology and communication practices); Knowledge about projects (organizational project landscape preview) and knowledge from/between projects (referring to expert knowledge, methodology, procedure, and experience). Sareminia, Shamizanjani, Mousakhani, and Manian (2016) posits that project knowledge management challenges and barriers arise from the characteristics of projects which are unique, temporary endeavors rapidly changing the workforce and short-term tenured undertakings that integrate the knowledge of both internal and external stakeholders through the project life cycle.

The project knowledge life cycle begins with knowledge identification, where the correct information required for completing a task or solving a problem is sought; Knowledge acquisition (Chuang, Jackson & Jiang, 2016; Todorović, Petrović, Mihić, Obradović, & Bushuyev, 2015; Newman, Kim, Lee, Brown, & Huston, 2016), which is the understanding process, where knowledge sought either within or outside the organization or team is obtained and internalized (Nonaka & Takeuchi, 1995) by the receiving individual. Knowledge creation is the conversion of the general acquired

knowledge to project-specific information, thereby creating new knowledge (Gasik, 2011). Knowledge creation (Adenfelt & Lagerström, 2006; Lavie & Drori, 2012; Nonaka & Toyama, 2015; Rutten, 2017) can occur either through knowledge combination (Denford & Ferriss, 2018), knowledge adoption (Ha, Lo, & Wang, 2016) or knowledge evolution (Smiraglia, 2016). Knowledge application occurs next, where the new project specific knowledge is directly appropriately applied to solving problems and addressing tasks by the team (Boateng & Narteh, 2015; Donate & de Pablo, 2015; Ha, Lo, & Wang, 2016).

Tacit knowledge is considered the primary driver of the Nonaka and Takeuchi (1995) SECI model. The spiral is iterative beginning with socialization to externalization, then combination and lastly internalization (Boje, Baca-Greif, Intindola, & Elias, 2017; Tang, 2015). Gasik (2011) posits that externalization (knowledge formalization) is necessary for knowledge sharing, however, in this case, tacit knowledge is first converted to explicit knowledge through collective recollection and dialogue (Nonaka & Takeuchi, 2015). However, some argue about the ability of tacit knowledge to be transformed into explicit knowledge, contending that tacit knowledge can only remain in its original form (Muñoz, Mosey, & Binks, 2015). Internalization is the final process in the Nonaka and Takeuchi (1995) SECI knowledge creation process, where explicit knowledge is converted to tacit knowledge through "learning by doing" to internalize new skills, behaviors, and practices, with the individual's self-image at center stage.

In the instance where an organization decides to hire external resources that possess the requisite knowledge to deliver a project (Franz et al., 2016), a temporary

organization is formed. The new knowledge brought in by resources coming into the new organization ought to be collected and transferred within the project to workers who need it and should be codified before the temporary organization is disbanded to mitigate the risk of loss (Gasik, 2011). Sareminia et al. (2016) study on the ontology of the project knowledge management domain identified four categories of successful project knowledge management as Information and communication technology, organization, methods, and cultural factors. They also recognized three layers of people, process, and technology as presented by extant literature as domain ontology for project management.

Perspectives on Project Knowledge Sharing

Knowledge sharing is a significant area of Knowledge Management that alludes to the process by which information acquired from different sources, is exchanged between and within individuals, teams, groups, associations, and establishments (Ikenwe & Igbinovia, 2015). Knowledge sharing is a social process (Lin & Lo, 2015), and voluntary act (Fullwood & Rowley, 2017) that leads to an exchange between a donor and a collector (Cavaliere & Lombardi, 2015). The mutual exchange that occurs in the sharing of tacit knowledge also results in the creation of new knowledge (Ma, Huang, Wu, Dong, and Qi, 2014). Knowledge sharing is therefore described as human behavior that embodies activities of explicit and implicit experiences while embedding knowledge and skills necessary for creating innovative workplace knowledge (Asrar-ul-Haq & Anwar, 2016; Kumar & Rose, 2012).

Researchers describe knowledge sharing in different ways based on their perception. Riege (2005) defined knowledge sharing as the distribution of personal

knowledge, which is beneficial to the recipient and appropriate for the context shared. Masa'deh, Almajali, Alrowwad, & Obeidat (2019) agree with this definition and expand further by describing the process for sharing as being an effective transfer of pure knowledge rather than recommended knowledge and can take place between individuals, groups, and teams. Mueller (2015) and Janus (2016) regard knowledge sharing as the process by which information on activities of assigned tasks expertise, experience, and intelligence through a give, and take the process of communication, observation, and similar practices is delivered or received (interchange). In agreement, Huang and Chen (2015) describe knowledge sharing as the behavior displayed by an individual in disseminating their acquired knowledge to others within the organization.

Knowledge sharing, which is the primary construct of this paper involves the flow of information between people. However, this construct has been used interchangeably with knowledge transfer by some researchers (Abu Samah, & Ismail, 2016; Al-Busaidi & Olfman, 2017; Paulin & Suneson, 2015; Tangaraja, Mohd Rasdi, 2015). Others have attempted to distinguish between the two (Goswami & Agrawal, 2018; Paulin & Suneson, 2015). Paulin and Suneson (2015) distinguish between the two terms using directionality, level, and focus, with knowledge sharing being multidirectional, and either focused or unfocused between individuals. Knowledge transfer is unidirectional, focused, and could occur not only between individuals but also between teams and organizations (Paulin & Suneson, 2015). This distinction is necessary to prevent confusion of the terms and enable focus on the main research objective.

Knowledge sharing occurs through diverse ways on the project team. Depending on the type of knowledge the medium of expression differ. For instance, individuals share tacit knowledge, which is described as difficult to articulate and codify through social networks through a person by person exchange in the socialization process (Bell, van Waveren and Steyn, 2016). Tacit knowledge sharing is a personal thing as the sharer chooses to divulge or not to; however on the project team, this action occurs within the routines and structures of the team, through events such as mentoring programs (Bell, van Waveren & Steyn, 2016).

The benefits of knowledge sharing on firm performance and innovativeness are emphasized in extant literature. These benefits include; Optimization of project processes, reduction of costs and risks, minimized internal transaction costs, and interfaces, prevent project reinvention, and ultimately increased customer satisfaction (Ferreira Peralta & Francisca Saldanha, 2014). Knowledge acquired through the course of projects, impacts the overall effectiveness of the organization by increasing the speed of project execution, improve the risk profile of projects through the appropriate capture of knowledge, documentation of lessons learnt, and appreciating the value of knowledge reuse (Sedighi, van Splunter, Brazier, van Beers, & Lukosch, 2016). Knowledge sharing in project teams is also an integral factor that ensures project success (Khoza & Pretorius, 2017).

Research findings on the impact of knowledge sharing in different contexts are varied for instance; Vij and Farooq (2014) conducted a study to verify the impact of knowledge sharing orientation of business on the organizational performance of several

manufacturing and service organizations in the National Capital Region in India. The 300 research participants identified through purposive random sampling were administered with self-reporting surveys, and the results analyzed using a structural equation model. The results showed a positive correlation between knowledge sharing orientation, and organizational business performance with firm size significantly moderating business performance (Vij & Farooq, 2014). However, in a similar study involving 228 respondents from a technology company in China, Wu et al. (2012) also using the structural equation modeling, found that tacit knowledge sharing was significantly correlated to human, structural and relational intellectual capital which in turn served to enhance the firms operational and financial output.

Several reasons have been cited for the reasons team members' exhibit knowledge sharing behavior; the three common reasons cited are of motivation, trust, and reciprocity. The effect of motivation has been cited a lot in literature as having a significant positive impact on knowledge sharing. However, some researchers like Szulanski (1996) and Matschke, Moskaliuk, Bokhorst, Schümmer, & Cress (2014) deviated from the typical reference of lack of motivational factors being responsible for no knowledge sharing to identify knowledge- associated issues which include the inability to comprehend and retain information, vagueness, and a problematic or fractured relationship between the donor and knowledge recipient.

A primary school of thought associates individual knowledge sharing behavior to that of the theory of motivation, where individuals are either motivated intrinsically or extrinsically to share their tacit knowledge (Deci, Olafasen, & Ryan, 2017). Individuals

are motivated to share by specific drivers, including reciprocity from the organization through rewards, self-efficacy in knowledge possession, and enjoyment in empowering others with knowledge. Ergün and Avcı (2018) opine team members are more inclined to share knowledge when they believe that indulging in such activity will result in a reciprocal benefit or that their reciprocity if maintained would improve their work.

However, in multi-organizational projects, collaborative knowledge sharing is strongly influenced by both the individual behavior of team members as well as the interest of their respective parent organizations (von Danwitz, 2018). The theory of social dilemma was used as the framework to conduct a study where the researchers found that in multi-organizational project teams, collaboration is stifled by the selfish interest of team members desirous of receiving a higher pay-off in the short run. If a team member decides to collaborate, and the entire team adopts this behavior, the whole team gains, and vice versa if they choose to hold back knowledge for selfish reasons. Group members participate in knowledge sharing on projects to obtain useful information, enhance the working relationship, for problem-solving, development of interpersonal skills, and aid in developing professional skills (Tsseng & Kuo, 2014).

In some situations, members utilize personal knowledge for control, and to defend their jobs career and status (Akgun et al., 2017). It is therefore plausible that they would go great lengths to hoard their knowledge from their contemporaries. Therefore, when there is the threat of knowledge hoarding, or it becomes a norm, the whole team losses. (von Danwitz, 2018). It is, therefore, necessary to understand what reasons would trigger this kind of attitude and behavior towards project knowledge sharing.

Factors Influencing Knowledge Sharing on Multi-Organizational Teams

Several factors have been found by research to explain the ability or inability to share knowledge (Boateng, Dzandu, & Agyemang, 2015), or the enablers and barriers to knowledge sharing (Razmerita, Kirchner, & Nielsen, 2016). These factors include the integrity of the knowledge informant, the readiness of the knowledge informant to divulge, the viability, authenticity of the communication channel, recipient willingness, and absorptive capacity to acquire the shared knowledge (Masa'deh et al., 2016).

Kumar and Rose (2012) identified the antecedents for knowledge sharing through the research on 472 members of the Malaysian public sector organizations. The precursors were self- image, knowledge self-efficacy, enjoyment in helping others, generalized trust, reward system, pro-sharing norms, and reciprocity. In all intrinsic motivation, which is an embodiment of all the antecedents, had a definite relation to knowledge sharing in the Malaysian public segment. In contrast to this, the study by Lavanya (2012) to identify the antecedents to knowledge sharing among 516 respondents showed not intrinsic motivation but attitude, trust, organizational knowledge ownership, culture, knowledge management initiative, absorptive capacity, and perceived time pressure, had the most considerable influence on the intention to share knowledge. Smaliukiene, Bekesiene, Chlivickas, and Magyla (2017) agree to some extent about the role of trust in knowledge sharing. Using the structural equation modeling and the confirmatory factor analysis to analyze data collected from 526 militaries personal, with self-administered questionnaires of 26 questions on a 5-point Likert scale, the researchers found that the variables that affect knowledge sharing are dependent on not just

organizational culture of trust but also on technology. The opinion poll technique used in collecting the data was not considered robust enough to ensure the validity and generalizability of the result. However, the hierarchical nature of the military structure which may have influenced the results (Smaliukiene et al., 2017) may not be so much a limitation, when considered in the context of the current research, given the similarity in the power distance culture prevalent in both contexts of the military, African, and public organization cultures.

The lack of competence and capability of the service providers engaged in executing projects can also create barriers to knowledge sharing. This challenge would be considered strange in more developed societies but not so in emerging countries in Africa (Chan & Ameyaw, 2013; Mitra, Karathanasopoulos, Sermpinis, Dunis, & Hood, 2015; Osei-Kyei & Chan, 2017). The reason for the poor engagement has been traced to corrupt practices of the government officials or the principals engaged in the agency process (Chan & Ameyaw, 2013), weak processes (Chan & Ameyaw, 2013; Locatelli et al., 2017), and selfish gains or political favor (Dza, Gapp, & Fisher, 2015). Research has shown that corruption is strongly associated with the award of government contracts in most countries (Dza et al., 2015). In Africa, procurement corruption is regarded as "one of the most lucrative white-collar crimes in government" circles, and this occurs through the entire procurement cycle even during project execution (Dza et al., 2015; Tukuta & Saruchera, 2015), so it would be instructive to know if this has any impact on TPKS on multiorganizational project team in Anglophone West Africa.

Ultimately project efficiency in all ramifications is reduced because of corrupt practices in the selection of service providers (Locatelli et al., 2017). Poor recruitment results in the engagement of incompetent and inexperienced personnel who inadvertently lack the self-efficacy to share knowledge. When an incompetent staff is selected, there is a clear case of a skill gap, which adversely affects the project in the long run. Mahamadu et al. (2018) found that, of the 45 technical and interpersonal skills required for the implementation of public procurement in Nigeria, employees lacked 38 of these skills and required further development and training (Mahamadu et al., 2018). The additional time and cost needed for this training would subsequently increase the contract sum over the baseline budget; as such, the project would fail to meet the success indices of cost. Addressing these skill gaps during project execution would take considerable time and expense that would negatively affect the project; as such, selecting appropriately qualified vendors at the onset could mitigate this risk and yield better results.

Wiewiora, Murphy, Trigunarsyah, and Brown (2014) conducted multiple case studies to investigate the relationship between knowledge sharing mechanism and inter-project knowledge sharing factors of organizational culture, and trustworthiness. The researchers found that perceived trustworthy behavior was valued to enable easy sharing of knowledge. They also found that when the effect of trust and clan culture was mutually enforced within the organization, knowledge-sharing behaviors were formed (Wiewiora et al., 2014). In summary, several factors inform the knowledge sharing behaviors of individuals in organizations, and these are categorized into three broad classes: the

organizational factors, individual factors, and technological factors (Fullwood & Rowley, 2017; Razmerita et al., 2016).

Organizational factors. Projects are short-term endeavors executed by multiple stakeholders that come together to form a temporary organization. The new organization comprises diverse individuals with practices drawn from parent organizations, profession, national, regional, and communities of practice (Boateng & Agyemang, 2015). The effect is a new environment with factors that affect the activities and ultimately, the performance of the temporary organization or team. These factors include culture, leadership, and structure of the organization (Fullwood & Rowley, 2017; Moussa, McMurray, & Muenjohn, 2018; Rai, R. K. 2011).

The context of the organization can be either inter or intra, internal or external. Mueller (2015) research to comprehend the knowledge culture, which could enhance cross-boundary knowledge sharing, used interviews, group discussions, document analysis and observations of 81 participants from five companies in Austria, Germany, and Italy. The researchers found that project-based organizations benefit from both formal and informal knowledge sharing practices developed autonomously by project team members, and identified five new organizational culture characteristics hitherto undiscovered in research. These characteristics are autonomy and trust in employees (leadership), growth orientation, output and customer orientation, team orientation and importance of the project work and trust and solidarity (Mueller, 2015). Two major influencers of project team members are organizational culture and leadership (Sareminia et al., 2016) and affect how employees or team members respond or behave in an

organization. Therefore, the values and ethos of the organization, as well as the stance and body language of the leadership, should communicate this objective otherwise, members of the organization would fail to share.

In an extant study, Schein (1992) posits that organizational culture is reflected on three levels of artifacts, espoused values, and foundational assumptions, and that only an alignment between knowledge management initiatives and the corporate culture would ensure successful integration. The prevailing culture in a team influences the attitude and behavior of the members. Individuals belong to several groups at the same time and through their lifetimes and as such, possess several cultures imbibed from their nationality, gender, ethnicity, or organization (Boateng & Agyemang, 2015). These different cultures are, therefore brought into the project team, where team culture is also expected to evolve. Team culture has been found to have an indirect and positive influence on the performance when mediated by knowledge sharing and emotional intelligence (Jamshed & Majeed, 2019).

Organizational culture is those values, systems, and beliefs that aid or impede the creation and sharing of knowledge within the group (Razmerita et al., 2016). The concept of culture has been classified into four groups of strategic awareness, trust, maintaining prevailing culture, and collaboration (Sareminia et al., 2016). A significant consensus among knowledge researchers is that the culture characteristic of any organization influences their knowledge sharing (Mueller, 2015). Cultural values such as care trust (Chiregi & Navimipour, 2016; Mueller, 2015), risk orientation, openness, autonomy,

employee, output, growth, learning, long-term direction, and fairness are espoused to support knowledge processes such as sharing (Mueller, 2015).

Extant literature has also explored organizational culture types or competing for value frameworks (Paro & Gerolamo, 2017; Turner & Pennington III, 2015) that influence knowledge sharing. These are classified as a clan, adhocracy, market, hierarchy, and mixed cultures. While clan and adhocracy culture are supportive cultures to tacit knowledge sharing; market, hierarchy cultures, and mixed have a more negative influence on knowledge sharing cultures (Abbasi & Dastgeer, 2018). Using the organizational culture assessment instrument (OCAI), Akhavan, Hosseini, Abbas, & Manteghi (2015) categorized and identified these four distinct types of organizational culture based on the extent of focus (internal or external) and the organizational structure (stable or flexible).

Clan cultures are environments where sharing is the norm and is characterized by dominant teamwork, high organizational commitment, and high corporate commitment (Abbasi & Dastgeer, 2018; Martínez, 2016). The environment in the clan culture facilitates frequent interaction, collaboration, supportiveness, and informality, which was found to be most suitable for tacit knowledge sharing (Martínez, 2016). The psychological contract in clan cultures is also characterized by equal and robust reciprocity. The motivation in this culture comes by goal sharing and participative decision-making (Turner & Pennington III, 2015). In the adhocracy culture, organic and not mechanistic culture prevails. Their atmosphere is dynamic, innovative, and

entrepreneurial. Employers are empowered and encouraged to be active risk takers to ensure optimal benefits (Abbasi & Dastgeer, 2018).

Environments with market cultures are characterized by competition, and winning is regarded as everything. Knowledge is therefore seen as a tool for power that gives a competitive advantage, thereby making sharing difficult as relinquishing it is considered a disadvantage (Abbasi & Dastgeer, 2018). In the market culture, knowledge is regarded as a source of power and a tool for an upgrade. In this culture, there is more emphasis on explicit knowledge. The hierarchy culture exists in a highly formalized environment with several levels of hierarchy, operational siloes, structures, and well-defined bureaucratic policies, controls, and practices which create bottlenecks and inefficiencies that stifle knowledge sharing (Abbasi & Dastgeer, 2018). The mixed organizational culture is one that combines one or more of these culture types and could accurately describe a multi-organizational project team, where members come from different dominant cultures. Abbasi and Dastgeer (2018) found that this type of culture is highly unlikely to promote tacit knowledge sharing.

The information on cultural dimensions is pertinent to the current research, as identification of the peculiar culture that exists within the temporary multi-organizational project unit in Africa would indicate if it is favorable or otherwise to TPKS. For instance, in organizational cultures where there is competition, as the market culture, knowledge would be hoarded and used as power leverage, and people would be less inclined to share their knowledge (Matić, Cabrilo, Grubić-Nešić, & Milić, 2017). Identification of the

culture type would also enable an understanding of the barriers that impede TPKS in that environment.

In consonance with this, Martínez (2016) opines that the culture of an organization is influenced by the information gathered over time by the group. This information could which shared values and beliefs, code of conduct, reward systems, risk tolerance, hierarchy, and authority that members embark upon consistently through time. These practices, in turn, have a strong influence on inter-project level or project team knowledge sharing behavior. Aquilani, Abbate, and Codini (2017) opine that the attitude, behavior, and intention of employees are triggered by the culture of the organization, and therefore organizational culture is considered a significant predictor of knowledge sharing (Akhavan, Marzieh, & Mirjafari 2015; Amayah, 2013).

The culture within an organization has the potential of creating a learning environment, fostering the adoption of information systems; and motivating the contribution of knowledge (King, 2007; Park & Gabbard, 2018). Calderon and Jimenez (2015) analysis of the organizational cultural qualities that increase or inhibit the knowledge sharing process in multi-national project groups found that language barriers, cultural differences, and fear inhibited knowledge sharing; but trust, positive relationships, positive relationships, and collaboration enhance the knowledge sharing process. Al-Kurdi, El-Haddadeh, and Eldabi (2018) in a systematic review of 73 articles in peer-reviewed journals, found that culture played a prominent role in knowledge sharing associated with the ideas and attitude. The research finding aligns with the conclusion of Bloice and Burnett (2016) that knowledge sharing barriers is sector,

organization, are context dependent. The conclusions from their case study research showed that not all the common knowledge sharing barriers (KSB) identified in literature such as Riege (2005) applied to all organizations. Therefore, this research on multi-organizational temporary organization would throw up new knowledge sharing barriers never identified.

Wei and Miraglia (2017) identified six cultural assumptions that influence knowledge sharing on projects. These assumptions were masculine/feminine values (Hofstede, Neuijen, Ohayv, & Sanders, 1990), the perception of time, past and future concerns, interpersonal relationships between project managers, project ownership, and project management role conception (Wei & Miraglia, 2017). The researchers found that irrespective of the gender role represented in the project management profession, masculine attributes of dominance and competitiveness which aided task accomplishment, meeting deadlines and managing risks, trumped feminine values of relationship building, and collectivist culture which support knowledge sharing and transfer (Chang & Lin, 2015; Wei & Miraglia, 2017). The masculine values of meeting deadlines and high competitiveness have been associated with project managers, and their respect for boundaries leads to the creation of knowledge siloes (Wiewiora et al., 2014), as professionals, they tended not to pry into projects that they did not own. Additionally, the perception of time as a scarce commodity on projects, which is in tandem with the temporal nature of projects, does not permit moments of informal sharing outside of formally scheduled meetings. Lessons learned are generally not dwelt on due to tight schedules, deadlines and heavy workloads; as such the organizational culture of collating

lessons learn as an organizational process asset is usually paid lip service (Chang & Lin, 2015).

An important element of culture that must exist in the team or organization is trust. Klein et al. (2018) opine that those from collectivist cultures possess group values and collectivist interest that promotes trust, making them highly unlikely to encourage self-interest or opportunistic behavior. However, Chien, Lewis, Sycara, Liu, and Kumru (2018) opine that managers in individualistic cultures had a higher propensity for trust than those in collectivist cultures. The reason was attributed to the "black sheep" effect where in-group violations in collectivist societies reduced the level of trust for violating members. Mueller (2015) traces the success of organizational processes to the organizational culture indicating that corporate culture and knowledge processes were interdependent. Wiewiora et al. (2014) found that if the cultural values in an organization promote ease, partnership, and teamwork; sharing is enhanced however if a culture of achievement, competitiveness, and focus on winning persist, it would lead to the hoarding of knowledge. Ma, Huang, Wu, Dong, and Qi (2014) also opines that project team members in collectivist societies like China require a trusting environment and both intrinsic and extrinsic motivation to share their knowledge.

Annadatha (2012) quantitative study of knowledge workers in Information technology in the United States of America and India discovered that collaboration, common language, and trust were not significant sharing stimulators as compared to mutual communicated and accepted idea. Interestingly, trust in the United States, which is an individualistic society was found to be higher than in India, a collectivist society

(Navimipour & Charband, 2016). Zhang, De Pablos, and Xu (2014) posit that collectivist cultural values directly have a positive effect on knowledge sharing while other factors such as uncertainty avoidance, power distance, and Confucian dynamism are more related to knowledge sharing motivation.

Hofsterder (1983) postulated that the cultural description of the African society fell under six dimensions of culture; power distance index, masculinity versus femininity, individualism versus collectivism, indulgence versus restraint, and long- term orientation versus short-term orientation, and uncertainty avoidance index. The African society is hierarchical, with high regard for those with higher societal status, and feminine, given the close-knit family structure. Collectivist societies possess high levels of groupthink and high uncertainty avoidance (Hofstede, 2016). These attributes inevitably stifle innovation, creativity, and initiative all necessary for knowledge sharing on projects. However, despite this generalization, some researchers still highlight the heterogeneous nature of the African society, which translates to distinct cultural values existing in regions and states (Kamoche, Siebers, Mamman, & Newenham-Kahindi, 2015). For instance, the honor culture has been used to describe countries in North Africa, where the ability to cooperate or compete is determined by an individual's reputation (Aslani et al., 2016). Given this, it is pertinent to identify if there are similar or diverse challenges to TPKS in Anglophone West Africa.

Papadopoulos and Blankson (2018) contend that despite the apparent ethnic, language, religious, and tribal differences that prevail, Africans possess a unique cultural identity formed from their experiences through the colonial era, informing their world

view that goes beyond any form of diversity. The two cultures that are the focus of this research; the Nigerian and Ghanaian cultures have some alignment. Both are Anglophone, were colonized by the British and English speaking (Ibrahim, 2015).) Both societies are collectivist with high power distance. Nigeria and Ghana are considered emerging economies in West Africa with the biggest economies (The global economy, 2017) dismal infrastructure, and un-parallel levels of corruption (Osabiyi, Oladipo, & Olofin, 2019). Understanding if there is any convergence or divergence of these African cultures in the understanding of the challenges in TPKS on government projects is worthwhile exploring.

Indeed, researchers on African culture have argued that imported western practices are strongly influenced by the local cultures and colonial traditions associated with society (Kamoche et al., 2015). Therefore, they argue for further research to understand the role that the culture of a nation and organizational culture plays on the work attitudes, values, ethics, and behavior of individual employees (Kamoche et al., 2015). In that regard, this study on the barriers to TPKS as perceived by project managers is a step in the right direction to meeting this gap.

Finally, culture has also been shown to be most associated with the reluctance to share tacit project knowledge on government projects. Boateng and Narteh (2013) case study research using interviews and self-report survey of 300 people across Ghana, found that projects in Ghana failed on six criteria, including that of culture. Ghana, the Central Africa Republic (CAR) and Ethiopia, three developing countries in Africa are described as highly collectivist, masculine with a stronghold of the patronal family system, with

high regard for constituted authority and consequently weak enforcement models (Yeboah, Asamoah, Bawole, Musah & Surugu, 2016). Culture creates a platform, which either promotes or impedes sharing of knowledge in bureaucratic and hierarchical public-sector organizations (Boateng & Agyemang, 2015). The qualitative research by Boateng and Agyemang (2015), revealed contextual dependent results. Uncertainty avoidance in public sector organizations could prevent knowledge sharing in collectivist societies if there was no trust or security, but femininity, which promoted group interest, increased the possibility of knowledge sharing. Depending on the perception of individuals, and based on the degree of collectivism or individualism prevailing in the group, knowledge could also be hoarded or shared (Boateng & Agyemang, 2015). However, a weakness of the research findings is that it cannot be generalized as it is not industry specific and only relates to Ghana, one country in Africa. Confirming the findings with other developing countries in West Africa is therefore expedient for this research.

The organizational structure has an impact on the quality of knowledge shared, especially as it impacts the subjective norm of the individual. The inter-firm or intra-firm structure, public or private structure, profit or not for profit structure all impact on the intent and behavior of the individual. However, despite the structure, knowledge sharing is a critical management process for every type (Boateng & Agyemang, 2015). Research has shown that the sharing and transfer of knowledge occurs through the project cycle in organizational structures where cooperation and collaboration exist in both inter and intra projects (Battistella, De Toni, & Pillon, 2016; Nauman & Ullah, 2016; Paulin & Suneson, 2015; Prinsloo et al., 2017; Tangaraja, Rasdi, Samah, & Ismail, 2016). The project life

cycle in which knowledge is shared starts from the initiation, then progresses to the planning, execution, monitoring and control, and closing (Project Management Institute, 2017; Sareminia et al., 2016; Tangaraja, Rasdi, Ismail, & Samah, 2015). Extant literature shows four basic processes for knowledge management through the cycle as creating and capturing knowledge, coding and storing knowledge, distributing and sharing knowledge and learning, and applying knowledge.

Loebbecke, van Fenema, and Powell (2016) opine that tacit knowledge sharing between members representing different firms through the project life is based on equality. Without this equality founded on reciprocalism, an atmosphere of uncertainty and distrust, resulting in tension and possible conflict is bound to arise (Hsu & Chang, 2014). The only way to prevent this distrust is by the professionals being interdependent and interactive in the interest of the project. Chen et al. (2014) found that inter-organizational trust is the bedrock necessary for business collaboration, cross-organizational information sharing, and data exchange. Fostering of trust in the organization is informed by the organizational culture, values, and fundamentally by the leadership.

The concept of leadership has been categorized into five groups; setting, strategy and vision, leadership style, participation and support, management of human resource, and change management (Hornstein, 2015; Sareminia et al., 2016). Novo, Landis, and Haley (2017) found a strong correlation between leadership skills and the successful delivery of projects. Larson and Gray (2014) collaborate this by identifying core project leadership traits as style, behavior, and attitudes, which invariably affect their members.

This assertion would suggest that team members should emulate leadership behavior, which promotes knowledge sharing (Shu, Page, Gao, & Jiang, 2012). Aga, Noorderhaven, and Vallejo (2016) posit that transformational leadership styles impact the performance and successful delivery of the projects, while Raziq, Borini, Malik, Ahmad, and Shabaz (2018) agree that a transformational leadership style is appropriate in motivating workers to achieve their potential. However, the researchers further argue for the adoption of dynamic or situational leadership styles, suitable reward system, and the creation of an open and creative work environment by leaders.

Liphadzi, Aigbavboa, and Thwala, (2015) found from their study of leadership styles on project success in the South African construction industry that while transformational and transactional leadership styles were positively correlated to project success, laisses fairer, democratic, and autocratic styles were not significantly related to project success. In contrast, Kandukuri and Nasina (2017) found from their study of 21 employees of a large multinational Information technology company in India that knowledge management culture enhances collaboration rather than processes and leadership. As directly related to tacit knowledge sharing on project teams, Shao, Feng, and Wang (2017) found that charismatic leadership is significantly associated with a safe psychological climate that positively impacts intrinsic motivation and the intention to share tacit knowledge. Bavik, Tang, Shao, and Lam (2018) found that leaders' ethical behavior motivated employee's knowledge sharing behavior, and therefore had moral relevance. Thus, the researchers endorsed reward and punishment for promoting knowledge sharing behaviors. Zhang and Cheng (2015) found that knowledge leadership

through the dimensions of leadership skills, cooperation, trust, knowledge innovation, and integration also positively impacted knowledge sharing. While these researches provide insight into the leadership types and their effect on knowledge sharing behavior, they do not address knowledge-sharing attitude, intention and cannot be generalized to all organizational types. Also, further exploration of the impact of leadership types on the TPKS behavior in multi-organizational projects deserves further investigation.

Technological factor. Information technology has become a primary tool in facilitating quick and efficient sharing of project knowledge. Razmerita, Kirchner, and Nielsen (2016) opine that technology is fundamental to the management of knowledge and knowledge sharing within an organization. The availability of the hardware, software, and the skillset of the employees are essential in the adoption of technology in knowledge sharing within an organization. Given the wide adoption of social media as a veritable tool for the dissemination of knowledge, training on how to use social platforms is essential and critical (Matschke, Moskaliuk, Bokhorst, Schümmer, & Cress, 2014). Information technology is a great enabler, enhancer, and facilitator for knowledge sharing and has led to a considerable decrease in barriers in sharing among users (Kirkwood & Price, 2013; Rathi, Given, & Forcier, 2014). Sareminia et al. (2016) identify four building blocks of knowledge management processes as; knowledge creation and capture; knowledge, coding and storing knowledge, distribution and sharing knowledge and learning and applying knowledge. The researchers also identified four support functions for these processes as collaboration, dissemination, discovery, and repository technologies (Sareminia et al., 2016), with dissemination technologies most related to the

sharing of personalized or tacit knowledge. The technological component subsets of dissemination are connectivity, communication, authoring, distribution, e-learning, collaboration, and community (Sareminia et al., 2016). Knowledge management dissemination applications include enterprise portals, learning management with activities that include the creation of content, controlling, interaction, interaction, assessment, performance reporting, and enterprise management (Sareminia et al., 2016).

Project management dissemination applications are wiki-based project management, basic project management applications, collaboration and conferencing, and time tracking. Information Communication Technology (ICT) applications associated with project knowledge sharing generally include project management systems such as Microsoft projects and ORACLE Primavera, knowledge repositories, modeling systems and knowledge portals; however, the choice must align with the organization's culture and preferences (Gasik, 2011). The primary objective of adopting Information technology to drive project knowledge sharing is that it aids in the reduction albeit elimination of mundane routine tasks, for instance, scouring through data, provision of data at the right time, sorting, and accurate storage of information for ease in retrieval.

Social media, as well as online applications, are currently the most versatile way of sharing knowledge (Nadason, Saad, & Ahmi, 2017; Panahi, Watson, & Partridge, 2016). Besides knowledge of this software and use, application of the information obtained is critical as well. Nadason, Saad, and Ahmi (2017) posit that technological barriers to knowledge sharing include the usability of the knowledge sharing platform, skill gap, lack of training, inadequate time, lack of communication of technological

benefits, uncoordinated data and information overload, and insufficient understanding of social media. Matschke, Moskaliuk, Bokhorst, Schümmer, and Cress (2014) confirms this in their research where they found that the lack of technological training, information overload, appreciation, and understanding of the merits of technological use and complication of use frustrates its use in knowledge sharing. However, there was no research material on technology for knowledge sharing, specifically for Africa. As already been established, generalizing findings from other contexts and cultures will create issues with validity when applied to a different context. Given this, a gap exists in the literature on the utilization of technology for knowledge sharing activities in developing countries in West Africa and its effect. This research takes a first step of confirming either the presence or absence of appropriate knowledge sharing technology, the technical know-how and capability which in essence would aid in understanding if a skill gap on electronic TPKS exists on government-funded projects being executed by multi-organizational teams in Africa.

Individual factor. People or human resources are a significant component in project delivery and integrated knowledge, collaboration and facilitated sharing of people working in an organization enables increased capability, competitive advantage and ultimately, organizational success (Goswami & Agrawal, 2018). However, if members of the team are unwilling to share their knowledge, this advantage is lost (Akhavan, Hosseini, Abbasi, & Manteghi, 2015). Knowledge sharing is, therefore, a social process (Lin & Lo, 2015) that enables the mutual and voluntary interchange of information (Fullwood & Rowley, 2017). Team members must possess the right attitude, sufficient

behavioral control, and attention to carry out the required behavior of knowledge sharing (Bock et al., 2005). From extant literature, three individual factors that affect their attitude and intention towards knowledge sharing are personal beliefs, rewards/ motivations and associations, and contributions, otherwise known as reciprocity (Goswami & Agrawal, 2018).

Two principal forms of motivation in research are intrinsic and extrinsic motivation. While intrinsic motivation is innate and associated with the enjoyment of executing an action; extrinsic motivation is associated with reciprocal benefits (Killingsworth & Xue, 2016). The social exchange that occurs between individuals in a team compels feelings of indebtedness and creates a supportive knowledge sharing environment as perceptions of reciprocal benefits creates a favorable disposition to knowledge sharing (Killingsworth and Xue, 2016). However, a few contradictory results exist about the research on rewards as a motivation to share knowledge. While Jahani, Effendi, and T-Ramayah (2013) found positive significance in the relationship between rewards and knowledge sharing among Iranian Academics, some other researchers found no significant influence of rewards on employee's knowledge sharing behavior and intention (Olatokun & Nwafor, 2012; Seba, Rowley, & Lambert, 2012).

An individual's willingness to contribute and share voluntarily without any form of coercion is often associated with the feeling of enjoyment and happiness in doing so. The social exchange theory has been used to show the associations between rewards and knowledge sharing behaviors. Non- financial benefits such as recognition and training have been found in research to have a more significant effect in motivating desired

behavior other than financial rewards (Šajeva, 2014). Razmerita, Kirchner, and Nielsen (2016) investigated factors that influenced knowledge sharing in enterprise social media. The researchers found that the factors that significantly drive knowledge sharing include the joy of helping others, anticipated financial rewards, support from management, alteration in the knowledge sharing behavior in the organization and recognition, while the barriers were insufficient time, trust issues, and behavioral change (Razmerita, Kirchner & Nielsen, 2016).

The intrinsic reward systems (interjected regulations or moderately controlled motivations) found to have positive significance with knowledge sharing include a sense of belonging, reputation, self-esteem, achievement and success, competence, usefulness, respect, recognition, and trust (Šajeva, 2014). Blau (1964) found that rewards such as money, social approval, self-esteem or respect, and compliances ensured reciprocity in the relationship. Reciprocity as well did not have any significant relation to knowledge sharing in contrast to earlier findings of Bock et al. (2005) and Wasko and Faraj (2005). Reciprocity was strongest in sharing cultures like collectivist societies.

Some researchers found that altruism was significantly related to knowledge sharing and that this relationship was not dependent on either the quality or quantum of the exchange (Jahani, Effendi & Ramayah, 2013). Interestingly, researchers like Kuvass, Buuch, Weibel, Dysvik, and Nerstad (2017) found that intrinsic motivation was positively associated with positive outcomes, while extrinsic motivation was associated with adverse consequences. However, others like Wang and Hou (2015) found that the combination of hard, soft rewards and altruistic attitude gave rise to behavior that benefits

the organization and promotes the sharing of knowledge. The disparity in the researchers results from previous findings is attributed to the sample population of a collectivist culture where group-think, high subjective norm, and the absence of a well-designed reward structure results in the ease of acceptance of possible tangible reward as a means of motivation. Also, a high level of interpersonal trust enables the acceptance of the organizational value of hard rewards (Wang & Hou, 2015). Killingsworth, Xue, and Liu (2016) in their study of 115 business students from three universities in the United States, Peru, and China found that trust, reciprocal benefits, and enjoyment created a positive attitude to knowledge sharing, while enjoyment, age, positive attitude, computer knowledge and nationality positively affected knowledge sharing behavior. The weakness identified in this study was the absence of consideration of the role of the subjective norm in predicting human behavior and the use of students in the research; both concerns of which are addressed in the present study.

Knowledge Sharing Barriers

Organizational knowledge and primarily tacit knowledge reside within individuals, unlike explicit knowledge. This characteristic of tacit knowledge is a fundamental barrier to sharing. Tacit knowledge must be willingly divulged by the possessor through encouragement or facilitation and not by coercion (Amaya, 2013). Knowledge sharing is a precondition for multi-organizational teams to be efficient and effective, but most team members are reluctant to share knowledge (Navimipour & Charband, 2016). In addition, when there are scarce opportunities to share knowledge in an organization (Cavaliere, Lombardi & Giustiniano, 2015) or there are few structures,

strategies and mechanisms in place to enable the efficient knowledge sharing governance there would be barriers to TPKS in the organization (Abbasi & Dastgeer, 2018; Huang, Chiu, & Lu, 2013). The barriers to knowledge sharing have been extensively researched in different contexts and a summary of findings is documented in table 1. A review of findings of the barriers to tacit knowledge sharing from extant literature would provide an insight into the dynamics that may occur in developing countries and aid in answering the main research question.

In other to understand the barriers that restrict the sharing of tacit knowledge on projects, the factors that enable sharing ought to be appreciated. Some studies have been done on knowledge sharing behavior in diverse contexts, designs and predictors of attitude, subjective norm, and behavioral norm, all constructs of reasoned action (Mafabi, Nasiima, Muhimbise, & Kasekende, 2017). A large quantum of knowledge sharing barriers has been identified in extant literature. Research by Riege (2005) review of management literature, identified several barriers which were structured and categorized into three broad headings of organizational, individual and technological barriers (Ali, Nor, Nor, Abdullah, & Azmi Murad, 2016). Given that this triad of barriers may not apply to all organizational contexts such as the public sector, it led to the call for a specific investigation of knowledge sharing barriers in specific organizational contexts (Bloice & Burnett, 2016).

Some barriers have been associated with the level of organizational knowledge management maturity (Oliva, 2014; Suresh & Mahesh, 2006). Todericiu and Boanta (2017) found several factors impede the sharing of knowledge in research. These include

the lack of value associated with the information possessed by the individual, lack of motivation or incentive to share the knowledge, lack of knowledge sharing structures and standardized mechanisms, poor communication skills of the sharer, inhibiting time and cost involved in the process, and the organizational culture prevalent in the group. Khoza and Pretorius (2017) found that factors such as job security, motivational factors, lack of time, psychological factors, lack of communication, resistance to change, lack of rewards, unrealistic expectations, education and lack of trust negatively influenced knowledge sharing in software development projects.

Researchers have identified both consistent and divergent factors responsible for knowledge sharing barriers associated with different societies and professions as well. Akgün, Keskin, Ayar, and Okunakol (2017) found from an exploratory multiple case study of a software team in Turkey that the reluctance to share knowledge was associated to the individual, organizational and knowledge sharing factors. This finding though not aligns with the results of Bloice and Burnet (2016) case study. Chumg, Seaton, Cooke and Ding (2016) investigated the factors that influence the knowledge sharing behavior of employees of virtual organizations and found a relationship between social capital tendency and organizational culture and knowledge sharing behavior. Akgun et al. (2017) found that the difference in purpose, values, working styles, distributional justice, gossip and hostility creates barriers to sharing knowledge among team members. Ghobadi and Mathiassen (2016) concur with this finding as they opine that the difference in perception, team diversity, capabilities, communication and organizational technology introduce barriers to knowledge sharing. Other perceived barriers identified include lack

of top management support, lack of time, job security, organizational culture and the reluctance to use technology (Ghobadi and Mathiassen, 2016).

Among civil servants, Amayah (2013) found that inhibiting factors to knowledge sharing are fear, low self-confidence, reluctance, confusion, background differences, fear of rejection leading to apprehensiveness. All these factors could create an absence of affective commitment in employees towards sharing knowledge (Henttonen, Kianto, & Ritala, 2016). The diminished social capital tendency would invariably reduce the tendency to share project knowledge. Fullwood and Rowley (2017) investigation of factors that affect knowledge sharing among academicians in the United Kingdom found that the academics beliefs played a dominant role in their knowledge-sharing attitude rather than the organizational culture. The view of an impending reward was the strongest motivator and therefore a deterrent if negative, from sharing knowledge.

Generally, knowledge sharing barriers have included fear of criticism, embarrassment, exploitation, job security, shift in power and authority (Lyra, Gomes, & Pinto, 2017; Matschke, et al., 2014), insufficient time (Razmerita, Kirchner, & Nabeth, 2014), Trust; economy based, information-based, and identification-based trust (Hau, Kim, Lee, & Kim, 2013). Karamat, Shurong, Ahmad, Waheed, and Khan (2018) investigated the barriers to knowledge sharing in the health sector in Pakistan and found four main barriers which are autonomous barriers, dependent barriers, linkage barriers and Independent barriers with the dependent factors barriers having the most reliable driving and dependence power on knowledge sharing. These drivers are employee conflict, lack of teamwork, low employee motivation and reluctance to share information.

There are several other reasons people refuse to share their knowledge, associated with trust as documented in literature (Smaliukienė, Bekešienė, Chlivickas, & Magyla, 2017). Razak et al. (2016) found that people are unwilling and resist sharing knowledge because of the lack of self-efficacy as shown in their insecurity, distrust, and lack of originality. In organizations, the lack of facilities, enabling culture and infrastructure has been shown to considerably impact the ability to share and receive knowledge (Razak et al., 2016). Amayah (2013) found that the significant barriers to knowledge sharing in public sector organizations were the degree of courage, and empathy in the climate of the organization and that the enhancers were social interactions, organizational support, and rewards. Diallo & Thuillier (2005) discusses the trust dimension as important for knowledge sharing.

Distrust as a sharing barrier is a recurring theme among researchers. Manu, Ankrah, Chinyio, and Proverbs (2015) opine that while trust gives confidence to the project team, reduce transaction costs, strengthen collaboration and cooperation among team members, reduces complexity, promotes learning which enables them to complete projects on time, the absence of trusts reduces the teams added value and competitive advantage. Zhang and Cheng (2015) found that trust was pertinent to knowledge sharing, and identified five elements of trust that affect the sharing of tacit knowledge sharing as swift trust, identification-based trust, information-based trust, lack of self-efficacy, and personal benefits.

Conflict another barrier, on the other hand is evident where there is a lack of trust and this is inevitable in a relationship where parties possess divergence in ideas, values,

targets goals and agendas (Diallo & Thuillier, 2005). Chen, Yang, & Jing, 2015; Ejohwomu, Oshodi, & Onifade, 2016a; Ejohwomu, Oshodi, & Onifade, 2016b). Conflict in multi-organizational project teams can arise due to limited resources, ambiguous or unclear project expectations and terms of reference, different project needs and concerns, and priorities (Wei, Liu, Skibniewski, & Balali, 2016; Ejohwomu, Oshodi, & Onifade, 2016a). Ejohwomu, Oshodi, and Onifade (2016a) identified from qualitative research of 69 participants seven identified causes of conflict, which are poor financial projections, scope creep, design issues, relationship, communication, finance, and contractual matters. Other reasons cited are the unfair behavior of project participants and psychological defense mechanism such as denial of facts for self-preservation and to protect self-esteem (Mitkus & Mitkus, 2014). In a study investigating the effects of trust-conflict interactions among project team members in China; Wu, Zhao, and Zuo (2017a) found that trust was positively correlated to the project teams' value and it also takes advantage of task conflict which is necessary to stabilize and add benefits to the project team while improving their communication; all essential for project sharing.

Martínez (2016) distinguishes between barriers external to the project (inter-project level) and those internal to the project (intra- project level). Martinez asserts that the structure, culture, and style existing within an organization influences project performance, and knowledge sharing and creation. The author differentiates between how knowledge is shared in the classic functional organization where specialists in a specific field are in siloes and the projectized organization where separate project teams comprising specialists from different fields work together. Martinez opines that

knowledge sharing on these project teams is difficult because members do not see the benefit in doing so, do not possess the knowhow and who should do so and lessons learned from previous projects are not strategically documented. Project members are released early from their projects, which also prevent the collection of best practices and other salient information (Martínez, 2016).

Poor leadership that fails to create an organizational climate that promotes knowledge, the level of organizational commitment, capabilities and technological compatibility; personnel skill gap, lack of sharing facilitates are some of the general inter-level factors proffered (Martínez, 2016). About personal barriers, the researchers suggest that constraints on time, the absence of rewards or incentives, job security, trust issues, insecurity in disclosing failure, low awareness, poor interaction between recipient and giver, knowledge source reliability, language, cultural differences, communication issues, inexperience, and personal issues like age, gender or differences in educational qualifications, all contribute to barriers to knowledge sharing (Martínez, 2016).

Specifically, the barriers to tacit knowledge sharing on teams are context dependent. Olaniran (2017), using a Delphi study to investigate the alleged obstacles to tacit knowledge sharing in geographically distributed project groups on oil and gas projects (GDPTs), found that the obstacles could be categorized into organizational, team, personal and external factors. The common thread with these factors is associated with the uniqueness of the GDPTs environment. GDPTs exist in different countries and continents with diverse national cultures that introduce cultural differences, economic factors, political, social, technological, environmental, and legal as well as different

organizational capabilities and competencies. This last point is particularly important as the individuals that make up each GDPT, represent a company with distinct values, and objectives (Olaniran, 2017). However, the researchers uncover certain salient points about tacit knowledge transfer in team settings.

First, team members need to be willing and able to share knowledge, but if the team culture is averse to this gesture, then members would be reluctant to participate (Olaniran, 2017). On organizational setting and culture, the researchers found that the inflow of diverse values and organizational cultures into the team could be counterproductive to tacit knowledge sharing (Olaniran, 2017). Organizational codes of secrecy, bureaucracy, and hierarchical constraint may constrain team members from sharing. Language barriers, competition because of social and economic outlooks in some countries are some external factors found through the research that affect tact knowledge sharing in GDPTs. While a significant limitation of this research that prevents generalization is its sole focus on the oil and gas industry, it still provides cogent findings that can be further investigated in other contexts.

In public organizations, Seba, Rowley, and Delbridge (2012) found that the organizational structure, leadership, trust and distribution of time could be significant barriers to knowledge sharing in the Dubai police force. Again, Gider, Ocak, and Top, (2015) study on the barriers to knowledge sharing by health workers in Turkey showed several similarities with the result of extant research and some dissimilarity. Some similarities were the lack of interaction between recipient and provider, poor communication skills, and interpersonal skills on public sector projects. Others were the

lack of time, unaligned organizational culture, and climate. A major additional find of this research is that knowledge sharing barriers differed according to gender, position, and specialty in the medical profession (Gider, Ocak, & Top, 2015).

Santos, Sares, and Carvalho (2012) research focused on identification of barriers in complex research and development projects, undertaken by multi-organizational project teams. The researchers found that inadequate information technology, no initiative, strategy, lack of time, communication, different technical terminologies, and the relationship between knowledge and skills constituted barriers. The researchers also found that interaction between employees from various organizations, lack of trust, knowledge considered as an asset rather than as security or competitive advantage, leverage, competitive environment, lack of initiative, lack of awareness of benefits, lack of time and resources, and skill gap in utilizing technology constituted barriers to knowledge sharing in multi-organizational teams (Santos et al., 2012; Nooshinfard & Nemati-Anaraki, 2014).

Table 1

Barriers to Knowledge Sharing in Various Contexts

Reference	Industry	Knowledge type	Barriers
Akgün, Keskin, Ayar, and Okunakol (2017)	Software team in Turkey	Tacit Knowledge	Difference in purpose, Values, Working styles, Distributional justice, Gossip and Hostility
Amayah (2013)	Civil service employees in United States	Tacit/ Explicit Knowledge	Degree of courage and Degree of Empathy
Fullwood and Rowley (2017)	Academics in the United Kingdom	Tacit/ Explicit Knowledge	Leadership, IT systems, Reward system, Availability of time to interact and share, Organizational structure values, Extrinsic rewards.
Ghobadi and Mathiassen (2016)	Project Managers, developers, testers and user representative from Australian software development companies	Tacit Knowledge	Team diversity, Perception, capabilities, Project communication and Organizational technology, Project setting, and Technology
Gider, Ocak, and Top, (2015)	Health workers in Turkey	Tacit/ Explicit Knowledge	Lack of interaction between recipient and provider, Poor communication skills, Interpersonal skills, Lack of time, Unaligned organizational culture and Climate.
Hau, Kim, Lee, and Kim (2013)	Employees from multiple industries in Korea	Tacit/ Explicit Knowledge	Reciprocity, Enjoyment, and Social capital (tie, trust and goals)
Karamat, Shurong, Ahmad, Waheed, and Khan (2018)	Health sector in Pakistan	Tacit/ Explicit Knowledge	Employee conflict, Lack of teamwork, Low employee motivation, and Reluctance to share information
Leonardi (2017)	Employees from Financial services Firm in Midwestern United States	Tacit/ Explicit Knowledge	Lack of incentive, Ease of free riding, Belief in the non- usefulness of one's knowledge
Ma, Huang, Wu, Dong, and Qi (2014)	Project teams in China	Tacit Knowledge	Lack of intrinsic and extrinsic motivation and trust. Lack of good interpersonal relationships, Lack of incentives and the pursuit of personal benefits with knowledge monopoly. Lack of Job security
Majid and Panchapakesan (2015)	Higher Secondary School students in India	Tacit/ Explicit Knowledge	Lack of time, Lack of sharing culture, Lack of depth in relationships
Maitlo, Ameen, Peikari, and Shah (2019)	Online retail organizations in the United Kingdom	Tacit and Explicit knowledge	Lack of leadership support, Unwillingness of employees to share knowledge, Lack of awareness of knowledge sharing, Inadequate opportunities to learn, Weak knowledge sharing culture, No job rotation, Lack of information sourcing opportunities and Poor technology infrastructure
Olaniran (2017)	Geographically dispersed project teams in Oil and Gas projects (GDPTs)	Tacit knowledge sharing	Inflow of diverse values and organizational cultures into the team
Razak, Pangil, Zin, Yunus, and Asnawi, (2016)	Articles	Tacit/ Explicit Knowledge	Unwillingness, Business citizenship behavior, Lack of commitment, Poor attitude, Subjective norms, perceived behavioral control, Exchange of benefits

(table continues)

Reference	Industry	Knowledge type	Barriers
Razmerita, Kirchner, and Nabeth (2014)	Telecommunications, media and marketing, banking, shipping, logistics, financial services companies in Denmark	Tacit Knowledge	Insufficient time, Lack of trust in colleagues, Fear knowledge will be misused, Knowledge hoarding
Santos, Sares, and Carvalho (2012)	Project Managers from diverse industries on Research and Development in Portugal, Germany, Spain, UK, Finland and France	Tacit/ Explicit Knowledge	Inadequate information technology, no initiative, and strategy, Lack of time, communication, Different technical terminologies and the Relationship between knowledge and skills.
Solli-Saether, Karlsen, and Oorschot (2015)	Ship owner Industry in China and Norway	Tacit Knowledge	Difference in organizational culture (not national culture), Strategic- misalignment, and Patency and secrecy around knowledge
Trusson, Hislop, and Doherty (2017).	IT Service Practitioners	Tacit/ Explicit Knowledge	Concept of KM is not well understood, Lack of integration of KM strategy, Lack of infrastructure supporting KS, Lack of transparent rewards, Lack of organizational culture, Emphasis on individuals rather than teams, Lack of knowledge retention, Staff defection and retirement, Lack of documentation, Lack of social network, Insufficient analysis of past mistakes, Lack of time to share knowledge, Fear of job security, Lack of trust, Age differences, Gender differences, Differences in national culture, Lack of training, Unrealistic expectations of employees, Reluctance to use IT system, and Lack of integration of IT system.
Todericiu and Boanta (2017)	Small and Medium Enterprises	Tacit/ Explicit Knowledge	Knowledge transmitter has no recognition for value of possessed knowledge, the information possessed by the individual, Lack of motivation or incentive to share the knowledge, Lack of knowledge sharing structures and standardized mechanisms, Poor communication skills of the sharer, inhibiting time and cost involved in the process, Organizational culture
Veer Ramjeawon, and Rowley (2017).	Senior staff in public and private Higher education facilities in Mauritius	Tacit/ Explicit Knowledge	Lack of policy and reward mechanism, Lack of resources and funding for research, Lack of IT infrastructure, and Technical support for academics and students. Lack of knowledge sharing culture. The frequent changes in leadership No promotion of teamwork and collaboration. \Individualistic and competitive behavior mistrust and fear. No incentives or encouragements for collaboration and sharing:
Seba, Rowley, and Delbridge (2012)	Dubai police force	Tacit/ Explicit Knowledge	Organizational structure, leadership, Trust and allocation of time
Yesil and Hirlak (2013)	Academic staff in Turkey	Tacit/ Explicit Knowledge	Organization and individual barriers, such as Lack of leadership, Strategy and vision, and Environment.
Zhou and Nunes (2016)	Health Care professionals in China	Tacit/ Explicit Knowledge	Interpersonal trust, Communication, management and leadership, Inter-institutional barriers

Recommended Interventions to Knowledge Sharing Barriers

The barriers to knowledge sharing in organizations in developed societies have been well researched and documented. In consonance, recommendations have been made as well. Akgün, et al. (2017) found that knowledge-sharing barriers could be remedied through the establishment of project leadership within a knowledge sharing culture and with a strong emphasis on monitoring the emotion of team members. Given that organizational and national culture drives the behavior of individuals (Cristino, 2016; De Angelis, 2016), project managers are encouraged to create an environment of trust for people to share information without feeling threatened.

Reward and recognition systems peculiar to the context and environment should be designed to motivate sharing behavior (Akgün, et al., 2017). Selamat, Saad, Murat, and Soon (2017) study of 130 civil servants in Malaysia to investigate the factors that influenced their affective commitment towards knowledge sharing, discovered that belief and sincerity positively and significantly stimulated affective commitment to share knowledge while emotional trust, trusting belief, and trusting intentions did not. The researchers, therefore, recommend that faith and sincerity be given considerable attention by public organizations. Ergün and Avcı (2018) survey of 284 undergraduate students from two public universities at Ankara and Karabuk in Turkey to determine to the degree that self -efficacy, motivation, and sense of community practice influence their knowledge behavior, found that reputation and possibility of enhanced status are factors that promote knowledge sharing. Therefore, it was recommended that managers design

appropriate interventions that will prevent conflict (Osei-Kyei, Chan, Yao, & Mazher, 2019) and improve employee's reputation and desire to ensure knowledge sharing.

For project knowledge sharing to occur, Gasik (2011) opines that a positive relationship among team members is necessary to reduce conflict and ensure trust. The positive interpersonal relationship among team members is built through team-building exercises and group integration. Llopis and Foss (2016) found that a cooperative climate motivates employees that are less inclined to share knowledge to do so, and that managers can design jobs to enable a cooperative climate geared towards knowledge sharing in the organization.

Socialization, which enables the free exchange of tacit knowledge is also pertinent and can be achieved through the creation of communities of practice (Aljuwaiber, 2016; Farnsworth, Kleanthous, & Wenger-Trayner, 2016), which is a social network of project managers (Veena, Jigeesh, & Bhat, 2019; Verma, & Sinha, 2016; Solli-Sæther, Karlsen & van Oorschot, 2015). Communities of practice are groups of professionals that provide an informal source of knowledge based on their work practices (Mueller, 2012). Specific to public sector organizations, Amaya (2013) advocates the formation of communities of practice to encourage and facilitate knowledge sharing and create enabling conditions. Other ways of socializing are through the creation of arenas for knowledge exchange such as knowledge chat groups, discussion forums, and cafés (Coradi, Heinzen, & Boutellier, 2015; Manaf, Armstrong, Lawton, & Harvey, 2018; Mueller, 2012; Wang & Chang, 2015) and symposiums, seminars or workshops (Chang & Lin, 2015; Nesheim & Hunskaar, 2015; Sergeeva & Roehrich, 2018; Zahedi, Shahin, & Babar, 2016).

The importance of motivation of the team to share knowledge has also been thoroughly researched. Cerasoli, Nicklin, and Ford (2014) found that when employees are intrinsically motivated, they actively seek to and expend effort in sharing knowledge due to personal enjoyment rather than based on the anticipation of a tangible reward. However, Pee and Lee (2015) argue that rather than leave intrinsic motivation to chance, managers need to actively design jobs through the increase of job autonomy in workgroups, giving of constructive feedback, increasing task significance, access to direct beneficiaries of their work, and presenting opportunities for skill variety to be improved.

Finally, Selamat, Saad, Murat, and Soon (2017) found that only sincerity had a positive significance to civil servants' affective commitment to knowledge sharing unlike trusting belief, trusting intention, and emotional trust that had no positive significance. Razak et al. (2016) argued that as the individual is unwilling to share their knowledge due to insecurities and mistrust, employers must instill trust and ensure collaboration among employees to ensure knowledge sharing. In the final analysis, these research findings are limited as they are not specific to tacit knowledge, and the West African society.

Summary and Conclusions

The review of the literature on project knowledge sharing and the barriers to sharing tacit knowledge on multi-organizational project teams indicates that several factors could present challenges. The concepts introduced by the TRA and TPB, which are attitude, intent, subjective norm, and perceived behavior enabled an integrated examination of the effect of these constructs on knowledge sharing behavior. From the

examined literature, it was quickly established that the factors that constitute barriers are contextual as there are disparities observed in research findings based on the environment, structure, and general context. Mainly, the literature only addresses this research subject in developed societies, where knowledge management and knowledge sharing are mature and the benefits readily apparent. The interventions proffered in these studies are thus specific to those societies. In developing societies where public projects are the bedrock for economic growth, and sustenance, an understanding of the barriers to TPKS, which impede progress, is also essential. This understanding is vital given that TPKS has been directly associated with creativity, innovation, and ultimately, success. Chapter 3 is a detailed description of the methodology undertaken to enable this understanding, as it details the structure and conduct of the research.

Chapter 3: Research Method

Introduction

Chapter 2 was a comprehensive literature review on project knowledge sharing on public sector projects in West Africa. The narrative in the chapter exposed the gaps in TPKS and the need for future in-depth research to gain more understanding of this phenomenon. Chapter 3 expands the narrative by outlining the research methodology used to examine the phenomena and presents a comprehensive review of the qualitative research design adopted for this study.

Therefore, the purpose of this research is to gain an understanding of the barriers to TPKS experienced by multi-organizational project team members in Anglophone West Africa and how these factors inform their project knowledge sharing behavior. A primary benefit of this study is the findings being used in future research to identify appropriate interventions that will ensure social change for the successful completion of developmental projects, reduce the spate of building collapse, and ultimately prevent waste of resources. This chapter begins with a discussion on the research design and rationale of the study. It contains the role of the researcher in the study as necessary for qualitative research, the process of selecting the study participants, the research design and method. Discussion on the study population and sample, sampling protocol for data collection, data organization technique and data analysis are also contained therein. Further, I will describe the strategies used to ensure the validity of the study such as the discussion on ethical research, transferability, dependability, rigor, and credibility.

Research Design and Rationale

There is a plethora of research on knowledge sharing and the challenges associated with its performance in the scholarly community but there also remains the gap of viewing these phenomena from the lived experience of project team members in emerging countries in Africa (Prinslow et al., 2017). Gaining an understanding of the team members' experience of the challenges they encounter in sharing their knowledge can only be obtained from the narrative of their experience. Because my research adopts a qualitative design approach, neither a formal hypothesis nor preconceived variables from previous research or theory was appropriate for this study (Creswell, 2013; Welch, Plakoyiannaki, Piekkari, & Paavilainen-Mäntymäki, 2013). This study rather is an inductive one, which adopts a transcendental phenomenological qualitative design inquiry into the lived experience of tacit knowledge sharing on public projects in developing countries, which had hitherto remained unexplored. The transcendental phenomenological state requires the bracketing of the researcher's views and perceptions to enable explanation of the phenomena in the "raw" state within the prevailing context and time (Groenewald, 2004; Willig, 2017).

The central research question is; what are the barriers to tacit knowledge sharing experienced by members of multi-organizational public-sector project teams in West Africa? The research sets out to understand the challenges project team members experience in sharing tacit project knowledge. Tacit knowledge sharing, the primary construct is defined as the distribution of intangible information obtained from individual experience, intuition, job skills and other undocumented information (Polanyi, 1966), all

of which are critical and beneficial to an organization's innovation and productivity (Saini, Arif, & Kulonda, 2018). An investigation into the barriers experienced in TPKS on multi-organizational projects is the focus of this study. The central concept of the study is challenges in tacit knowledge sharing, defined as the forces that negatively influence the intent, attitude, and actual behavior of sharing tacit information between parties. The research tradition adopted to understand this phenomenon is qualitative.

Qualitative research, unlike quantitative, enables interaction with the project team members in a natural setting and acquisition of detailed information on their lived experience of challenges encountered in tacit knowledge sharing in a multi-organizational environment (Creswell, 2009; Hatch, 2002; Leedy & Ormond, 2005; Miles, Huberman, & Saldaña, 2014). Merriam (1998) supported this assertion by positing that the world is subjective and that the human interpretation is in their perception and intentionality. Intentionality is important as it enables participants to make sense of their experiences through their values, environment, location, perception, context, worldview, and desires (Willig, 2013), and ensures the participants explain the phenomena through their own lens thereby giving a richness and variety to the study.

Unlike quantitative research design, which relies on variables and statistics to test hypotheses to validate and ensure reliability of a study (Singh, Gupta, & Sahu, 2014), qualitative research design is used to explore and understand meaning through unstructured insights given by the subjective interpretations of respondents (Bailey, 2014). Qualitative research design, therefore, ensures comprehension and understanding through methods such as in-depth interviews that provide an uncritical way of obtaining

in-depth views through dialogue and observations (Kvale & Brinkmann, 2015; Ritchie, Lewis, Nicholls, & Ormston, 2013). The qualitative research design also enables a revelation of the depth of the issues from the perspective of respondents, unlike the quantitative research paradigm.

The qualitative research design chosen for this study is phenomenological because this design is philosophically and methodologically congruent with understanding the challenges associated with tacit knowledge sharing (Caelli, Ray, & Mill, 2003; Marshall & Rossman, 2011, Ravitch & Carl, 2016). Based on early 20th-century philosophy, phenomenology facilitates the use of descriptive interviews and experience to appreciate the creation of meaning through individual perception (Crawford & Lynn, 2016; Cho & Lee, 2014; Finlay, 2012). This research design aids the exploration of specific human experience and allows insight into a respondent's interpretations, beliefs, and perceptions of the phenomena (Singleton & Straits, 2005; Willig, 2013). It is also the most appropriate method for collecting research data through interviews (Marshall & Rossman, 2011; Ravitch & Carl, 2016). However, a drawback with this method is the misconception that the subjective nature of individual perceptions introduced in narratives is common knowledge and unscientific (Cho & Lee, 2014; Finlay, 2012). This view is ill informed as the opinion of respondents is based on their lived experience, and only commonalities between expressed themes are analyzed. Therefore, I adopted an iterative stance in the study to reduce subjectivity and bias through the study. Given this, the study will be progressively elaborated with eyes on "the whole" (Ravitch & Carl, 2016).

Personal relations constitute the phenomenological context in which an individual's co-construct meanings in relationships (Wilson, 2012); this design is also considered appropriate for studying human relationships. With phenomenology, the focus is on relating a phenomenon such as tacit knowledge sharing to several individuals, where each respondent experience is portrayed as collective but also described generally (Yin, 2014). This phenomenological study will be an interpretive approach drawn from hermeneutic philosophers Heidegger and Ricoeur (Finlay, 2012). This approach has been used to gain an understanding of the social world of individuals using the "whole" to understand the "part" as recommended by Heidegger's "hermeneutic circle" (Clayton, 2016). A few studies have adopted this approach to understand the phenomena of knowledge sharing. Mtshelwane, Nel, and Brink (2016) used a social constructivist phenomenological approach to identify the impression management tactics embraced by the Zulus' of South Africa descent to impress employers, whereas Clayton (2016) used hermeneutic phenomenological methods to understand how and why volunteers at a UK music festival share knowledge.

Several other qualitative research designs, which were considered but discarded due to their insufficiency to meet the research objective adequately, include ethnography, which studies specific cultural group over a period (Creswell, 2013), typically done in the field using participant observation (Schwandt, 2001). This design would have been ineffective for this research as the multi-organizational team members being investigated bring diverse cultures from their nationality and parent organization into the project organization, as several such cultures would need to be discussed. Although the narrative

design could have been considered appropriate, as it dwells on a story like delivery of individual life experiences (Creswell, 2013), the narrative would only be centered on the individual's views and fail to appreciate other strategic issues that may be obtained from other sources. Case studies provide a single historical situation and are ideal for extreme cases, which could also be unusual (Yin, 2014). However, this research involved the phenomenon of knowledge sharing, which is neither peculiar nor unique, and adoption of the case study approach would have limited the examination to one African culture to the detriment of comparison with other African countries.

Finally, the grounded theory, which is most appropriate for studies with the scant theoretical foundation as the theory is formulated from data (Ravitch & Carl, 2016) would also have been a good fit for the study, given limited information on the West African context. However, despite the dearth of direct research material peculiar to the context of knowledge management in Africa, similar research has been conducted in a different setting other than that of public projects in developing countries and more developed societies. The data collected were discussed through the lens of conceptual framework built on the TRA and the TPB, adopted for this study.

Role of the Researcher

In interpretative phenomenology, the researcher adopts an active role as an observer-participant in understanding the respondent's perspective and interpreting the results to uncover hidden meaning (Finlay, 2012; Hycner, 1985; Xu & Storr, 2012). This approach aligns with the phenomenological ontological view of appreciating participant's realities within the context of multiple realities (Moustakas, 1994). Several

phenomenological approaches exist, such as descriptive, interpretative, life world and existential. Although descriptive phenomenology, a product of Husserl, focuses on the description of the experience of the phenomena in itself and reduced to the point where only essential meanings are obtained (Broome, 2011; Matua & Van Der Wal, 2015); Giorgi (2009) maintained that the participants voice is maintained and not polluted in analysis. Existential phenomenology, based on the work of Giorgi, seeks to understand in whole and not in part, the lived experience of the "co-researcher," also known as the respondent, in their natural and not artificial settings (De Castro, 2003). Interpretative phenomenology (Heideggar, 2005), adopted for this research, takes the experience and the meanings participants attribute to them and situate it within context during analysis.

Therefore, the observer-participant role of the researcher in this interpretative phenomenological study is to interview, discern, make sense, contextualize, and develop themes on the barriers to tacit knowledge sharing as experienced by multi-organizational project team members. A deep engagement was necessary to enable insight and the extraction of meaning from the research (Creswell, 2012; Moustakas, 1994). I engaged with participants by facilitating and guiding the interviews using an interview protocol (Smith, 2015) while making observations of verbal and nonverbal cues and remaining sensitive.

Other specific roles that I played included participant identification, data collection, transcribing, data organization/categorization, analysis, and reporting. Care was taken from research conception to ensure that there was no personal or professional relationship with the participants recruited for the study, to mitigate the risk of researcher

bias and power imposition. However, given that I belong to the community of project management practitioners and possesses certain preconceived notions about the study, there was a possibility of researcher bias being introduced to the study, so it was expedient that I bracket my assumptions to avoid tainting the research. Identification of this ethical issue is essential as the entire investigation is premised on my experience of working with diverse multi-organizational team members to deliver public projects in a developing country for over 15 years. In that course of time, I had observed the dearth of information shared both formally and informally among project team members, which has been attributed to factors bordering on personal, cultural, and organizational. This study, therefore, was to get an understanding and possible explanation of the phenomena from the perspective of a sample of this population.

Some of my opinions that could be potentially introduced into the research include that (a) each organization represented in the project team possessed different levels of knowledge management maturity that affects the quality of sharing of tacit knowledge on projects, (b) conflicting motives of team members introduce barriers to tacit knowledge sharing, (c) the temporal nature of projects and the high turnover of resources contribute to the shortage of tacit knowledge sharing on projects, and (d) the public nature of the client organization stifles innovative tacit knowledge sharing on projects. Although some of these may apply, they cannot be proven without rigorous research; as such, I managed researcher bias through identification and bracketing of these assumptions to ensure validity of the study. Next, objectivity was introduced using semistructured interview questions to elicit a depth of information, and finally, I used

member checking to validate questions and findings as well as the triangulation of the data collected (see Creswell, 2013).

Methodology

The research methodology encompassed; the logic behind the selection of participants, the procedure for their recruitment, participation, the process for data collection, and the plan for the analysis of the as elaborated on below to enable the replication of the study by other researchers in future studies.

Participant Selection Logic

The population for this study is professional project managers of diverse disciplines who have managed the delivery of public development projects in two emerging countries in Africa; Nigeria and Ghana. Although a total of 10 respondents were initially interviewed for this study, all of which have practiced in Ghana or Nigeria on a multi-organizational project team, saturation was not achieved as such an additional three participants were also included in the study bringing the total to 13. Participants were sourced from diverse industries, including but not limited to, finance, construction, and telecommunications. All participants were English speaking and resident in West Africa at the time of the study. This population was homogenous enough to provide the answers to the research question. Homogenous groups are most appropriate for Interpretative phenomenological study and homogeneity was established by (a) the reduction in interpretative concerns enabled through common language, discipline, and project management context (b) other pragmatic considerations such as ease of reaching

participants and relative commonality of the phenomena under investigation (Pietkiewicz & Smith, 2014).

Purposeful sampling method was considered an appropriate way for participant selection for qualitative studies, where the sample is selected based on the particular purpose of the study (Crawford & Lynn, 2016). It is also the preferred method for carrying out an IPA study as purposive sampling enables the identification and recruitment of individuals who have close affiliation to those the phenomena has some form of personal significance (Pietkiewicz & Smith, 2014). Purposeful sampling enables a diverse representation of the target population, as the researcher can identify participants who have abundant information on the phenomena through referrals (McMillan, 2000). The benefit of this sampling strategy includes; a reduction in bias and appropriateness for studies where the available population is greater than the resources available to carry out the research (Ravitch & Carl, 2016). The snowball sampling was considered as an alternative means of recruiting additional participants in the event saturation is not attained. In such an instance, participants were to be invited to identify and refer others who are challenging to meet with experience on the subject to the research (Onwuegbuzie & Leech, 2007), however this turned out to be unnecessary. This purposive sampling strategy is particularly desirous due to the geographical dispersion of the target population within West Africa and the associated time and cost of reaching participants within the research period.

For this research, therefore, participants were sought who met the criteria defined by Morse (1999) as (a) possessing the requisite knowledge and experience for the

research. (b) Can reflect and is articulate. (c) Is available to be interviewed and lastly. (d) Posses the willingness to participate in the study. The specific inclusion criteria were

1. Certified project manager of a specific project management association
2. Minimum of 2 years work experience on government project in Nigeria or Ghana
3. Member of a multi-organizational project team in Nigeria or Ghana
4. English speaking
5. Currently resident in West Africa

Participants were certified project managers belonging to the local chapter of a project management association in Nigeria or Ghana. This criterion ensured uniformity in language and a baseline understanding of the research subject. The respondents were either male or female with no specific age limit, as it would have no tangible bearing on their insight into the phenomena. The exclusion criteria are project team members that are not registered members of the association, are not resident in Nigeria or Ghana, do not possess a minimum of 2 years of work experience on a multi-organizational government project team, and do not speak the English language.

For this study, participants were identified and recruited only through the applicable local association chapter website. Following my submission of Form A to the Walden University Institutional Review Board (IRB) to request approval to commence data collection, I was instructed to obtain letters of corporation from the local chapters that supported my study. Thereafter, I sent out letters to the President of the project association in Ghana and Nigeria requesting permission to recruit participants for the

study. I received the signed consent letters from Ghana in November 2019 and from Nigeria in December 2019. Following the receipt of IRB approval in February 2020, I commenced purposeful sampling by sending out my advert, which contained the link to my consent form to my contact persons in both institutes for placement on their local website of the project management association for a 2-week period.

Interested individuals that fit the predetermined criteria stated on the advert were invited to click on the link on the website and where instantly navigated to the informed consent form hosted on a Google documents platform when they complied. The IRB approved informed consent form contained details of the interview process and the rights of the respondents, such as the freedom to withdraw from the study at any time. At the end of the form was an e-consent link which when clicked on signified the participants consent to the study. The consent link navigated participants to a page hosted on Google forms, where contact details, preferred mode, and time of interview where collated and sent electronically to the researcher. Upon receipt of the details, I immediately contacted the participants to appreciate them for their volunteering. I confirmed that they fitted the sample criteria, reminded them of the primary purpose of the study, implications including risks and benefits of participating, rights during the study, and finally confirming the time and venue for the interview. Before ending the call, I also enquired if they had any concerns before proceeding with the interview.

The initial plan for this study was to conduct all interviews face-to-face with all respondents. While this was possible in Nigeria the travel restrictions posed by the coronavirus pandemic from March 2020 made travel to Ghana impossible. Therefore,

following the automatic approval by the IRB in March 2020 for alternative data collection means other than face-to-face, I was able to collect data from the Ghanaian respondents through emails and phone calls. All interviews were conducted in the English language using the interview protocol (Appendix B).

There is no fixed rule on the necessary sample size for qualitative studies (Pietkiewicz & Smith, 2014; Smith & Osborne, 2015). In qualitative research, acquiring understanding from participants through the depth of the information is necessary to achieve thoroughness and balance rather than the number of participants involved in the process (Rubin & Rubin, 2012; Yin, 2014). However, the number of participants for this research was determined by the purpose of the study, the need for diversity of opinions and perspectives (Brocki &Weardon, 2014; Francis et al., 2010), and to achieve balance and thoroughness in the study (Rubin & Rubin, 2012).

Researchers have been known to differ in their position for the number of participants proposed for a study. While Sandelowski (1995) and Creswell (2012) posit that the minimum number of 10 participants is ideal for a phenomenological study, Dworkin (2012) recommends the use of one to five participants to achieve data saturation. Other researchers recommend samples sizes of six to 25 participants (Moustakas, 1994; Van Manen, 2014), for interviews and Giorgi (2009) consider three to 10 participants as ideal. Given that this research adopts the IPA approach as a methodology, the number of participants, data collection procedure and analysis are in tandem with the methodology. The idiographic method of this approach dictates that analysis is done on each individual description and the identified themes compared and

contrasted (Pietkiewicz & Smith, 2014). The IPA therefore lends itself to the adoption of small sample sizes ranging between one to thirty with a preference for lower sizes (Eatough & Smith, 2017) as large sample sizes are considered inappropriate (Pietkiewicz & Smith, 2014). Depth of information and not breadth of population is important in IPA as it enables the collection and comparison of similar and divergent views and perspectives (Brocki & Weardon, 2014). Generally, small samples that achieve the required depth in information to ensure saturation (Reid, Flowers, & Larkin, 2005) are the norm. IPA advocates small homogenous samples comprising of individuals who have in-depth insight into the research phenomena within the research context and able to give information from their lived experience (Brocki & Weardon, 2014).

At the start of this study, a total participant size of 10 was expected to generate enough data to achieve saturation. This number was expected to provide a rich narrative of their experience of the phenomena that will enable an understanding of their human experience (Polkinghorne, 2007). The adopted sample size was to ensure adequate representation of the population from both Nigeria and Ghana in other to ensure transferability of the findings, and data saturation. Data saturation can only occur through continuous data observation, participant interviews, and document observation until no further insight or idea was yielded (Marshal & Rossman, 2013; Fusch & Ness, 2015), and when the sample population provides relevant data that is repeated and collaborated by others consistently, until no new information was realized in subsequent interviews (Dworkin, 2012; Elo, Kääriäinen, Kanste, Pölkki, Utriainen, & Kyngäs, 2014). However, during the interviews it was observed that while data from the fifth respondent from

Nigeria showed that saturation had been achieved, this was not the case with the Ghanaian respondents. Given this, recruitment was extended to March 12, 2020 with two additional participants recruited and interviewed from Ghana and one from Nigeria bringing the total to 13 respondents before saturation was achieved. The additional recruit from Nigeria was to eliminate all doubt and reconfirm that saturation had indeed been achieved from Nigeria.

Instrumentation

To achieve the purpose of understanding the barriers to TPKS experienced on multi-organizational projects in developing countries in West Africa, the primary instrument used for data collection, approved for this research by the Walden University IRB board was in-depth semistructured open-ended interviews. This instrument aligns with the IPA method of real time dialogue for the collection of empirical data (Pietkiewicz & Smith, 2014). The selection of in-depth individual interview for this study was determined by the design, time constraints, and diverse locations and team dynamics (Crawford, & Lynn, 2016). Individual interviews are more suited for phenomenological studies as I seek the lived experience of the individual (Crawford, & Lynn, 2016), with me, the researcher, as the primary tool of the data collection (Moustakas, 1994).

In IPA, data interpretation is done through a dynamic process of "dual hermeneutic" or "dual interpretation" (Pietkiewicz & Smith, 2014; Smith, Flowers, & Larkin, 2009). I collected the data of the participants lived experience is through in-depth open-ended interviews and interpretation done of each participant's description (Smith & Osborn, 2018). At the start of each interview, I informed each respondent of their rights,

requested, and obtained permission to audiotape the proceedings for accuracy of the transcription. Upon receipt of their consent, I commenced the interviews, all of which lasted between 40 and 90 minutes. All interviews were conducted at the time and location identified by each respondent. For the interviews conducted through Whatsapp phone calls, where the network signal was bad or weak, the respondent rescheduled to later hours in the day when there was less interference. All interviews were captured using a digital voice recorder. I made notes in my personal research journal at each interview that captured the meeting context, impressions, non-verbal cues, and bracketed my thoughts and assumptions.

The interview protocol that I used was adopted to ensure consistency in the responses obtained from participants (Crawford, & Lynn, 2016), aided in maintaining the interview focus, and serve as a procedural guide (Jacob & Furgerson, 2012). The questions were designed as semistructured and open-ended to provide a maximum description of the participant's experience. Semi structures questions enable focus on the research questions while still allowing the probes to generate further insights from participants (Crawford, & Lynn, 2016). My interview guide was structured based on the published questions of Bloice and Burnett (2016). Bloice and Burnet conducted a case study research to confirm if the knowledge sharing barriers identified by Riege (2005) were applicable in third sector organizations. The research was conducted on 17 members of staff of the Scottish Autism, an independent charity, social enterprise, and not for profit organization (Bloice & Burnett, 2016). The research questions developed by Bloice & Burnett (2016) are applicable for the current research to understand the experienced

barriers to tacit knowledge sharing in multi-organizational project teams, as both studies are qualitative, have the same constructs and purpose. Two primary limitations of Bloice and Burnett study were the lack of generalizability of the study attributed to the case study research methodology and validity due to the sample size (Bloice & Burnett, 2016).

This study adopts a phenomenological approach, which engages a greater variety of participants across several industry and two countries to increase validity. It also adopts an interpretative phenomenological approach where insight is obtained from the participant's perspective of their lived experience enabling an adaptable and accessible approach to the phenomenon (Brocki & Wearden, 2014; Pringle, Drummond, McLafferty, & Charles, 2011). However, due to the dissimilarity of the context, especially with the finding of knowledge sharing barriers being sectorial, contextual, and organizational dependent (Bloice & Burnett, 2016), modifications were necessary to reflect the type of organization being researched. For instance, questions such as Bloice and Burnett (2016) BQ1. "When asked for your input on providing services to the individual user, which forms of knowledge do you draw upon to shape your response?" was modified to Q4: Describe the methods you use to share your personal knowledge about providing services on public projects? and BQ4. "What would you say are the barriers to sharing knowledge about providing services for individual service-users?" Modified to Q5: What would you say are the barriers to sharing knowledge about the services you provide on public sector projects? Given this content, validity was further established using subject matter experts to confirm the appropriateness of the questions and verification through a pilot study.

Pilot studies are scaled down replicas of original research used for the confirmation of the suitability of a survey, interview guide or questionnaire (Doody & Doody, 2015; Janghorban, Latifnejad, Roudsari, & Taghipour, 2014a). They aid in mitigating the risk of challenges arising in the main study (Pritchard & Whiting, 2012) and help in strengthening the proposal through the testing of the questions (Marshal & Rossman, 2011). Pilot studies also aid in revealing potential ethical issues in the research (Doody & Doody, 2015); and guide the areas of focus, and scope of the study (Denzin & Lincoln, 2013).

While the preferred form of interviews for this study is face-to-face, alternative instruments like telephone was used to navigate the geographical boundaries in the face of the Corona Virus epidemic. Although Irvine, Drew, and Sainsbury (2013) argue that a major limitation of the telephone interviews is the difficulty in establishing and building rapport, providing details and elaboration; Cachia and Millward (2011) posits that telephones are ideal for interviews with a detailed agenda and available questions. There are other advocates for the use of telephones as a means of reducing the discomfort of respondents, which might occur through face-to-face interaction (Holt, 2010) especially in the case of sensitive questions (Block & Erskine, 2012). However, given that this research interview was not expected to generate any form of discomfort besides the normal anxiety of participating in an interview, both face-to-face and telephone interviews were used. Video calls are also a great tool that can address the shortcomings of the telephone. It enables synchronized, face-to-face connection without both parties

being collocated, thereby reducing the cost of travel to conduct interviews (Janghorban, Latifnejad, Roudsari, & Taghipour, 2014b; Crawford & Lynn, 2016).

During the interviews, I remained professional, courteous, and reflexive through the study, by establishing rapport with participants, informing them of their rights while assuring them of the confidentiality of the research to put them at ease. All interviews were conducted within the agreed time of not more than 90 minutes.

Pilot Study

The primary purpose of the pilot study was to test and ensure the content validity of the modified interview protocol. Pilot studies are exploratory or preliminary studies necessary and essential in qualitative studies to verify the appropriateness of the interview protocol for the context it will be applied (Arain, Campbell, Cooper, & Lancaster, 2010; Thabane, et al., 2010). Given this, they are most appropriate for exploration in areas where insufficient research has been carried out (Pritchard & Whiting, 2012) as in the present study. In this study, given the context of Anglophone West Africa where such study had never been carried out, the pilot was necessary to test the interview protocol and confirm the adequacy for the study.

Pilot studies have been conducted on different projects and for various reasons. Burnette (2017), held a four-week pilot study using a critical incident semi-structured interview approach to explore how tacit knowledge was shared among colleagues in the library. Benoit et al. (2017) conducted a pilot to examine the impact of a learning program contributed to the empowerment and transformation of sex workers in Canada. Finally, Gray and Williams (2011) used the pilot study to determine if there was any

adverse effect on individual and organizational learning. In all despite the flexibility quantitative research offers the researcher in navigating the study, pilot studies further enrich it by enabling "reflexive mapping" of unknown terrains before venturing into them (Pritchard & Whiting, 2012) as necessary for this study.

A Walden University IRB number for the study is 02-10-20-0638161 and was granted on the February 10, 2020. The IRB approval will expire on January 9, 2021. For this study, a total of two participants were recruited as described for the main study, from the local project management association network with requests electronically sent through the message board for volunteers with experience on government projects in a developing country in West Africa to be part of a pilot study. The project management association was only engaged in the limited role of informing members about the research availability using the approved IRB materials and contact. They were not involved in the securing of participants consent or the actual data collection process.

Materials accessed by the potential respondents included the approved informed consent document containing information about the research and interview. The document contained my personal contact details, and the details of my committee chair in the event additional information or clarification on the study was desired before the session (Doody & Doody, 2015). The contact details of the Walden University IRB representative was also contained in the consent form for participants to use in the event of any ethical concerns about the study. Potential respondents were sent the interview questions (Appendix A) before the study. Participants were screened, notified of the research purpose and informed consent obtained to participate in the study. All pilot

interviews simulated the main interview and as such were conducted in an environment of the participant's choice, thereby affording privacy, comfort, and free communication.

Participants were debriefed at the end of the pilot interview with the following questions: "Were the questions clear and unambiguous, if not, which needed additional clarification?" "Which of the questions if any, did you find redundant and should be eliminated?" "Was the interview period adequate to address all the questions"? and "Are there any additional contributions or insight that you will like to include that will enrich the study?" All but one of the questions was found to be appropriate by the pilot participants. The question:

Q3: When asked for your input on providing services on public projects, which forms of knowledge do you draw upon to shape your response? was found to be redundant and subsequently dropped. However, one pilot respondent suggested an additional question of "what have you done in your own ingenious way to resolve some of these issues?" This question was solution oriented, not focused on understanding the phenomena and as such not adopted.

An audio recorder was used to capture all interviews following consent from the respondents. Subsequently all recorded messages were transcribed verbatim before analysis. Participants were requested to validate the transcription as an accurate representation of their narrative. Feedback from participants enabled the review of the final instrument to improve the quality, before the commencement of the main research.

Procedures for Recruitment, Participation, and Data Collection

In phenomenological studies, one of the recommended processes of collecting data is through in-depth interviews (Creswell, 1998; Moustakas, 1994). Interviews are based on identified questions, which provided answers to the research questions from the individual's perception and personal reflection of their experiences and critical analysis (Moustakas, 1994). Semistructured interviews are ideal for novice researchers of which, I am, as they not only ensure focus on the research question but also enable probes to obtain additional information (Crawford & Lynn, 2016). Open-ended semi-structured interview questions are typically adopted in qualitative studies to establish study boundaries to ensure a better understanding of the respondent's experience (Seidman, 2013). Semi-structured questions also serve to elicit in-depth information from the participants and prevent them from deviating from the central research question. I used semi-structured interviews to focus the discussion on the topics that address the research questions (Rubin & Rubin, 2012). The semistructured interviews were administered in a single session for an average of 60 minutes, the average duration for an IPA study (Pietkiewicz & Smith, 2014). Following the acquisition of consent from the participant, I conducted the interviews and audio recorded each one as prescribed for IPA (Smith, 2015), using a digital recorder.

The location and medium of the individual interviews was suggested by the respondent and agreed upon by both parties. Interviews were held in agreed locations where the participant's feel comfortable, at ease, minimizes distraction, and most of all, afford them privacy (Crawford, & Lynn, 2016). All data were collected between late

February 2020 and early March 2020, and the digital voice recording of all sessions was transcribed subsequently. The recordings were pass-worded to ensure security of the data and to maintain confidentiality of the participants. I listened and transcribed the audio recordings after which I reviewed and proofread the transcriptions severally to ensure accuracy and immersion in the data.

There were a total of seven interview subquestions, which stem from the two sub-research questions designed to answer the central research question. The research questions were formulated with the aid of the conceptual framework based on the TRA and TPB which attributes all human behavior to the influence of attitude, intent, subjective norm and perceived control (Fishbein & Ajzen, 1975; Glanz, Rimer & Viswanath, 2008). The interview questions, therefore, invite the respondent to share from their experience the behavior; ways and manner team members engage and collaborate on the team that negatively affect their attitude, intention, subjective norm towards TPKS The first question the interviews sought to answer was "How do multi-organizational project team members on public sector projects engage in the process of tacit knowledge sharing?" The question is broad enough for respondents to provide a rich description (Creswell, 2012) that explores their experience of the tacit knowledge sharing and give insight into what transpires on the team. It confirms the existence of this phenomenon, explores how TPKS is done on the team and identifies the attitudes and intents towards TPKS of individuals in the team. The second research question "How do project team members explain the tacit knowledge sharing gaps experienced on public sector organization projects?' sought to obtain further insight on the influence of subjective

norm, perceived control or perceived social pressure if any on tacit knowledge sharing from the experience of the individual. The questions associated with this theme probe personal experiences and invite respondents to question motives and intents about knowledge sharing.

After the interviews, the participant had periods of debriefing for reflection of the exercise. During the period of debriefing, participants were able to reflect and discovered that they possess additional insight on their experience (Munhall, 1994). Lastly, a second interview was initiated for respondents who filled out the questionnaire, were questions and further probes will be used to refine, clarify, and reveal any negative or outlier data (Creswell, 2012). At the end of the study, I sent all the participants personalized thank-you notes, as an expression of gratitude for their availability to take part in the study. The notes also reminded respondents of the transcription verification that was sent two weeks after the interview for their confirmation and validation. All respondents acknowledged receipts and offered additional assistance if required with the research.

Data Analysis Plan

The subjective attribute of qualitative research is usually evident during data interpretation, coding, and contextualizing of the data. Therefore, to mitigate the risk of personal bias tainting the data analysis process, I ensured the validity by bracketing of my assumptions during self-reflection (Starks & Trinidadad, 2007). Data analysis for this phenomenological study was based on thematic analysis, which enabled the identification of patterns observed in the respondent's narratives (Mtshelwane et al., 2016), and as such ensured "a search for all possible meaning" (Creswell, 2012, p. 52).

I followed the following steps as recommended by Smith, Jarmen and Osborne (1999) for IPA:

Step 1. I transcribed the data for each respondent, listened to the audio recording several times, to become familiar with it and enable better comprehension (Smith, 2015), and took notes of striking references. I also made notes of associations and connections through an initial coding process. I proofread my transcription severally to ensure immersion in the data. Immersive engagement of the data through multiple readings, coding, connecting information across participants, generating, and vetting themes was executed (Ravitch & Carl, 2016). I read the transcripts until understanding and familiarity with the content was achieved and emergent themes identified through the interpretative process. Using the NVIVO 12 software for Mac which I purchased online for the study, I imported all the transcribed files into the software and commenced the process of electronically coding the contents of the transcript. I grouped the codes into clusters or themes based on the response to each research question.

Step 2. I collated all emerging themes from each of the respondents and connections or associations between them to form common themes. I carried out data explication with the holistic review of transcribed data to observe and note common themes, patterns, and divergence if any. Coding was either inductive, 'emic' or 'in vivo,' as deduced from the transcribed data, and deductive, 'outsider' or 'etic' as discovered from existing literature (Ravitch & Carl, 2016). Inductive codes are used when then respondent's narrative accurately captures their expression, while deductive codes are adopted when the narrative describes findings from formal research (Creswell, 2009;

Ravitch & Carl, 2016). The common themes were grouped into shared themes and categorized.

Step 3. A table of themes was articulated that aligned with the research questions. The first analyzed transcription served as a master list for subsequent analysis. During analysis, 'outliers' were sought; these are discrepant data that do not align with or that disconfirm other findings and challenge preconceived notions (Ravitch & Carl, 2016). These and new themes were compared to the master list to identify if they substantiate or can stand alone on their own. The emerging themes from the results were used to answer the research questions.

Step 4. At the end of the interpretative process, I produced a new master list for the entire study. The themes in the master list were deductively or inductively selected based on extant literature, their prevalence in the data, richness of the description in the transcription, and the ability of the theme to support other parts of the account.

Step 5. I reported the findings using a narrative that interprets the findings, utilizing the respondent's verbatim description to support the findings. By linking the themes to existing literature, I was able to identify areas of convergence or divergence in interpreting the findings and writing out the results.

Summarily I used my experience and knowledge in the project management profession to make sense of the data and quickly identify meaning and common themes in the responses. In other to enable the emergence of central themes, coding was done using "horizontalization" where central themes, which reflect the phenomena, emerged (Creswell, 2012).

The NVivo software by QSR international is a Computer Assisted Qualitative Data Analysis Software (CAQDAS) used for the collection, documentation, and analysis of qualitative data (Saladana, 2015; Smith & Firth, 2011) was adopted for the data analysis in this study. Although I possess a good grasp of the use of this software, having taken classes and utilizing it in completing a master's degree research in 2012, I needed to take brush-up classes to update my knowledge on the use of the latest version of the software, NVivo 12. NVivo is versatile as it enables ease in data organization, manipulation, concept mapping, and representation of a visual illustration of themes and codes (Smith & Firth, 2011). The software also saves time in processing data and translating it into useful information (Hilal & Alabri, 2013). The Nvivo software also enabled efficient query, coding, interpretation, and establishes a systematic approach to customize labels (Ritchie et al., 2013). The coding of the transcribed data was based on the frequency of the word or phrases. Patterns that emerge from the coding process were presented as themes that answered each research question. This approach was adopted to ensure consistency in the arrangement and interpretation of data and enable the formulation of a justifiable conclusion (Stake, 2010). Finally, interpretation of the data results was done within the context reported by participants and as supported by the literature. However, where divergent views were expressed, I recommended further research to identify why.

Issues of Trustworthiness

Rigor in a naturalistic inquiry such as a phenomenological study is established through trustworthiness found in the truth-value of findings, transferability, and

applicability as well as neutrality and consistency (Lincoln & Guber, 1985). To this end, phenomenological studies must remain derivative rather than prescriptive to prevent the loss of meaning in the method used (Munhall, 1994). Given this, to ensure trustworthiness in this qualitative research and measure what it purported to, the verification methods, which I adopted, were as follows: triangulation, clarification of researcher bias, rich, thick description, and informant verification (Creswell, 2013). Triangulation in this research was achieved with the cross-referencing of the collected data with extant literature to have a deeper appreciation of the subject of TPKS barriers (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). Informant verification or member checking was achieved through the review of transcripts by the respondents two weeks after the interviews to enable confirmation that their thoughts were appropriately captured and further contribute to the topic if necessary (Morse, 2015).

Credibility

Credibility (internal validity) of the research was assured through the identification of researcher bias, peer review, member checking, and data triangulation (Marshall & Rossmann, 2011). Member checking and the adoption of the review of the transcribed documents by the respondents not only reduced bias in the research but also ensured that participants confirmed the completeness and accuracy of their responses in the transcribed documents (Houghton, Casey, Shaw, & Murphy, 2013). I achieved this by contacting respondents about two weeks after the interviews to validate the transcribed documents. I adopted reflexivity to uncover my presumptions by carefully identifying and bracketing my personal opinions and experiences, during the data collection and

analysis (Colaizza, 1978; Munhall, 1994), and through reflection to establish validity (Schwandt, 2001). I accomplished this by journaling my thoughts, intuitions, observations, and impressions experienced during interactions with the participants to ensure internal validity. My committee also aided in identifying bias through close scrutiny of the results.

Transferability

Transferability (external validity) was ensured by the representation of the study sample from two countries in West Africa and the provision of a rich description of the study context. Transferability of this study was guaranteed to enable future researchers to replicate or apply the results in a similar background to future studies (Houghton et al., 2013). The main strategy that I adopted for ensuring transferability was obtaining a full description from multiple sources working in diverse industries in both Ghana and Nigeria. Data saturation was another method that ensured transferability as enough data was collected until no emergent pattern that added value to the research was observed (O'Reilly & Parker, 2012). Rich description of the study population, demographics, and geographic boundaries are also necessary to demonstrate the transferability of the research findings (Thomas & Magilvy, 2011). Therefore, in the participant selection, first, I recruited only experienced professionals in the research subject area of focus, as they were vital to extracting relevant and pertinent data (Elo et al., 2014). Secondly, the selected participants were drawn from project managers that currently practice in Nigeria or Ghana. This practice ensured an accurate representation in the research and transferability of the findings within the context.

Dependability

I adopted several methods in establishing the dependability of this study, to ensure that if the same research were replicated in a different cross-section of project team members on government projects in any Anglophone West African country, the same results will be realized (Smith, 2015). These included the inclusion of a pilot study, comparison of collected data with interview notes, and journal articles for similar words and phrases (Hougton et al., 2013). Also, multiple journal articles that align with the subject were used to compare the study findings and interpretations. The reflective notes, journal entries made during the interview, and transcriptions made a good audit trail for scrutiny by my committee.

Confirmability

Confirmability occurs when collected data is from two or more participants in the research (Elo et al., 2014). In reviewing the transcribed data, data auditing is a sound approach that was adopted in confirming the accuracy in respondents account (Harper & Cole, 2012); member checking ensured accurate representation of the study group (Harper & Cole, 2012; Tracy, 2010). In summary, I ensured the authenticity and confirmability of this research through the use of research interview protocols, transcription review, and member checking (Elo et al., 2014; Houghton et al., 2013). Reflexivity was done through the journaling process after each interview.

Ethical Procedures

The research was considered to pose a negligible degree of risk to the wellbeing of the research participants, given that they all consulted for the government and as such,

required protection, such as confidentiality. For instance, participants may have signed non-disclosure agreements with the employing government agency that restricts them from discussing their projects with external parties. Following receipt of consent notification from Google forms, I arranged a preliminary meeting with the respondents to confirm they met the predefined criteria, that they were not constrained by any agreement with their employer, to check their understanding of the purpose of the research, and obtain their informed consent. I also reminded the participants that the interviews would be audio-recorded, that I would also be taking notes, and lastly, obtained their permission to do so. I repeatedly reminded the participants that their participation was voluntary, that they could withdraw at any point, and that everything said would be treated in the strictest confidence and struck out if requested. I encouraged the participants to retain a copy of the consent form for their personal records.

To ensure the confidentiality of participants, I went through the process of de-identification during the data treatment and analysis. The transcribed data and journals were stored on the hard drive of a password-protected computer and an encrypted file on an external hard drive, which served as a backup. Hard copy documents were stored in a secure personal safe, dedicated for that purpose. All electronic and hard copy documents used in the research will be destroyed after five years. I informed the respondents of the measures taken to ensure their privacy and, that in the event they remained uncomfortable; they were under no compulsion to stay on but could withdraw. No participant withdrew before or during the interviews.

The Walden University IRB guide was used to structure the research. I commenced data collection only after approval of the research plan was sought, and an approval number 02-10-20-0638161 was granted on the February 10, 2020. The IRB approval will expire on January 9, 2021. IRB approval was obtained following the submission of my CITI completion report, the form C ethics self-check form, signed letters of cooperation from my research partners in Nigeria and Ghana, the research questions, consent form and advert. Further to this, I applied the lessons from the National Institute of Health (NIH) web design training on the protection of human subjects in research to the study plan and implementation. The Participants were provided with comprehensive information on the study objectives, and they were given time to review and sign the e-consent forms before the interviews. All the respondents were willing to participate in the research, and as such, it was unnecessary to give an incentive as compensation for participation.

Summary

This chapter provides a detailed explanation of the research intent, design, sample selection, treatment, instrument, data collection procedure and analysis of data collected for the study on the barriers to TPKS as experienced by project managers on multi-organizational project teams in developing countries. A qualitative phenomenological study was identified as the best method to understand this phenomenon, and IPA was adopted as the best approach to fully comprehend the lived experience of the respondents. Data were collected from 13 participants on a multi-organizational team from the project management associations in Nigeria and Ghana, both Anglophone countries in West

Africa. The role of the researcher is paramount in ensuring the production of a quality scholarly study. In collecting the data, I took care to ensure ethical considerations such as the respect of the respondent's privacy and confidentiality. Participants were identified using the criterion based purposeful sampling and data collection stopped only after saturation was achieved. Informed consent was obtained from each respondent before the interviews. The use of telephones alongside face-to-face interviews was adopted in the wake of the travel risk associated with the Covid -19 pandemic. This method eliminated the expense and time of travel within West Africa and effectively reduced the data collection period. Interview questions were semi-structured and the recorded data was transcribed manually and analyzed using the NVIVO software. The validity of the study was ensured through the bracketing of assumptions, reflexivity, member checking, triangulation of data, and transcription review. The analysis and findings are discussed in Chapter 4.

Chapter 4: Results

The purpose of this qualitative IPA study was to understand the barriers project managers on multi-organizational project teams in emerging countries in West Africa experience when sharing tacit project knowledge. The dismal performance of public sector projects has been attributed to the failure of team members to collaboratively share knowledge (OGC, 2009). However, collaborative knowledge sharing in multi-organizational project teams is strongly influenced by both the individual behavior of team members as well as the interests of their respective parent organizations (von Danwitz, 2018). This behavior is explained by their attitude, intention, perceived behavior, and subjective norm (Fishbein & Ajzen, 1975), all of which are constructs of the TRA and the TPB. These theories are the most adopted and influential framework for the study of human intentions and actual knowledge sharing behaviors (Goswami & Agrawal, 2018; Youssef et al., 2017) in the past two decades (Ajzen, 1991; Huang & Chen, 2015), Therefore, the challenge was to identify the factors that drive this behavior within the context of Anglophone West Africa.

This research on TPKS in Anglophone West Africa is crucial because prior studies were limited to developed cultures and contexts other than the project environment. To identify the barriers that impede TPKS, I asked respondents the primary research question. What are the barriers to TPKS experienced by members of multi-organizational public-sector project teams in West Africa? The subquestions were:

RQ1: How do multi-organizational project team members on public sector projects engage in the process of tacit knowledge sharing?

RQ2: How do project team members explain the tacit knowledge sharing gaps experienced in public sector organization projects?

I interviewed a total of 13 project managers, seven (54%) from Ghana and six (46%) from Nigeria, both in Anglophone West Africa. The findings are presented in this chapter.

Pilot Study

The purpose of the pilot study, which was a simulation of the main study, was to ensure the suitability of my research questions and protocol for my context and to identify any flaws that required revision (van Teijlingen & Hundley, 2001). The explorative study also confirmed the strategy for obtaining participants' consent and aided in the review of the interview questions to ensure the dependability (Yin, 2014), to identify any trace of researcher bias in its composition and finally to test for clarity and understanding by the respondent (Block & Erskine, 2012). The Walden University IRB granted approval on February 10, 2020 for all materials used for the pilot and, by extension, the main study.

The literature is silent on the sample size for pilot studies, although going by the recommendations of 10% of the sample (Herzog, 2008), I decided to recruit two project managers using the recruitment procedure described in Chapter 3. I contacted the first two participants using their contact details submitted in response to the informed consent form. I briefed them about the purpose, procedure, risks, duration, rights, and benefits associated with the research. I also informed them that they were part of the pilot to validate the research questions. Finally, I reconfirmed the date, time, and venue for the

research and enquired about any concerns about the study, to which they responded in the negative. I sent the interview questions to both participants before the interviews to acquaint them with the questions.

On the day of the interview, I reminded them of their rights and requested consent to audiotape the discussion, which they affirmed. The interviews lasted an average of 60 minutes, during which I ensured bracketing of personal bias and maintained professionalism even though a novice interviewer. Although both pilot respondents confirmed the general face validity of the interview questions, one of the respondents suggested the inclusion of a question on innovative solutions to the tacit knowledge sharing on projects and the elimination of one subquestion. The suggested question to include did not add value to answering the overarching research question but the existing question was dropped, as it was redundant.

Research Setting

The Walden University IRB had initially approved the face-to-face mode of data collection for this interpretative phenomenological study. This method of data collection was a preferred means as it enables the appreciation of verbal and nonverbal cues and aids in building rapport between the participant and interviewer given the collocation (Irvine, Drew, & Sainsbury, 2013). The initial plan for this study was to conduct all interviews face to face with all respondents. However, although this method was possible with the Nigerian respondents, the travel restrictions imposed by the Nigerian government due to coronavirus (COVID -19) pandemic from January 2020 made travel to Ghana impossible. Since the confirmation of the outbreak of the virus in Wuhan,

China, in January 2020, the virus has been a global pandemic currently affecting over 170 countries. The Africa Centre for Disease Control (Africa CDC) website shows that by the 18th August 2020 the virus had fully infected the African continent, with a total of 1,128,245 confirmed cases and 25,884 deaths. At that time, there were 42, 653 recorded cases with 239 dead in Ghana and 49,485 recorded cases with 977 dead in Nigeria (Africa CDC, 2020), and both countries were on total lockdown with inhabitants self-isolated and observing social distancing. The spread of the virus was exacerbated by the lack of medical equipment and appropriate health care in the affected regions. It is plausible that the uncertainty of the times negatively impacted the participants. While all participants were eager to contribute, the complexity and trauma associated with the global events could likely have influenced their view of the phenomena.

I was able to engage with the Ghanaian respondents through telephone conversations and email in one instance. This was possible following the automatic approval by the IRB in March 2020 for the use of any alternative form of data collection. Interestingly all but one of the respondents from Ghana preferred the phone method. The fifth respondent, GR05, opted for an email option as his location was far removed from where he could get a telephone signal. Follow up questions and validation of the transcription could only be done through email as well.

Demographics

Participants were selected via criterion purposive random sampling, and as such, given that the population was fairly specific, the participant pool was homogenous. All participants were project managers with a minimum of 2 years post qualification

experience, practicing on a multi-organizational project team in Anglophone West Africa, specifically Nigeria or Ghana. They were English speaking and currently resident in Nigeria or Ghana. While two of the respondents had considerable work experience abroad, they were both currently working and resident in Ghana. There were seven respondents (57%) from Ghana and six (46%) from Nigeria. There were also four (30%) female and nine (70%) male respondents across both countries. All respondents (n = 13) had worked on a multi-organizational team on a public sector project. The industries in which the respondents worked was diverse, increasing the transferability of the findings and results. Table 2 contains the respondents' demography, relevant characteristics, and alphanumeric codes.

Table 2

Demographics of the Participants From Nigeria and Ghana

Code	Country	Gender	No of years of practice	Industry
NR01	Nigeria	Male	> 15 years	Banking
NR02	Nigeria	Male	> 15 years	Banking
NR03	Nigeria	Male	10 - 15 years	Finance
NR04	Nigeria	Female	10 - 15 years	Consulting
NR05	Nigeria	Male	10 - 15 years	Construction
NR06	Nigeria	Male	> 15 years	Consulting
GR01	Ghana	Male	6 - 10 years	Telecommunication
GR02	Ghana	Female	6 - 10 years	Engineering
GR03	Ghana	Female	6 - 10 years	Consulting
GR04	Ghana	Male	6 - 10 years	Telecommunication
GR05	Ghana	Male	10 - 15 years	Telecommunication
GR06	Ghana	Female	> 15 years	Consulting
GR07	Ghana	Male	6 - 10 years	Engineering

Data Collection

I collected data from a total number of 13 respondents using semistructured interviews in line with the interview protocol and questions. Face-to-face interviews were appropriate for the Nigerian respondents (n = 6); for the Ghanaian respondents (n = 7) interviews were conducted through WhatsApp phone calls (n = 6) and through email (n = 1). There were four (30%) female and nine (70%) male participants in the sample from different industries of construction, telecommunication, consulting, banking and finance. For the face-to-face interviews, the meetings were held at the preferred location of the respondents, and this was at their offices. The benefit was that this location ensured that the participant was comfortable and at ease in their environment; however, a significant drawback was the occasional interruption when the respondent had to be called upon for some information. The second challenge was the sound emanating from the surrounding open office, which sometimes crept into the audio, but this was minimal and not constant. The use of an enclosed office was able to ensure the confidentiality of the discussion, although and the subject of discussion was not of a confidential nature that could pose a risk to the respondent's job.

All interviews were semistructured with the primary purpose of facilitating and steering the discussion rather than dictating (Smith & Osborn, 2015). All of the face-to-face and phone interviews lasted 40-90 minutes without the preliminary greetings, inquiries of the respondent's well-being and a reminder of the purpose of the research. I requested and obtained consent to audiotape the conversation using a digital recorder before commencing the actual interview. During the interviews, I followed Smith and

Osborn (2015) recommendations for a semistructured interview by first establishing rapport with the respondent. I accomplished this by expressing appreciation for their time while reminding them of the benefits of participating in collecting data on an important subject not thoroughly investigated. Next, I invited the respondents to share their personal stories and experience through their lens and worldview of the phenomena, thus putting them in control. At the same time, I navigated the process using the semistructured interview questions. The interview questions aided in keeping respondents focused on the subject, especially when they started deviating and discussing other matters. However, the sequence of questions was inconsequential as I probed areas of interest arising from the respondents' narrative in line with the research questions (Smith & Osborn, 2015), leading to a wealth of information.

For the interviews conducted by telephone, the procedure was similar to that for the face-to-face interviews, the significant difference being that I was not co-located with the respondents. The respondents also had the comfort of their homes to talk from and did so. Most of the interviews took place at night or in the early hours of the day because of the network issues during the day. The time difference between Ghana (GMT) and Nigeria (GMT + 1) was inconsequential; evening calls occurred between 8:00 pm and 10:00 pm (GMT + 1), whereas the early morning calls took place between 6:00 am and 8:00 am. The benefit of adopting these times was that the respondents had no physical interruptions or distractions and no electronic interference as well. However, I conducted the first interview from Ghana GR01 during a workday at about 10:00 am (GMT +1). The respondent selected the day and time; however, he had a total of four phone

interruptions disrupting the interview. The respondent repeatedly apologizes for the constant disruptions, and I repeatedly reminded him of where we left off to enable quick recall.

Following my advice based on this experience, the other respondents from Ghana opted for early morning or late evening calls based on their availability and to minimize disruption of the calls. Unlike the face-to-face interviews where only a digital recorder was present, during the phone calls, I had both my iPhone and a digital recorder present to audiotape the calls after obtaining prior consent from the respondent. Data collection by email was necessary for one respondent, GR05, due to the poor network condition of the respondent's location. A hardcopy of the questions was sent by email to this respondent, and the response received after 3 days of consistent follow-up. After this, follow-up was done to clarify the grey areas in the responses.

I took notes at all the interviews, which served as the basis of follow-up probes. I also took notes of nonverbal cues during the face-to-face interactions. I reflected and journalized my experience questioning my bias and bracketing them. During both face-to-face and phone interviews, respondents were informed that there would be follow-up where they would be required to review their interview transcripts and they all accepted. I proceeded to transcribe the recordings verbatim and proofread the transcriptions to ensure correctness and immersion of the data through several readings. I sent the verbatim transcriptions to respondents approximately two weeks after each interview for their review and feedback. The member checking exercise aided in ensuring the validity of the process and preventing the creeping in of researcher bias into the data collection process.

In line with recommendations by (Gibson, Benson, & Brand, 2013), I used alphanumeric codes to identify respondents with *N* identifying Nigeria, *G* identifying Ghana, *R* for respondent, and the number representing the order in which the respondent was interviewed. The codes for Nigeria were NGR01-NGR06 and Ghana GR01-GR07.

Data Analysis

I adopted Moustakas (1994) recommendation for executing an IPA by first bracketing myself away from the lived experience as recounted by the research participants (Alase, 2017). I did this by journalizing my experience of the phenomena as recommended by Creswell (2013), to prevent researcher bias affecting the credibility of the study. I, therefore, achieved 'epoche' by documenting my preconceptions of the barriers I had encountered in the course of managing projects in the past 20 years and set them aside during the interviews and analysis stages. Some of my presumptions include (a) Each organization represented in the project team possess different levels of knowledge management maturity that affects the quality of sharing of tacit knowledge on projects. (b) Conflicting motives of team members introduce barriers to tacit knowledge sharing. (c) The temporal nature of projects and the high turnover of resources contribute to the shortage of tacit knowledge sharing on projects. (d) The prevailing organizational culture in the Public client organization creates a barrier to tacit knowledge sharing on the team.

Next, I transcribed each of the audiotaped interviews into typed word documents. I had initially intended to use the Temi software for this purpose but had later discovered after downloading it that it was not programmed for use in my geographical region.

Transcription was done verbatim and imported into the NVivo software, where identified codes were color-coded and categorized during analysis (Alase, 2017). During the transcription process, I was able to listen to the audio recordings repeatedly and re-read the transcripts to get familiar with the content, and a total picture of each respondents experience. I transcribed only to the semantic level, indicating false starts such as *ehm*, repetitions, laughs and pauses indicating reflection but eliminated prosody's (Smith & Osborn, 2015). Transcription of each interview took an average of three days with an average of three hours each day to complete. However, transcription of the interviews from Ghana took longer with an average of four days due to the lack of clarity in understanding certain words. Following this exercise, each transcription was emailed to the respondent for member checking to ensure accurate capture of their experience so as to ensure validity of the collected data. Respondents from Ghana who gave feedback *(n* = 2) were able to clarify the grey areas.

Next, I carried out a preliminary coding exercise of the first interviewee NR01 on an excel spreadsheet. This process enabled me to interact with the data and identify emergent themes using both the inductive and deductive coding approach. The codes I identified from the first transcription where categorized at two levels; first under each research question and secondly under pre-identified codes identified from literature. Inductive coding process is a data driven process that I found appropriate for the identification of frequent themes, which answer the research question (Thomas, 2006). However, I also adopted the deductive coding (theory driven) approach, to identify the central themes from literature review, which represented the categories. The themes were

structured along the framework of Riege (2005) and Bloice and Burnet (2016) findings of the barriers to knowledge sharing being grouped under organizational, individual, and technological barriers. The themes identified from the first transcription served as a master list for subsequent transcriptions.

Following a thorough review of the contents of the excel spreadsheet, I proceeded to import all my data to NVivo software to continue the analysis. Where new codes were discovered in subsequent transcripts outside the master list, I quickly created them as new nodes in NVivo. The method of continuation of coding using a master list is appropriate for large sample sizes, as it saves time from having to code each new transcript from scratch and later integrating (Smith & Osborn, 2015). Where new codes were identified in subsequent transcript, I iteratively reviewed previous transcriptions to see if it was inferred within. Iterative data analysis was necessary to identify omissions and ensure proper coding through several reviews of the data (Vaismoradi, Jones, Turunen, & Snelgrove, 2016). The reduction of the codes to themes was made next, and this was quite daunting. I considered certain factors when identifying the themes to focus upon, including prevalence, richness, and emphasis on the theme within the context of the passage highlighted (Smith & Osborn, 2015).

I identified a total of 49 codes in this study, 3 in response to Subquestion 1 and 48 in response to Subquestion 2. The codes were grouped based on similarity through a phenomenological reduction process into a total of 26 categories. Finally, I reduced these categories deductively into a total of 5 themes that provided a textural description of the phenomena being described and their source as drawn from the respondent's description.

Three of these themes, Organizational Barriers, Individual Barriers, and Technology Barriers, where deductively drawn from extant literature and the conceptual framework. For example, the codes under organizational barriers have some similarities to (Bloice & Burnette, 2017; Olaniran, 2019; Riege, 2005). The other two themes; TPKS Methods and Team dynamics where data-driven or Inductively emergent from the collected data. For instance, the theme Team Dynamics has the following seven categories; Absence of Motivation, Attitude of team members, Conflict among team members, Loyalty to Parent Organization, Regional differences among team members, Absence of team cohesion, and Work pressure. The 49 codes was systematically reduced to 26 categories and down to 5 themes based on similarity grouping and summarized in Table 3 and Figure 3.

Discrepant or exceptional cases in research are heuristics that enable the challenging of discoveries and questioning of findings to uncover alternative explanations for the phenomena (McPherson & Thorne, 2006). In the course of the analysis, three major discrepant cases were noted from responses to the two research questions in the interview (a) The identification of bureaucracy, (b) corruption and (c) Loyalty of parent organization, as barriers to TPKS on the project team. These discrepant cases did not have any supporting evidence from reviewed literature of barriers on tacit knowledge sharing. These discrepant or exceptional cases enable the challenging of discoveries and questioning of findings to uncover alternative explanations for the phenomena (McPherson & Thorne, 2006) will therefore be discussed using alternative explanations in Chapter 5.

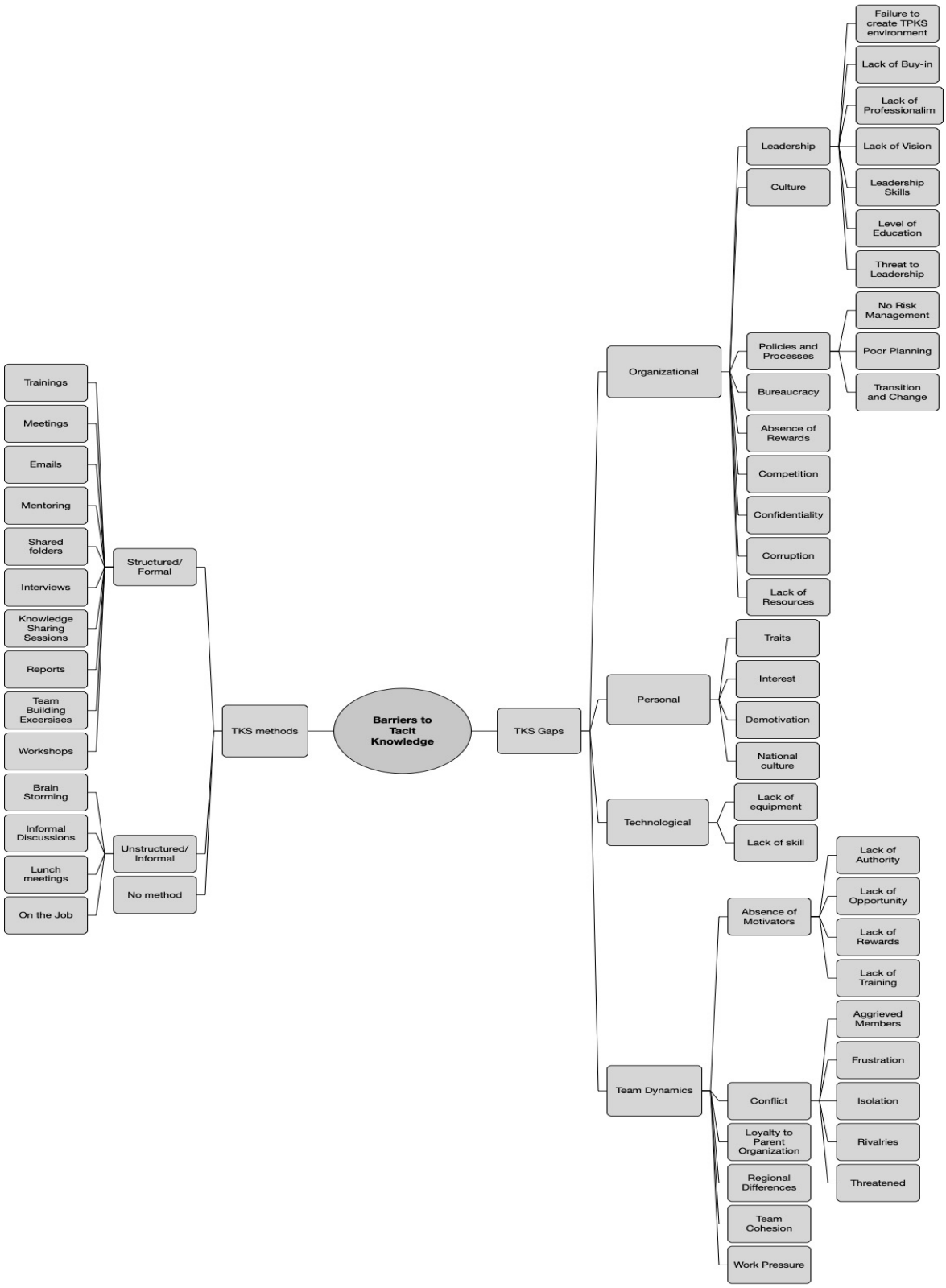

Figure 2. Codes, categories, and themes on barriers to TPKS.

Evidence of Trustworthiness

Establishing the trustworthiness of this research was expedient in ensuring accuracy of findings, validity of the result, and rigor of the process. The elements considered in establishing the trustworthiness of this research are discussed below.

Credibility

I ensured the credibility (internal validity) of this research by implementing the strategies highlighted in Chapter 3 by identifying researcher bias, member checking, and data triangulation (Marshall & Rossmann, 2011). I identified and bracketed my presuppositions, personal opinions, and experiences during the data collection and analysis in the pilot and main study using *epoche* (Scott, 2016). I adopted reflexivity to journalize my thoughts, intuitions, observations, and impressions during the interactions with the respondents in memos associated with the applicable codes in NVivo. I was also careful of the phrasing of the questions to avoid leading the respondents during the interview (Maxwell, 2013). I also sent the transcribed interviews to respondents to review and validate the accuracy and completeness of the transcription (Houghton, Casey, Shaw, & Murphy, 2013; Morse, 2015; Scott, 2016).

I received only 50% feedback from the ten respondents interviewed, which were mostly corrections of grammar and misspellings in the course of transcription. My committee also aided in identifying bias through the review of my results. To increase the credibility of the study, my bias is discussed in the final report (Janesick, 2011), which contains also contains details of the research methods, analysis and procedures, and description of the entire process for possible replication (Miles et al., 2014).

Transferability

I ensured the transferability (external validity) of this research by having representation of study samples from two Anglophone countries in West Africa provides a rich description of the study context. The strategies that I adopted for ensuring transferability include: acquiring full descriptions from multiple sources working in diverse industries in both Ghana and Nigeria. I also ensured data saturation by recruiting participants until no emergent pattern that added value to the research is observed during the interviews (O'Reilly & Parker, 2012). Although the original intent was to recruit only $n = 10$ participants, I increased the number to $n = 13$ to ensure saturation. Given that rich description of the study population, demographics, and geographic boundaries are also necessary to demonstrate the transferability of the research findings (Thomas & Magilvy, 2011), I recruited only experienced project management professionals practice within Nigeria or Ghana as they were vital to extracting relevant and pertinent data (Elo et al., 2014).

Dependability

I adopted several methods to establish the consistency of this study, to ensure that the same results would be realized if replicated on a different cross-section of project team members on government projects in any Anglophone West African country (Smith, 2015). These included the inclusion of a pilot study, comparison of collected data with interview notes, and journal articles for similar words and phrases (Hougton et al., 2013). I used the interview guide to aid in maintaining consistency in the responses. Also, I reviewed several journal articles that align with my conceptual framework to compare the

study findings and interpretations. The reflective notes, journal entries made during the interview, and transcriptions made an excellent audit trail for scrutiny by my committee.

Confirmability

I ensured confirmability of the research by first establishing an audit trail by detailing the data collection process, analysis, and data interpretation as well as documenting my thought process in arriving at my results. The second method was through reflexivity, where I adopted a reflexive journal to capture my thoughts on the respondent's account and description of how I arrived at the categories and themes arrived at in the study. I also compared the notes taken during the interviews with the findings from the transcription. I carried out data auditing of the transcribed data auditing by requesting respondents to confirm the accuracy of their transcribed accounts (Harper & Cole, 2012); and member checking to ensure an accurate representation of the study group (Harper & Cole, 2012; Tracy, 2010). In summary, I ensured the authenticity and confirmability of this research through the use of research interview protocols, transcription review, and member checking (Elo et al., 2014; Houghton et al., 2013).

Study Results

Two main research questions supported the primary research question for this study. In order to effectively answer these two research questions, eight subquestions were developed, out of which I dropped one as it was discovered during the pilot to be redundant. These subquestions were only designed as probes to elicit answers for the main research question, What are the barriers to TPKS experienced by members of multi-organizational public-sector project teams in West Africa? The subquestions were

RQ1- How do multi-organizational project team members on public sector projects engage in the process of tacit knowledge sharing?

RQ2- How do project team members explain the tacit knowledge sharing gaps experienced in public sector organization projects?

The responses to these subquestions would be discussed with the respondent's direct quotes written to validate the findings.

Research Question 1

How do multi-organizational project team members on public sector projects engage in the process of tacit knowledge sharing?

Theme 1- TPKS methods. The analysis of the transcript using the interpretative phenomenological approach gave rise to three essential subthemes of how multi-organizational team members shared on their projects, which were (a) structured/formal, (b) unstructured/informal, and (c) no form of knowledge sharing.

Subtheme 1: Formal and structured methods. Using the word frequency count, all respondents stated that they used nine structured methods for tacit knowledge sharing such as Emails, Interviews, Knowledge sharing sessions, Meetings, Mentoring, Reports, Shared folders, Team building sessions, Training, and Workshops. All respondents account that TPKS was statutory and expected on the team. However, upon further analysis of the data in the transcripts I observed that there seemed to be a blur in the distinction between tacit knowledge which is personal knowledge, based on skills, insight, and experience that is difficult to articulate and document and explicit knowledge

(technical, documented information) (Nonaka and Takeuchi, 1995). For instance, GR07 discussed the use of *emails* and *meetings* for sharing technical information on scheduling:

> this template will be shared with the internal team members, especially with the project engineers and maybe the engineering lead as the case may be so sharing it with them we send it via email, and they look into it, the by the time they see what is included in the template or the spreadsheet there will now be the need to call for a meeting. .So email, preparing templates, and handing a meeting would be able to get this done.

NR02 shares his experience with *knowledge sharing sessions*, but does not seem quite sure whether to categorize the sessions as formal or informal:

> But, we also have formal knowledge sharing sessions once in two weeks bringing everyone together and sharing topical issues on our projects and also areas of interest. Its also not informal but formal because you are doing it in a formal environment; I do not know what you will call that.

By attributing the status of the environment where sharing is done to the method, the respondent formalized a process not recognized in the organization. This account is considerably different from the account of NR05, a construction project manager who shares his experience on the use of *meetings* for TPKS:

> As the head of the team, I have a meeting with my team once a week on the project progress and difficulty and how to resolved them and encouraged everyone to share his knowledge on the problem to get more knowledge on how to resolve our problems.

Again the code of *mentoring* like knowledge sharing sessions was a bit cloudy, while mentoring is an excellent means of transferring TPKS from mentors to protégées, GR01 accounts show that in a structured way, it is more about transferring explicit documented knowledge to un-board new members to the team:

> Ok, so in my team, I have these stakeholders who join as assistants whom you have to train, so that is where the mentoring comes in, so you have to mentor the person to understand the drawings to understand how to solve issues arising and to use the project management software, so you have to mentor the person coach the person on how to use the software's.

The other methods adopted by respondents to formally share their knowledge on the team include reports, shared folders, team building sessions, training, and workshops all excellent ways of sharing project knowledge however to be able to use reports and shared folders to share TPKS adequately, it has to be made explicit through the codified process which will be discussed in Chapter 5. The factors, which might moderate this process, are identified in response to the next subquestion, RQ2.

Subtheme 2: Informal and unstructured methods: Eleven respondents cited this theme as prevalent on their project teams. The four methods described were, brainstorming, discussions, lunch meetings, on the Job. *Brainstorming* is a process where team members collectively share ideas on project issues and is a fertile ground for the exchange of tacit knowledge. However, the account of NR01 made pertinent observations on the effectiveness of this method as he observed on the proper use and incorporation in the team

> Ok from my experience as a project manager I found that using a tool called brainstorming, for instance, if it is properly used and incorporated into the project team it could be used to actually solicit a lot of information from especially if project managers are coming from varied different background you know a lot of lessons learned.

Discussions and *Lunch meetings* were both new and refreshing insights gotten from this research it was obvious lunch meetings was a favourite for getting information as shared by GR01:

> I gather a lot of knowledge from my colleagues at work lunch meetings. We have random lunch meetings oh let's eat over here, and this crew would be talking about the work, and you know sharing knowledge that hasn't been shared before. You get me?

On- the job training was not a surprising theme as this is one of the easiest ways of transferring experiences to protégées. However, GR05 noted that "experience sharing is usually done by actually doing the work for team members to observe, explaining using charts, diagrams, and sketches." This connotes that this form of sharing is used for the transfer of both tacit (observe) and explicit (charts, diagrams, and sketches) knowledge sharing. Also, it shows deliberate intention and attitude towards sharing to achieve this method.

Subtheme 3: No form of tacit knowledge sharing. Of the 13 respondents, only one GR06 made this startling revelation that "knowledge sharing in the public sector is non- existence." Upon scrutiny of the transcript and the context in which this statement

was made, I observed that first; the respondent was referring to the public sector as an organization and not to the project team working on public projects. This was a useful distinction to make as while the public sector is a part of the multi-organizational project team, they do not constitute the whole. Secondly GR06, a project management professional who trained and worked in America for over 10 years, shared her frustrating experience in attempting to share knowledge with the project team in Ghana:

> I was brought in to start up a PMO and so trying to help them, and you see a lot of brick walls, so you get so frustrated you are like I don't need this frustration I am out of here.

It is instructive to note that although these different methods have been established as existing on public projects, they have implementation challenges that render them ineffective, as noted in the narrative of GR06. These barriers, which inadvertently influence the attitude, intention, subjective norm, and PBC of the team members and are identified by the next research question RQ2.

Research Question 2

> How do project team members explain the tacit knowledge sharing gaps experienced on public sector organization projects?

In response to Subquestion 2, four major themes were obtained through the analysis. Three themes where drawn inductively from the literature review, the conceptual framework, and deductively from the codes identified from the transcripts, which were individual, organizational, and technology. The fourth major theme of team dynamics was deductively drawn from the codes in the transcripts. The themes, sub-

themes, categories, and concepts are contained in Table 4 and figure 3 below.

Theme 2 - Individual barriers. The theme of individual (Bloice & Bennett, 2015) or personal (Olaniran, 2019) comprises sub-themes of barriers that influence the attitude, intent, subjective norm and PBC of individual project team members. The following sub-themes were identified in the analysis.

Subtheme 1: Personal attitude. This sub-theme had the highest frequency in the set as it captured four codes echoed by respondents account, which was; lack of commitment, lack of confidence, no appreciation of TPKS, and no buy-in of the team member. It is apparent how these attitude could influence the intention of members as the prioritizing and nonalignment of personal goals over the team goals, would result in *Lack of commitment* of the team member as recounted by NR01 "because the personal goal probably doesn't align with the project goals, then they would not be committed towards that project in its whole". The respondent NR01 goes further to expand on how this challenge can be addressed and, expands on why this barrier could occur when their welfare is not cared for and as such failing to "motivate them to commit to the project goals' and ultimately giving an excellent performance.

The *Lack of appreciation of TPKS* is also closely associated with *No buy-in* of the team members and somewhat to *Lack of commitment*. The disparity, however, lies in the application. First, where there is appreciation, there is a tendency for buy-in into the TPKS, whether a structured process of exchange exists or not. However, commitment refers to the existence of a standard process, which may or may not be complied with,

introducing the element of choice. Here NR06 draws attention to compliance to TPKS based on the appreciation of the value of the practice:

> So, one main thing for me is if the people within the team would understand the value and importance it is. If you understand that something is valuable, then, you'd be willing to comply with to share.

Two respondents from Nigeria and one from Ghana discussed this sub-theme as a significant barrier with codes like; “know it all attitude of members” (GR07), “optimistic attitude” (NR06) and “hoarding attitude” (GR06). This barrier translates to the second subtheme of behaviour also deduced from the transcripts.

Subtheme 2: Individual Behavior*: This second subtheme is driven by the personal attitude.* Four codes associated with this sub-theme are Fear, Indifference, Interest, and Relevance. Four respondents from Ghana and Nigeria (n = 4) expressed fear of losing their *Relevance* on the team being responsible for not sharing their tacit knowledge. This admission is very informative as respondents realize the power of possessing tacit knowledge. Tacit knowledge is personal, and divulging is considered a loss of an advantage as recounted by GR01:

> So I'd like, have to stay relevant, you know, you look for me so that I will be part of the drawing of the budget because there are certain details I know I can work on the budget that nobody can do.

NR03 agrees by stating that “the second issue is to become relevant”, again indicative of the need for recognition for the value they bring to the team.

The code on *Interest* was the highest reported by eight respondents (n = 8) from both Nigeria and Ghana. Respondents stated that "underlying personal interest" prevents TPKS on the team The Interest where diverse such as, "wanting to be considered experts and fear of losing continuous patronage" (NR04) and "job security" (GR06). Lastly, GR06 discusses indifference of team members who don't want to be bothered to share their knowledge primarily because they have not been carried along: "you know some individuals some of them are coasting, and they don't want to be bothered"

Subtheme 3: Financial gain. The majority of the respondents alluded to financial gains and personal gains as the main reason for the withholding of information. NR04 notes "some people for financial gains, so they want to keep it because they know that it is going to be useful for you, it is going to be useful for all". GR07 also collaborates this barrier to TPKS recounting from experience:

> I have actually heard someone say that they are going to hold on to some files he would have to come back and do consultancy where you would pay him $2,000 dollars because when they retire, you have to come back for them.

Respondents from Nigeria also highlight the same sub-theme in their accounts. NR01 attributes withholding of information for "personal gains", while NR03 attributes the hoarding of tacit knowledge for "financial gains"

Subtheme 4: Ignorance. Respondents identified are two scenarios where Ignorance of a member could prevent TPKS. The first is *Ignorance of the value of TPKS* where that members are unaware of the value of their tacit as noted by NR06 "They are often dormant; certain people that got certain experiences are often unaware that it is very

valuable in other groups". The Second is *a Lack of relevant substance to share,* where the team member lacks the information prevents sharing.

Subtheme 5: Inexperience. One respondent NR06 recounts from experience that members on his team lack the relevant skill and professional competence to evaluate situations and proffer solutions proactively. Interestingly the respondent recommends personal training as a means of dealing with inexperience and does not put that responsibility on the team or the organization as stated:

> It's not just I am a specialist in my area if you don't have that project knowledge how do you want to foresee ahead he cannot foresee the problem ahead and make sure you get a good and solid solution ahead and bring everything together to ensure, so it boils down to this inexperience and not training yourself.

Subtheme 6: Level of education and exposure. Several respondents opined that the level of education and exposure of the team members could moderate their knowledge sharing attitude and intention. This sub-theme was advanced by GR04, "But sometimes I also think it is the level of education" and NR03, "If such a person is not a very wide exposed person, it might not really; it might affect him sharing the knowledge on the project".

Subtheme 7: National culture. This sub-theme generated some exciting insights among respondents. There were three areas highlighted in the interviews, (a) respect for elder and leaders, (b) absence of urgency, and (c) nepotism. Three respondents from Ghana and Nigeria attributed low TPKS on teams to the *Respect* or Culturally expected deference to elders and leaders. In their opinion, one does not question or talk back at a

leader or an elder, as this would be disrespectful. As such at meetings, younger officers differ to their superiors in age and rank on the team as highlighted by GR04 “Because of the culture when an elderly speak, you don't talk back to the elderly is always right that sort of thing” NR01, in their account, portray attributes of the Nigerian collectivist culture in the project team:

> In the Nigerian context were you have like certain people from a particular ethnic group lets say the Yoruba's, for instance, big on uhhh giving Respect to elders you don't challenge others when they speak so you find a situation where if a project leader for instance Yoruba and you have a project member who is also Yoruba and something is going wrong the project member may not be able to say until he is given permission to speak so cultural peculiarities definitely affect projects in the context of sharing knowledge.

Other Respondents mentioned *Absence of urgency*, where the lack of appreciation of the importance of timing in sharing tacit knowledge could be a barrier. In an attempt to explain the barrier to TPKS, GR04 described the lack of urgency associated with time in his society.

> Oh, we do, we are, we do have Ghana man time the GMT you know the GMT, we call it the Ghana man time if you are going for a wedding and they say its at two o clock, people will show up at four and so sometimes when people are fixing their date of time for their event, they factor the Ghana man time.

Nepotism within the project team was also considered a barrier to TPKS. NR03 describes the pervading influence of tribal dichotomy within the project team preventing members

on the team who are not from the same geographical region as the person in charge from obtaining benefits on the project as described below:

> You know over here we have the issue of the tribal dichotomy, the south versus north versus east versus west, all those things. So then if you are take for example if you are from the same region with the person that is in charge of that government project that is leading it, I get it more, I get into the project something's more. But if I am not, that means I am going to be passing through some sort of intermediary or something.

***Subtheme 8: Personality*.** Three respondents, two from Ghana (n = 2) and One from Nigeria (n = 1), discussed this sub-theme. They alluded to their personality as being a limiting factor affecting the TPKS ability. The personality traits considered were "selfishness", "laidback", and "introverted". *Selfishness*, was discussed by GR01:

> I mean obviously it's never a good trait but sometimes in some individuals personality people don't like sharing, people don't like giving so if you don't like giving, let me speak to myself.

GR04 talks about being *laid back; "*Personality that it might just be the individual that is just his way, he does not commit, that's just his trait. Some people are just *laid back* and finally NR03 discusses *introversion*; "Those two, the nature, there are people that are…you meet people they blend easily so introvert, the extrovert can affect."

Theme 3 - Organizational barriers. Organizational theme is based on the different organizations represented in the multi-organizational project team. Primarily there are two separate and distinct groups. The first is the parent organization, where all

the resources formerly come from to form the second group, which is the temporary group with resources "loaned" from the parent organizations. Given this, multi-organizational project teams possess diverse cultures, policies, processes, values, goals, and alignments of the parent companies, which have to be managed to prevent conflict (Wei, Liu, Skibniewski, & Balali, 2016; Ejohwomu, Oshodi, & Onifade, 2016b). This category discusses barriers, which emanate from either the parent or temporary organization.

Subtheme 1: Absence of rewards. A respondent, NR01, allude to the possibility of the absence of rewards being a mitigating barrier to TPKS in the organization. However, the respondent was also quick to clarify that even when rewards are present, if not commensurate to the quality of knowledge possessed, it could negatively influence attitude and intention to share:

> if it is if the financial benefit is appropriate or matches that external inducement, yes, it could be a motivational factor for people to speak, so yes, I would say it could be a means of eliciting.

Subtheme 2: Bureaucracy. Three respondents from Ghana and Nigeria opine that public sector projects are subject to government policies and procedures. However, these procedures are often characterized by bureaucratic rigidity and "red tape" prevalent on government establishments (Hirvi & Whitfield, 2015); their personnel on the team possess a fixed mind-set that prevents the acceptance of the tacit knowledge that they deem to be at variance with their policy form other team members. NR06 notes:

> For the public sector organizations, I would say, in my experience, that these are bureaucratic rigidity. The people representing the public sector client within the project team often come with a mind-set, you know, from their internal policy – this is how solution to certain problems has to go by. They come with a well-established procedure from their organization, which they want to pursue, even if that is not the best way to go for the problem at hand.

Subtheme 3: Competition. Within the temporary organization, the different representatives want to hold on to their knowledge to maintain competitive advantage over their teammates, especially if that information is considered a "trade secret" as noted by GR07:

> I think it is competition I mean you feel threatened by the other person for you information you are like okay you want to kick me out of business you want to know my trade secret that sort of thing so everybody sort of holds on to their trade secret.

Subtheme 4: Confidentiality. This subtheme captures the effect of polices and processes of the parent organization on their representatives in the project team. The parent organizations may have confidentiality policies were employees, NR02, notes "take an oath of secrecy" not to divulge certain information without authorization. NR06 also highlights the salient point of employees not "wanting to be quoted" if their tacit knowledge is divulged because it might be construed to be representative of the organization and as such would constrain their intention to share:

> Sometimes certain representatives don't want to be quoted, okay? Even though they might be in possession of certain opinion or certain knowledge, but just because they felt that they have not been authorized to say that, they wouldn't.

Subtheme 5: Corruption. Corruption was a sub-theme widely discussed by all the respondents as a barrier to TPKS, indicating its dominance on public sector projects.

Respondents allege that team members on the public projects hold back information for personal benefit like their social life styles, as stated by NR03:

> The first factor is money, because everybody wants social life and because of the environment. Thinking of everything in Nigeria. So you want to have that money to keep themselves. When they are there, you know this things and all they are doing so they still need that money to maintain all those level.

GR07 states her lack of interest on being on and sharing in public sector project teams any more because of the level of corruption indicating:

> I've gotten to some points where I am not interested in public sector projects; yeah, there is another one coming my way, but I am still not interested because yes, because of all the free monies people are expecting.

Subtheme 6: Culture. Ten of the respondents discuss the limitation of the culture of both parent and the temporary team organization. NR02 notes that the cultures of both organizations do not promote sharing due to the absence of a strategic plan for TPKS:

> The organizational culture don't really promote all this sharing, maybe in theory, but in practice, you don't really see anything put in place or any strategic arrangement or plan to achieve such goal.

GR07 describes a pervasive observation of culture as regards reading emails, a tool for sharing TPKS. The respondent notes;

> One thing they told me was that oh people don't read emails and I am like how can you say people don't read emails in America they used to say if you want to hide something from Black people put it emails people don't read put it in emails and it is so true because when I got here, people don't read.

Therefore it can be surmised that tacit knowledge codified and transmitted in emails, e-letters, and shared folders may be ignored, ultimately affecting the TPKS intention to share again. GR07 in explaining the frustration associated with sharing unrequited knowledge, further notes that "here the culture doesn't open up and you struggle to make your voice heard". "Open up" here is indicative of a closed organization possibly devoid of trust. There also is a culture of "micro-managing" by the parent organizations of team representatives, who are given responsibilities on the project team without the requisite authority. As such for members to share on a project, they have to continually get permission from the parent organization, as noted by GR07:

> Let me talk for Ghana in Ghana as a subordinate you can't just give out information, it has to go through a superior for I speak for engineering firms because civil engineering firm because a lot of them are private small firms and there is a lot of micromanagement within these firms, so everything has to be approved by the boss.

The constant deference to the parent organization will affect team member's attitude, intention and perceived behavioural intention towards TPKS.

Subtheme 7: Lack of Resources. NR01 discusses this sub-theme, referring to the parent organization providing financial resources for the training of the team to boost their confidence as noted by GR02:

> It's just that they are not well equipped, one with modern tools and with the resource the financial resources to collect this data they are not able to have it let alone share it.

Subtheme 8: Leadership. All the respondents discussed extensively the following codes associated with this sub-theme as; ability to create TPKS environment, lack of buy-in to TPKS, lack of professionalism, lack of vision, leadership style, and threat to leadership. NR01 believes that the main barrier to team members sharing is that the individuals or the organizations leading the teams often fail to create that opportunity for others to share their knowledge'; GR07 agrees noting that the '*ability of the leader to create TPKS environment'* on the project matters. As regards *leadership style*, NR01 notes that a "non-threatening approach" of the leader allows a member to share freely, and in describing a demanding leader, NR01 states:

> when you have a tyrant as the leader of the team or leader of the unit who feels that he's always right, you know there's a tendency that once people have been shut down once or twice.

Lack of buy – into TPKS refers to respondent's references for leadership not appreciating the importance of TPKS. Respondents use terms like "tone at the top" in this context, referring to "buy-in from the top" (GR07) and "management support" (NR02). However, for buy-in to occur, the leadership needs to have an appreciation of the value TPKS

brings to the project. The *Lack of vision* (GR07) of the leader can prevent the promotion of TPKS on the team because "the leadership must understand that it is necessary" (NR02). Lastly, respondents discuss the effect of *a Lack of Professionalism*. NR03 notes the culture of making "non-professional to be the leader of projects", such as politicians that are not members of the identified project management association. The respondent further elaborates on the importance of a professional leader:

> If you are a professional, you dish out everything. You know that the more you give, the more people value you no matter how small you are in there presence. But if you are not a professional, you will continue to hold it, and I see people in government holding onto more information than professionals that are outside. Because they believe that, that information is what is their own, it is what they are eating.

Also, respondents discuss the *Threat to Leadership* where the inexperienced leader is uneasy around the more experienced members of the group and as such tries to dominate conversations to remain in control as noted by NR06

> If you show up in a project team, and you're the most experienced, you'd feel that uneasiness on the part of the project leader trying not to be put to the side. You'll see that they are more forceful sometimes – trying to force down their own opinion just so that people will continue to look up to them as the people leading the group.

Subtheme 9: Policy and processes. The codes associated with this theme are; No risk management, absence on policy on TPKS, poor planning of TPKS, no processes for

TPKS, transition and change. A respondent GR07 discusses the failure of team members to "anticipate problems" and manage them proactively by applying tacit knowledge obtained from past projects for *Risk management*. The same respondent GR07 cites an example of a previous project worked on in oil and gas where there was an *Internal policy* on TPKS to articulate and document tacit knowledge in the appendix of documents used to soliciting services from prospective vendors as a means of proactively anticipating problems, *planning* and managing them. NR01 stresses the importance of having TPKS "integrated within the *process*" for it to be institutionalized in the team. Finally, GR07 points out that in periods of *transition and change*, "knowledge can also be lost" referring to the process of attrition where members leaving the team exit with their tacit knowledge.

Theme 4 - Team dynamics barriers. This Category was introduced from the deductive coding of data during analysis. The category reveals barriers due to the interaction of the team members in the process of the project delivery. The barriers from this theme, which could affect the subjective norm, attitude, intent and behavior to share knowledge on the team and are (a) absence of motivation (b) attitude of members (c) Conflict (c) loyalty to parent organizations (d) regional differences (e) lack of team cohesion (f) work Pressure.

Subtheme 1: Absence of motivation. Respondents allude to the absence of either intrinsic or extrinsic motivators as barriers to TPKS. The codes captured under this subtheme were Lack of authority, Lack of opportunity, Lack of rewards, and Lack of Training. Given the multi-organizational nature of the team resources of diverse status

drawn from different parent organizations NR01 points out that some members *Lack the authority t*o share certain information on behalf of their organizations. They are required "validate with maybe a higher authority in his own parent organization before he can share such experience". GR07 also refers to the confidentiality issues surrounding divulging certain information to the rest of the team without clearance and the need to be discreet.

Some respondents also claimed to *Lack the opportunity* to share their tacit knowledge in their project teams. NR06 points out the absence of debriefing sessions to capture lessons learned at the end of the project and the failure of the leader of the team to provide that opportunity share. GR06 succinctly expresses it that is not for the Lack of the knowledge to share but the absence of the opportunity

> In Ghana, there is people want the know; most people want the knowledge most people want they know how, how to do it right its just that they don't have the opportunity.

On the issue of *Rewards* an extrinsic motivator, GR03 notes that unlike her parent organization which has targets and bonuses, public sector project teams do not have such reward systems in place and as such members have to seek alternatives to reward themselves

> No let's just say that within my office, we have what we sometimes call targets and bonuses, okay? If you are able to do A, B, C or the like tasks you get returns for that I think the public sector is not set up to reward people doing the right

> thing within their offices and because of that people look in other areas to reward themselves that I think sometimes is the problem.

Training was one code that a lot of respondents (n = 6) had a lot to talk about. There were several dimensions to this code. GR05 laid the blame on five fronts (a) failure to audit individual skillsets of employees for training needs and gaps (b) Wholesale training regimes (c) modes of selecting training candidates (d) failure for institutions to include training/knowledge transfer components in project (e) lack of budget allocations for training and skills transfer. NR03 gives a detailed explanation of how members are assigned training without any needs assessment done. Training is also often assigned as a form of compensation to individuals. The respondent notes:

> But projects specific training, you need to align, and that is when I can say okay, we need to look at what is a, who is leading the project. If it's an engineer, we know that for an engineer to perform on this project, he needs this type of training. However, most of the time, especially the unit, the department that used to be in charge of training in some government organization in Nigeria, they use training for something else not for the acquisition of knowledge. Maybe to pay back, to compensate somebody loyal even if the training is not really, is not going to benefit such a person. So far, as you are going to have some remuneration, let's just put them there, so please go ahead with it.

NR01 notes that team members should be engaged in identifying their knowledge gaps and being trained in that area to avoid waste of resources. The respondent further

highlights the benefits of training on inexperienced team members as giving them confidence to share with the team.

Subtheme 2: Conflict. There were five different codes categorized under this sub-theme, which are: aggrieved members, frustration, isolation, rivalries, and threatened members, which all occur during team interactions. Respondent GR05 allude to members being *aggrieved* and *frustrated* when their suggestion is "downplayed or undermined", and as such are not interested in what other team members have to share. GR06 describes the feeling of *isolation* and unimportance when marginalize, ignored, and not kept in the information loop, affecting TPKS. *Rivalries* among team members came to the fore in the account of NR06, who pointed out that there is some level of professional rivalries between multi-organizational team members. The respondent notes that members withhold pertinent information from the other to see them fail to make a point:

> So, it is more like a rivalry between professions, you know, when another profession seems to be doing a job you feel honestly that you should be doing, then when he is at it you don't want to support him; you'd implicitly like to have him fail so that people would understand the point your making.

Finally, NR06 also notes that members feel *threatened* if their knowledge is revealed to team members, as there is they become vulnerable and lose their relevance on the team.

Subtheme 3: Loyalty to parent organizations. Members of the team are representative of diverse parent companies and, as noted by NR06, "being brought together to serve one project" The team is, therefore, a temporary organization, which is

disbanded after the performing and mourning stages. Members represent their parent organizations and are therefore loyal to them, as explained by NR06:

> there's a dynamics about that; there's loyalty in the context where people have not been …the project managers have not been would I say properly authorized to deal openly with their team members on the project so in that context its more like somebody wants to be, the project team members wants to validate with maybe a higher authority in his own parent organisation before he can share such experience with the project he is working on, so there's that angle to it.

Subtheme 4: Regional differences. Besides the diverse groups, values, and cultures represented in the multi-organizational team, there is also the issue of ethnicity. Given that both Nigeria and Ghana comprise different tribal groups represented in the workforce there is the other aspect of expatriates in the mix, introducing the angle of 'us against them' that seems to be pervasive in both cultures as well as highlighted by NR03**:**

> yes, it use to be because it's always an issue of us against them, especially when you are on a project outside your geopolitical zone. So it's …ermm the fact use to be. And that is why some of the projects now this days, they look at the project team, composition of the project team.

Subtheme 5: Lack of team cohesion. This sub-theme flows from the last one as the division introduced by ethnicity in the team makes it Lack cohesion GR06 adopts different ways of expressing the Lack of cohesion such as “there is no I in team they know that the buck stops with all of us”. The respondent further states:

> I was even telling them in America the black Americans most of them join the military or the forces because those are the only areas that discrimination is really less because when you are on a project in a team in the military I mean you trust each other or one will die you know so you know they trust blacks they don't care if you are black or red or whatever it's a team a band of brothers. Here in Ghana, they don't look at projects as a band of brothers you are when you are on a project it's like you are on your own.

Subtheme 6: Work pressure. Respondents identified the pressure of work as being a barrier to TPKS on the project. Interestingly respondents attributed this pressure to having insufficient support from the rest of the team as noted by NR02:

> You may not really have the support from people around, management, maybe due to the work pressure, due to Lack of understanding of the whole concept, so its more of not having sufficient support.

Theme 5 - Technological barrier. This theme was inductively identified from extant literature, and the barriers from it influence the intent and PBC to share knowledge. Two dominant sub-themes were identified by respondents (a) lack of equipment and (b) lack of skills.

Subtheme 1: Lack of equipment. Respondents note the importance of technology to capture, codify, share, and store tacit knowledge (NR01). The absence of it, therefore, could hamper knowledge sharing on the team as noted by GR07: “I think that they are also not equipped to have the data to share”.

Subtheme 2: Lack of skill. Respondents recount from experience that even with the provision of the appropriate technology and software's for knowledge sharing the failure to train team members will limit their ability to use the tools for TPKS as noted by NR03, That is why, for every technology, and there should be training that would follow. But, no matter how small you are bringing in, there should be training

Another respondent, GR07, also notes that team members do not update their skills and, as such, are at a disadvantage to share.

Table 3

Summary of Codes, Categories, Themes, and Applicable Concepts

Research question	Codes	Categories	Themes	Concepts
RQ1: How do multi-organizational project team members on public sector projects engage in the process of tacit knowledge sharing?	No method of TKS	No method of TPKS	No method of TPKS	Attitude Intention Subjective Norm PBC
	Emails, Interviews, Knowledge sharing sessions, Meetings, Mentoring, Reports, Shared Folders, Team Building Sessions, Trainings and Workshops	Structured and Formal Process		
	Brain storming, Informal discussions, Lunch meetings, on the job transfer	Informal and Unstructured Process		
RQ2: How do project team member's explain the tacit knowledge sharing gaps experienced on public sector organization projects?	Personal Attitude, Lack of commitment, Lack of confidence, No appreciation of TPKS, No Buy-in to TKS, Fear, Indifference, Interest, Relevance, Financial Gain, Ignorance, Inexperience. Level of Education, National Culture, Personality	Personal Attitude, Individual Behavior, Financial Gain, Ignorance, Inexperience. Level of education, National Culture, Personality	Individual	Attitude Intention
	Absence of Rewards, Bureaucracy, Competition, Confidentiality, Corruption, Culture, Lack of Resources, Failure to create opportunities, Lack of buy-in Lack of professionalism, lack of vision, Leadership style, Level of education, Quality and Experience, Threat to Leader, No Risk management, Poor planning, Transition, and Change	Absence of Rewards, Bureaucracy, Competition, Confidentiality, Corruption, Culture, Lack of Resources, Leadership, Policy and Processes,	Organizational	Attitude Subjective Norm PBC
	Lack of authority, Lack of opportunity, Lack of Rewards, Lack of training, Aggrieved members, Frustration, Isolation, Rivalries, Threat of to relevance, Loyalty to Parent Organization, Regional differences, Absence of team cohesion, Work Pressure	Absence of motivators, Conflict, Loyalty to Parent Organization, Regional differences, Absence of team cohesion, Work Pressure	Team Dynamics	Attitude Intention Subjective Norm PBC
	Lack of Equipment, Lack of Skill	Lack of Equipment, Lack of Skill	Technology	Intention PBC

Summary

The purpose of this interpretative Phenomenological Analytic study was to understand the lived experience of multi-organizational project team members of sharing their TPKS on public sector projects. This chapter provides an overview of the methodology used in the data collection and analysis from 13 project managers in Nigeria and Ghana. The research participants were identified using purposeful criterion sampling with recruitment through local chapters of the project management associations in Ghana and Nigeria. All participants signed the approved consent forms and were interviewed using semi-structured open-ended questions. Using the NVivo software thematic data analysis was carried out to identify themes that answer the research question. The analysis was through rigorous engagement with the respondents and review of the transcriptions rather than through counting the frequency (Smith & Osborn, 2015). I translated all recordings verbatim and identified each respondent with alphanumeric codes to maintain their confidentiality.

The responses to the interview questions confirmed that different methods of tacit project knowledge exist on multi-organizational project teams. However, these methods of sharing lack structure, processes and are often confused with explicit knowledge sharing. In response to the second research question, respondents gave a wide range of barriers that moderate TPKS on the theme. While the Organizational, Individual, and Technology where inductively identified from extant literature but the last theme of Team dynamics was identified deductively from the data. Three themes identified that were discrepant in this study were bureaucracy, corruption, and loyalty of parent organization

wew peculiar only to this research. These themes are heuristics that would be questioned to uncover more in-depth explanations for the phenomena (McPherson & Thorne, 2006), in the next chapter. The measures adopted to ensure the trustworthiness of the research were also outlined in this section. I achieved credibility, confirmability, and dependability through the use of reflexivity, member checking, data triangulation, and detailed descriptions of the respondent's account.

The ultimate purpose of this research is to answer the main research question of What are the barriers to tacit knowledge sharing experienced by members of multi-organizational public-sector project teams in Anglophone West Africa? I will answer this question by discussing the identified themes in Chapter 5. I also present the study limitations, discuss the discrepant themes, make appropriate recommendations, and discuss implications of the study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this research was to understand the barriers to TPKS multi-organizational project team members' experience in public sector projects. To gain this understanding, I adopted the IPA methodology to collect and analyze data from 13 respondents from Nigeria and Ghana. The inquiry was an extension of the discovery into the factors that limit sharing, which ultimately results in improved project performance. Findings from respondents align with three major themes from extant research: organizational, individual, and technological barriers. I inductively deduced the last theme of team dynamics from the codes. In this chapter, I discuss the findings, the limitation of the study, and the implications of the findings for positive social change within the application context.

Interpretation of Findings

Identification of the barriers that hinder knowledge sharing on projects, in general, is not a new research area. What is new, however, is contextualizing the study specifically to public sector projects in a developing geographical context. The results of this study confirm that although some of the identified barriers in extant literature are similar, some unique factors seem not applicable to developed countries and perhaps private sector projects. These findings raise more questions on transferability and the degree of applicability for further research to answer. In interpreting the findings of this research, I focus on addressing the primary research question through the lens of the conceptual framework, literature review, identified themes, categories, and codes.

Theme 1 - TPKS Methods

Contrary to the assertions that multi-organizational project teams in Africa have a scant tradition for systemized knowledge sharing (Muller, 2014), findings of this research show otherwise. Extant literature portrays tacit knowledge as (a) requiring face-to-face interaction, (b) being challenging to articulate and capture, and (c) driven by personal experiences (Zin, Yunus, & Asnawi, 2016). Tacit knowledge is shared through situation learning, through interaction of tasks, and learning from personal interaction or interpersonal relations, for instance, through communities of practice (Manaf et al., 2017). Both structured/formal and unstructured/informal means of TPKS existed in the project teams. However, the examples of TPKS methods cited by the respondents indicate no clear understanding of the difference between tacit knowledge and explicit knowledge sharing methods.

Collectivist societies such as those in Africa have a predilection for indirect and face-saving forms of communication, given their preference for body language and gestures rather than the use of e-mails (Triandis, 2001). Some project teams also do not have a structured process or protocol for sharing and adopt methods like brainstorming, discussions, lunch meetings, or on the job learning. Given that these methods are not institutionalized and incentivized, members are neither compelled nor encouraged to use them. As such, only those who are motivated or induced would be so inclined. No form of sharing was expressed in frustration at the lack of intentionality to share on teams. It further indicates that even when TPKS takes place on teams, there are barriers to its effectiveness.

Three factors responsible for the barriers to TPKS are not new to research. These are the organizational, individual, and technological barriers (Fullwood & Rowley, 2017; Razmerita et al., 2016). The members of the project team introduced Individual barriers (Bloice & Bennett, 2015), or personal (Olaniran, 2019), are introduced by the individuals in the multi-organizational project team. These individuals belong to a myriad of groups and organizations where they have imbibed values, systems, and beliefs that together mediate or moderate TPKS on the team if not properly managed (Boateng & Agyemang, 2015). Team members work collaboratively and share to deliver projects. Their level of integration and assimilation into the temporary organization would influence the building of trust, reduce suspicion, and improve buy-in (Olaniran, 2017). However, this finding indicates that members' attitude expressed in their know-it-all demeanor, optimism, and hoarding, influences their belief or expectation of the consequence of that action (Evans, et al., 2015; Shahzadi et al., 2015).

Theme 2 - Individual Barriers

The individual behavior of members is a reflection of their attitude, personality, and values with respect to a particular situation, where attitude and behavior indicate a willingness to share (Razak et al., 2016).

Respondents identified four behavioral barriers of fear, indifference to TPKS, personal interest, and protection of relevance. Team members hoard personal knowledge for personal interest such as control and to defend their relevance on the job (Akgun et al., 2017), financial gain (Ma et al., 2014), and the fear of losing patronage, relevance, or power (Razmerita, et al., 2014). Research by Trusson, Hislop, and Doherty (2017)

collaborate this finding with the identification of fear of job security prevalent among IT service practitioners. Other reasons put forward that affect PBC include wanting to be considered experts, and job security is indicative of societal peculiarities associated with survival in developing countries. Team members are more willing to engage in behaviors that they believe will attract specific rewards (Chennamaneni et al., 2012; Shahzadi et al., 2015), and this, in turn, drives their intention to share.

Ignorance of the value of TPKS, lack of relevant substance to share, and inexperience of individuals affect the self-efficacy of an individual and their attitude and intent to choose, prepare, and ultimately correctly perform tasks (Asnawi, 2016). The absence of education in communication skills results in a lack of confidence to share, thereby creating a barrier (Gider, Ocak, & Top, 2015; Todericiu & Boanta, 2017). Maitlo, Ameen, Peikari, and Shah's (2019) research on online retail stores in the United Kingdom showed that the lack of awareness of value and know-how prevented sharing. Santos et al. (2012) agreed by citing inadequate information as a limiting factor to tacit knowledge sharing among project managers in Europe. The absence of TPKS experience diminishes self-efficacy, as inexperienced personnel perceive new tasks like TPKS as difficult; with experience comes ease and confidence to perform, resulting in greater TPKS intention (Mafabi et al., 2017).

The influence of the national culture of team members on their TPKS behavior has received mixed reviews in extant literature. Respondents explain that respect for leaders or elders, absence of urgency, and nepotism based on the values, assumptions, and beliefs of individual team members limit TPKS on the team. Respect for elders or

leaders or deference to those in authority is a classic power-distance attribute of a collective society (Hofsterder, 1983). African culture has been described by Hofsterder (1983) as collectivist, with characteristics of feminity, high power distance, and high uncertainty avoidance. In collectivist cultures in Africa like Nigeria and Ghana (Hofsterder, 1983), feminine attributes are supportive of relationship building and the promotion of group interests above the individual interest to support TPKS (Chang & Lin, 2015; Wei & Miraglia, 2017). However, the cultural expectations due to high power distance evidenced in deference to elders and leaders on the team, moderates the subjective norm to share.

Several of the respondents discussed the absence of urgency to share on projects referring to the values associated with time management. Respondents alluded to slow-paced tempo in West African society in referring to their African time (Nigeria) and Ghana man time or GMT (Ghana), respectively. The collectivist nature of both societies focuses on affiliation rather than achievement, the former requiring indulgences while the latter speed (Levine, 2006). Collectivist cultures work with event time rather than clock time; as such, there is no need for urgency to share (Levine, 2006), thereby influencing both their PBC and subjective norm negatively. Nepotism is the pervasive influence of tribal dichotomy within the project team that occurs in close-knit collectivist societies in Africa (Triandis, 2001). The tendency is to look out for one's kin, and when team members are not relatives, the tendency is to hoard knowledge.

Personality traits have a moderating effect on knowledge sharing and individual performance (Manaf et al., 2017). Three personality traits considered under this theme

were selfishness, being laidback, and introversion. Respondents refer to the opposite big five traits of conscientiousness, agreeableness, openness to experience, extraversion, and neuroticism, as barriers. Selfish individuals are not agreeable and are less inclined to share in nontrusting relationships (De Vries, Bakker-Pieper, and Oostenveld. 2010). Laidback individuals lack active imagination and intellectual curiosity associated with the trait openness to experience (Cabrera, Collins, & Salgado, 2006). Introversion, the last theme is not supported by research to show knowledge sharing increase in individuals (Martzler et al., 2011), and is therefore worth further investigation.

Theme 3 - Organizational Barriers

Organizational barriers are introduced by first the parent organization, where all the resources formerly come from, the second is the temporary group or project team constituted to deliver a product with resources "loaned" from the parent organizations, and the last is the client organization, the government, which may or may not be actively involved in the project process. The primary construct that explains organizational factors as a barrier is a subjective norm, which is the normative belief about the perceived social influence and pressure from significant influencers (within and outside the team) to engage in TPKS (Ajzen, 1991), and the motivating factors propelling compliance to those beliefs (Fishbein & Ajzen, 1975).

Respondents refer to the Absence of Rewards as a significant barrier to TPKS. Findings from this research show that extrinsic reward is a stronger motivator for sharing in agreement with Ma et al. (2014) who found that the Chinese were extrinsically motivated to share tacit knowledge when promised rewards such as pay raise, bonuses,

and other financial benefits. However not all researchers agree on the suitability of extrinsic rewards as appropriate motivators, Bock et al. (2005) found that the prospect of extrinsic rewards hurt knowledge sharing attitude on the team, and Wang et al. (2019) posited that intrinsic rewards are more influential than extrinsic ones, indicating that the appropriate reward would depend on the environment and context. Respondents further expanded that rewards must be commensurate to the quality of knowledge possessed by the sharer. This condition is explained by Trusson et al. (2017), who posited that transparent rewards, enabled by an appropriate reward system built into the organizational structure, and indicative of distributional justice, could motivate TPKS (Akgün et al., 2017).

The respondents' reference to the bureaucracy of the parent organization as a barrier to TPKS has no supporting literature. This gap could imply that this barrier primarily exists on multi-organizational project teams in West Africa. The impact of the nature of the government client organization on the project team is crucial. Respondents refer to the "red tape" and bureaucracy in taking and giving timely decisions influencing sharing on the project. Governments worldwide are conservative, with low-risk appetite and a penchant to conserve rather than exploit knowledge (Kallio & Lappalainen, 2015). This characteristic prevents the promotion of innovative and proactive TPKS on the project team, especially when there is a strategic misalignment between the client and the team organizations (Huang & Chen, 2015; Solli-Saether, Karlsen, & Oorschot, 2015).

Competition emerges from the different social and economic orientation of representative organizations in the team (Olaniran, 2017). In project teams where there is

competition, knowledge is hoarded and used as power leverage (Matić, et al., 2017). Rowley (2017) found competitive behavior as a barrier to knowledge sharing among senior staff in public and private Higher education facilities in Mauritius. A respondent refers to tacit knowledge as "trade secret" that which if divulged makes the sharer lose competitive advantage.

Most parent and client organizations, especially in the government sector, have confidential policies for information control. Solli-Saether, Karlsen, and Oorschot (2015) describe this barrier as the "secrecy around knowledge" occurrences between the parent organization and the temporary project organization or team. Respondents note that some parent organizations may have confidentiality policies were employees, "take an oath of secrecy" not to divulge certain information without authorization. This restriction would explain respondents not "wanting to be quoted" to their superiors. Given that the confidentiality requirement makes it difficult to share, it is an impediment to TPKS, affecting the PBC subjective norm and serving as a moderator to TPKS intention (Ajzen, 1991).

Corruption was a dominant issue on public sector projects echoed by most respondents. However, no reviewed research collaborates with this theme. Corruption is one of the primary reasons projects in developing countries fail (Ika & Saint Macary, 2014). Indeed, it is in the bid to stem corrupt practices that governments world over adopt public procurement strategies that transparently enable sourcing of project vendors (Neupane, Soar & Vaidya, 2014). However, corruption still pervades in bribery, conflict of interest, and cronyism (Dza et al., 2015; Locatelli, Mariani, Sainati, & Greco, 2017).

Respondents describe scenarios of inducements to gain information on projects indicative of a corrupt attitude of prevalent on the team.

Summarily, different organizational cultures of parent organizations, teams, and individuals would create a barrier to TPKS. Supporting cultures evidenced in social interaction within the team, ensure positive subjective norms (Igbinovia & Osuchukwu, 2018), and enable unhindered information flow through complimentary values and norms (Abbasi & Dastgeer, 2018). However, where the prevailing culture is the lack of openness, micro managing by parent organizations, there will be trust issues. Trust is those elements of culture, which must exist in a team for members to effectively, collaborate, and share (Zhang & He, 2015). A review of the team culture for effective project management is therefore necessary (Battistella, Nonino, & Palombi, 2017).

Researchers and respondents agree that the cultural characteristics of any organization influence knowledge sharing behavior (Majid & Panchapakesan, 2015; Maitlo, Ameen, Peikari, & Shah, 2019; Olaniran, 2017; Solli-Saether, et al., 2015; Trusson, et al., 2017 Trusson, et al., 2017; Veer Ramjeawon & Rowley, 2017), especially team member's behavior and response (Sareminia et al., 2016). In a multi-organizational project team, a team culture evolves from the diverse cultures existing, to give a mixed culture; the market culture characterized by competition and winning is everything, and the hierarchical culture of the client organization characterized by bureaucratic bottlenecks and inefficiencies that stifle the right attitude and subjective norm requisite for knowledge sharing (Abbasi & Dastgeer, 2018). The absence of a knowledge-sharing

culture within the organization also constitutes a barrier to TPKS (Veer Ramjeawon & Rowley, 2017).

Leadership has a predominant role in promoting a TPKS culture on the team. Organizational culture and leadership also affect team members' behavior and ability to be innovative (Moussa, McMurray, & Muenjohn, 2018; Sareminia et al., 2016). Leaders inability to create a TPKS environment, lack of Buy-in of the team leader creates barriers to TPKS. Without the support of the leadership, funding, structure policies for knowledge sharing will also not be provided, thereby creating a barrier to TPKS (Maitlo, et al., 2019). Researchers observe that the constant change in leaders creates a barrier to knowledge sharing (Veer Ramjeawon, & Rowley, 2017), noting that new leaders on public projects fail to recognize the achievements of their predecessors and as such, ignore historical knowledge. However, respondents also argue that such leaders are "round peg in square holes", as they are unqualified or "politicians" appointed based on "cronyism" (Dza et al., 2015), and possess no real interest in the team.

Respondents note that these leaders lack vision and feel threatened by more qualified members of the team. Respondents comment that the Leadership style could influence the attitude and intention of members to share. Transformational leadership promotes positive performance through the motivation of team members (Aga, Noorderhaven, & Vallejo, 2016; Raziq, Borini, Malik, Ahmad, & Shabaz, 2018). However, other researchers found that a charismatic leadership style was necessary for creating a climate that promotes intrinsic motivation to enable the sharing of tacit knowledge. Respondents noted that the authoritarian leadership styles where the leader

dominates conversations and stifle opinions affect their subjective norm and ultimately TPKS.

The importance of organizations providing material and financial resources to support TPKS on teams is essential. The absence of or limited resources in multi-organizational project teams can give rise to conflict (Wei, Liu, Skibniewski, & Balali, 2016), which in turn affects the subjective norm and PBC of team members. Respondents agree that the absence of resources to fund the procurement of TPKS tools, train team members, and fund research (Veer Ramjeawon, & Rowley, 2017) were major impediments to their TPKS behaviour.

Without appropriate policies and processes, the organization cannot institutionalize TPKS. Processes are integrated as project initiatives into the team to gain acceptance and implementation (Hanisch et al., 2008). Policies and processes on TPKS, ensure planning of TPKS, risk management, and management of transition and change. The absence of structure (Fullwood & Rowley, 2017; Todericiu & Boanta, 2017), knowledge sharing strategy (Santos, Sares, & Carvalho, 2012), knowledge management strategy integration (Trusson, et al., 2017), policy and reward mechanism (Veer Ramjeawon, & Rowley, 2017), organizational structure (Seba, Rowley, & Delbridge, 2012), weak knowledge sharing culture (Maitlo, Ameen, Peikari& Shah, 2019), and strategy and vision (Yesil & Hirlak, 2013) all inadvertently affect the attitude and subjective norm of members to share.

Theme 4 - Team Dynamics Barriers

Government organizations procure services from external resources with the requisite knowledge to deliver public projects (Franz et al., 2016). The temporary organization formed is disbanded after the delivery of the project and the resources released to their parent organizations (Project Management Institute, 2017). While some researchers allude to team diversity translating to better performance (Navimipour & Charband, 2016), others posit that it constitutes a significant barrier to knowledge sharing on projects (Ghobadi & Mathiassen, 2016; Wu et al., 2017). The reason for this difference is that team members are representatives of different functional units or diverse organizations, with diverse motivations, perspectives, values, and ethos, which, if not correctly managed, could breed conflict (Wu et al., 2017).

Respondents attribute specific barriers to affecting their TPKS behavior on the team, such as the absence of motivation, attitude of other members, conflict, loyalty to parent organizations, regional differences, lack of team cohesion, and work pressure. Motivation is a significant factor that affects team members' attitudes and intentions towards TPKS (Goswami & Agrawal, 2018). Reciprocity in teams motivates members to share (Ergün &Avcı, 2018). All respondents were more motivated by extrinsic rewards comprising incentives or reciprocal benefits (Killingsworth & Xue, 2016), such as authority, opportunity, bonuses, and training. First, this finding contradicts other research that shows extrinsic rewards negatively impacted TPKS attitude (Bock et al., 2005). However, respondents also agree that when the distribution of rewards such as training is

not equitable, it affects the attitude or the willingness to engage in the behavior of sharing based on the perceived benefit that it will yield (Shahzadi et al., 2015).

Some of these factors, which affect respondents' attitude, include lack of commitment, lack of confidence, lack of appreciation of TPKS, and no buy-in of the team member. Lack commitment of members was attributed to the non-alignment and prioritizing of personal goals over the project goals (Martinez, 2016), differences in purpose (Akgün et al., 2017), team diversity (Fullwood & Rowley, 2017), and lack of trust (Trusson, et al., 2017). There are two perspectives to the lack of appreciation of TPKS. The first is the non-appreciation of other team members to the value of the tacit knowledge shared, and the second is the disparity in the values of team members towards TPKS constitutes a sharing (Akgün et al., 2017). Again, team members lack the confidence to share, because they underestimate the value of the information they possess (Todericiu & Boanta, 2017), have poor communication skills (Todericiu & Boanta, 2017) or believe in the no- usefulness of the information that they possess (Leonardi, 2017) all of which affect their attitude, subjective norm, and PBC towards sharing.

The cultural diversity, project management maturity, technology, and values within the multi-organizational teams could breed conflict. Team members come into the team with different values, cultures, expectations, TPKS strategies, risk appetites, and thresholds which if not properly managed could result in conflict within the team (OGC, 2009; Wu et al., 2017a). Conflict in teams erodes about 3 - 5 % of the total business investment (Wu et al., 2017a) and prevents TPKS (Karamat, Shurong, Ahmad, Waheed, & Khan, 2018). Five areas of conflict found in this study are; aggrieved and frustrated

members, isolation, rivalry, and threatened members. Members become isolated and refuse to share, especially when kept out of the "loop". The reason for this is because there is no teamwork (Karamat, Shurong, Ahmad, Waheed, & Khan, 2018), poor interpersonal relationship among members (Ma et al., 2014), and again the lack of trust among members (Razmerita, Kirchner, & Nabeth, 2014). Rivalries occur when teamwork and collaboration are not promoted, thereby breeding competition, mistrust, and fear, which all moderate the attitude and intention to share tacit knowledge (Veer Ramjeawon, & Rowley 2017). Threatened members lack interpersonal trust (Zhou & Nunes, 2016) respond to the fear of losing relevance, job security (Trusson, et al., 2017) by withholding information.

Project team members are loyal to their parent companies, as their remuneration emanates from there, and they return there at the end of the project. The reason is that projects are temporary endeavors with a definite beginning and end, designed to produce a product (Project Management Institute, 2017). Respondents believe the impact of the parent organization is negative, as members do not receive requisite authority to act independently on the team, and the treatment of the parent organization reflects in their attitude on the team. This reason is that the behavior of team members and the interest of their respective parent organizations influences collaborative TPKS (von Danwitz, 2018). There was no reference to this subtheme in any reviewed literature, and as such, may be peculiar to multi-organizational project teams in West Africa.

Furthermore, besides the diverse groups, values, and cultures represented in the multi-organizational team, there is also the issue of ethnicity introducing a level of

diversity that breed's conflict (Ghobadi & Mathiassen, 2016; McDermott, & O'dell, 2001). Given that both Nigeria and Ghana comprise different tribal groups represented in the workforce, there is the other aspect of expatriates in the mix, introducing the angle of "us against them" that is reported as pervasive in both cultures. The negative subjective norm of team members results in low intention to share on the project. With the level of diversity on the team, cohesion will be absent. Research shows that the lack of integration of knowledge management strategy (Zhang & Cheng, 2015; Trusson, et al., 2017), and while the absence of team cohesion affects team performance (Franz et al., 2016) affect knowledge sharing on projects.

Even on teams with seemingly good cohesion, the pressure of work associated with lack of time to share affects TPKS negatively. Fullwood and Rowley (2017) found that the unavailability of time to share and interact constituted a barrier to knowledge sharing among academics in the United Kingdom and this, and Trusson, Hislop, and Doherty (2017), who found lack of time to share impeded knowledge sharing among IT service practitioners; Others refer to lack of time to share knowledge (Gider, Ocak, &Top, 2015; Majid & Panchapakesan, 2015; Razmerita, et al., 2014)

Theme 5 - Technological Barrier

Two dominant sub-themes were identified by respondents that prevent effective TPKS on multi-organizational project teams in West Africa are Lack of equipment and Lack of skills. Tacit knowledge form is fluid and not easy to capture except codified and transferred. Technological equipment enables the capture, conversion, storage, and dissemination of knowledge (Chugh, 2017; Sareminia et al., 2016). Organizations often

lack the requisite IT systems (Fullwood & Rowley, 2017) and infrastructure (Veer Ramjeawon, & Rowley, 2017); have poor technology infrastructure (Maitlo, et al., 2019), inadequate information technology (Santos, et al., 2012). The team members are also reluctant to use IT systems (Trusson, et al., 2017), all of which hamper members' TPKS intention and behavior.

The rapid pace of technological advancement and the upgrade of existing tools and software make regular training imperative for every member. However, from the respondent's account, this is not the norm. Without the requisite skill set, team members' self-efficacy is affected, and they lack PBC, both major influencers for a positive attitude and ultimate TPKS intention. The absence of consistent training gives credence to respondents' account that even with the provision of the appropriate technology and software is for knowledge sharing, the failure to train team members (capacity) will limit their ability.

Limitations of the Study

The trustworthiness of this study is established through the truth-value of the findings, transferability, neutrality, and consistency (Lincoln & Guber, 1985). However, in attempting to establish this there were several limitations I had to contend with in the course of the study. These limitations were not far removed from those that conform to qualitative research design and specifically, IPA. The first set of limitations was from the population sample and the sampling method. The research is on public projects in Anglophone West Africa. However, out of the five countries in that geographical area, only two were studied. The results of this study may therefore not be representative of the

Gambia, Liberia, and Sierra Leone. Secondly the criterion sampling strategy limited recruitment to professional project managers from a p project management association to ensure uniformity in the terminologies used and a base line understanding of the topic. However, this sampling technique eliminated practitioners with certification from other institutes and members of the project team with vast experience but no form of certification.

Face-to-face interviews were the preferred source of data collection but this was not possible due to the Covid-19 pandemic at the time of data collection. To manage the possibility of unintentionally influencing the respondent account (Creswell, 2013) while probing them in the course of the interviews, I carried out transcript verification. However, while transcript verification was done to manage this limitation, it did not go as intended. Transcripts were sent out two weeks after the interviews with a return rate of only 50% at the time of analysis.

Recommendations

This phenomenological study was inspired first by the number of failed public projects in West Africa and the associated effect on public funds. Secondly, the poor tacit knowledge sharing on projects is associated with project failure. Failure to transfer project knowledge known as lessons learnt from past projects to new projects reduces the potential for the project to succeed (Khoza & Pretorious, 2017). While some research to identify the barriers to tacit knowledge sharing exists, there is a gap in the context of West Africa. This gap led to the call for context-specific research on the barriers to TPKS (Prinslow &Waveren, 2017). In answer to that call, I sought to understand the barriers to

TPKS on multi-organizational project teams from the lived experience of project managers on the team using semistructured interviews. Several recommendations for future research, methodology, policy, and practice are stated in line with the findings and results of this research.

Recommendation for Action

The results of this interpretative phenomenological study indicate that there are peculiar barriers to TPKS on project teams in West Africa. These barriers are a result of the challenges associated with the organizations involved in project delivery. Further, there is the challenge of the fusion of findings from research with practice, especially as there is a dearth of research in this area in West Africa. Given this project management practitioners should adopt sponsoring and promoting research in this area and integrating the results into practice. This research is also a synthesis of three primary disciplines, Knowledge management, Organizational psychology, and Project management.

Furthermore, I will make a presentation of the study result in these communities of practice and recommend further tests and discussions. I propose to publish the results in journals such as the Journal of project management, Knowledge management journal and the SIOP. I will also make paper presentations at conferences and workshops. Finally, I advise the promulgation and implementation of government policies to ensure tacit knowledge sharing on project teams.

Recommendation for Further Research

Findings from this research confirm that the barriers to TPKS are indeed contextual (Chugh, 2017; Prinslow et al., 2017), as some of the identified barriers were

peculiar to Anglophone West Africa. These new barriers to TPKS were Bureaucracy in Client Organization, Corruption in the project team, and Loyalty to Parent Organizations. This study captures "what" and "how" these barriers exist but not "when", "where", and the level of their impact, on the project team. Therefore, firstly I recommended that appropriate qualitative and quantitative studies to address these questions. Also, the new barriers found to be peculiar to multi-organizational project teams in West Africa ought to be tested as variables on a larger sample size from the entire West Africa and Africa to confirm the generalizability and validity given the heterogeneous nature of the continent.

Secondly, although this study is in response to the call by Prinslow &Waveren (2017) for further research into the barriers to knowledge management in Africa, it has only been partially answered. There is more ground to cover as the dearth of research in this area in Africa is real. Further study is necessary and advised in other project settings in Africa, such as project teams in the private sector, non-governmental agencies, multi-nationals, and joint venture companies. Fundamentally leadership was identified as a potential barrier to TPKS. It is, therefore, necessary for future research to focus on identifying the leadership traits and styles essential for enabling TPKS in multi-organizational project teams on public projects. Lastly, in the wake of the impact of the COVID-19 outbreak and its implications for work as is currently known, the extension of this study to virtual work in Africa is suggested. Given this, identification of the barriers to TPKS on virtual work teams in West Africa is recommended.

Recommendation for Methodology

The purposeful criterion sampling was used for the selection of participants with the aid of gatekeepers of the selected project management association in Ghana and Nigeria. This approach was possible because of the relatively small sample size. It is, therefore, possible that saturation may not have been achieved if the sample size had not been more substantial. Therefore, it is recommended that for future research, the snowballing sampling be adopted again using "gatekeepers" to give the researcher the required authority to approach the identified participants. Secondly, it is recommended that the participant selection criteria be improved to accommodate all project team members without project management credentials so that findings are representative of the entire team. Finally, the method for the member checking was unsatisfactory, with only a 50% return rate. It is recommended that transcription be completed and sent out to respondents within three days to a week after the interviews, with follow-up phone calls to enable a better response rate.

Implications

Multi-organizational teams are the default service providers for public sector project delivery in Anglophone West Africa. However, the spate of failed and abandoned projects resulting in colossal loss of public resources is indicative of the failure of the team to share knowledge and ensure successful project delivery collaboratively. It was therefore imperative that the deterrents to TPKS, which constitutes 90% of the organizational information required for a successful project (Peroune, 2007), be identified. The identified potential barriers are said to affect the attitude, subjective norm,

PBC, and ultimately, knowledge-sharing behavior of the project team members (Huang & Cheng, 2015). Three barriers that are unique to multi-organizational project teams identified in this study are bureaucracy, corruption, and loyalty to the parent organization. The identification of these barriers implies that the challenges are unique to public sector projects and require different kind of intervention.

Individual Implications

As regards positive social change, some respondents took away the importance of documenting lessons learned through the course of the project, others took away the importance the value of informal knowledge sharing sessions during lunchtime which they had never attributed much value, and others realized the importance of structure, process, and management buy-in in ensuring TPKS. Respondents from their accounts suddenly came to the consciousness of various tacit knowledge leakage points and resolved to look out for them on their projects.

Awareness is a significant step towards achieving positive social change within communities of practice, industry, and practitioners. Following the publication of the findings of this research, I intend to follow-up by signing up to speak at applicable professional conferences, grant webinars, create a podcast, and participate in other applicable engagements that will bring the challenge to the fore. This approach will ensure greater visibility of the issues surrounding TPKS and attract the attention of policymakers.

Societal/Policy Implications

The creation of awareness that these peculiar barriers exist on public sector projects is only the first step to addressing the challenge. Corruption, for instance, is endemic, and if not curtailed, would have a detrimental effect on not just the project but the economy of the country. To ensure positive social change, appropriate interventions, which address these challenges, must be designed and implemented. To get the buy-in of the government to fund such interventions it is imperative that they see the benefits accrued from TPKS. Governments ought, therefore, to institutionalize policies and best practices that promote tacit knowledge sharing and transfer on all public sector projects to reduce the potential for project failure associated with the failure to share. Ultimately, mitigating the barriers of TPKS on government projects could have a long-term effect on reducing the rate of failed projects, building collapse, abandonment, and the associated waste of government resources (Ewa, 2013). Therefore, government investment in policies and programs, which promote the design and implementation of appropriate training and interventions to address the barriers to TPKS, may enhance the possibility of successful project delivery.

The Implication for the Organization

The three unique sub-themes identified from this study; bureaucracy, corruption, and loyalty to parent organization are inherent either in the organizational culture of the client, parent, or team. The conflicting cultures introduced in the team breed competition and have to be tweaked and managed to enable positive social change. Culture informs behavior, and the TPKS attitude and behavior need to be positively altered; as such

appropriate structures, procedures, and processes need to be embedded in the team culture. Secondly, it is a cultural issue that team members lack autonomy from their parent organizations and have to defer to them at every decision point on the project. Where the organization is a bureaucratic one, time to make decisions and dissipate is ordinarily lengthy and counter-productive to projects. While the benefits of a single point of information management and control are desirous, the counter-productive nature of micro-managing what and when knowledge is shared is not lost on the project. Therefore it is recommended that parent organizations, design rules of engagement, which will grant representatives on the team not only the requisite authority but also compel them to share their tacit knowledge on the project.

Lastly, the implication of the project team is enormous. Identification of these barriers brings them to the fore, and as such, planning can be done to manage it. Industrial and Organizational Consultants can be brought in to design appropriate interventions, workplace protocols, and training that aim at addressing conflict and other challenges impeding TPKS and ensure harmonious collaboration on the project team. Other desirable TPKS behaviors that would be targeted to ensure positive social change on the team include; improved social interactions, succession planning, mentorship, promotion of informal communities of practice, and promotion of lessons learned workshops to ensure adequate debriefing at the end of the project. Training on the team has to be based on needs assessment and not treated as welfare packages. Giving this, it is recommended that training should be managed by an independent third party to address issues with nepotism and tribalism.

Methodological Implications

The current study demonstrates the value of the qualitative research design method in obtaining the lived experience of a phenomena from a population and understanding the "why" and "how" of the phenomena. The findings of this study have revealed barriers hitherto unidentified in prior studies, thereby confirming the importance of context in ensuring research trustworthiness. Furthermore, the results also indicate that the conceptual framework based on the TRA and TPB is appropriate to explain the tacit knowledge sharing behaviour of project managers. Although this study has identified new barriers, it would be worthwhile to ascertain the extent to which they affect the intention, attitude, subjective norm, and PBC of project managers in West Africa, using the qualitative research design methodology.

Implication for Industry

The project management body of knowledge has effectively captured the importance of knowledge management for the effective delivery of projects. While the professional guide is not prescriptive on solutions to address deficiencies in the practice environment, it is a tool that project managers refer to for ethical guidance. The PMBOK can leverage research findings from studies such as this to formulate a more robust document that will guide the practice of knowledge management among project management professionals. A fundamental benefit of this research is that it investigates the lived experience of project management professionals, and as such, the findings are practical and real, making application also realistic.

Conclusions

Governments of developing countries must adopt appropriate, efficient, and transparent TPKS strategies on project teams to guarantee successful project delivery. Tacit knowledge has a more significant impact on successful project performance than explicit knowledge (Diallo & Tuillier, 2010), which has had a greater research focus. The findings of this study show that the barriers to sharing tacit project knowledge on government projects are context-specific, and that challenges with the bureaucracy of the client government organization, issues with corruption, and confidentiality are significant barriers to tacit knowledge sharing.

The application of research findings to enable the identification of appropriate interventions, which will foster social change, is difficult, given the deeply embedded culture that exists. The findings of this research have successfully delineated the individual, organizational, team, and technological barriers to TPKS on public sector projects, and as such, identified critical areas that should be intervened in. Establishment of an appropriate framework is necessary to institutionalize knowledge sharing best practices within the team. Also important are the creation of ethical guidelines to manage corrupt practices, design of appropriate interventions, workplace protocols, and training to manage regional differences, conflict and ensure collaboration in the workplace. The introduction of strategic guidelines to deal with the influence of adverse effects of bureaucracy and influence of parent organizations issues would also mitigate the negative impact on the attitude, subjective norm, and PBC that affect the TPKS intention of team members thereby enhancing tacit sharing on projects.

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Appendix A: Interview Questions

1. Introduction

Q1: Tell me about yourself, what you do on the project team, how long you have been a practicing project manager and how long you have been working in a developing country in West Africa?

2. **RQ1**-How do multi-organizational project team members on public sector projects engage in the process of tacit knowledge sharing?

Q2: Tell me your experience in sharing personal project knowledge with your project team members.

Q3: Describe the methods you use to share your personal knowledge about providing services on public projects.

3. **RQ2-** In what ways do project team members account for the gaps in tacit knowledge shared on public sector organization projects?

Q4: What would you say are the barriers to sharing your personal knowledge about the services you provide on public sector projects?

Q5: What factors do you consider responsible for these knowledge gaps?

Q6: What factors may prevent you from addressing this gap and transferring your expert knowledge to others on the team?

Alt **Q6:** What concerns do you have about addressing these gaps and transferring your project knowledge?

4. Conclusion

Q7: Are there any additional barriers to tacit knowledge sharing which you have experienced on project teams that you wish to share.

The interview *concluded on this day……..Time……..*

Appendix B: Interview Protocol

Interview Protocol Outline

Date of Interview …….

Location of Interview …….

Interviewees name …….

Interviewee's Title ……..

Interviewer ……..

Recording Mechanism ……..……..

Introduction

Interview Protocol Introduction

Greetings! Thank you for taking the time to participate in this study by granting me this interview. You have been selected to participate in this interview based on a pre-set participant criterion for this study aimed at identifying the barriers to tacit knowledge sharing on multi-organization project teams in developing countries. You are not only a certified project manager but also possess the requisite minimum number of 2 years post qualification experience required to speak with deep insight on the subject. My research focus is to obtain your understanding of the barriers, which you believe impede the exchange of personal knowledge and information on the projects you have managed in developing countries. The aim of this study is not to evaluate the shortcomings if any on your current projects neither is it an evaluation exercise instead it is to generate and add empirical data to the project management body of knowledge on Africa. It will ultimately attempt to provide the foundation for future research on the identification of appropriate interventions that will strengthen the realization of successful projects in Africa through knowledge sharing on project teams.

To ensure the accurate capture of your narrative, I request permission to record the interview. However, if at any time you feel uncomfortable with the recording, please do not hesitate to request that it be turned off. If you are agreement, please state your name

and consent for the recording of this interview. To protect your privacy and confidentiality, measures have been taken to ensure you remain completely anonymous and that the information you give in this study is protected through and after the study. All documents will be carefully safeguarded using passwords for the e-copies and the hard copies locked up securely.

Informed Consent

Interview Questions

Closing

Interview Closing

I want to extend my profound appreciation to you for creating the time to participate in this study. All information is completely confidential and will be used solely for the intended purpose that it was elicited. You will be contacted in about two weeks to authenticate and confirm the transcription. Only upon the receipt of this confirmation will the next stage of data analysis be embarked. Thank you.

Appendix C: Personal Journal Entries

Pre-interview

In preparation for the interviews, a comprehensive search of the Walden library databases was done to identify the extent of study on tacit knowledge sharing in developing countries in Africa, the gap and this information was recorded. Potential sources for recruiting potential participants were documented and the procedure for recruitment, challenges, and referrals was also captured (see chapter 3).

Post Interview

Approximately 10 minutes after each interview, I captured observations of the participant's verbal and nonverbal cues, including but not limited to their body language, facial expression, pauses and starts, hesitations and agitations if any (see chapter 4). For the telephone conversations I noted tone, pitch and pauses of the respondents. I used probes to seek clarification but stayed on topic. The intonation and some words were unclear to me at the time of the interview. However I will seek for clarification during the transcription phase. Following the series of disruptions with the first phone call, I requested for a change in time to early hours of the morning or late in the evening, which helped immensely with the connection and minimized interruptions considerably. I sensed anger, disillusion, disappointment and sometimes helplessness and resignation from the tone of both Nigerian and Ghanaian respondents, which is an indication of a desire for positive social change.

Personal reflections

Bracketing of Bias: I had certain preconceived notions about the barriers to tacit knowledge sharing on multiorganizational project teams in West Africa. These views are: (a) Each organization represented in the project team possessed different levels of knowledge management maturity that affects the quality of sharing of tacit knowledge on projects. - Not confirmed

(b) Conflicting motives of team members introduce barriers to tacit knowledge sharing- Confirmed

(c) The temporal nature of projects and the high turnover of resources contribute to the shortage of tacit knowledge sharing on projects - Confirmed

(d) The public nature of the client organization stifles innovative tacit knowledge sharing on projects- Partially confirmed

Modification of Research Question

Pilot respondents confirmed the general face validity of the interview questions; one of the respondents suggested the inclusion of a question on innovative solutions to the tacit knowledge sharing on projects and the elimination of one subquestion. The suggested addition did not add any value to answering the overarching research question. However the original subquestion RQ2 –Q5was considered redundant and dropped, as it was a reiteration of the original RQ2-Q4.

Q1 was very good as I learned a lot about the respondents, what they do and how they go about it on the project team. It also put respondents at ease and relaxed. I learnt a lot from this question and maintained it.