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Tacit Knowledge Transfer at Engineering Consulting Organizations

Funminiyi Sunday Egbedoyin
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Walden University

College of Management and Technology

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Funminiyi Sunday Egbedoyin

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2020

Abstract

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by

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MPhil, Walden University, 2019

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Management

Walden University

May 2020

Abstract

Engineering consulting organizations are knowledge-intensive firms characterized by highly technical personnel. The problem was that the leaders of engineering organizations have not eliminated loss of tacit knowledge transfer among employees. The purpose of this qualitative multiple case study was to gain an understanding of how engineering consulting organization leaders facilitate the transfer of tacit knowledge among employees. The conceptual framework was the socialization, externalization, combination, and internalization model developed by Nonaka and Takeuchi and Burns' transformational leadership theory. A qualitative multiple case study design was used by employing multiple sources of information including semi-structured interviews, field notes, and review of organizational documents. The unit of analysis was leaders in an engineering consulting organization. The data analysis processes involved coding of the data, categorizing the coded data, and subsequently generating themes in line with the research question using NVivo Version 12 software. Findings indicated that leaders facilitated the transfer of tacit knowledge through the creation of a safe environment for employees and through on-the-job development. The opportunity to facilitate the transfer of tacit knowledge among employees in engineering consulting organizations enhances growth among employees. The outcome could contribute to social change through improved professionalism and expertise of employees.

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Dedication

I dedicate this dissertation to God Almighty, who has been my help. To my dad Apostle Jacob Egbedoyin, who is my hero and role model, and to the memory of my mom Princess Dorcas Waleade Egbedoyin. To my wife Queen Folasade and wonderful son Prince David Egbedoyin for selflessness and sacrifice. I also dedicate this dissertation to my spiritual fathers for unconditional love and support. Finally, to everyone that God brought my way as destiny helpers during the dissertation journey. I love you all.

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Chapter 1: Introduction to the Study

Engineering consulting organizations are knowledge-intensive firms characterized by highly technical personnel (Witmer, 2018). Leveraging the transfer of tacit knowledge among employees may enhance organizational performance (Dzekashu & McCollum, 2014). This study is significant to engineering consultants as the findings may reveal strategies to implement knowledge transfer. In this study, I sought to gain an understanding of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. This chapter includes the background of the study, the problem statement, the purpose of the study, the research question, the conceptual framework, the nature of the study, definitions, assumptions, scope and delimitations, limitations, and the significance of the study to theory, practice, and social change.

Background of the Study

Consulting engineering organizations are knowledge-intensive firms that leverage the expertise of their skilled workforces for operational continuity (Ding, Zuo, Wang, & Zillante, 2016; Kuciapski, 2017) and competitive advantage. Tacit knowledge has unique peculiarities in a knowledge-based organization, and the technical and professional skills of engineers are critical to the operational continuity of the organization (Litchfield, Javernick-Will, & Maul, 2016; Pérez-Luño, Saporito, & Gopalakrishnan, 2016). Therefore, the focus of engineering consulting leaders has shifted from physical to intellectual assets (Millar, Chen, & Waller, 2017). Leaders and academics recognize that knowledge management (KM) is essential for competitive advantage (Garrick & Chan,

2017). The transfer of tacit knowledge may enable organizations to preserve critical knowledge and promote operational continuity (Ding et al., 2016).

The strategic resources for the sustainability of organizations are the knowledge of the people who worked for or are currently working for the organization (Millar et al. (2017). Although the exit of experts from organizations may be inevitable, there could be a transfer of knowledge among employees through knowledge sharing (Joe, Yoong, & Patel, 2013; Witmer, 2018). According to Krylova, Vera, and Crossan (2016), the defection and attrition of experienced employees has an impact on the future workforce (Reder et al., 2010) if there is no as organizational practice of a knowledge transfer strategy. The consequence is a challenge for organization leaders to hire qualified candidates due to the increasing needs of the organization and to stay competitive (Denner & Blackman, 2013; Millar et al., 2017). Pereira, Alves, and Ferreira (2016) explained that tacit knowledge might impact customer loyalty. Lack of quality in knowledge transfer practice, according to Litchfield et al. (2016), might limit the usefulness of the captured tacit knowledge to enhance organizations' bottom line.

According to Ren, Deng, and Liang (2018) and Denner and Blackman (2013), few organizations have a formal strategy for knowledge retention of experienced employees and methods of eliminating loss in the process of knowledge transfer. Dzekashu and McCollum (2014) added that the limiting factors to adequate knowledge transfer are insufficient quality in the process. Imran, Ilyas, and Aslam (2016) and Millar et al. (2017) posited that understanding how leaders facilitate the transfer of tacit knowledge at engineering consulting organizations is significant. This research was

conducted to gain an understanding of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. The opportunity to leverage the transfer of tacit knowledge for experienced employees at an engineering consulting organization may enhance the growth of new employees and contribute to positive social change.

Problem Statement

The projected number of aging or experienced workers exiting the engineering industry between 2011 and 2029 will create a labor scarcity that will affect the engineering industry (Ren et al., 2018). The labor scarcity may be a result of unqualified candidates due to inadequate knowledge required to fill the gap. A survey administered by the Technology Services Industry Association in KM across industries showed that 43% of the 300 respondents thought that there are unqualified employees because of inadequate knowledge (Ragsdale, 2018).

The general management problem is that despite the efforts in capturing tacit knowledge, leaders of organizations have not fully realized the benefit of tacit knowledge (Joe et al., 2013; Litchfield et al., 2016; Perjanik, 2016). The specific problem is that the efforts of the leaders of engineering consulting organizations in eliminating loss in the transfer of tacit knowledge among employees have not been realized (Dzekashu & McCollum, 2014; Millar et al., 2017; Wang, Zhou, & Ding, 2010).

Purpose of the Study

The purpose of this qualitative exploratory multiple case study was to gain an understanding of how leaders in an engineering consulting organization facilitate the

transfer of tacit knowledge among employees. I selected a case study for this research because the focus was to understand the phenomenon within its natural setting (Gog, 2015; Yazan, 2015; Yin, 2014). According to Bendassolli (2013), the goal of qualitative research is to gain an understanding of a situation, individuals, or group of people. Dzekashu and McCollum (2014) also noted that the qualitative approach is suitable for answering *how* questions. A case study enables the researcher to obtain a more in-depth understanding of the phenomenon of interest (Agee, 2009; Yin, 2014).

Research Questions

The overarching research question was: How do leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees?

Conceptual Framework

Landerer (2013) described a conceptual framework as a lens for understanding the underlying paradigm of a research study. The conceptual framework for this study was based on (a) the socialization, externalization, combination, and internalization (SECI) model developed by Nonaka and Takeuchi (1995), and (b) transformational leadership theory (Burns, 1978). Knowledge creation is a dynamic process of spiral interaction of explicit and tacit knowledge. Knowledge creation involves the transfer of tacit and explicit knowledge among individuals and groups of individuals within and outside organizations (Nonaka & Takeuchi, 1995). In the SECI model, there are four modes of knowledge creation: (a) socialization, (b) externalization, (c) combination, and (d) internalization. In the socialization model, knowledge transfer is from tacit to tacit. Externalization activities result in tacit to explicit knowledge transfer; in combination

activities, there is a knowledge conversion of explicit to explicit. In internalization mode, there is a conversion of explicit to tacit knowledge. In this dynamic process of knowledge creation, there is a continuous interaction among varied levels of employees. Research has shown that the leadership role is critical to the outcome of the interaction (Tsai, Wang, & Yuan, 2015).

Transformational leadership theory focuses on the followers and leadership relationship and how leaders motivate followers to support each other to a higher level of performance (Burns, 1978). According to Burns (1978), leaders inspire followers to achieve unremarkable results by working with the team in identifying changes, instituting a guide through inspiration, and executing the change with the group. In this study, I focused on the effect of transformational leadership on knowledge transfer programs. Research has shown that visible leadership commitment has a positive mediating effect on employees' competence and job performance (Tsai et al., 2015).

Transformational leaders enable followers to focus on goal attainment, accept the ethical practice, and promotion of personal sacrifice for achieving goals (Qu, Janssen, & Shi, 2015). Tse, Huang, and Lam (2013) maintained that transformational leaders promote enduring social exchange between the organization and the employees by breaking down the rivalry of self and organizational interest and ultimately reducing turnover of employees. Tsai et al. (2015) further argued that a transformational leader has a positive influence on employees' engagement, job satisfaction, and personal commitment to an organizational goal. Therefore, the transformational theory can be used as a lens to understand the role of leaders in the knowledge exchange.

Nature of the Study

The nature of this study was a qualitative exploratory multiple case study. Qualitative studies permit a continuing investigation and an in-depth analysis of a phenomenon of interest (Mills, Durepos, & Wiebe, 2010). According to Mills et al. (2010), when the phenomenon is undetermined, the intuitive approach of the qualitative case study has an advantage over other approaches. The case was to gain understandings of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. The use of an exploratory multiple case study was appropriate for focusing on a phenomenon of interest (Yin, 2018) at an engineering consulting organization.

The unit of analysis was leaders from consulting engineering organizations with at least 5 years of employment history. The unit of measurement was the process and support system that leaders in the organization have provided to facilitate knowledge transfer within the last year of operation. Todres and Galvin (2005) postulated that the breadth and depth of research are not necessarily about numbers of respondents but focus on particular details within their natural context. In this research work, the depth of the scope was 10–15 research participants in two different organizations and their satellite offices purposely sampled to meet the purpose of the study. Purposeful sampling enables the researcher to focus on the phenomenon of interest in achieving an information-rich study (Haahr, Norlyk, & Hall, 2013; Rubin, 2015).

The inclusion criteria are (a) leaders in a consulting organization with a minimum of 5 years' experience, (b) consulting organizations with operations in the United States

for a minimum of 10 years and are actively involved in consulting activities for the last 5 years, and (c) consulting organizations with at least 10 employees. The interview questions (Appendix A) were the tool for the inquiry into the phenomenon. The study was bounded within the United States and consulting engineering firm with a minimum of 5 years of operation. Data collection was through a purposive sampling of 10–15 leaders through a semistructured interview and review of the organizational documents from consulting engineering organizations in the United States.

The researcher was the primary instrument (Yin, 2014). The artifacts reviewed through visual observations were the organization structure chart, work management process, quality program, communication methods among employees, and the organization website. During the visual observations, notes were taken to enhance code development and data analysis. I selected a case study for this research based on focusing on the subjective experience of the participants (Auerbach & Silverstein, 2003). The purpose was to understand the complexity of the phenomenon within a natural setting (Gog, 2015; Yazan, 2015; Yin, 2014).

The case study serves as a lens for the researcher to obtain a more in-depth understanding (Agee, 2009; Yin, 2014) on the role of leaders in the transfer of tacit knowledge within the consulting engineering organization (Joia, & Lemos, 2010). The analysis was content analysis (Yazan, 2015). The enhancement of the internal validity was through peer check and data triangulation with field notes and artifacts relating to the process of tacit knowledge transfer.

The qualitative method of study is mostly adopted and used by a researcher when an in-depth understanding of a phenomenon becomes essential (Goertz & Mahoney, 2013). In support of the selected research method, I considered other types of qualitative research methods for suitability. Grounded theory is used to generate a new theory from data collected (Moss, Gibson, & Dollarhide, 2014). The goal of the study was not to create a new theory, thus make grounded theory inappropriate for the study.

Explanatory case study design is appropriate for conducting a causal study, and such a study reflects on the *why*, *what*, and *how* of the issue (Berg, Lune, & Lune, 2004; Yin, 2014). In this study, the goal was not to find out about the cause. A descriptive case study was not suitable for this study because descriptive research attempts to explore and describe what is happening in more detail and expand the understanding about a phenomenon of interest. The phenomenological design was not appropriate for use in this study as this type of design is used to study the lived experiences of the people in the study (Achakul & Yolles, 2013; Naim & Lenka, 2018). The narrative design was not suitable for the study because that design focuses on data collected from participants in the form of storytelling (Patton, 2015). Finally, I evaluated an ethnographic design and found that the approach was not suitable for the study. The ethnographical design is used to understand the culture of people (Mutchler, McKay, McDavitt, & Gordon, 2013; Wahda, 2017). This exploratory case study included 10–15 leaders in an engineering consulting organization in the United States, who are involved or have influence in facilitating the transfer of tacit knowledge among employees. The documents review process occurred through a visual inspection of artifacts, such as organization structure

chart, work management process, quality program, communication methods, and organization website. During the visual observations, notes were taken to enhance the code development process.

The research method of this study was qualitative. Gog (2015) and Yazan (2015) emphasized the use of a case study when the objective is to observe the internal and external patterns of organizations for a deeper understanding of the phenomenon of interest. Yin (2018) recommended a case study for an intensive study of a specific context. Therefore, the qualitative approach was suitable for the study in understanding the role of leaders in facilitating the transfer of tacit knowledge of experienced employees (Campbell, 2014; Goertz & Mahoney, 2013)

Definitions

In this section, I provide definitions of key terms used in the context of this research.

Expert knowledge: Comprehensive and authoritative knowledge in a specific area that demonstrates higher levels of efficiency in performing relevant tasks (Carmel, Yoong, & Patel, 2013).

Knowledge management systems: Processes adopted to promote information creation, sharing, and preservation (Wahda, 2017). Wahda (2017) described KM as a practice of discovering, capturing, and applying collective learning in an organization to help the organization gain a competitive advantage.

Knowledge transfer: Wahda (2017) defined knowledge transfer as a planned movement of the right skills and information at the right time to keep a workforce productive, competitive, and able to execute business strategy.

Mentoring program: A goal-oriented business relations strategy that establishes mutual benefits to the mentor, mentee, and organization. Wahda (2017) described a mentoring program as a learning partnership between employees to share technical and institutional knowledge. A mentoring program provides an opportunity to gain insight into the occupation, profession, organization, and other business endeavors.

Personal qualities and attitudes: Unique characteristics an individual possess that can differentiate them from another (Gysbers, 2013).

System approach: A process in which inputs are transformed to the desired output (Puche, Ponte, Costas, Pino, & De la Fuente, 2016)

Tacit knowledge: Knowledge personalized to the individual and difficult to transfer to others (Xu, Po-An Hsieh, & Wei, 2014)

Leader: Individual who influences others to realize defined objectives (Mishra, & Schmidt, 2018). In the context of this research study, a leader is also referred to as *partner*.

Facilitate: Creative ability to drive organizational goals (Zhang, Ren, Zheng, Ma, & Yu, 2017).

Assumptions

Assumptions are essential aspects of a study that are true but difficult to prove (Vogt & Johnson, 2011; Wang, 2018). In conducting the study, first, I assumed the

participants would be representative of the focused population and selected engineering organizations implementing a KM program. These assumptions are crucial in the collection of relevant data for understanding the phenomenon of interest. Second, I assumed the participants answered truthfully. A lack of accurate information will affect the credibility of the research findings. Third, I assumed the interview environment would be conducive and the participants would be available during the period of the interview. A conducive and pleasant atmosphere is essential to the privacy of participants and may affect the way they respond to interview questions. Unplanned events would have been counterproductive and may have affected the outcome of the interview process.

Scope and Delimitations

The scope of the study is the description of the extent of the study that I performed to answer the research question. Researchers set boundaries or constraints to ensure study completion.

Scope

The scope of the study was to gain an understanding of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. The scope of evaluation at consulting engineering organizations included processes in the main office and satellite groups. The survey participants included 10–15 leaders, such as the head of a department or partners, who have direct or indirect involvement with tacit KM. The participants in the study were leaders from consulting engineering organizations in the United States with at least 5 years of employment

history with the organization. The unit of measurement was the process and support system that leaders in the organization have provided to facilitate knowledge transfer within the last year of operation. In this study, 10–15 leaders were interviewed, and there was a review of organizational documents relating to tacit knowledge application.

Delimitations

The participants in the study were leaders from consulting engineering organizations in the United States with at least 5 years of employment history with the same organization. The inclusion criteria were: (a) leaders in a consulting organization with a minimum of 5 years' experience; (b) consulting organizations with operations in the United States for a minimum of 10 years, actively involved in consulting activities for the last 5 years, and (c) consulting organization with at least 10 employees. Although there may be some similarities in how leaders are supporting the management of tacit knowledge internationally, the strategies and recommendations may not be generalizable (Van Genderen, 2014). Goal-setting theory, although related to the phenomenon of interest, was not used for the investigation because I determined that SECI and transformational leadership theory would give a more robust outcome in my analysis.

Limitations

The assessment of the tacit knowledge programs at the organization during the time of the study limited the findings. The use of semistructured interviews did not support the generalization of research findings (Miles, Huberman, & Saldana, 2014; Patton, 2015) as the study was purposefully limited to engineering consulting organizations in the United States. Therefore, there is a limit on the generalization of

findings to other organizations. I based the limitation of the study to two organizations on the existence of data saturation after the 11th interview. There were no new insights or codes after interviewing the 11th participants; however, I interviewed 15 participants across the two organizations.

Significance of the Study

This research study may contribute to previous work on tacit knowledge. The study may further explore the importance of leadership in the transfer of tacit knowledge at engineering consulting organization. It may support the recommendations of Joe et al. (2013), Perjanik (2016), Dzekashu and McCollum (2014), and Millar et al. (2017) regarding the need for more research on tacit knowledge in knowledge-intensive organizations.

Significance to Theory

The findings of this study may yield useful information that may build on the current theory of knowledge creation and transformational leadership. Researchers have used the theories for manufacturing but rarely used them in investigating KM practices in service organizations (Şimşit, Günay, & Vayvay, 2014). By using these theories, I examined the application of tacit knowledge from the perspectives of leadership roles and their influence on skilled employees.

Significance to Practice

The outcome of this research may be helpful to management scholars and researchers in developing new strategies to facilitate the transfer of tacit knowledge in knowledge-intensive organizations. The results of the research might lead to the

generation of information leading to increased work performance and increased career satisfaction or engagement (Kianto, Vanhala, & Heilmann, 2016). The outcomes of the study may help refocus the attention of leaders in talent management for organizational effectiveness.

Significance to Social Change

According to Chow, Kopp, and Portney (2003), Tiba and Omri (2017), and Schwab (2010, September), a reliable workforce is the impetus for the growth of a community. The opportunity to facilitate the transfer of tacit knowledge from experienced employees in engineering consulting organizations may enhance the growth of new employees. The outcome of my research work may contribute to social change by improving the expertise of employees, supporting a sustainable workforce, and increasing quality of life.

Summary and Transition

Engineering consulting firms are knowledge-based organizations (Wang et al., 2010) and are characterized by skilled personnel. Due to continued growth in engineering consulting organizations (Zhang, Gregory, & Neely, 2016) and the exit of experienced and skilled personnel, leaders have shifted their focus to the quality of capturing tacit knowledge (Dzekashu & McCollum, 2014). Although there is an increase in education level, general knowledge is not a substitute for institutional knowledge and experience (Fredericksen, 2010; Wipawayangkool, & Teng, 2016). In the United States, engineers are reported consistently as demanding jobs to fill, and 16% of U.S. employers cited a lack of technical competencies as a reason for refusing job applicants (Manpower Group,

2016). The general management problem is the shortage of qualified employees in an engineering organization to meet the increasingly dynamic need of the industry (Ragsdale, 2018). The specific management problem is that leaders in consulting engineering organizations have not eliminated the loss in the transfer of tacit knowledge from experienced employees (Wang et al., 2010; Zhang et al., 2016). Urbancová and Linhartová (2011) noted that the consequence of the described problem is the loss of organizational historical and critical knowledge that may affect the growth of less or inexperienced employees and the organizational, operational continuity.

The purpose of this qualitative case study was to gain an understanding of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. The intent was to establish the role of management in the transfer of tacit knowledge in the following areas: (a) management responsibility, (b) culture, (c) innovation to enhance knowledge value, and (d) maximization of innovative and creative potentials for new knowledge. The opportunity to leverage the transfer of tacit knowledge of experienced employees in an engineering consulting environment may enhance the growth of new employees. The outcome of this research may contribute to social change through increased expertise of employees leading to improved economic well-being and quality of life for the community. Chapter 2 includes a review of the existing literature on this phenomenon.

Chapter 2: Literature Review

The engineering consulting industry applies principles of engineering to design, processes, and diverse systems to support customers' operational needs. Services provided may include feasibility studies, designs, and project management support during different stages of project execution. The purpose of this qualitative multiple case study was to gain an understanding of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. The specific management problem is that leaders in consulting engineering organizations have not eliminated loss in the transfer of tacit knowledge from experienced employees (Wang et al., 2010; Zhang et al., 2016).

In this study, I established the role of leaders in the transfer of tacit knowledge in the following areas: (a) management responsibility, (b) culture, (c) innovation to enhance knowledge value, and (d) maximization of innovative and creative potential for new knowledge. Another aim was to determine the alignment of leadership with tacit knowledge capture initiatives in attracting and motivating skilled employees within the dynamic environment of their operation. I organized this chapter by starting with the literature search strategy; findings regarding the conceptual framework follows the search strategy. I provide a comprehensive review of the literature on the information relating to the fundamental concepts of the study.

Literature Search Strategy

In researching literature for this study, I used the following keywords in the search: *tacit knowledge*, *knowledge capture*, *knowledge management*, *optimization of*

tacit knowledge, engineering consultancy, leadership, utilities, quality management, quality improvement, attributes of explicit and tacit knowledge, knowledge loss, motivation-based theories, and derivatives of knowledge transfer. Using search tools like Thoreau and Google Scholar, I performed a search of multiple databases: Science Direct, Business Source Direct, IEEE Xplore, Emerald Management, ProQuest, ABI/INFORM Complete. The emphasis during my search was peer-reviewed and full-text scholarly articles that are within the last 5 years.

Conceptual Framework

Landerer (2013) described a conceptual framework as a lens for understanding the underlying paradigm of a research study. The conceptual framework for this study was Nonaka and Takeuchi's (1995) SECI model and Burns (1978) transformational leadership theory (Burns, 1978). Knowledge creation is a dynamic process of spiral interaction of explicit and tacit knowledge. Knowledge creation involves the transfer of tacit and explicit knowledge among individuals and groups of individuals within and outside organizations (Nonaka & Takeuchi, 1995). In the SECI model, there is an identification of four models of knowledge creation: (a) socialization, (b) externalization, (c) combination, and (d) internalization.

In the socialization model, knowledge transfer is from tacit to tacit. Externalization activities result in tacit to explicit knowledge transfer; in combination activities, there is a knowledge conversion of explicit to explicit. Lastly, in internalization mode, there is a conversion of explicit to tacit knowledge. In this dynamic process of knowledge creation, there is a continuous interaction among varied levels of employees.

Research has shown that leadership's role is critical to the outcome of the interaction (Tsai et al., 2015).

Transformational leadership theory focuses on the followers and leadership relationship and how leaders motivate followers to support each other to a higher level of performance (Burns, 1978). According to Burns (1978), leaders inspire followers to achieve unremarkable results by working with the team in identifying changes, instituting a guide through inspiration, and executing the change with the group. In this study, I focused on the effect of transformational leadership on knowledge transfer programs. Research has shown that visible leadership commitment has a positive mediating effect on employees' competence and job performance (Tsai et al., 2015).

Transformational leaders enable followers to focus on goal attainment, accept the ethical practice, and promotion of personal sacrifice for achieving goals (Qu et al., 2015). According to Tse et al. (2013), transformational leaders promote enduring social exchange between the organization and the employees by breaking down the rivalry of self and organizational interest and ultimately reducing employee turnover. Tsai et al. (2015) further argued that a transformational leader has a positive influence on employees' engagement, job satisfaction, and personal commitment to an organizational goal. Therefore, I used transformational theory as a lens to understand the role of leaders in knowledge exchange.

Knowledge Management Theory

KM involves the capturing and successful use of knowledge (Omotayo, 2015). As a result of multifaceted interpretations of the word *knowledge*, the focus of this study was

on how leaders are facilitating the transfer of knowledge to ensure quality, value, usefulness, and relevance. Makhmutov, Isavnin, and Karamyshev (2016) explained that knowledge comprises of experience, information, and intuition such that knowledge has become an intangible asset to achieving successful outcomes. The three levels of knowledge are knowing what, knowing how, and knowing why (King, 2009).

Papa, Dezi, Gregori, Mueller, and Miglietta (2018) stated that knowledge is a valuable resource that supports the competitive advantage of an organization. Developing an effective method to manage knowledge has a relevant economic implication on organizations (Kraśnicka, Głód, & Wronka-Pośpiech, 2016). Furthermore, Quintas, Paul, and Geoff (1997) and Caiazza, Richardson, and Audretsch (2015) posited that knowledge within an organization must be monitored and evaluated continuously.

Transformational Leadership Theory

The conceptual framework for this study was grounded in (a) knowledge creation theory developed by Nonaka and Takeuchi in 1995 and (b) transformational leadership theory (Burns, 1978). Transformational leadership theory focuses on the relationship between followers and leaders and how leaders motivate followers to support each other to a higher level of performance (Burns, 1978). According to Burns (1978), leaders inspire followers to achieve results. In this study, I focused on the role of transformational leaders on employees' performance through knowledge transfer programs. Research has shown that visible leadership commitment has a practical mediating effect on employees' competence and job performance (Tsai et al., 2015).

Transformational leaders enable followers to focus on goal attainment and accept the moral practice and promotion of personal sacrifice for achieving goals (Qu et al., 2015). Transformational leaders promote enduring social relationships between the organization and the employees by breaking down the rivalry of self and organizational interest. Furthermore, a transformational leader has a pragmatic influence on employees' engagement, job satisfaction, and commitment, and ultimately reduces employee turnover (Tsai et al., 2015). The results of this study may supplement current knowledge by gathering data from the management of engineering consulting organization regarding how management views succession planning through the lenses of mentoring and coaching as a viable means to transfer knowledge. Through this research, I reflected on the strategic initiatives used by organization leaders to facilitate knowledge transfer from the perspective of succession planning (Neukam, 2017).

Knowledge Transfer

KM had over 20 years of history and that the origin of KM was difficult to trace to a specific period (Bolisani & Handzic, 2014). Essential KM research was published by Ikujiro Nonaka and Hirotaka Takeuchi in 1994 (Grant, 2015). The concept of evolution of knowledge stemmed from the perception that the conversion of knowledge can be through group interaction, known as a KM process (Iyamah & Ohiorenoya, 2015). Nonaka (1994) noted that the development of new knowledge could only be through interactions among employees and that an organization determines the extent of the interaction.

According to Saks and Grumman (2018), knowledge creation is a continuous process of combining and recombining knowledge to generate a competitive advantage. Nonaka and Takeuchi (1994) modeled a knowledge-creating process for understanding the dynamic characteristics of such activities. Alegre, Sengupta, and Lapiedra (2013) established that KM involves the identification and leveraging of collective expertise in organizations for advanced performance. Iyama and Ohioirenoya (2015) established that knowledge sharing influences performance. Furthermore, employees might not be willing to share knowledge for the worry of losing such knowledge (Iyama & Ohioirenoya, 2015). Nonaka (1994) explained that employees lack satisfaction in sharing tacit knowledge because there is insufficient reward for sharing knowledge.

Critical to knowledge transfer is the conversion of tacit knowledge to explicit knowledge, first proposed by Nonaka and later advanced by Nonaka and Takeuchi in 1995. Later, Agnew (2018) outlined the model of knowledge and explained the conversion of explicit and tacit knowledge. Despite the difficulty in performing the transfer of knowledge, tacit knowledge is an organization's primary resource to competitive advantage, and the process of transfer remains the focus to maintain the organization's standards (Agnew, 2018). Furthermore, the degree of complexity of tacit knowledge makes it more valuable to a firm (Agnew, 2018). Agnew (2018) explained that the model comprises of four transitions: (a) socialization, (b) externalization, (c) internalization, and (d) combination.

Socialization. The socialization process is the beginning of knowledge conversion. Tacit acquisition occurs because of interaction between individuals. The

interaction could be formal or informal (Moorosi & Grant, 2018). Transfer of tacit knowledge is could be through observation and imitation of others (Nonaka, 1994).

Externalization. Externalization is the next step in knowledge conversion. Externalization is the turning of tacit knowledge into explicit knowledge to form new concepts. The accomplishment of the process is through dialogue that makes tacit knowledge to be known as giving understanding to others (Kharuhayothin & Kerrane, 2018). Externalization is exemplified through documentation of newly acquired knowledge in the form of words to produce desirable results. Tacit knowledge may be expressed in metaphors, hypotheses, models, or similar (Moorosi & Grant, 2018).

Combination. The next step in knowledge conversion is combination. Combination is the process of systematizing concepts into definitive knowledge (Nonaka & Takeuchi, 1995). Meetings and other forms of social connections formed the core of the process of turning tacit to explicit knowledge (Nonaka, 1994). The combination process in knowledge transfer is through expressed words, hence, effective communication is a vital element of knowledge transfer (Grant, 2015).

Internalization. Internalization is the last step in the SECI model. Internalization is the conversion of explicit knowledge into tacit knowledge through learning by doing (Saks & Grumman, 2018). Internalization is the absorption of new knowledge and skills on a cognitive level (Saks & Grumman, 2018). Internalization has a link with the learning within the organization and could result in the change of the culture of the organization (Nonaka, 1994). According to Nonaka (1994), all the four processes of conversion are required to prevent loss in the capturing of the knowledge. The combination of the four

processes is the spiral of organizational knowledge creation (Agnew, 2018; Moorosi & Grant, 2018). Combination and socialization processes are at individual or group level and may be complicated at organizational level (Kharuhayothin & Kerrane, 2018).

From the study of internal knowledge transfer performed by Saks and Grumman (2018), the organization can determine the success of transferring tacit knowledge if the knowledge has been integrated within the organization. Leaders must promote collaboration and trust among employees to enable a successful transfer of new knowledge (King, 2009). Therefore, I conducted a research to understand how leaders in consulting organizations facilitate the transfer of tacit knowledge. The study may contribute to the model of the knowledge conversion process and the importance of leaders.

As a process, the knowledge management cycle includes acquisition, refinement, and transfer of knowledge. The initiation of the knowledge management starts with the acquisition of knowledge. Knowledge refinement is the process of optimizing knowledge to maximize its reusability (King, 2009). According to Hau, Kim, Lee, and Kim (2013), to maintain the knowledge' creation and dissemination, there must be constant interaction between explicit and tacit knowledge. Therefore, the two knowledge management strategies prevalent among organizations are codification and personalization (King, 2009). To set a formidable strategy, Wahba (2015) suggested the following: (a) share the existing knowledge, (b) create new knowledge, and (c) create a culture that promotes knowledge management.

Literature Review

According to Nonaka and Takeuchi (1995), knowledge is a justifiable acquired skill and can be classified as explicit and tacit. Knowledge creation is a continuous process of combining and recombining knowledge, and deliberate action is necessary for success (Saks & Grumman, 2018).

Knowledge Management Systems

KM improves corporation value through the development and management of intellectual assets (Saifi, 2015). However, KM security is essential for the preservation of valuable assets (Saifi, 2015). The knowledge management system plays a significant role in supporting the advancement of an organization (Laihonon & Mantyla, 2018).

Therefore, securing KM is crucial for the organization as they share data, work mutually, and collaborate on various confidential projects. In acquiring knowledge, Fombad (2018) suggested that an organization must focus on integrating confidentiality, trust, and privacy into KM.

Confidentiality, trust, and privacy concerns. Confidentiality, trust, and privacy are critical in the KM process (Alharbi, Alyoubi, Alyoubi, & Almazmomi, 2018). Alharbi et al. (2018) posited that establishing and maintaining confidence and trust at various stages of the process enhanced the transfer of tacit knowledge.

Quality improvement strategy. In performing knowledge-capture activities, reduced quality may diminish knowledge value (Dalkir, 2013; Saifi, 2015). The challenges with quality management are rooted in the different meanings applied to different processes or specific business areas. Therefore, quality management requires a

deliberate plan and a guided implementation (assurance) to ensure the desired outcome and eliminate the cost of quality (Alharbi et al., 2018). Quality management activities include policy and planning, management responsibility, and knowledge capturing processes. From the study performed by Dzekashu and McCollum (2014), I established the following: Top management's engagement produced an optimum result within the organization. Having quality policies in place will translate to real and desired improvements. The management activities have a maximum enormous on the effectiveness of the processes. The self-assessment of the quality management system by organizational leaders improves the overall effectiveness and efficiency, resulting in a maximum impact on operations. The method used by the organizational leaders for analyzing performance had maximum impact on the organization.

Reason for Knowledge Sharing in Organization

Knowledge sharing enables people to do their work using the collective knowledge and experience. Knowledge sharing could be through SWI, email, communities, meetings (Davis, 2017). One such approach was by mapping. Mapping is relevant in the following ways: (a) providing a perspective of the entire process and the organization in which it exists, (b) showing the relationship of parts to the whole, (c) identifying or verifying performance improvement opportunities, and (d) highlighting aspects of the process that requires more learning (Saifi, 2015).

The Four Capabilities of Operational Excellence

The four capabilities for operational excellence centered on the work of Stephen Spear. In the work of Spear, comparing operationally excellent companies with good

companies, Spear identified four failure modes and four best practices that he calls capabilities. The capabilities counteract the failure modes.

Failure Mode 1 and Capability 1. The failure mode has to do with copying lean tools without allowing the system to be self-diagnostic. The solution to solving the challenge was to design work to see problems as they occur. The designed work captures best practices and issues are evident immediately (not hidden)

Failure Mode 2 and Capability 2. The failure mode is working around problems even when they are recognized. A better approach is to develop a corrective action against the problems rapidly at the point of activity by containing the problem, so it does not affect anyone else. Recognizing the abnormality should trigger problem-solving.

Failure Mode 3 and Capability 3. The failure mode is that people do not share what they know with each other quickly. Transfer of knowledge is prevalent in the transfer of tacit knowledge. A best practice is to share new local knowledge across the enterprise, i.e., share the knowledge that was learned and shares how the learning occurred.

Failure Mode 4 and Capability 4. The failure mode is that leaders do not develop the capabilities of others to design work and institutionalize new knowledge. The acceptable practice is that leaders develop engaged employees through teaching coaching and mentoring. It, therefore, suggests that the most senior management owns the capability development process — a system of ideas, values, beliefs, knowledge, norms, customs, and technology shared by those within an organization.

The quality transfer of tacit knowledge may enable organizations to preserve critical knowledge and promote operational continuity. The vital strategic resources are the people (Millar et al., 2017), and leaders must be aware and recognize that KM is essential for competitive advantage (Garrick & Chan, 2017). As previously explained, though the exits of experts from organizations may not be inevitable, knowledge may be transferred to active employees through knowledge sharing (Joe et al., 2013). The challenge for leadership was how to better facilitate the artistic value of employees (Millar et al., 2017).

As posited by Joe et al. (2013), the knowledge-intensive organization is unique in its operation, and the competitive advantage that they have is their technical expertise. As revealed by Pérez-Luño et al. (2016), the peculiarities of tacit knowledge in the knowledge-based industry are unparalleled. Furthermore, the expertise of experienced employees is critical to organization existence (Litchfield et al., 2016). However, Pereira et al. (2016) argued that the quality of tacit knowledge on customer loyalty is essential and relevant to the goal of an organization. In the study of Dzekashu and McCollum (2014), the authors identified quality in the process of capturing the intellectual asset as a critical ingredient in the transfer of tacit knowledge.

Lack of necessary quality might limit the usefulness of the captured tacit knowledge (Litchfield et al., 2016). According to Nam Nguyen, and Mohamed (2011), and Millar et al. (2017), leadership behaviors in KM practices would be a key driver for optimum benefits of tacit knowledge. Despite the efforts of organizations in capturing tacit knowledge (Litchfield et al., 2016; Perjanik, 2016), leaders of organizations have not

fully realized the benefit of the transfer of tacit knowledge. In this study, the goal was to understand how leaders facilitate the transfer of tacit knowledge among employees in engineering consulting organizations.

In a previous research, the study focused on the processes of knowledge transfer in multinational corporations and the associated challenges in international settings (Perjanik, 2016). Research finding revealed that several barriers could exist during a knowledge transfer, which includes a lack of value for new knowledge, motivation to apply new knowledge, and combination of issues (Lievre & Tang, 2015). As suggested by Garrick and Chan (2017), leaders should be the facilitators for fostering motivation and trust. In the studies of Neukam (2017), and Badara, Johari, and Yean (2015) on knowledge sharing through collaboration, the authors identified culture as the controller of behavior. Therefore, Neukam (2017), and Badara et al. (2015) proposed that leaders must promote a favorable culture that favors knowledge transfer. Hence, leaders are essential pieces in the process of knowledge transfer and must continuously motivate their employees to embrace the new way of thinking (Garrick & Chan, 2017).

Tacit Knowledge in Engineering Consulting Organization

Tacit knowledge is an intellectual asset that is based on experience and overly complicated. The strategies for capturing tacit knowledge have varied challenges. For this study, the capturing of tacit knowledge is the extracting of knowledge from an individual or group for a projected benefit of all (Dzekashu & McCollum, 2014; Garrick, 2018). Tacit knowledge is often difficult to verbalize by the individuals that possess it. The acquisition of the knowledge is through the interaction of three cognitive processes-

selective encoding (sifting through information), combination (integration), and comparison (for continuous update of knowledge). The coordination of these processes supported the practical application of tacit knowledge in an organization (Garrick, 2018; Seidler-de Alwis, & Hartmann, 2008). Hau et al. (2013) and Endres and Chowdhury (2014) stated that KM has growing attention in enhancing and supporting knowledge creation and sharing within organizations.

Capturing of Tacit Knowledge in Engineering Consulting Organization

The design of the study was to understand how leaders are facilitating the transfer of tacit knowledge in consulting engineering organizations. Bican, Guderian, and Ringbeck (2017) posited that there is a diverse range of practices available to capturing knowledge, and successful implementation of knowledge must be a collaboration between leadership and employees. KM requires vital supportive drivers, such as the availability of organic organizational structure, human resources, and supportive culture (Papa et al., 2018).

Organization culture. Extant literature established the significant impact of organizational culture in supporting KM processes (Papa et al., 2018). Organizational culture is a set of values/beliefs that guide its behavior (Tomas & Hult, 2003). The success of KM thrives on the support of organizational culture and can constitute vital promoters or barriers of a collaborative mutual work environment (Papa et al., 2018). Papa et al. (2018) posited that organizational culture hinged on leadership support and which in turn may affect KM. The level of trust among employees is an essential factor in advancing organizational KM. Wahba (2015) confirmed that organizational structure is a

significant key to supporting KM, and organizational structures may positively enhance KM (Sunalai, & Beyerlein, 2015; Wahba, 2015).

Human resource management. The interface among organizational divisions is essential to acquiring valuable knowledge (Hau et al., 2013; Wang et al., 2010). People are the critical driver of KM as the value of knowledge is intangible (Soliman & Spooner, 2000). Groff and Jones (2012), and Roy and Mitra (2018) supported the above statement by describing the inherent knowledge in employees as a greatest intangible asset.

Challenges of Knowledge Transfer

There is an increase in the relevance of human and cultural concerns in KM. A more profound knowledge or experience is a product of higher tacit knowledge that comes with more significant difficulties in articulation. Since tacit knowledge is highly individual (Polanyi, 1974), diffusion of the knowledge may seem impossible (Augier & Vendelo, 1999; Roy & Mitra, 2018). Researchers asserted that there are difficulties in sharing tacit knowledge. One of the challenges is the perception, which is a characteristic of unconsciousness, or lack of awareness of the wealth of knowledge possesses by people (Polanyi, 1974; Roy & Mitra, 2018). Second challenge is the language difficulty due to the non-verbal form of tacit knowledge. Third, time is a threat to capturing tacit knowledge because of the amount required to complete the communication process. Augier and Vendelo (1999), and Bennett and Gabriel (1999) stated that the internalization of tacit knowledge requires a considerable time among employees. Fourth challenge is ensuring the value/quality of tacit knowledge (Donate & de Pablo, 2015). The quality of the captured knowledge may drive the willingness of employees to apply

them. Lastly, the remote characteristics in the present work-life pose an immeasurable resistance to the dispersion of tacit knowledge as face-to-face seems to be a better platform for effectiveness (Garrick, 2018; Leonard & Sensiper, 1998).

Tacit Knowledge and Leadership Success

Continuing exploration of tacit knowledge might enhance the success of leaders (Sandybayev & Yilmaz (2015). However, the personal characteristics of leaders are factors in the implementation of KM. Such personal traits are social, emotional intelligence, and critical thinking skills. Swensen, Gorringer, Caviness, and Peters (2016) favored the above argument and further emphasized that for a leader to be successful, they must possess the following three qualities:

1. Understanding - what to change.
2. The ability to move from old and new personal behavior
3. Communication skills

Since an increase in the accumulation and application of tacit knowledge enhances an individual's knowledge grows, the effective transfer of tacit knowledge may support both employees' and leaders' performances (Garrick, 2018).

Leadership in Engineering Consultancy

A leader is someone that guides others and leads them and that leadership is the ability to guide and direct others (Srivastava & Jain, 2017). In today's changing business world, the leader should be open to change and should influence the employees to change and be involved in the change process (Srivastava & Jain, 2017). A leader with confidence would believe in followers, consequently, employees will believe and

demonstrate high level of motivation in following the leader (Beehr & Bennett, 2015). Beehr and Bennett (2015) further stated that the goal of leaders is to empower employees in optimizing their potentials, foster in three components: the concern for others, openness, and support. These leadership qualities make the team feel welcome and wanting to work and follow the leader. The probability of being committed to working for lack of trust in the leader is one out of twelve (Swensen et al., 2016). As previously stated, leaders must understand what to change, the ability to adapt, and effective in communication (Swensen et al., 2016).

The qualities of a leader stated by Swensen et al. (2016) aligned with that of Beehr and Bennett (2015). The leader acts as the change agent and must communicate *what* and *why* the change to protect the integrity of the information (Saxena, Davies, & Phillippon, 2018). Saxena et al. (2018) further explained that leaders should have visions of a future with corresponding action plans to accomplish them. The action plans should also include how to motivate employees to relate to the vision (Saxena et al., 2018). The leader should be apparent in their message and develop an effective communication plan towards accomplishing the goal. For communication to be effective, Beehr and Bennett (2015) proposed that the message must be repeated several times to achieve good understanding and for employees to buy-in.

A leader, being a role model promotes and sustains organizational goals. According to Beehr and Bennett (2015), a leader drives the followers' actions throughout the organization. Saxena et al. (2018) further established that the leader's role affects everything from attitudes to work and the management of knowledge transfer processes.

Moreover, as a role model, Srivastava and Jain (2017) suggested that leader's words should match the actions. Tacit knowledge is crucial for an organization's competitive advantage (Lievre & Tang, 2015), and leaders should be mindful of their roles in the process of managing the transfer of valuable assets (tacit knowledge) to enhance the worth of the organization.

Sharing of knowledge is a vital component of the transfer of tacit knowledge. According to Saxena et al. (2018), the three aspects of knowledge sharing are relational, cognitive, and structural. The identified dimensions (Saxena et al., 2018), are to be fostered by leaders to facilitate the sharing of tacit knowledge. In the first dimension, relational, the focus is on building trust, respect, and friendship among employees. In the second dimension, cognitive, the attention is on effective communication for creating systems of shared meaning within the organization. The third and the last aspect, structural, centers on building network ties that supported the interactions among employees. All the three elements point to the relevance of commitment in knowledge transfer that Nonaka (1994) identified as one of the main issues in the creation of new knowledge. Nonaka (1994) identified the three factors that could encourage individual commitment as intention, autonomy, and fluctuation.

The intention is the awareness of the individual in creating new knowledge and recognizing the value in them. Autonomy focuses on understanding individual differences and the practice of openness within the organization to optimize the different viewpoints in achieving set goals. The third factor, fluctuation, recognizes the existence of some discontinuity or change in patterns within the organization. However, since the

transfer of knowledge is through the interaction between people (Nonaka, 1994), the effect of fluctuation creates new interactions between individuals, and in turn, create new knowledge.

Leadership Role in Knowledge Transfer

Leadership is the ability to inspire followers through vision and mission (Yıldız, Baştürk, & Boz, 2014). Davis (2017) stipulated that leadership covers necessary tasks and functions that are required for businesses to succeed, develop, and be efficient. Therefore, leadership functions are into two categories-normal operations and transformation (Davis, 2017). To be successful in KM, Dalkir (2013) and Braedley (2016) posited that successful KM requires a conscious approach throughout the organization. According to Amin, Akram, Shahzad, and Amir (2018), there exists a relationship between life-changing leadership and the productivity of an organization. Amin et al. (2018) further confirmed that a transformational leader is instrumental in improving the position of organizations. Leaders' behavior might increase employees' innovative thinking and performance, and that transformational leaders empower employees to be creative and innovative (Amin et al., 2018; Chaudhry & Joshi, 2017).

Leadership Styles Applicable in Knowledge Transfer

A leadership style is a method that a leader uses to provide direction, implement plans, and motivate people (Yıldız et al., 2014). Leadership in regular operation offers support and structure by establishing an environment for employees to thrive (Yıldız et al., 2014). In management, there had been an extensive discussion on the following

leadership styles: transformational, transactional, authoritarian, paternalistic, democratic, and laissez-faire.

Transformational. The principal goal is to transform the followers and redirect their thinking. Leaders with this style, inspire their followers with a sense of purpose (Yıldız et al., 2014). Transformational leaders create a vision and communicate them to their followers (Amin et al., 2018; Chaudhry & Joshi, 2017). Charismatic leaders are very knowledgeable and use different strategies to stimulate their followers to think independently (Zhou, Zhao, Tian, Zhang, & Chen, 2018). The following are the stages in the transformational leadership style:

- First, the leader communicates to employees the importance of their assignments
- Second, the leader ensures the realization of the organization's objective rather than employees' targets.
- Third, the leader is useful in providing the necessary support to employees.

Transactional. Transactional leaders motivate followers through rewards and punishments. Leaders provide rewards for effort and excellent performance. If subordinates do not meet expectations, leaders maintain the status quo through management by exception and implementation of corrective actions for performance improvement. The focus of transactional leaders is to increase the efficiency of a system by following the established rules. A transactional leader provides and standardizes practices in achieving organizational goals. A transactional leader is either negatively or positively affected, depending on whether the emotional level is high or low, respectively. The leadership style is task-oriented (Budak, 2017) and based on a working

relationship between leader and employee. Employees can perform their roles and do their best if they understand expectations.

Authoritarian. The authoritative leadership style emphasizes the distinction between leaders and their followers. Direct supervision is the strategy for maintaining a thriving environment, and authoritarian leaders follow the vision of those in control. Authoritarian traits include setting individual goals, engaging one-way and downward communication, controlling, and interaction domination.

Paternalistic. A paternalistic leader acts as a parental figure. The leader has comprehensive care for his/her subordinates and, in return, enjoys the loyalty of his followers. Employees are committed to the leader's beliefs' and are independent. The relationship between leaders and followers is substantial such that workers have more extended employment history because of the trust in leadership that makes workers open up to the leaders with any issue. One of the downsides to a paternalistic leadership is an unfair preference. The effect of favoritism may erase the benefit of longevity with the organization. Northouse (2018) posited that the followers of paternalistic leaders have better organizational skills than followers of a transactional leader. Having this style of leadership promoted a reward system that enhanced more accomplishment and boosted employees' self-confidence.

Democratic. In a democratic leadership style, the leader shares the decision-making abilities of followers by practicing social equality — the democratic style believes in everyone playing a part in decision making. In research on participative management, Dyczkowska and Dyczkowski (2018) asserted that the democratic style is one of the most

effective and may result in higher productivity, and increased morale. The downside to the democratic leadership is that it works best for followers that are skilled and eager to share knowledge. It requires plenty of time to establish the best course of action.

Laissez-faire. The laissez-faire leadership style gives the power to make decisions wholly to workers and enables followers' self-rule. In the laissez-faire leadership style, leaders provide followers with every support but only involve in decision making unless requested by followers. Laissez-faire leadership is sufficient to use when: (a) employees are highly skilled and experienced, (b) employees take pride in their assignments, (c) employees are outside experts, and (d) followers are trustworthy and experienced.

Summary and Conclusions

In a review of the literature, the phenomenon of interest is to gain understandings of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. The fundamental concepts of this research work are to understand tacit knowledge, its application, limitations, leadership roles, and quality measures to facilitate its transfer (Deng, 2016, 2017). Past research findings revealed that several barriers could exist during a knowledge transfer in the form of lack of value for new knowledge, motivation to apply new knowledge or combination (Lievre & Tang, 2015).

Leaders are essential pieces in the process of knowledge transfer and must continuously motivate their employees and be the facilitators for fostering motivation and trust (Garrick & Chan, 2017). In the studies of Neukam (2017) and Badara et al. (2015)

on knowledge sharing through collaboration, the author identified culture as the controller of behavior. Neukam (2017), and Badara et al. (2015) proposed that leaders must promote a favorable culture that favors knowledge transfer. Since tacit knowledge is highly individual (Polanyi, 1974), diffusion of the knowledge may seem impossible (Augier & Vendelo, 1999).

While there was extant literature on tacit knowledge and application in many industries, there was a lack of empirical studies in engineering consulting organizations. In this chapter, I identified related literature on the conceptual framework of the study, and steps towards quality management. The research tradition is qualitative. The qualitative approach is suitable for the study in gaining understandings of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. In Chapter 3, the focus of the discussion is on the details of the research methodology of the study.

Chapter 3: Research Method

The purpose of this qualitative multiple case study was to gain an understanding of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. I selected case study as the research design because the focus was on the subjective experience of the participants (Auerbach & Silverstein, 2003). The purpose of this research was to understand the complexity of the phenomenon in-depth within a natural setting (Gog, 2015; Yazan, 2015; Yin, 2014). The case study serves as a way for a researcher to obtain a more in-depth understanding (Agee, 2009; Yin, 2014); in this research, that understanding was on how leaders at an engineering consulting organization facilitate the transfer of tacit knowledge among employees.

In this chapter I explained the research design and the rationale for its selection. I also discuss the role of the researcher, methodology, participant selection logic, instrumentation, and procedures for recruitment, participation, and data collection. The chapter includes the data analysis plan and trustworthiness. The trustworthiness comprises of credibility, transferability, dependability, confirmability, and ethical procedures. The final section of this chapter is a summary of the main points and a transition to Chapter 4.

Research Design and Rationale

In this study, the overarching research question that applied to this study was: How do leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees?

The research methodology was qualitative. Gog (2015) and Yazan (2015) emphasized the use of a multiple case study when the objective is to observe the internal and external patterns of organizations for a deeper understanding of the phenomenon of interest. Yin (2018) recommended a case study for an intensive study of a specific context. Therefore, a qualitative approach was suitable for the study in gaining an understanding of how leaders facilitate the transfer of tacit knowledge of experienced employees (Campbell, 2014; Goertz & Mahoney, 2013). A case study generally follows the rules of qualitative research. According to Yin (2018), the use of qualitative research occurs for the following reasons: (a) open-ended interview questions, (b) the researcher provides an in-depth analysis of the phenomenon, (c) the study is used to examine individuals in their natural settings, and (d) the method provides a subjective experience of the people under study. The case was to gain understandings about how leaders facilitate the transfer of tacit knowledge among employees in an engineering consulting organization (Wang et al., 2010; Zhang et al., 2016).

The research interviews were a tool for the inquiry into the phenomenon of interest through a reflective process (Agee, 2009; Brinkmann, 2014; Rosário, Kipper, Frozza, & Mariani, 2015). As the researcher, I was the primary instrument in this study (Agee, 2009; Brinkmann, 2014; Yin, 2014). I collected data through the purposive sampling of 10–15 leaders from consulting engineering organizations in the United States. The unit of analysis was leaders in an engineering consulting organization who are partners with at least 5 years of employment history with the same organization. The unit of measurement was the type and support system that leaders in the organization have

provided to facilitate knowledge transfer within the last year of operation. The inclusion criteria were leaders in the consulting organizations who have practiced for a minimum of 5 years and are still practicing in the consulting industry.

Although a quantitative research approach may apply to a study, Mills et al. (2010) posited that qualitative research is more appropriate where the presentation of data is subjective. The details required called for the use of content analysis techniques. The enhancement of the internal validity occurred through asking participants to review the produced transcripts to ensure they represent what transpired during the interview process and that the interpretation and meanings of participants' interview responses are accurate (Auerbach & Silverstein, 2003). The use of multiple data sources was to support the research credibility through the triangulation of data (Gorissen, Van Bruggen, & Jochems, 2013).

Research Design

Yazan (2015) recommended the use of an exploratory multiple case study when the objective was to observe the internal and external patterns of organizations for a deeper understanding of the phenomenon of interest. Yin (2018) recommended a case study for an intensive study of a specific context. A case study generally follows the set of rules of qualitative research. In contrast to qualitative inquiry, quantitative data can be counted, measured, and expressed using numbers. However, in qualitative, data is descriptive and conceptual as it reflects the setting of an organization under study (Saldaña, 2015).

Gathering information in the field is intended to work toward providing answers to the research question in a study. Mills et al. (2010) emphasized the use of the qualitative method for research where a lack of structure exists, and the presentation of data is subjective, as is the case in this study. In this study, the data analysis required the application of content analysis. This study included interviews and a review of organizational documents on the knowledge transfer process. Marshall and Rossman (2014) suggested analyzing all the traditions of inquiry before selecting the appropriate strategy. I considered Delphi, ethnography, grounded theory, narrative research, and phenomenology before selecting case study.

A narrative research design focuses on data collected from the storytelling perspective. The narrative design focuses on the life experiences and stories of participants presented in a story form (Bocuzzo & Gianecchini, 2015; Ivana, 2016). The use of narrative design in data collection becomes suitable when the focus is not on identifying broader strategic issues associated with a phenomenon of interest (Morse, 2015; Thomson, 2015). The choice of narrative research did not meet the needs of this study. The Delphi technique as a research design is appropriate when organizational protocols need to be established to understand better divergence through interactive communication with a panel of experts. The requirements that are significant when using the Delphi technique as a research design tool are experts' judgment, group consensus, and anonymity in data collection to ensure zero influence (Fletcher & Marchildon, 2014; Green, 2014). Cassar, Marshall, and Cordina (2014) suggested that the Delphi approach becomes useful when a researcher needs to collect ideas from experts on a specific topic

and establish an agreement. In this study I intended to interview research participants who were not necessarily experts in the field but who understand the phenomenon of interest (Lewis, 2015).

Ethnography is useful for studying the culture of a people through face-to-face interviews with the focus population in their environment. Ethnography addresses the learned behavior of a group (Weis & Fine, 2012) and involves a study of a cultural group; the findings are about the cultural activities of the focused group (Mutchler et al., 2013; Van Maanen, 2015). In this study, broader-based research was on the relationship between leadership and followers in the transfer of tacit knowledge of experienced employees in an engineering consulting organization. The ethnography research design was not suitable for this study.

Phenomenology, as research design, emphasizes the direct experiences of individuals. The strength of the phenomenological approach is in understanding the principles of the lived experience of an individual or a related group of people through the collection of information relating to the subjective interpretations, beliefs, perceptions, and specific human experiences (Denzin & Giardina, 2014; Yuksel & Yildirim, 2015). Although the phenomenon under study was the relationship of leadership and followers in the transfer of tacit knowledge of experienced employees in engineering consulting organizations, the study does not require determining the meaning of lived experiences of the population (Tight, 2016; Yuksel & Yildirim, 2015) but the experiences themselves and the relationship with the concept. In this study, the focus was on the actual experiences of leaders in the transfer of tacit knowledge of experienced

employees in an engineering consulting organization. The use of phenomenology was inappropriate.

Research Rationale

The conceptual framework for this study was SECI (Nonaka & Takeuchi, 1995). The framework is grounded in (a) knowledge creation theory developed by Nonaka and Takeuchi in 1995 and (b) transformational leadership theory (Burns, 1978). These theories are the basis for understanding leaders' perspectives on strategies to influence knowledge transfer and identification of potential barriers. I chose a case study so as to explore and capture the participants' experiences and develop themes from emerging data. Bailey (2014) pointed out that the case study design adopts a step-by-step process for a better understanding of a given outcome. The basis for the use of a case study is to follow the path of constructivism. The view of constructivism centered on how people construct their understanding and knowledge of the world (Tadajewski, 2016). The described position allows me to examine the complexity of views of the research participants rather than the restricted meaning of the few ideas on the phenomenon of interest.

The research participants were interviewed in a location comfortable to them, as guided by the inclusion and exclusion criteria for the recruitment of the sample population. The participants were 10–15 leaders in an engineering consulting organization that have practiced for a minimum of 5 years and are still practicing in the field of engineering. I recorded the interviews for this study using a digital audio recorder, transcribe the recorded interviews, and generate the themes using NVivo

Version 12 software. The review of the produced transcripts by participants enhanced internal validity. As a follow up to interview questions, participants were asked to present any available artifacts in support of phenomenon of interest. I reviewed the artifacts by visual observations. The artifacts reviewed are organizational structure chart, work management process, quality program, communication methods among employees, and organizations websites. The review of the artifacts was at the interview location at the day of interview or at a scheduled date. During the visual observations, notes were taken to enhance code development and data analysis process.

Role of the Researcher

In this study, I established a relationship at the location of the study to credibly and ethically collate information that helped to answer the research question. Because the study involves a non-random selection of a few participants, the use of field research complemented the purpose of the study. I gathered information through interviews and reviewing internal documents without compromising the participants' anonymity. The study used multiple data sources that include interview transcripts, field notes, and organizational documents. The data collection processes involved the use of semistructured questions, field notes, and review of the organizational document in which those activities are happening (Nadal et al., 2015). The interview was recorded using an audio recorder and transcribe the interviews verbatim for coding purposes (Collins & Cooper, 2014). I have no personal relationship with the participants.

The data collection processes involved the use of interview questions to gain an understanding of participants within a natural setting. For triangulation, multiple data

sources were used that include interview transcripts, field notes, and the review of organizational documents (Gorissen et al., 2013). In this study, to ensure biases do not affect the findings, I documented the reflections and other observations in a reflexive journal to minimize biases. I gave priority to the confidentiality of information and anonymity of the research participants by using pseudo names. The data was kept safe and secure by using a password control device (Braunack-Mayer et al., 2015).

Methodology

The study was a qualitative multiple case study. Yazan (2015) described case study as a contemporary phenomenon within a real-life context when the boundaries between a phenomenon and context are not clear, and I have little control over the phenomenon and the context. The specific case was to gain understandings about how leaders in an engineering consulting organization facilitate the transfer of technical expertise among employees. The study was bounded within the United States. The unit of analysis were two engineering consulting organizations in the United States.

The inclusion criteria are: (a) leaders in a consulting organization with a minimum of 5 year experience, (b) consulting organizations with operations in the United States, practiced for a minimum of 10 years and are actively involved in consulting activities for the last 5 years, and (c) consulting organization with at least 10 employees. The criteria for the sample size was the focus on having an in-depth understanding of the phenomenon, and that the collection of data from 10-15 participants may bring saturation to data collection. According to Mason (2010), saturation exists when data collection does not provide new ideas.

The choice of qualitative method was on the justification that it provides guidelines for me to understand the case to be studied (Guth & Asner-Self, 2017; Lee, Yoo, & Yun, 2015). In this study, the goal was to gain an understanding of how leaders facilitate tacit knowledge transfer in the selected organization. Also, to answer the following research question: how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees? In this study, experts are subject matter experts (SMEs) among the faculty members of the School of Management, Walden University. The SMEs evaluated the initial interview questions against the research question for a possible generation of valuable data in answering the research question.

Implementing the feedback from the experts helped me to develop the final interview questions (Guth & Asner-Self, 2017; Ravitch & Carl, 2016). This process ensured that the possible outcome from the interview of participants will be enough in answering the research question. Participants in this study included the leaders at an engineering consulting organization. The population consisted of 10-15 participants who represent the case. The inclusion criteria are: (a) leaders in a consulting organization with a minimum of 5 years' experience, (b) consulting organizations with operations in the United States, practiced for a minimum of 10 years and are actively involved in consulting activities for the last 5 years, and (c) consulting organization with at least ten employees. The selection criteria were to acquire an information-rich data that illuminated the question under investigation (Haahr et al., 2013). In this study, the purposeful sampling approach was implemented to select the 10-15 research participants

that could provide data suitable for exploring the role of leaders in facilitating the transfer of tacit knowledge. The exclusion criteria are leaders in consulting organizations with less than 5 years of professional practice. To achieve triangulation, the other sources of data were field notes through observations and review of organizational documents (Gorissen et al., 2013).

Participant Selection Logic

The purposeful sampling of 10-15 research participants was to ensure an information-rich study. The criteria for the sample size were to have an in-depth understanding of the phenomenon, and collection of data from 10-15 participants will bring saturation to the data collection. According to Mason (2010), saturation exists when data collection does not provide new ideas. Purposeful sampling was with the intent of identifying and selecting participants for the effective management of limited resources (Rubin, 2015). The choice of the first 10 participants was to determine whether understanding occurred according to Guest, Bunce, and Guest, Bunce, and Johnson (2006) that stated that understanding occurs within the first ten interviews.

Instrumentation

I was the primary data collector as the researcher for this study. Leedy and Ormrod (2013) asserted that the primary data collection instrument in qualitative research was the researcher. For evaluation of the appropriateness of the inquiry questions, I consulted subject matter experts on qualitative research (SMEs) as contained in the Walden University faculty expert directory (FED). Interviewing was a significant source of qualitative data collection (Oye, Sorensen, & Glasdam, 2016). I had the opportunity to

interact with the participants on individual bases as they share their experiences.

Historically, the conduction of an interview was limited to two primary forms: one-on-one (individual) or focus groups. In recent years, technology has widened the processes of conducting these interviews to include a telephone interview, e-mail interview, and other internet interviews (Leedy & Ormrod, 2013).

Individual interviews are one-on-one moments between the interviewer and the participant where the interviewer asks either structured, unstructured, or semistructured questions for the participant to respond. Individual interviews were to obtain independent, in-depth personal data from each of the participants (Oye et al., 2016). The main factors in selecting participants were the purpose of the study. The interviews were conducted, independent of each participant, and the information was processed the confidentially. The data collection was through individual interviews, field notes, and review organizational documents.

Field study. All correspondence for the field study followed the Walden IRB guideline. The procedures for the conduct of an expert validation involves the sending of invitational e-mails to qualitative research experts (SMEs) as contained in the information from the Walden University faculty expert directory (FED). The expert validation method was a process where I solicited feedback from experts in qualitative research design. I used the feedback to check for the alignment of the research question to the interview questions (Leedy & Ormrod, 2013).

Using the FED, I sent an invitational e-mail to ten qualitative research SMEs with an attachment of the abridged proposal that includes the initial interview questions. The

evaluated interview question and the inputs from the SMEs would enable me to make the necessary revision and improve the quality of work (Leedy & Ormrod, 2013). The process facilitated the collection of relevant data from the research participants to answer the research question and address the gap in the literature.

Individual interview. Central to the data collection processes was the semistructured interviews of participants with open-ended questions. Face to face interviews provided an opportunity to obtain extensive insight of participants; how they feel, what they think, what are the effects of certain events (Hazzan & Nutov, 2014). The interview centered on semistructured questions aligned with the central research question on the role of leaders in facilitating the transfer of tacit knowledge of experienced employees in an engineering consulting organization. The private setting was conducive to its forthrightness and deep introspection. These interviews were semistructured, allowing me to exercise control over the direction of the data collection processes.

The participants were asked of their availability for an interview via a letter of introduction that informed participants of the fundamental nature and purpose of the research. The responses to the interview questions obtained prompted the vital information needed to address the purpose of the study. The interview questions were directly related to the research question of the study. Responses obtained became part of the database built to manage the enormous amounts of generated data. The interviews were audio-recorded, and participants had the opportunity to review the transcribed interview. The process helped to ensure that the produced transcripts represented what transpired during the interview process before data analysis began.

The privacy risk was minimal as the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life. The information shared by the participants was anonymous and confidential (Corbin & Strauss, 2015). Sharing my possible biases was a strategy to reduce bias (Stahl, Doherty, Shaw, & Janicke, 2014). A second strategy was to circumvent the risk of bias by analyzing all the sets of responses from the participants. To avoid the temptation of selecting only a few responses, I incorporated all the participants' ideas into the themes and patterns. There was coding of the transcripts to extrapolate patterns or description of labels. The generation of these labels was from each line of thought, sentences, or phrases of the participant (Rubin & Rubin, 2012). The categorization of the codes served as a gathering point for codes or family of codes (Ravitch & Carl, 2016). The categorization led to the theme. Themes explained what had happened, its meaning, or how the participants felt about the subject matter that helped draw conclusions and reflected the intent of the participant (Braunack-Mayer et al., 2015).

An interview question protocol was pre-established to include: (a) Opening and welcome note, (b) interview questions and, (c) a closing summary thanking the participants. The interview protocol ensured the direction of questions and uniformity in the interview process (Fakis, Hilliam, Stoneley, & Townend, 2014). I sought the consent of the participants before proceeding with the interviews. All the interview data and internal and external document reviews were screened to remove personal information to prevent the identification of the participants (Seidman, 2013).

Fieldnotes. The field notes generated reflective engagement in the data collection activities. In a qualitative study, a field note was a data-collecting tool that allows me to acquire data from participants in the context of the activities or the environment (Leedy & Ormrod, 2013). While conducting the interviews, I took notes of any pertinent occurrences or thoughts. The field notes may generate insight into the roles under consideration and engagement with the processes or activities (Yilmaz, 2013).

Document review. The third instrument was the review of the organizational document. It included companies' organizational documents and artifacts on the knowledge transfer process. Dworkin (2012) noted that the document review process was another source of data collection that can add to the credibility and trustworthiness of the research study.

Procedures for Recruitment, Participation, and Data Collection

The recruitment of participants for this study occurred only after obtaining approval from the Institutional Review Board (IRB). Approval from the Walden University IRB provided the access and the application of the letter of cooperation, expression of interest form, and consent form to the study. I sought and obtained permission from the University's IRB (Walden University) to conduct this study and produce a detailed schedule for the interview and data collection processes. Individual participants were approached for consent to carry out and audio-record the interviews. I transcribed the audio-recorded interviews, and the research participants reviewed the produced transcripts to ensure that the transcribed represented what transpired during the

interview process. The final process involved the importation of the transcribed text into Microsoft Word to start the data analysis stage.

Letter of cooperation. A draft letter of cooperation was sent to IRB for approval before sending it to the potential research participants. The letter of cooperation was a requirement to gain access and permission to the respective participants' office sites and locations. After the approval of the letter of cooperation, I sent it to potential research participants in a consulting organization in United States.

Expression of interest. The expression of interest was the notification e-mail to the potential research participants at a consulting organization in the United States. The e-mail was necessary to select the individuals that might be interested in participating in the study. The e-mail contained a description of the study. The consent form provided detailed information about the research procedures and participation.

Consent form. Communication using informed consent was one way suggested by Kaiser (2009) towards the protection of shared experiences of the participants and meeting the ethical requirement. Kaiser (2009) advocated for a two-step approach to the informed consent process: Agreeing with participants on the use of data and confidentiality and modifying the informed consent process to have a re-envisioned informed consent. Participants' questions and concerns before, during, and after data collection was given attention to guarantee the understanding of the participants about the process and interview questions and that the responses obtained remained anonymous (Hazzan & Nutov, 2014). The consent form contained important information on the rights of the research participants. The information in the consent form included the privacy and

confidentiality of the participants and the liberty to quit from the research process any time without retribution. The nature of the study was voluntary. To protect the interest of participants, I kept data in secure storage.

Data collection plan. A collection of data in a qualitative method is often susceptible to subjectivity. McCusker and Gunaydin (2015) indicated that a dominant and prevalent theme in qualitative research would be the understanding derived from the linguistic meaning within the textual material. Serious consideration was attached to the selection criteria for research participants and data collection. Careful planning before and during the data collection preceded data analysis (Marshall, Cardon, Poddar, & Fontenot, 2013). The timing for the face to face interview was 20-30 minutes, and data collection techniques such as interviewing were adopted.

Techniques such as triangulation was used to support quality in research with the involvement of multiple sources of data (Patton, 2015). Data triangulation was used for cross-data validation and provided checks for the various data sources to achieve accurate and valid findings. The application of multiple sources of data like the transcribed interviews, field notes, and organizational documents and seeking convergence among them to form themes enhanced the validity of the study. I maintained objectivity using a reflective journal (Kvale & Brinkmann, 2015).

Data Analysis Plan

I performed an analysis of the collected data through the semistructured individual interviews, field notes, and organizational document reviews. Yin (2014) pointed out that one dominant practice during the analysis phase of qualitative research is

to return to the original propositions. The reason adduced for this was that the practice led to a focused analysis when attractions to analyze data outside the scope of the research question come up. The qualitative data analysis processes involved coding of the data, categorizing the coded data, and subsequently generating themes in line with the research questions (Godden, 2014).

I coded the transcripts to be able to extrapolate patterns or description of labels. The generation of these labels was from each line of thought, sentences, or phrases of the participant (Rubin & Rubin, 2012). I used the axial or thematic clustering coding process. The process involves an inductive approach starting with a chunk of data to coding categories where themes and patterns are observed and used for analysis (Miles et al., 2014; Ravitch & Carl, 2016). The categorization of the codes served as a gathering point for codes or family of codes. The descriptive categorization was an iterative process and allowed the theme to stay close to the research question through its attributes (Ravitch & Carl, 2016). The categorization led to the theme. Themes explain what had happened, its meaning, or how the participants felt about the subject matter helped to draw conclusions and reflect the intent of the participant (Braunack-Mayer et al., 2015).

Completion of the transcription of the audio recordings of the semistructured interviews was followed by member checking process. The participants reviewed the transcripts for accuracy and accurate representation of what transpired during the interview process. The textual transcribed data was uploaded into NVivo software from the word document to obtain standardized data that were sorted into groups and themes. Miles et al. (2014) asserted that the determination of the means of data collection, data

organization, and data storage is important before the commencement of data collection as this saved the time in the data management process. The development of a data framework was used for the data collected. The use of a case study enhanced the analysis of data as it has a set of routine procedures suitable for the identification of themes (Fakis et al., 2014). The data sources consisted of individual interviews, field notes, and organizational document review.

The organization of data from the interview transcripts was into rows and columns. I stored the interview questions on the role of leaders in facilitating the transfer of tacit knowledge in columns and responses provided by participants in rows. NVivo Version 12 is the software that was used to organize the data. The NVivo is a prominent software used by qualitative investigators to analyze, manage, and shape qualitative data (Richardson, Earnhardt, & Marion, 2015). During data analysis, exploration of the phenomenon of interest involved reading the interview field notes and transcripts. Flicker, Haans, and Skinner (2004) posited that the analysis of the data should start during fieldwork.

The purpose of coding was to identify concepts and find relations between them (Miles et al., 2014). Structured coding or precoding provided a framework for the researcher to focus on data collection efforts. Precoding was deductive, and the researcher followed-up with inductive coding as the themes emerge from the data. The development of the precoding structure was a product of the experience gained as a researcher to relate the conceptual framework, the internal and external document review, and responses to the interview questions to derive themes. Precoding assisted in ensuring

congruence with the conceptual framework and research questions. The pre-coded structure allowed the researcher to analyze the data iteratively to ensure the efficacy of the data collection and organization processes.

I intended to interview the first 10 participants to monitor for data saturation. The justification for the 10- 15 participants was dependent on running analysis to see how themes are unfolding. Where data saturation was not achievable with the first 10 participants, other participants were interviewed to seek for the generation of new themes or convergence of themes and ideas for data saturation (Fusch & Ness, 2015). There was a review of the categorization of the codes and themes to ensure pattern correctness and precision and alignment with the framework used in the study.

Issues of Trustworthiness

In qualitative research, trustworthiness has four parts, namely, credibility, transferability, dependability, and conformability. Addressing all the parts of the trustworthiness ensured the credibility of the study (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014; Cope, 2014). The extent of the reliability of the research process was the level of compliance with the rigors, demand, and ability to demonstrate evidence of the results reported in these four areas. Triangulation enhances the research trustworthiness (Simundic, 2013) and serves as an audit trail (Carter et al., 2014). The use of three related data collection reduced the associated bias with the use of a single data source. In the data collection process, the researcher maintained the interview protocol to maintain consistency and keep track of the questions.

Credibility

In a qualitative study, I engaged the study participants long enough to gain and earn trust through the establishment of rapport. The establishment of rapport was to gain an extensive and thorough understanding and information from the participant. Harper and Cole (2012) described credibility as the process a researcher engaged to ensure that findings are accurate. The prolonged engagement of the study participants brought out details that gave new perspectives and insights into the phenomenon of interest. Sufficient time was spent during the interview process to gain a sound understanding of the case under investigation. There was a transcribe of the 10- 15 individually recorded interviews verbatim and ensured that the participants received a manuscript of the transcribed interview for comment and correction through e-mails.

Transferability

Transferability refers to the ability to reapply a research finding in another study (Collins & Cooper, 2014; Sinkovics & Alfoldi, 2012). The need exists for thoroughness in the processes leading to the identification of the research participants and the overall data collection and analysis processes. Providing a detailed protocol, and explicit in the description of the steps to take might guarantee external validity that could make the outcome and findings of the research transferable. The provision of a detailed account of the natural settings where data are collected, and an in-depth explanation of the data to be collected and analyzed supported the transferability of the findings of the study. An opportunity was available to future researchers and readers of the findings and to evaluate

the extent to which these findings were transferable to similar settings and larger populations (Marshall et al., 2013).

Dependability

The issue of dependability refers to how well established are the data used in a study (Su, 2014; Tobin & Begley, 2004). The review by participants may ensure the dependability of the qualitative research been undertaken and further validate the data (Munn, Porritt, Lockwood, Aromataris, & Pearson, 2014). The collection of field notes, memos, and comments revealed reflexivity in the research process. The design layout of the research provided a clear picture of the research strategy. Consideration was given to the dependability of the findings to ensure the repeat of the study. Given the same context, method, and equal participant, similar results will be obtainable while considering the uniqueness of studies.

Confirmability

Confirmability was a criterion of trustworthiness and established the level of confidence of researchers' findings. Upon completion of the transcription of the audio recordings of the semistructured interviews, participants reviewed the transcripts. The purpose was to ensure that it represents what transpired during the interview process and that the interpretation and meanings of participants' interview responses are accurate. There was a provision of explanations for themes in the analysis.

Ethical Procedures

Communication focused on the aim of the study, the possible benefits derivable, and the expectations of the research to the research participants before conducting the

interviews. The purpose of this action was to protect participants from harm and ensure the process was in line with the established professional and ethical behavior (Komić, Marušić, & Marušić, 2015). The participants knew about the ethical standards, and the informed consent process before conducting the interviews (Sanjari, Bahramnezhad, Fomani, Shoghi, & Cheraghi, 2014). The ethical duty was to protect the study participants from harm (Flicker et al., 2004). As noted by Yin (2014), all human elements of the research must receive special considerations, from the participants to personal records. The protection of the participants' rights was paramount. The research participants understood the ethical standards associated with the use of human samples, the data collection, and analysis.

The benchmark or selection criteria for the participants indicated a detailed selection process. The participants have the right to accept or reject the offer to participate in the study. The right to participate or withdraw at any time from the interview process without penalty was stated in the expression of interest form and the informed consent form. There was an assurance to the participant of the safeguard of data. I protected the data by the encryption of the files and locking up paperwork related to the research in a safe location with proper locking mechanics.

The first step in minimizing harm to participants in the research process was to ensure consent from the participants. Informed consent indicated the approval of the participants to use the data and not as stolen data, and this goes for participants' data from recordings and notes taking (Desai & von der Embse, 2008; Ritchie, Lewis, Nicholls, & Ormston, 2013). The consent sought was for individuals who participated in

voice recording and using transcription to code the research. Information made known to the participants included the time required for the interview and the sample questions. I followed the necessary steps for the consent of participants before data collection and analysis. The participants consented to audio-recording and analysis processes and procedures. The stated ethical practice helped minimize harm to participants and ensured that the participants could pull out of the process at any time.

Confidentiality. The participants of the interviews trust that their contributions in the interview process was confidential and did not end up in the wrong hands. Protecting the privacy of participants includes both confidentiality and anonymity (Cope, 2014; Ritchie et al., 2013). Confidentiality refers to a participant's privacy and the distribution of their information (Anney, 2014; Ravitch & Carl, 2016). Ways to ensure confidentiality included using pseudonyms and changing identifying information (Bojanc & Jerman-Blazic, 2013). The participants were treated with respect during the process of data collection. To prevent the issue arising from compromise to confidentiality, participants were able to confidentially provide any additional comments or revisions to the transcript through e-mail—a hard drive on a secure computer password-protected to prevent access to unauthorized users.

Protecting participants from harm. In the study, I was responsible for informing the participants on the purpose of the study and explaining the risks associated with the research process. There was an explanation of the benefit derivable from the study and the right to pull out from the study if they do not feel convinced or secured in participating in the study (Bojanc & Jerman-Blazic, 2013). During and beyond the period

of study, the communication channels remained open and cordial. Where the need arises, there was a disclosure of all activities that may become potentially harmful and risky to the participants. Question and follow-up questions were related to the research question.

Protecting the researcher from risk. In the likelihood that an anticipated risk occurs during the research processes, the participants were briefed on the mitigating strategies to adopt. I showed awareness of the cultural biases that exist among the research participants (Shenton, 2004). In a cross-cultural research environment where social gaps exist, I gave attention to hidden biases that may affect the study. The participants were commensurately motivated to partake in the interview section through the building of trust that encourages openness in the interview sections (Shenton, 2004).

Summary

Chapter 3 contained an overview of the research design and described the qualitative method that served as an underpinning guide for the study. The purpose of this qualitative multiple case study is to gain understandings of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. The trustworthiness was achievable through triangulation. I used three related data collection methods to reduce the bias associated with the use of a single source (Simundic, 2013). The use of triangulation ensured the credibility, dependability, and conformability of the study (Carter et al., 2014).

Chapter 3 included details of the role of the researcher, the sampling population, the data collection, and analysis strategies and techniques used to optimize reliability. A section on the trustworthiness focused on the research validity (i.e., credibility),

transferability, and dependability. In Chapter 4, I addressed the settings, participants' information, presentation of data collection, and analysis.

Chapter 4: Results

The purpose of this qualitative multiple case study was to gain an understanding of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. I selected a multiple case study because the focus was on understanding the phenomenon within its natural setting (Gog, 2015; Yazan, 2015; Yin, 2014). In this study, I sought to answer the overarching research question: How do leaders facilitate the transfer of tacit knowledge among employees? To answer the research question, I conducted a qualitative analysis by performing semistructured interviews with 15 leaders in two engineering consulting organizations. The organizations have satellite offices all over the United States. The selected leaders have practiced for a minimum of 5 years and are still practicing in the field of engineering. I purposely selected the sample population and obtained data from them using semistructured, face-to-face interviews, field notes, and a review of internal documents relating to knowledge transfer processes to ascertain the convergence of the data from participants.

In this chapter, I describe the methodology I used for the data analysis of this study. I collected the data in the interviews using nine open-ended questions to address the central research question. The data resulting from the 15 interviews with the participants, field notes, and related nonproprietary documents served as the input for analysis after I used NVivo 12 software to organize the data. Chapter 4 of this study entails the purpose overview, the design of the study, the implementation of the research setting, demographics, data collection, analysis, and the general analysis strategy used for

the study. I illustrate the data collection procedures and discuss the data that were analyzed using coding and themes to reflect the findings ascertained from 15 respondent audio recordings and transcriptions. In Chapter 4, I explain the approach I used to ensure the integrity of the findings.

Research Setting

To recruit participants for this study, I sent a request to the authorization officers in two organizations; these officers later sent me the contact information of potential participants who met the inclusion criteria. The criteria were leaders with a minimum of 5 years of experience at a consulting organization. The consulting firm also had to have a minimum of 10 years of operation in the United States and a minimum of 10 employees. I sent invitation e-mails to 25 individuals on the list. Some potential participants declined to be a part of the study based on their busy schedules; others did not respond to the e-mail. The holiday season caused a significant delay in receiving responses from potential participants. Some potential participants refused to participate because they were retiring at the end of the year. I sent consent forms and interview protocols to the participants who responded and set up interviews.

I interviewed 15 participants with 11 participants from one organization and four from the second organization; the distribution was based on the availability of participants. The research study was carried out according to the approved approach and consistent with the plans in Chapter 3. The two organizations have footprints across the United States. A case study is a methodological approach that involves the in-depth exploration of a specific bounded system (Mills et al., 2010). In this study, the bounded

system was the process of transferring tacit knowledge among employees in a consulting organization. Mills et al. (2010) further explained that multiple forms of data collection are employed to gather information on how a system operates or functions systematically.

In this study, triangulation of the semistructured interviews occurred through the use of field notes and organizational nonproprietary documents for data collection. Moving through the field notes and documents, I extracted codes and categories keeping in mind the list extracted from the interview transcripts. I compared the lists with the lists generated from the transcripts and merged them into a master list from all the data. The master list constituted the outline of the recurring patterns that became the themes of the study. The themes are the conceptual elements that span the categories generated from the multiple data sources. The multiple data sources were used to corroborate and augment evidence from the interviews.

Based on the field notes, analyses of the interviews, and the document review, there was no new insight or codes after the 11th interview. Saturation occurs when continued data collection produces no new information or insights into the phenomenon of study. I concluded the existence of data saturation; hence, the study was limited to two cases. The interviewing process and peer checking occurred in the two organizations and spanned 7 weeks. I performed the interviews at the office premises of the participants. I administered and disseminated the script and the informed consent agreement to the research participants and explained the primary focus of the study before the interview.

The interviews lasted approximately 20–30 minutes. I sent the transcripts to the participants about 2 days after their interview throughout the data collection process to

ensure their immediate review for the strength, validity, and reliability of the study. All 15 participants reviewed the transcripts with either minor or no comments. The strength of the study reflects a mixture of interviewees' expertise. The professional knowledge shared by the participants during the face-to-face interviews showed the depth of their knowledge of the phenomenon of interest.

Demographics

The sample for this study consisted of 15 leaders who had prior knowledge in facilitating knowledge transfer. Purposeful sampling allowed me to intentionally select this sample size, which constituted the demographics aligned with the criteria for participation in this qualitative study. Table 1 depicts the demographics of the research participants. The study population was composed of 15 participants from two consulting organizations with operations in the United States. In alignment with the objectives of the study, I used the sample size of 15 to establish data saturation.

Table 1

Participants Demography

Participant	Organization	Position	Years of experience	Years with firm
P1	Y	Environmental engineer/project manager	6	6
P2	Y	Senior mechanical engineer/project manager	8	8
P3	Y	Environmental engineer	9	9
P4	Y	Senior mechanical engineer/project manager	10	10
P5	Y	Senior structural engineer/project manager	8	8
P6	Y	Mechanical engineer	8	8
P7	Y	Senior chemical engineer/project manager	25	4
P8	Y	Senior chemical engineer/project manager	20	3
P9	Y	Senior mechanical engineer/project manager	9	9
P10	Y	Senior mechanical engineer/vice president	11	11
P11	Y	Senior chemical engineer/project manager	7	7
P12	X	Senior project manager	23	23
P13	X	Principal	25	25
P14	X	Senior project consultant	5	5
P15	X	Project manager	6	6

The initial interviews covered eight participants (53%) from the first participating organizations. Data saturation occurred after two additional interviews from one organization. However, I continued the interviewing process with one additional participant from organization Y and four others from organization X. The participants were leaders with diverse experiences in facilitating the transfer of tacit knowledge.

Data Collection

After I received approval from the Walden University IRB (#2018.01.2618:04:93-25'1'), I commenced the recruitment of the research participants from two engineering

consulting organizations with operations in the United States. I completed data collection through semistructured interviews with leaders who had 5 years' experience in a consulting organization. Potential participants received e-mails approved by Walden University IRB for data collection. Participants had to respond to the e-mail with the phrase "I consent" to express their willingness to participate in the study formally.

I completed interviews of the participants using a digital audio recorder to record the responses of each of the 15 research participants. I obtained permission from the participants to record their answers. The duration of the interviews ranged from 20 to 30 minutes, with an average of 26 minutes and 10 seconds per participant; the data collection process took about 7 weeks. I listened to the audio recordings of the interviews several times, transcribed the discussions, and used peer checking to ensure that I captured the correct responses during the interviews. I saved the transcripts as a Word document in a password-protected Iron Key storage device.

In alignment with the consent form, I removed or replaced with codes all information that could identify individuals, projects, or activities—the anonymized version of the transcript was sent to participants for comments and approval. I e-mailed the anonymized transcript to the participants to verify the accuracy of the information presented. I asked the participants to provide feedback within 48 hours if changes were necessary. I received minor modifications from five participants, and other participants responded with no comments. There were no changes to the data collection plan outlined in Chapter 3. I interviewed and analyzed data from 15 research participants.

Each participant was available on time during the interview process. After completing the interview, I reviewed documents with each of the respective participants at their offices at an agreed-upon date. I also collected field notes during the face-to-face interview session of each participant. The interview location was in alignment with the preference of the research participants. The interview protocol (see Appendix B) served as the data collection framework that I consistently used throughout the data collection process. I will store all the data collected for 5 years before destruction.

In this study, I used in-depth, open-ended interview questions to generate responses that uncovered important categories, subcategories, and themes in question. I used the same interview questions (see Appendix A) in each of my interviews with the 15 participants. I was the data collection instrument, collecting data from the 15 interviewees using the research question, and interview questions (see Appendix A). All 15 participants provided feedback that supported the research question and interview questions. I used one audio recorder and hand coding during the data collection procedures. I took notes during the interview. In conjunction with reflective journaling files, the researcher used the notes for data analysis. The hand-coding process was a significant factor that supported the development of codes. I used the hand coding process as a backup strategy to fully capture the data.

While waiting for the feedback from participants, I listened to the audio file over again and performed the first reflective summary of the interview. Upon receiving the transcript, I repeatedly listened to the recording and performed a validation of the transcript. I imported the transcripts, journals, and non-proprietary document to NVivo 12

for data analysis. The length of the transcripts varied between four to 10 pages. The average transcript length was five pages. There were no exceptional events during the process of interviews; therefore, no deviation from the interview guide defined in Chapter 3. I was amazed at the level of excitement of the participants in being part of the study. In addition to answering the semistructured open-ended questions asked during the interview, participants offered the opportunity to reach out to them for any additional clarification or supports. The enthusiasm of the participants was a driver in collecting relevant data in answering the research question. Though it reached data saturation after ten interviews, I continued with the interviewing of other participants to avoid deviation from the proposed plan of data collection in Chapter 3.

Data Analysis

The data analysis plan deployed, as previously outlined in Chapter 3. The selected instruments for data collection for this study included semistructured, face-to-face interviews, field notes from observation, and document reviews. The researcher reviewed semistructured open-ended questions, notes, and documents by uploading all the sources of data into NVivo 12. I used the data analysis approach of Yin (2014) for the data analysis, which comprised (a) data compilation (b) disassembling (c) reassembling (d) interpretation and (e) conclusion of data to get meanings in alignment with the research question. I used both auto-code features in NVivo 12 and manual hand-coding in extracting the codes. I applied several coding methods described by Saldaña (2015) and used the NVivo 12 software to facilitate the data analysis process.

Document Review

As a follow up to interview questions, participants were asked to present any available artifacts relating to how they are facilitating the transfer of tacit knowledge. The review of the artifacts was through visual observations. The document reviewed included the nonproprietary newsletters, practice group bulletin, quarterly meeting bulletin, training, and development weekly update, quality assurance and control manual, practice group bulletin, and organization websites. I independently reviewed the organizations' websites to retrieve any related information to the phenomenon of interest. The review of the artifacts was at the interview location at the day of interview or at a scheduled date. During the visual observations, notes are taking to enhance code development and data analysis process. Moving through the field notes and documents, I extracted codes, categories, and sub-categories keeping in mind the list extracted from transcripts. I compared the lists with the one generated from transcript and merged them into a master list from all the sets of data. The master list constituted the outline of the recurring patterns that became the themes of the study. The themes are the conceptual elements that spanned the categories generated from the multiple data sources. I showed the final distribution of the codes, categories, and sources in Tables 4, 8, 15, and 19.

First Cycle Coding

The word frequency and text search were the methods used to identify codes, and categories in the first coding attempt. I coded the data by focusing on patterns and insights related to the purpose and the questions guided by constructivism framework. I reviewed the transcripts multiple times for each interviewee to ensure that the verified

transcripts reflected the appropriate categories and sub-categories to identify patterns.

The list of emerging codes developed in this study facilitated the identification of patterns after numerous reviews of the transcripts, field notes, and documents. The themes are the conceptual elements that spanned the categories generated from the multiple data sources.

The use of hand-coding and audio records facilitated the emergence of themes.

The keywords that reappeared and emerged from the data collection included: caring, safety, dependability, lesson learned, competition, creativity, mentor, coaching, funding, education, promotion, development, growth, environmental, opportunities, workshop, conferences, trust, safety, growth, ownership, meetings, interaction, collaboration, encouragement, engagement, diversity, listening, attitude, mentoring, and communication and seminars. As I continuously listened to the audio recorder, I gained an all-inclusive perspective from the participants. Yin (2014) asserted that philosophical and worldview perspectives remain influential in research studies. The continuous assessments of the transcripts, audio recordings, field notes, and documents enabled the researcher to have an understanding concerning each interviewee's learning path, their contributions, and social change perspective.

Second Cycle Coding

I started the second cycle by reviewing the quotations mapped to each one of the codes and removing the duplications. At this stage, there was the merging of some quotes and codes, and some organized into specific categories. I used the technique of pattern coding (Saldaña, 2015) to combine initially identified codes. As a result of pattern coding, the researcher reviewed all codes on how the leaders are facilitating the transfer

of tacit knowledge and organized into subcategories and categories. The combination of the categories led to patterns or themes. The final distribution of the individual codes into the corresponding categories and the statistics of appearances in the transcripts of the interview are presented accordingly in Tables 3 through 21 and discussed in the section study results. I performed several iterations in which I continued to review and merge quotations and codes to ensure that the categories are mutually exclusive.

Thematic Analysis

According to the research design described in Chapter 3, the participants of this study were representatives of three groups principals, senior managers, and middle managers. Based on the analysis of the answers to the interview questions, I discovered that the interpretation of tacit knowledge transfer depended on the level of experience and understanding. The data analysis section depicted the process used to develop the themes. The researcher generated codes inductively from the raw data, and a precept category based on literature and conceptual framework. While not including every response, the researcher provided multiple interviewee's quotations to emphasize their importance.

I developed open-ended semistructured interview questions as an interview guide. These questions followed Chuang, Jackson, and Jiang's (2013) recommendations to focus on descriptive categorical questions related to opinions, views, observations, or experiences that would demonstrate or illustrate acquisition and knowledge sharing activities. Following the recommendation of Mantere and Ketokivi (2013), I made a few empirical generalizations from the evidence collected. Using the features of NVivo (e.g., word frequency tables), and including what Bendassolli (2013) described as repeated

ideas, sentences, concepts words, images, and sounds, codes and categories were identified. I used the codes to develop several patterns or themes.

Evidence of Trustworthiness

The trustworthiness of qualitative research is a combination of credibility, transferability, dependability, and confirmability (Ravitch & Carl, 2016; Shenton, 2004; Todres & Galvin, 2005). In the following sections, I reported the actions performed to assure the trustworthiness of this research. I paid particular attention to the compliance of the performed activities with the strategies discussed in Chapter 3.

Credibility

To ensure the credibility of the researcher's instrument, I used peer debriefing and expert evaluation, as planned in Chapter 3. The reviews of the dissertation by the chair and methodology expert enhance the credibility of the instrument (Noble & Smith, 2015). The detailed explanation of steps in the data collection and analysis process served as a fulfillment for the transparency of the study. Using the NVivo Version 12 software for qualitative analysis provided a transparent picture of the data and an audit of the data analysis process (Elo et al., 2014). Assurance of anonymity and open-ended questions helped to minimize the common method bias.

As discussed in the corresponding section of Chapter 3, I applied the strategy of member checking. While utilizing the paraphrasing during the interview sessions to ensure that the original meanings of participants are well understood, I also implemented the member check strategies. To ensure the accuracy of the data, I requested all participants to review the anonymized transcript and respond to my email for any

comments or feedback. The extra step was to ensure the removal or replacement of participants' identifiable information and to maintain the quality of the data. As a testimony to the accuracy of the transcript, minor adjustments were made by three participants, and other participants responded with no additional comments.

Transferability

According to the plan in Chapter 3, I explained the research context and assumptions to enhance the transferability and replicability of my results (Noble & Smith, 2015). The results of the multiple case design are on subjective practitioners' opinions; therefore, it should be generalized with caution. The tacit knowledge transfer process may vary across organizations depending on local culture, geography, employee demographics, or other variables. The included consulting organizations may not be representative of all consulting firms within the United States, which may affect transferability. Also, the study was limited to the leaders in consulting organizations and did not include other industries. Future research is warranted to explore their view.

Dependability

To ensure the dependability of results, I kept detailed audit trails of all the steps throughout the research process (Noble & Smith, 2015). Dependability refers to the stability and consistency of data collection processes (Miles et al., 2014; Ravitch & Carl, 2016). Moreover, I followed strategies such as full detailed description, researcher's bias clarification, present negative information, documenting research procedures, steps and transcripts, and cross-checking codes and data sources to confirm trustworthiness and rigor in the research (Noble & Smith, 2015). I described and justified any changes that

occurred during the research process. I implemented Curtis and Curtis (2011) recommendations for journaling the entire process of data collection and analysis. The interview protocol used consistently during the interview; therefore, it can be established that the data collected through the interviews is wholly reproducible.

Confirmability

To ensure the confirmability of the results, I provided detailed documentation of the data processing (Elo et al., 2014). I have documented data checking by both the study participants through peer review of transcripts (Noble & Smith, 2015). There were no deviations from the outlined in Chapter 3. Finally, I described any negative instances that contradict prior observations in the results chapter. One method to achieve the confirmability in qualitative research is through structured reflexivity processes. I performed the reflective self-assessment and described both the process and the outcomes of it in the corresponding sections of this chapter.

Study Results

The central research question of the study was how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. In the following sections, I presented the findings of this study about how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. The researcher reported outcomes of the reflexivity through the multiple analysis of the experiences and lessons learned by the participants. This study was a multiple case study of leaders in two engineering consulting organizations and how they facilitate the transfer of tacit knowledge among employees towards gaining a common

understanding of the transfer. The research study was carried out according to the approved method and consistent with the plans in Chapter 3.

The selected two organizations have footprints across the United States. Based on the field notes, analysis of the interview, and document review, there was no new insight or codes after the 11th interview. I concluded the existence of data saturation. I purposively selected 15 participants in alignment with the research method and methodology of this research study. I recruited the 15 participants after getting the Walden University IRB approval, and I interviewed the 15 participants as outlined in Chapter 3. Participants' interviews transcribed, and the transcription with the field notes and documents review served as evidence of the theme formation. I transcribed the interviews verbatim but removed nuisance and repeated words.

Research question. The central research question for the study was: How do leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees?

Table 2

Research Question, Interview Questions, and Proposed Data Analysis

Research question	Interview questions	Types of data	Analysis
How do leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees?	<ol style="list-style-type: none"> 1. What are the visible or practical processes or programs that you implemented that promoted knowledge transfer in your organization? 2. What criteria were present at work that assisted in knowledge transfer implementation? 3. What were the performance appraisal techniques used in implementing knowledge transfer in your organization? 4. How did you plan for change in human resources along with plans for knowledge transfer? 5. What were the knowledge development programs that you put in place to achieve a knowledge transfer strategy in your organization? 6. How did socialization, the interaction between individuals, which can be through observation and imitation of others, help in knowledge transfer implementation? 7. How did externalization, exposing staff to other organizations, help in achieving knowledge transfer in your organization? 8. How did internal work rotation help in knowledge transfer implementation in your organization? 9. How did the combination of all these strategies help in achieving knowledge transfer in your organization? 	<p>Semistructured open-ended questions, notes, and document review. The document reviewed included the nonproprietary newsletters, practice group bulletin, quarterly meeting bulletin, training, and development weekly update, quality assurance and control manual, practice group bulletin, and organization websites</p>	<p>Thematic analysis via coding and generation of Themes</p>

According to all the participants in this study, the timeliness and relevance are very impressive. All the participants acknowledged this fact and reflected in the overwhelming support for the research. P7 stated, “Well, I’ll start with just an acknowledgment that the transfer of this type of knowledge among from more experienced staff to less experienced staff is a critical element of our business model. I think it is critical. It is critical to any successful consulting organization.” Also, P7 expressed that organizations are mindful of the quality of their works by saying: “We take our product and our client satisfaction very seriously.”

In reinforcing the importance of the study, P6 expressed that this study is timely as their company is also investigating this topic. We are trying to be proactive, understanding that over the next 5 to 10 years, we will be losing senior people with experience-based knowledge. Moreover, I do not know what the outcome of the study will be, but I assume there may be additional programs to try and transfer knowledge. P12 also corroborated P6 saying, “Knowledge transfer is a subject worth considering, especially as more of our senior staff near retirement.” P6 justified the need stating that “we try to staff so that we have less experienced people supporting those people and learning from them. I think that we have found it to be challenging to hire experienced people in certain skillsets.”

Despite the identified justification for the transfer of tacit knowledge, challenges are extreme. P13 stated that “We do have practices. We do have processes. We do have certain ways that we do things. However, the tacit part is the most difficult in terms of bringing someone up to speed, transferring that knowledge.” In agreement with P13, P14

said: “I think one thing we did identify was that there is an overwhelming difficulty in getting people to document what they can document to record what knowledge they have in the ways of a procedure.” According to P4, the challenge expressed was the uncertainty that everybody is sort of actively sharing the knowledge.

Major Themes

I reviewed semistructured open-ended questions, notes, and documents by uploading all the sources of data into NVivo 12. The document reviewed included the organizations’ Newsletters, Quarterly meeting bulletins, Training and Development weekly update, Quality Assurance and Control manuals, Practice Group bulletins, and websites. The emergent themes resulted from the analysis and interpretation of the data collected from the semistructured interview question, field notes, in conjunction with the internal and external documents from the two organizations.

Table 3

Emergent Major Themes and Categories from Interviews, Field Notes, and Document Review

Major themes	Categories
Safe environment	Diversity, listening, and culture/behavior
On the job growth	Transformational, mentoring, trust, collaboration/partnership, interaction, choice, and organizational structure
Quality	Communication, continuous improvement, and planning
Caring	Engagement, encouragement, and benefit

Table 4

Inductively Developed Thematic Theme: Safe Environment

Category	Codes	Sources	% Relative occurrence
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Diversity	Work rotation	Organization structure chart, newsletter, weekly update bulletin, project planning worksheet, field notes, website, interview	34
Listening	Feedback	Interview, newsletter, weekly update bulletin, real-time feedback sample, website, QAQC, lesson learned form, website, field notes	33
Culture	Attitude/Behavior	Interview, field notes, websites, newsletter	33

Theme 1: Safe Environment

The participants recognized that a safe environment is critical to tacit knowledge transfer. The categories identified from the analysis included Culture, Diversity, and Listening.

Diversity. The first category in this theme is diversity. The details of a few quotations are shown in Table 5. Participants responded that being diverse is critical to continuous operation in engineering service. P11 stated that getting to hear different perspectives on the types of work, emerging topics, and then to hear from people that do not regularly work with all the time or who have different knowledge sets is something they focus on and something critical. P15 noted that

Everyone works together collaboratively, depending on the size of the project and the complexities. So, we try and get everyone exposed to as many different types of activities as they can, see what they like, see what they are good at, and plug them into those activities where we have that ability.

P7 mentioned that inherent in the consulting model is that we have clients. Thus, we need to interact with and understand our clients to fulfill their needs. Moreover, each of our clients is, of course, a little different. Our utility client is a lot different from a mining client. Furthermore, we must interact with all those types of clients. Thus, we must interact to gain tacit knowledge. We must understand the nature of what is acceptable, how they practice, what they want from us. Moreover, it is different across the board. According to P14,

Everybody is different, and P1 thinks it is essential to have such diversities for tacit knowledge transfer to happen. I do not believe it is necessarily always a hundred percent successful in achieving that goal, but providing the opportunity is vital so that some of that happen organically.

Table 5

Category: Diversity

Key code	Category	Theme	Quotation
Work rotation	Diversity	Safe environment	<p>P1: I think it's important to have kind of those diverse ways of providing that the opportunity for that transfer to happen. I don't think it's necessarily always a hundred percent successful in achieving that goal, but providing the opportunity is important so that some of that happen organically.</p> <p>P11: I think you get to hear different perspectives on the types of work, emerging topics, and then you get to hear from people that you don't regularly work with all the time or who have different knowledge sets. So I think it's something we focus on and something important to help learn from different perspectives.</p> <p>P12: The project mix is very diversified. The projects and customers are changing all the time. So, there's rotation with the customers as well.</p> <p>P14: And everybody's different.</p> <p>P15: Everyone works together collaboratively, depending on the size of the project and the complexities. So everyone, we try and get everyone exposed to as many different types of activities as they can, see what they like, see what they're good at and plug them into those activities where we have that ability</p> <p>P7: inherent in the consulting model is that we have clients. And so, we have the need to interact with and understand our clients to fulfill their needs. And each of our clients is, of course, a little different. Our utility client is a lot different to a mining client. And we must interact with all those types of clients. And so, we must interact to gain tacit knowledge. We must understand the nature of what's acceptable, how they practice, what they want from us. And it is different across the board.</p>

Culture. The second category in this theme is culture. The details of a few quotations are shown in Table 6. Participants responded that culture is a significant player in delivering services to their customers. P7 stated that human behavior or interaction is necessary. The participant further noted that the most effective way to accomplish knowledge transfer is to encourage direct interaction either on projects, mentoring relationships, or practice group meetings and presentations. People must have the ability to interact (human interaction) with each other, which is the most effective way to accomplish the tacit knowledge transfer. P10 stated that being a flat organization, they try to push that down to all our staff to get out and attend conferences or trade shows by effectively using the employee's education account.

P15 explained that as an organization, they have open workspaces. Much discussion occurs in those offices, and the discipline grouped physically close to promote effective interaction. Because of the desire expectation from the organization, P11 explained that there are many things they look for during an interview to identify if an applicant has interest, drive, and tendencies to seek knowledge and ask questions to help them learn quickly. P11 stated, "The goal of the organization in terms of attitude is to identify and hire applicants who are willing to seek out knowledge."

Table 6

Category: Culture

Key code	Category	Theme	Quotation
Attitude/behavior	Culture	Safe environment	<p>P10: We try to push that down to all of our staff to get out involved with organizations. And one of the ways we do that is we give our employees individual education account</p> <p>P11: there are many things we look for during an interview to identify if an applicant has interest, drive, and tendencies to seek knowledge and ask questions to help them learn quickly. I think a big part of our hiring is making sure we identify applicants who are willing to seek out knowledge.</p> <p>P15: At our organization, we have open workspaces. Much discussion occurs in those offices, and the discipline grouped physically close. So if you and I are working on a project to complete a task and there is another engineer in our group might not be involved in that project. They will observe and hear discussions and what's going on there</p> <p>P7: Human behavior or interaction is necessary. Ideally, I think it's most effective way to accomplish knowledge transfer. We do encourage direct interaction being on project teams or mentoring relationships or be a practice group meetings and presentations. It is critical that people have the ability to interact with each other. And I think, again, is the most effective way to accomplish this knowledge transfer is through direct human interaction.</p>

Listening. The third category in the theme is listening. Details of few quotations are shown in Table 7. Participants responded that good listening skill is a factor in the transfer of tacit knowledge. P11 stated, “I have learned from just having those casual conversations. I have learned things about other people’s project work. The evidence of the listening is the transitioning into real-time feedback. P2 explained: “We are transitioning into something that we call real-time feedback. As a leader, I have been trained in multiple types of real-time feedback. That seems to be far better. It is far better to give that feedback now.” The participants noted that through the feedback and active listening, there is a transfer of tacit knowledge.

Table 7

Category: Listening

Key code	Category	Theme	Quotation
Feedback	Listening	Safe environment	<p>P11: I have learned from just having those casual conversations. I have learned things about other people’s project work.</p> <p>P14: I always want to see that they understand what the customer said. So, there is what I understood that what the customer was looking for. And then I would ask them what did they hear? And hopefully they heard the same thing or maybe they heard something different. We can integrate or at least share.</p> <p>P2: We are transitioning into something that we call real time feedback. I as a leader have been trained and trained in multiple types of real time feedback. That seems to be far better. It’s far better to give that feedback in the moment</p> <p>P7: provide everyone in the organization with feedback regarding the nature of their work and how much of this type of knowledge they’re picking up over time.</p>

Theme 2: On-the-Job Growth

The second emergent theme identified from the analysis resulted in eight categories. These categories are Transformational Leadership/Organizational structure, Mentoring, Trust, Collaboration, Partnering, and Choice.

Table 8

Inductively Developed Thematic Theme: On-the-Job Growth

Key code	Category	Source	% Relative occurrence
Management support	Transformational leadership/organizational structure	Organization structure chart, newsletter, weekly update, project planning worksheet, meeting agenda, practice group bulletin, project management plan, interview, website, field notes	20
Guidance	Mentoring	Interview, newsletter, website, QAQC, lesson learned, feedback form, field notes	16
Interaction	Trust	Interview, field notes, newsletter, quarterly meeting bulletin, and website	16
Lesson learned	Collaboration	Interview, newsletter, quarterly meeting bulletin, website, QAQC, project planning form, and field notes	16
Seminars/conferences	Partnering	Interview, newsletter, website, practice group bulletin, project planning form, training and development schedules, and field notes	16
Ownership	Choice	Interview, newsletter, website, and field notes	16

Transformational leadership/Organizational structure. The first category in this theme is transformational leadership and organizational structure. The details of a few quotations are shown in Table 9. Participants responded that transformational leaders

and the type of organizational structure are pivotal to facilitating the transfer of tacit knowledge among employees.

Table 9

Category: Transformational Leadership/Organizational Structure

Key code	Category	Theme	Quotation
Mentoring	Transformational leadership/ Organizational structure	On-the-job growth	<p>P13: I work with a lot of our junior staff members (out of school less than five years) and frequently share “sea stories”. This is an effort to pass on some tacit knowledge with stories.</p> <p>P8: Go ahead and handle this meeting. And he’s there just to help me if I get stuck</p> <p>P10: it is a safe zone here</p> <p>P14: It is interesting when you give somebody some instructions once you want them to do so, it’s a good idea to ask them to kind of repeat it back.</p> <p>P2: Really, you sit down and it’s devoting that kind of that first few hours to be one on one time with a junior engineer to really lay out how you would approach the problem and then how you would what are the end results look like to try and guide them</p> <p>P3: So every time we have a new employee that we do plan for that and we have we assign every new employee a sponsor, and that’s someone who kind of helps them get their feet on the ground here and makes sure that they get comfortable, find some projects to work on. And get familiar with how things work.</p> <p>P4: It is in my best interest to transfer that tacit knowledge and build up people so that I have the best people available when I need them to work on my project team. So, there is no constraint of any kind.</p> <p>P5: help and encourage growth and transfer</p> <p>P7: providing them with guidance, providing them with coaching and being willing to interact with them</p> <p>P9: to continue in my career development, I must help others</p> <p>P1: I am not sure how much you know about our structure. But we are relatively flat. We do not necessarily have a hierarchy outside of our projects.</p> <p>P10: Especially being that flat organization, we do not put a year of experience to be able to go to a conference or be part of a trade show. We really try to push that down to all our staff to get out involved with organizations.</p> <p>P11: our organization does is what we call it our IEA program - individual education account. So that’s separate training funding allocated to any full-time employee. All our full-time employees have individual education account and they can spend that funding on any type of relevant internal or external training.</p> <p>P15: our company structure is set up in discipline groups. Which allows younger staff to work with senior staff within that same discipline at our organization, we have open workspaces.</p> <p>P4: the way we build and rely on our networking here within our organization because we are flat structured organization. You are not housed in a department of relatively few people, but rather know my business unit has hundreds of people in it</p> <p>P7: a lifelong commitment to professional development improvement, at least if you are in the organization. Everybody in the organization has a coach. It is a fun, good activity. The CEO has a coach.</p>

Participants responded that it is a win-win situation to provide support to developing employees to advance in career. P4 categorically stated that “It is in my best interest to transfer that tacit knowledge and build up people so that I have the best people available when I need them to work on my project team.” Participants responded that the structure of the organization is a guide to the culture of the employee. According to P4: “we build and rely on our networking here within our organization because we are a pretty flat structured organization. You are not housed in a department of relatively few people, but rather know the business unit has hundreds of people in it.”

P2 recognized the importance of sitting down and devoting quality time with a junior engineer to lay out how you would approach the problem and then how the results look like to try to guide them. P3 stated:” So every time we have a new employee that we do plan for that, and we assign every new employee a sponsor, and that is someone who kind of helps them get their feet on the ground here and makes sure that they get comfortable, find some projects to work. Moreover, get familiar with how things work.”

Creating a safe zone, said P10, helps to delegate assignments/meetings and guide employees through the process. P8 said: Go ahead and handle this meeting, and he is there just to help me if I get stuck. P14: It is interesting when you give somebody some instructions once and want them to do so, it is a good idea to ask them to kind of repeat it back. P4 established that there should be no constraint in guiding employees through the learning and acquiring the tacit knowledge through observation.

Mentoring. The second category in this theme is mentoring. The details of a few quotations are shown in Table 10. Participants responded that mentoring of employees is critical to their professional growth.

Table 10

Category: Mentoring

Code	Category	Theme	Quotation
Guidance	Mentoring	On-the-job growth	<p>P13: For example, I have learned this from my family life. My oldest son does not necessarily conform to standard practices. And I have learned over the years that as a father, I used to give him a task and then say, this is how you do it, thinking I was helping him. He did not want to do it the way I asked him to do it. And it is about communication. It is about getting them engaged and allowing them to feel ownership and work on those projects. And instead of just doing tasks one, two and three, it's getting them involved in the assignment.</p> <p>P14: Based upon what we've done the past is how I arrive at my decision in the present, and so the same thing we try to do with the younger engineers is to also help them build their own catalogue of experience of similar type of jobs</p> <p>P2: Really, you sit down and it's devoting that kind of that first few hours to be one on one time with a junior engineer to really lay out how you would approach the problem and then how you would what are the results look like to try and guide them</p>

In this category, participants posited that mentoring is pivotal to supporting junior employees in decision making at every stage in their career. The decision is never made in a vacuum but based on past experiences. P14 stated explicitly that the present

arrangement is based upon what we have done in the past, and so the same thing we try to do with the younger engineers to help them build their catalog of experience.

P13 gave an example of how mentoring helps developing decision-making skills. P13 said, “For example, I have learned this actually from my family life. My oldest son does not necessarily conform to standard practices. Moreover, I have learned over the years that as a father, I used to give him a task and then say, this is how you do it, thinking I was helping him. He did not want to do it the way I asked him to do it.

Furthermore, it is about communication. It is about getting employees engaged and allowing them to feel ownership and work on those projects. Also, instead of just doing tasks one, two, and three, it is getting them involved in the assignment. According to P2, “you sit down and devote the first few hours to be one on one time with a junior engineer to lay out how you would approach the problem and then what are the results look like to guide them.”

Trust. The third category in this theme is trust. The details of a few quotations are shown in Table 11. Participants responded that trust is the platform for tacit knowledge transfer. Employees are willing to share knowledge when they feel safe through the relationship journey and interaction technically and socially.

Table 11

Category: Trust

Code	Category	Theme	Quotation
Interaction	Trust	On-the-job growth	<p>P6: working with different teams allows the opportunity for more knowledge transfer. Moreover, that is because everybody learns, and everybody shares information in a little bit different way.</p> <p>P10: And one of the things that we do locally here is we promote the acceptance of it is OK to fail sometimes. So, creating a culture of being able to speak, gutfeel, to be challenged on solutions and understand that we are all working towards a common goal</p> <p>P13: It must be about trust. So, what we have tried to do is take it outside of the workspace as well. We look at taking people out to lunch and just talking with them and getting to know them as not just a co-worker, but as a person that has a family and interests and goals. Furthermore, it is building that relationship so you can build trust. If somebody has trust, then they can start looking at this person and saying, yep, I understand that I can follow that person.</p>

Trust is the key to interaction. According to P6, working with different teams allows the opportunity for more knowledge transfer. Moreover, that is because everybody learns, and everybody shares information in a little bit different way.

Collaboration. The fourth category in this theme is collaboration. The details of a few quotations are shown in Table 12. Participants responded that collaboration is essential since no one can work in isolation, especially in knowledge sharing. The reoccurring form of collaboration is the practice group. According to P7, in practice groups, people who are interested in or practicing in a particular area gather from across

the company to exchange information. Employees are willing to share knowledge when they feel safe through the relationship journey and interaction technically and socially.

Table 12

Category: Collaboration

Code	Category	Theme	Quotation
Lesson learned	Collaboration	On the job growth	<p>P10: And one of the biggest things that we do through that group besides the mechanics, we teach the art of how you are doing. So, we turn people into consultants, the art of consulting, how you listen to your client, how you consult them on the best solution, how you are a part of their team. We bring people throughout the organization into our headquarters and have them sit together to share stories about project successes and then also project failures</p> <p>P13: And on the tail end, we have project closeout that looks back and says, did we do everything that we intended to do? And what did we learn? And we get to share that knowledge with the team members, and they are involved in that. Another way that we get lessons learned out there or transfer of information or knowledge is we have quarterly meetings with our groups.</p> <p>P7: practice groups where people who are interested in or practicing in a area will gather from across the company, would gather virtually to exchange information.</p>

According to P10, “one of the biggest things that we do through that group besides the mechanics, we teach the art of how you’re doing. So, we turn people into consultants, the art of consulting, how you listen to your client, how you consult them on the best solution, how you’re part of their team. We bring people throughout the organization into our headquarters and have them sit together to share stories about project successes and then also project failures.” In alignment with the above statement,

P13 explained “at the tail end, we have a project closeout that looks back and says, did we do everything that we intended to do? And what did we learn? And we get to share that knowledge with the team members, and they are involved in that. Another way that we get lessons learned out there or transfer of information or knowledge is we have quarterly meetings with our groups.”

Partnering. The fifth category in this theme is conferences. The details of a few quotations are shown in Table 13. Participants responded that partnering is a common occurrence for knowledge transfer. P14 stated: “There are different professional organizations that the employees belong to. When small groups go to various expositions or conventions or meetings, business meetings, there is a more informal exchange with potential clients”. In the words of P9, we partner with firms pretty regularly. P7 reiterated the statement by saying: “We all commonly partner with other engineering or consulting organizations that might provide us with specific expertise that we need to accomplish a project. By doing so, we get a flavor for the nature of their organization and how they do work.”

Table 13

Category: Partnering

Key Code	Category	Theme	Quotation
Meetings/ Conferences/ Seminars	Partnering	On the job growth	<p>P10: the practical side is the on the job training. It is when we get a project, I tried to set the vision at the front end of the project. So, sharing knowledge in those meetings</p> <p>P13: how we treat our young employees, how we bring them along. They are there in the field with us each time we go. They are in meetings with us so they can see how to interact with clients and vendors and co-workers, so they get it almost through osmosis.</p> <p>P14: There are different professional organizations that the employees belong to. And there are often when in groups, small groups who go to different expositions or conventions or meetings, business meetings. So, there is then a more informal exchange with potential clients. But then like we have talked about before, when you go on site, you are speaking with a client about a certain project. You are taking that person with you and they are getting to experience and understand how that organization operates</p> <p>P7: We all commonly partner with other engineering or consulting organizations that might provide us with specific expertise that we need to accomplish a project. And by doing so, we get a flavor for the nature of their organization and how it is that they do work.</p> <p>P9: We partner with firms regularly</p>

Choices. The seventh category in this theme is choice. The details of a few quotations are shown in Table 14. Participants responded that being flexible creates an enabling environment for employees to interact and transfer knowledge. According to P10, P11, P14, P7, and P8, the flat organization structure promotes behavior. No employee has a constraint in any form or shape.

Table 14

Category: Choice

Key code	Category	Theme	Quotation
Ownership	Choice	On the job growth	<p>P10: We have given our flat structure, so we do not have a lot of silos, I guess. So different rotations. What we do have are the sectors that we work in that be in power fuels mining and public. So, you just align yourself with somebody in that that market. There is nobody saying, no, you cannot do that.</p> <p>P11: our organization does is what we call it our IEA program - individual education account. So that's separate training funding allocated to any full-time employee. All our full-time employees have individual education account and they can spend that funding on any type of relevant internal or external training.</p> <p>P14: Organically we try to keep people familiar and up to date and keep younger engineers involved the projects, so they become more and more familiar with certain facilities and certain customers. So, I would not say it is like you have to spend a thousand hours with X client and a thousand hours with Y customer.</p> <p>P7: providing them with guidance, providing them with coaching and being willing to interact with them as they accomplish, you know, for example, design of a particular system for a particular device, you in my mind, this is the most effective way you impart that knowledge to them when they're most interested in it because they're trying to solve a problem for our mutual client</p> <p>P8: I think it is up to the individuals to say, I've learned all I have on the replacing expansion joint, so I want to move on to something else here. The onus is on you. Drive your future. Motivate yourself.</p>

Theme 3: Quality

The third emergent theme identified from the analysis is Quality. Quality is considered as the connecting bridge with customers and makes the organization to be attractive to existing and potential customers. Three categories were identified from the analysis, and they are Communication, Continuous Improvement, and Planning.

Table 15

Inductively Developed Thematic Theme: Quality

Key code	Category	Sources	% Relative occurrence
Awareness	Communication	Practice group bulletin, training and development schedule, lesson learned, interview, newsletter, website, QAQC, and field notes	35
Gap identification	Continuous improvement	Practice group bulletin, training and development schedule, lesson learned, interview, newsletter, website, QAQC, and field notes	35
Organizing	Planning	Practice group bulletin, training and development schedule, lesson learned, interview, newsletter, website, QAQC, and field notes	30

Communication. The first category in this theme is communication. The details of a few quotations are shown in Table 16. Participants responded that communication helps tremendously to facilitate the transfer of tacit knowledge among employees.

Table 16

Category: Communication

Key code	Category	Theme	Quotation
Awareness	Communication	Quality	<p>P12: The QA QC process also includes a formal project close out procedure. This includes a “lessons learned” section where the project experience is reviewed. Identify the good events and the not so good events. We also try identifying events/occurrences that are not necessarily a technical nature (not textbook stuff but more tacit)</p> <p>P13: And so, we have standard operating procedures, standard ways of doing things. And those are right out there. There is a place on our server for engineering resources, employee resources, project management resources.</p> <p>P14: We also have a company newsletter, but that’s usually much lighter activity. It does not really go into so much the details. But sometimes a large project that we might land that might get discussed in the newsletter.</p> <p>P7: We also have an extensive intranet that we use. We have established it and call it XLink (X stands for the organization). It is accessible to all employees. And it is really a tremendous resource of information that staff have available to them regarding technical information.</p>

The organization employs various mediums to communicate with employees. According to P12, P13, P14, and P7, QAQC, operating procedures, company newsletters, and intranet are tools in use to achieve this goal.

Continuous Improvement. The second category in this theme is continuous improvement. The details of a few quotations are shown in Table 17. Participants

responded that continuous improvement is the way to operate effectively and efficiently. According to P10: we have implemented in each office, as we call them, huddles where the team can get together for knowledge sharing.

Table 17

Category: Continuous Improvement

Code	Category	Theme	Quotation
Gap identification	Continuous improvement	Quality	<p>P1: In the early 2000s when our organization was growing to a certain point where it was not really feasible anymore for everyone to get together and talk about what is going on. And so that was a way we start dividing interests and services so that people could be aware of what other projects we were working on and kind of stay and stay abreast of shared knowledge.</p> <p>P10: we have implemented in each office, as we call them, huddles where the team can get together for knowledge sharing.</p> <p>P13: And on the tail end, we have project closeout that looks back and says, did we do everything that we intended to do? And what did we learn?</p> <p>P14: Well, on our server, we have files for all our previous projects. We have a project database that allows us to look up projects by keywords , by customer , by job number , so you can, if you think that something we're doing is something we might have done before or you're hoping you can search for that , once you find that project number , you can then very simply go into the server and find that project go through a lot of the information that was stored about it.</p> <p>P15: For additional programs to explore, certainly our senior staff are always looking at professional training activities. If there is a new continuous improvement program or a new human resources development on how we can do that.</p> <p>P4: This is a very timely question. I have a little bit of insight into this. So, I do know that our human resources director at our organization is taking on sort of a set of priority initiatives for 2020. So, through some strategic planning we have done and some employee like surveys and things like that, they have identified a few things that they run a focus on. And one of those has to do with just this tacit knowledge transfer, most specifically related to retirements.</p> <p>P5: So, we have developed a more comprehensive centralized resource where you could find the calculations, template specs, all that kind of stuff. We have discussed perhaps getting a more client specific personnel in the office, that could be that would be the point person for the source of knowledge for the clients instead.</p> <p>P6: exposing staff to outside organizations, conferences, trade shows are that you get to see new technologies, new ways to do things and to achieve the same results more efficiently and effectively.</p> <p>P7: provide everyone in the organization with feedback regarding the nature of their work and how much of this type of knowledge they are picking up over time. We also have what we call a real time feedback process where you can make a somewhat formalized where an individual has something to say to someone or you want someone to offer you feedback</p> <p>P9: identifying any gaps within their practice</p>

Planning. The third category in this theme is planning. The details of a few quotations are shown in Table 18. Participants responded that planning is vital in the process of facilitating the transfer of tacit knowledge among employees.

Table 18

Category: Planning

Code	Category	Theme	Quotation
Organizing	Planning	Quality	<p>P10: I think is the closest way I can answer that is we have specific knowledge transfer plans for senior individuals that are looking to transfer out to the out of the company in a retirement, or maybe they want to take on a new career.</p> <p>P12: I think we are going to be exploring other strategies. This interview process is kind of stimulating us to further develop this strategy. We have had one internal meeting already amongst certain staff to discuss tacit knowledge. We have staff members getting close to retirement age and we discussed the things we are doing, but we really have not discussed strategy moving forward.</p> <p>P13: We have what is called our project planning worksheet. And we go through the scope of the project. All the activities that are expected to be performed during the project and what each person brings to the project, what our expectation is for that person and how they all intermix and how we need to communicate that information.</p> <p>P9: role of the practice groups and level, let us say use the mechanical engineering practice group as an example. That practice would be responsible for identifying any gaps within their practice. And then at that point in time, work with human resources to get the appropriate positions open. That is a formal process that's done once a year through planning, where the individual practices identify the staffing needs going into the subsequent calendar year and then at that point in time</p>

According to P12,

“I think we are going to be exploring other strategies. This interview process is kind of stimulating us to develop this strategy further. We have had one internal meeting already amongst individual staff to discuss tacit knowledge. We have staff members getting close to retirement age, and we discussed the things we are doing, but we haven’t discussed strategy moving forward.”

And P13 said,

“We have what’s called our project planning worksheet. And we go through the scope of the project. All the activities that are expected to be performed during the project and what each person brings to the project. Our expectation is for that person and how they all intermix and how we need to communicate that information.”

Theme 4: Caring

The fourth emergent theme identified from the analysis is *Caring*. A caring environment promotes relationships, trust, and communication. Four categories identified from the analysis, and they are Engagement, Encouragement, and Benefit.

Table 19

Inductively Developed Thematic Theme - Caring

Key Code	Category	Sources	% Relative Occurrence
Involvement	Engagement	Quarterly Meetings Bulletin, Practice Group Bulletin, Project Planning Form, Interview,	35

		Newsletter, Website, Lesson Learned, and Field notes	
Empathy	Encouragement	Quarterly Meeting Bulletin, Lesson Learned, Interview, Newsletter, Website, and Field notes	35
Gain/Appreciation	Benefit	Interview, Newsletter, Website, and sheet, Field notes	30

Engagement. The first category in this theme is engagement. The details of a few quotations are shown in Table 20. Participants responded that engagement helps tremendously to facilitate the transfer of tacit knowledge among employees.

Table 20

Category - Engagement

Code	Category	Theme	Quotation
Involvement	Engagement	Caring	P10: socialization is paramount in our organization because we work on teams. So we are a flat company and a structure standpoint. Until you get on a project team and then we're very hierarchical P11: we pair more senior employee with new staff to get them involved in project work. It's really to have a solid project relationship with senior level staff. So I would say probably most of the tacit knowledge sharing is trying to get somebody to work on and then to either work alongside with or pass off work to go to a younger staff and then have somebody go

through and help them kind of review the work they did.

P12: I work with a lot of our junior staff members (out of school less than five years) and frequently share “sea stories”. This is an effort to pass on some tacit knowledge with stories.

P13: We list action items, we put due dates, we check up on them and we look at development plans. What do we want you to do this year and what do you want to accomplish as part of your growth as an engineer? What is your development plan that you see? Here is what we see, and we kind of we discuss that and checkup occasionally throughout the year.

P14: Organically we try to keep people familiar and up to date and keep younger engineers involved the projects, so they become more and more familiar with certain facilities and certain customers.

P9: Breaking down those barriers between senior and junior staff makes it easier for that knowledge transfer to occur. We have had many internal trainings recently focused on unconscious biases and trying to identify the differences between different age groups and what may or may not be acceptable for one versus the other. So, trying to make it as easy as possible for these wide range of people to interact, I think, does improve the ability for knowledge to be transferred.

P9 stated: Breaking down those barriers between senior and junior staff makes it easier for that knowledge transfer to occur. We have had many internal pieces of training recently focused on unconscious biases and trying to identify the differences between different age groups and what may or may not be acceptable for one versus the other. So,

trying to make it as easy as possible for these wide ranges of people to interact, I think, does improve the ability for knowledge to be transferred.

Encouragement. The second category in this theme is encouragement. The details of a few quotations are shown in Table 21. Participants responded that encouragement brings strength to employees. According to P14: we encourage, especially the younger engineers, to do as much fieldwork as possible.

Table 21

Category - Encouragement

Code	Category	Theme	Quotation
Empathy	Encouragement	Caring	<p>P7: all of our staff are encouraged to engage in a personal development plan process where you outline what to improve, what knowledge you're going to gain or what experience you intend to gain to further your career on an annual basis.</p> <p>P13: We have lunch and learns here when vendors come in and talk to us and share their products, share their stories. And we expect and really put the onus on some of our young engineers to make phone calls and talk. And for many young engineers or a lot of engineers like myself, we are introverts and it is hard to have that discussion and it's nerve-wracking sometimes.</p> <p>P14: we encourage, especially the younger engineers, to do as much field work as possible.</p>

Benefit. The third category in this theme is the benefit. The details of a few quotations are shown in Table 22. Participants responded that benefit helps to facilitate the transfer of tacit knowledge among employees, and celebrating accomplishment is a tool to help facilitate the transfer of tacit knowledge among employees.

Table 22

Category - Benefit

Code	Category	Theme	Quotation
Gain	Benefit	Caring	<p>P11: All our full-time employees have individual education account, and they can spend that funding on any type of relevant internal or external training.</p> <p>P3: acknowledging that they may be coming towards the end of their career and making sure that their client and their project is in good hands with someone who could really manage it.</p> <p>P4: It is in my best interest to transfer that tacit knowledge and build up people so that I have the best people available when I need them to work on my project team.</p> <p>P 8: And part of delegating down is pass on your knowledge, so they can do your work and you can slowly manage with your years of experience, manage bigger projects.</p> <p>P 9: the things that's important for me is to continue to coach the team and grow others for me to progress within the company so my individual success is tied to the success of others that I can bring up with me.</p> <p>P 13: We have an activity next week where we have a golf outing, golf in the middle of winter, where we are going to TopGolf in Auburn Hills. But we have picnics and golf outings. And every other week we have a luncheon and it is just an opportunity to interact outside of the work environment. It may be at work, but we are not talking about work. So, it is building that relationship so you can go beyond just the day to day rigors.</p> <p>P14: there's a lot of times that we do things during we talk about things casually during lunch or when we have like a birthday celebration or in the summer when we hang out after work and have some beers in the barn. So, there is a lot of informal type of socialization where there's a lot of knowledge transfer.</p>

P4 posited: It is in my best interest to transfer that tacit knowledge and build up people so that I have the best people available when I need them to work on my project team. According to P14: there's a lot of times that we do things while we talk about things casually during lunch or when we have like a birthday celebration or in the summer when we hang out after work and have some beers in the barn. So, there is a lot of informal type of socialization where there's a lot of knowledge transfer.

Summary

The research question of the study was: how do leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees? In Chapter 4, I explained the setting of the research concerning the demographics and schedule for interviews. I presented the demographics of the participants drawn from the two engineering consulting organizations with operation in America that made up the multiple case study. The research question used to identify the common understanding from the findings in the areas of tacit knowledge transfer among employees. I discussed the trustworthiness and its application to the study. The chapter comprised the study results that encompassed how I generated the codes, category, and themes. In Chapter 5, I argued how the findings of this study contributed to the literature in the field of knowledge transfer through the comparison of this study results and the literature reviewed in Chapter 2. Then, I discussed the limitations of this study and provided recommendations for further research. Finally, I explained the application to positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

The goal of this study was to gain an understanding of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. I selected a case study design because the focus was on understanding the phenomenon within its natural setting (Gog, 2015; Yazan, 2015; Yin, 2014, 2018). According to Bendassolli (2013), the goal of qualitative research is to gain an understanding of a situation, individuals, or group of people. Dzekashu and McCollum (2014) also noted that the qualitative approach is suitable for answering *how* questions. A case study enables a researcher to obtain a more in-depth understanding of the phenomenon of interest (Agee, 2009; Yin, 2014, 2018).

Interpretation of Findings

To reach conclusions about the contribution of this study to the existing body of knowledge, I performed a data source analysis with the literature discussed in Chapter 2. The conceptual framework of this study was used to determine the boundaries of the review, and the study findings served as the main themes for the review. In the following sections, I present the results of the analysis and how the results of this study address gap in existing knowledge. I discuss the contributions of this study in terms of understanding how leaders are supporting the transfer of tacit knowledge among employees.

The research question that guided this study was: How do leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees? I manually coded the data from the transcribed interviews of the research participants, field notes, and document review from the two organizations to generate the

themes to address the research question. Four major themes emerged, and I aligned the themes with my findings from the literature review in Chapter 2 to ascertain the concurrence and to corroborate with the previous research framework as outlined in the literature review and the conceptual framework.

Safe Environment

From this study, I found that leaders facilitate the transfer of tacit knowledge through the creation of a safe environment for employees. This finding is supported by Garrick and Chan's (2017) finding that leaders are the facilitators of enabling environment that fosters employees' motivation and trust. Neukam (2017) and Badara et al. (2015) inferred that knowledge sharing, through collaboration, thrives in a safe environment both culturally and behaviorally.

On-the-Job Growth

From the findings of this study, I determined that leaders facilitate the transfer of tacit knowledge through on-the-job development. The findings aligned with Srivastava and Jain (2017), who found that leaders guide, direct, and influence employees to change and are involved in the change process. The success of tacit knowledge transfer thrives on the support of management who serve as a vital promoter of a collaborative mutual work environment (Papa et al., 2018). This finding also confirmed that organizational structure is significant to supporting and may positively enhance KM (Sunalai, & Beyerlein, 2015; Wahba, 2015).

The findings of this study also revealed that a leader's demonstration of concern and support significantly supports the transfer of tacit knowledge. Beehr and Bennett

(2015) established that leaders empowered employees in optimizing their potential through concern for others, openness, and support because knowledge sharing enables people to do their work using collective knowledge and experience. Beehr and Bennett (2015) further stated that the goal of leaders is to empower employees in optimizing their potential, which is fostered in the concern for others, openness, and support. According to Bican et al. (2017), a diverse range of practices are available to transfer knowledge, and successful implementation of knowledge must be a collaboration between leadership and employees. The findings also established that the level of trust among employees is an essential factor in advancing organizational KM. Wahba (2015) confirmed that organizational structure is a significant key in promoting the building of relationships, which in turn, positively enhances the transfer of tacit knowledge.

Quality

The findings from this study established that quality is considered the connecting bridge with customers and makes the organization attractive to existing and potential customers. The quality transfer of tacit knowledge is an enabler for organizations to preserve critical knowledge and promote operational continuity. How leaders ensure good quality practice promotes the transfer of tacit knowledge. Three categories were identified from the analysis: (a) communication, (b) continuous improvement, and (d) planning. The findings from this study confirmed Alharbi et al.'s (2018) findings that quality management affects tacit knowledge transfer. Litchfield et al. (2016) established that a lack of necessary quality might limit the usefulness of the captured tacit knowledge. Nam Nguyen and Mohamed (2011), and Millar et al. (2017) posited that

leadership behaviors in KM practices would be a key driver for optimum benefits of tacit knowledge.

From this study, there is a confirmation of the findings of Dzekashu and McCollum (2014) that: (a) top management's engagement produced an optimum result within the organization, (b) quality policies in place will translate to real and desired improvements, (c) The management activities have a maximum enormous on the effectiveness of the processes., (d) The self-assessment of the quality management system by organizational leaders improves the overall effectiveness and efficiency, and (e)The method used by the organizational leaders for analyzing performance had maximum impact on the organization.

Caring

A caring environment promotes relationships, trust, and communication. Under the umbrella of caring, the findings from this study spanned leaders influence on engagement, encouragement, and the benefits in sharing knowledge. From this study, I established that how leaders engaged employees tremendously help in facilitating the transfer of tacit knowledge among employees. In addition, every encouragement by leaders brings strength to employees in effort to share tacit knowledge. Furthermore, leaders creating opportunity to celebrate employees facilitate the transfer of tacit knowledge.

The findings in this study aligned with Alegre et al. (2013), and Iyamah and Ohioirenoya (2015), that knowledge sharing influences performance. Furthermore, negative feelings on how caring leaders are may dampen the sharing of knowledge and

loss of such knowledge (Iyama & Ohioirenoya, 2015). In support of the argument of Iyama and Ohioirenoya (2015), Nonaka (1994) explained that employees will not share tacit knowledge if there is no reward for sharing the knowledge. Nonaka (1994) noted that the development of new knowledge could only be through interactions among employees, and that organization determines the extent of the interaction.

Limitations of the Study

The first limitation of the study is the restricted scope and generalizability, as the study participants were drawn from two consulting organizations in the United States. The study was purposefully limited to two engineering consulting organizations in the United States. The assessment of the tacit knowledge programs at the organization during the time frame of the study limited the findings. Therefore, there was a limit on the generalization of findings to other organizations.

The second limitation of the study is the susceptibility of interviews to response bias (a universal credibility issue) due to participants restricting the truth. Assurance of anonymity and open-ended questions helped to minimize the limitation. I also decreased the inaccuracy in the collection of qualitative data by peer checking the transcribed interviews to ensure the dependability of the data collection process (Ravitch & Carl, 2016).

Finally, the findings from the sampled population signifies the opinions of leaders based on their experiences. The outcome may not represent prediction of future perceptions, assessments, and behavior of the population of leaders in other consulting organizations.

Recommendations

The study findings have created future opportunities for further research. The purpose of this qualitative multiple case study is to gain understandings of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees.

The first recommendation is to expand the empirical research on tacit knowledge transfer to include other countries. This supports the recommendations of Carmel et al. (2013) that more research needed in the professional services, and specifically those knowledge-intensive industries. The need for operational continuity exists throughout the world; there is a continued need for research to improve the management of tacit knowledge.

The second recommendation is for future research to increase the number of participating consulting organizations across the nation. The proposal will provide an opportunity for future researchers to compare the result of this study with future outcomes.

The third recommendation addresses the identification of industry best practices for the transfer of tacit knowledge in the consulting organization. Determining the best practices from this research could provide what Macmillen and Stead (2014) stated as a gap in the literature – studies on the application of best practices. For the consulting organizations where size, geography, and organizational structure vary from organization to organization, research is required to provide managers with those best practice strategies that most efficiently and effectively leverage resources.

Implications

The implications of this study are explained in three sections - positive social change, theory, and practice. The details are as follows:

Implications to Positive Social Change

The research findings indicated that the growth or development of professionals is dependent on the transfer of tacit knowledge among employees. Therefore, the opportunity to facilitate the transfer of tacit knowledge among employees in engineering consulting organizations will enhance the growth of less experienced employees. The outcome will contribute to social change through improved professionalism and expertise of employees.

Implications to Theory

The findings from this study have undergirded the theoretical framework regarding the body of knowledge and professional practice that would help leaders of engineering consulting organizations to enhance KM. The research findings provided additional information on how leaders could facilitate the transfer of tacit knowledge to strengthen their operational continuity. Future scholars of leadership and management could find the information useful on the application of tacit knowledge from perspectives of leadership roles and their influence on skilled employees.

Implications to Practice

Leaders of consulting organizations at various levels of authority or position need to support the growth of less experienced employees for operational continuity. The outcome of the study provided evidence of the role of leaders in facilitating the transfer

of tacit knowledge among employees. The effect will lead to an increase in work performance and employees' career satisfaction or engagement.

Conclusions

The purpose of this exploratory multiple qualitative case study was to understand how leaders in consulting engineering organizations are facilitating the transfer of tacit knowledge among employees. This topic of this study was Tacit Knowledge Transfer at Engineering Consulting Organizations. Influenced by the theory of KM, the findings from this study came from the leaders of engineering consulting organizations in the United States. They provided a common understanding of how leaders are facilitating the transfer of tacit knowledge among employees. The key findings from this study are a demonstration of the need for continuous research on tacit knowledge transfer and positive social change initiatives to promote the development of professionals in knowledge-based industries.

References

- Achakul, C., & Yolles, M. (2013). Intrinsic and extrinsic motivation in personality: Assessing knowledge profiling and the work preference inventory in a Thai population. *Journal of Organization Transformational and Social Change*, *10*, 196–217. doi:10.1179/1477963312z.0000000005
- Agee, J. (2009). Developing qualitative research questions: A reflective process. *International Journal of Qualitative Studies in Education*, *22*(4), 431–447. doi:10.1080/09518390902736512
- Agnew, S. (2018). Empirical measurement of the financial socialization of children by parents. *Young Consumers*, *19*, 421–431. doi:10.1108/YC-07-2017-00717
- Alegre, J., Sengupta, K., & Lapiedra, R. (2013). Knowledge management and innovation performance in a high-tech SMEs industry. *International Small Business Journal*, *31*(4), 454–470. doi:10.1177/0266242611417472
- Alharbi, I., Alyoubi, B., Alyoubi, A., & Almazmomi, N. (2018). Knowledge management systems: Evaluating confidentiality, trust, and privacy concerns. *Journal of Engineering Technology*, *6*(2), 83–97. Retrieved from <http://www.joetsite.com>
- Amin, W., Akram, U., Shahzad, F., & Amir, M. (2018). Impact of transformation leadership on affective employee's commitment. *European Online Journal of Natural and Social Sciences: Proceedings*, *7*(1(s)), 48. Retrieved from <http://european-science.com>
- Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational*

- Research and Policy Studies*, 5, 272–281. Retrieved from <http://jeteraps.scholarlinkresearch.com/>
- Auerbach, C., & Silverstein, L. B. (2003). *Qualitative data: An introduction to coding and analysis*. New York, NY: New York University Press.
- Augier, M., & Vendelo, M. T. (1999). Networks, cognition and management of tacit knowledge. *Journal of Knowledge Management*, 3(4), 252–261.
doi:10.1108/13673279910304005
- Badara, A. M., Johari, H. B., & Yean, T. F. (2015). Individual performance, leadership succession, organizational climate and the moderating effect of trust: Data screening and preliminary analysis. *Mediterranean Journal of Social Sciences*, 6(2), 13. doi:10.5901/mjss.2015.v6n2p13
- Bailey, L. F. (2014). The origin and success of qualitative research. *International Journal of Market Research*, 56, 167–184. doi:10.2501/IJMR-2014-013
- Bendassolli, P. F. (2013). Theory building in qualitative research: Reconsidering the problem of induction. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 14(1). doi:10.17169/fqs-14.1.1851
- Bennett, R., & Gabriel, H. (1999). Organizational factors and knowledge management within large marketing departments: An empirical study. *Journal of Knowledge Management*, 3(3), 212–225. doi:10.1108/13673279910288707
- Beehr, T. A., & Bennett, M. M. (2015). Working after retirement: Features of bridge employment and research directions. *Work, Aging and Retirement*, 1(1), 112–128.
doi:10.1093/workar/wau007

- Berg, B. L., Lune, H., & Lune, H. (2004). *Qualitative research methods for the social sciences*. Boston, MA: Pearson.
- Bican, P. M., Guderian, C. C., & Ringbeck, A. (2017). Managing knowledge in open innovation processes: An intellectual property perspective. *Journal of Knowledge Management, 21*(6), 1384–1405. doi:10.1108/JKM-11-2016-0509
- Boccuzzo, G., & Gianecchini, M. (2015). Measuring young graduates' job quality through a composite indicator. *Social Indicators Research, 122*, 453–478. doi:10.1007/s11205-014-0695-6
- Bojanc, R., & Jerman-Blazic, B. (2013). A quantitative model for information security risk management. *Engineering Management Journal, 25*, 25–37. doi:10.1080/10429247.2013.11431972
- Bolisani, E., & Handzic, M. (Eds.). (2014). *Advances in knowledge management: Celebrating twenty years of research and practice* (Vol. 1). New York, NY: Springer. doi:10.1007/978-3-319-09501-1
- Braunack-Mayer, A., Skinner, S. R., Collins, J., Tooher, R., Proeve, C., O'Keefe, M., & Marshall, H. (2015). Ethical challenges in school-based immunization programs for adolescents: A qualitative study. *American Journal of Public Health, 105*, 1399–1403. doi:10.2105/AJPH.2014.302280
- Brinkmann, S. (2014). Interview. In T. Teo (Ed.), *Encyclopedia of critical psychology* (pp. 1008–1010). New York, NY: Springer. doi:10.1007/978-1-4614-5583-7_161
- Braedley, S. (2016). Research on fire: Lessons learned in knowledge mobilization.

Technology Innovation Management Review, 6(9), 53–58.

doi:10.22215/timreview1020

Budak, F. (2017). The importance of clinical leadership in healthcare management.

Journal of Current Researches on Health Sector, 7(2), 1–20.

doi:10.26579/jocrehes_7.2.1

Burns, J. M. (1978). *Leadership*. New York, NY: Harper and Row.

Caiazza, R., Richardson, A., & Audretsch, D. (2015). Knowledge effects on

competitiveness: From firms to regional advantage. *The Journal of Technology*

Transfer, 40(6), 899–909. doi:10.1007/s10961-015-9425-8

Campbell, S. (2014). What is qualitative research. *Clinical Laboratory Science*, 27(1), 3.

doi:10.29074/ascls.27.1.3

Carmel, J., Yoong, P., & Patel, K. (2013). Knowledge loss when older experts leave

knowledge-intensive organizations. *Journal of Knowledge Management*, 17(6),

913–927. doi:10.1108/JKM-04-2013-0137

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014). The use of triangulation in qualitative research. *Oncology Nursing Forum*, 41, 545–547.

doi: 10.1188/14.ONF.545547

Cassar, F. A., Marshall, S., & Cordina, M. (2014). Use of the Delphi technique to

determine safety features to be included in a neonatal and pediatric prescription

chart. *International Journal of Clinical Pharmacology*, 36, 1179–1189.

doi:10.1007/s11096-014-0014-y.

Chow, J., Kopp, R. J., & Portney, P. R. (2003). Energy resources and global

- development. *Science*, 302(5650), 1528–1531. doi:10.1126/science.1091939
- Chaudhry, S., & Joshi, C. (2017). Transformational leadership, HR practices and affective commitment to change: A theoretical perspective. *Journal of Organization and Human Behavior*, 6(3), 37–45. doi:10.1108/JOHB-05-2016-0506
- Chuang, C. H., Jackson, S. E., & Jiang, Y. (2013). Can knowledge-intensive teamwork be managed? Examining the roles of HRM systems, leadership, and tacit knowledge. *Journal of Management*, In Press, 1-31, doi:10.1177/0149206313478189
- Collins, C. S., & Cooper, J. E. (2014). Emotional intelligence and the qualitative researcher. *International Journal of Qualitative Methods*, 13, 88–103. doi:10.1177/160940691401300134
- Cope, D. G. (2014). Methods and meaning: Credibility and trustworthiness of qualitative research. *Oncology Nursing Forum*, 41, 89–91. doi: 10.1188/14.ONF.89-91
- Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). Thousand Oaks, CA: Sage.
- Curtis, B., & Curtis, C. (2011). Autoethnographic research-writing and reading the self. In *Social Research: A Practical Introduction* (pp. 263–284). doi:10.4135/9781526435415
- Dalkir, K. (2013). *Knowledge management in theory and practice*. Burlington, MA: Elsevier Butterworth–Heinemann. doi:10.4324/9780080547367
- Davis, F. A. (2017). *Continuous improvement by improving continuously (CIBIC): Addressing the human factors during the pursuit of process excellence*. New

York, NY: Productivity Press.

- Deng, Z. H. (2017). Impact of servant leadership on the employee's attitude and behaviors. *DEStech Transactions on Engineering and Technology Research*, (sste). doi:10.12783/dtetr/sste2016/6620
- Deng, Z. H. (2016). Multiple study of servant leadership and paternalistic leadership on employee's performance. *DEStech Transactions on Engineering and Technology Research*, (ssme-ist). doi:10.12783/dtetr/ssme-ist2016/3918
- Denner, L., & Blackman, T. (2013). Knowledge management in the public sector: an online presence as a tool for capture and sharing. *Studies and Perspectives Series (The Caribbean)*, 20. Retrieved from <https://www.cepal.org/en/publications/type/studies-and-perspectives-eclac-subregional-headquarters-caribbean>
- Desai, M. S., & von der Embse, T. J. (2008). Managing electronic information: An ethics perspective. *Information Management and Computer Security*, 16, 20-27. doi:10.1108/09685220810862724
- Denzin, N. K., & Giardina, M. D. (2014). *Qualitative inquiry outside the academy*. Walnut Creek, CA: Routledge.
- Ding, Z., Zuo, J., Wang, J., & Zillante, G. (2016). Searching for niche market for engineering consultants. Case of regional supervisor system in China. *Engineering Construction & Architectural Management*, 23, 622-637. doi:10.1108/ECAM-09-2015-0132
- Donate, M. J., & de Pablo, J. D. S. (2015). The role of knowledge-oriented leadership in

- knowledge management practices and innovation. *Journal of Business Research*, 68(2), 360-370. doi: 10.1016/j.jbusres.2014.06.022
- Dworkin, S. L. (2012). Sample size policy for qualitative studies using in-depth interviews. *Archives of Sexual Behavior*, 41, 1319-1320. doi:10.1007/s105080120016-6
- Dyczkowska, J., & Dyczkowski, T. (2018). Democratic or Autocratic leadership style? Participative management and its links to rewarding strategies and job satisfaction in SMEs. *Athens Journal of Business & Economics*, 4(2), 193–218. doi:10.30958/ajbe.4.2.5
- Dzekashu, W. G., & McCollum, W. R. (2014). A quality approach to tacit knowledge capture: Effective practice to achieving operational excellence. *International Journal of Applied Management and Technology*, 13(1), 52-63. doi:10.5590/IJAMT.2014.13.1.04
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE open*, 4(1). doi: 10.1177/2158244014522633
- Endres, M. L., & Chowdhury, S. K. (2014). Reciprocity in knowledge sharing research: An attempt to consolidate diverse meanings and uses. *Academy of Management Annual Meeting Proceedings*, 2014(1), 1. doi: 10.5465/AMBPP.2014.17678abstract
- Fakis, A., Hilliam, R., Stoneley, H., & Townend, M. (2014). Qualitative analysis of qualitative information from interviews: A systematic literature review. *Journal of*

- Mixed Methods Research*, 8, 139-161. doi:10.1177/1558689813495111
- Fletcher, A. J., & Marchildon, G. P. (2014). Using the Delphi method for qualitative, participatory action research in health leadership. *International Journal of Qualitative Methods*, 13, 1-18. doi:10.1177/160940691401300101
- Flicker, S., Haans, D., & Skinner, H. (2004). Ethical dilemmas in research on internet communities. *Qualitative Health Research*, 14(1), 124-134.
doi:10.1177/1049732303259842
- Fombad, M. (2018). Knowledge management for poverty eradication. A South Africa perspective. *Journal of Information Communication and Ethics in Society*, 16, 193-213. doi:10.1108/JICES-04-2017-0022
- Fredericksen, E. (2010). When the music stops: Succession is more than filling seats. *State and Local Government Review*, 42(1), 50. doi:10.1177/0160323X10368518
- Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, 20, 1408-1416. Retrieved from <https://works.bepress.com/d101mentor/4/>
- Garrick, J. (2018). A critical discourse on tacit knowledge management and the performance agenda. Implications for industry training and development. *European Journal of Training and Development*, 42, 210-225. doi:10.1108/EJTD-12-2017-0107
- Garrick, J., & Chan, A. (2017). Knowledge management and professional experience: The uneasy dynamics between tacit knowledge and performativity in organizations. *Journal of Knowledge Management*, 21(4), 872-884.

doi:10.1108/JKM-02-2017-0058

- Godden, L. (2014). Essentials of a qualitative doctorate. [Review of the book , by I. Holloway & L. Brown]. *Alberta Journal of Educational Research*, 60, 610-614. Retrieved from <http://ajer.journalhosting.ucalgary.ca>
- Goertz, G., & Mahoney, J. (2013). Methodological Rorschach tests: Contrasting interpretations in qualitative and quantitative research. *Multiple Political Studies* 46, 236-251. doi:10.1177/0010414012466376
- Gog, M. (2015). Case study research. *International Journal of Sales, Retailing & Marketing*, 4(9), 33-41. Retrieved from <http://www.ijprm.com>
- Gorissen, P., Van Bruggen, J., & Jochems, W. (2013). Methodological triangulation of the students' use of recorded lectures. *International Journal of Learning Technology*, 8, 20-40. doi:10.1504/IJLT.2013.052825
- Grant, K. (2011). Knowledge management: An enduring but confusing fashion. *Electronic Journal of Knowledge Management*, 9(2), 117. Retrieved from <http://www.ejkm.com>
- Green, R. A. (2014). The Delphi technique in educational research. *Sage Open*, 4(2).1-8. doi:10.1177/2158244014529773
- Groff, T., & Jones, T. (2012). *Introduction to knowledge management*. doi:10.4324/9780080495781
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18, 59–82. doi:10.1177/1525822X05279903

- Guth, L. J., & Asner-Self, K. K. (2017). International group work research: Guidelines in cultural contexts. *Journal for Specialists in Group Work, 42*, 33-53.
doi:10.1080/01933922.2016.1264519
- Gysbers, N. C. (2013). Career-ready students: A goal of comprehensive school counseling programs. *The Career Development Quarterly, 61*(3), 283-288.
doi:10.1002/j.2161-0045.2013.00057.x
- Haahr, A., Norlyk, A., & Hall, E. O. (2013). Ethical challenges embedded in qualitative research interviews with close relatives. *Nursing Ethics 21*(1), 6-15.
doi:10.1177/0969733013486370
- Harper, M., & Cole, P. (2012). Member checking: Can benefits be gained similar to group therapy? *The Qualitative Report, 17*, 510-517. Retrieved from <http://www.nova.edu/ssss/QR/QR17-2/harper>
- Hau, Y. S., Kim, B., Lee, H., & Kim, Y. G. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management, 33*(2), 356-366. doi: 10.1016/j.ijinfomgt.2012.10.009
- Hazzan, O., & Nutov, L. (2014). Teaching and learning qualitative research: Conducting qualitative research. *Qualitative Report, 19* (24), 1-29. Retrieved from <https://nsuworks.nova.edu/tqr/vol19/iss24/3>
- Imran, M. K., Ilyas, M., & Aslam, U. (2016). Organizational learning through transformational leadership. *The learning organization, 23*(4), 232-248. Retrieved from <https://www.researchgate.net>

- Ivana, G. I. (2016). Book review: Joost Beuving and Geert de Vries, doing qualitative research: The craft of naturalistic inquiry. *Qualitative Research, 16*, 741-742.
doi:10.1177/1468794115618005
- Iyamah, F. A., & Ohiorenoya, J. O. (2015). Knowledge sharing and performance in the Nigerian oil and gas industry. *Information and Knowledge Management, 5*(3). 82-90. Retrieved from academia.edu
- Joe, C., Yoong, P., & Patel, K. (2013). Knowledge loss when older experts leave knowledge-intensive organizations. *Journal of Knowledge Management, (6)*, 913.
doi:10.1108/JKM-04-2013-0137
- Joia, L. A., & Lemos, B. (2010). Relevant factors for tacit knowledge transfer within organizations. *Journal of Knowledge Management, 14*(3), 410-427.
doi:10.1108/13673271011050139
- Kaiser, K. (2009). Protecting respondent confidentiality in qualitative research. *Qualitative Health Research, 19*, 1632-1641. doi:10.1177/104973230935087
- Kharuhayothin, T., & Kerrane, B. (2018). Learning from the past. An exploratory study of financial food socialization processes using the lens of emotional reflexivity. *European Journal of Marketing, 52*, 2313-2333. doi:10.1108/EJM-10-2017-0694
- Kianto, A., Vanhala, M., & Heilmann, P. (2016). The impact of knowledge management on job satisfaction. *Journal of Knowledge Management, 20*(4), 621-636.
doi:10.1108/jkm-10-2015-0398
- King, W. R. (2009). Knowledge management and organizational learning. *Annals of Information Systems, 3*(13). doi:10.1007/978-1-4419-0011-1_1

- Komić, D., Marušić, S. L., & Marušić, A. (2015). Research integrity and research ethics in professional codes of ethics: Survey of terminology used by professional organizations across research disciplines. *PloS one*, *10*(7), e0133662. doi: 10.1371/journal.pone.0133662
- Kraśnicka, T., Głód, W., & Wronka-Pośpiech, M. (2016). Management innovation and its measurement. *Journal of Entrepreneurship, Management and Innovation*, *12*(2), 95–121. doi:10.7341/20161225
- Krylova, K. O., Vera, D., & Crossan, M. (2016). Knowledge transfer in knowledge intensive organizations. The crucial role of improvisation in transferring and protecting knowledge. *Journal of Knowledge Management*, *20*, 1045-1064. doi:10.1108/JKM-10-2015-0385
- Kuciapski, M. (2017). A model of mobile technologies acceptance for knowledge transfer by employees. *Journal of Knowledge Management*, *5*, 1053-1076. doi:10.1108/JKM-03-2016-0136
- Kvale, S., & Brinkmann, S. (2015). *Interviews: Learning the craft of qualitative research*. Thousand Oaks, CA: Sage.
- Laihonen, H., & Mantyla, S. (2018). Strategic knowledge management and evolving local government. *Journal of Knowledge Management*, *22*, 219-234. doi:10.1108/JKM-06-2017-0232
- Landerer, N. (2013). Rethinking the logics: A conceptual framework for the mediatization of politics. *Communication Theory*, *23*, 239-258. doi:10.1111/comt.12013

- Lee, S., Yoo, Y., & Yun, S. (2015). Sharing my knowledge: An international perspective. *Journal of Management Psychology, 30*, 986-1002. doi:10.1108/JMP-11-2013-0355
- Leedy, P. D., & Ormrod, J. E. (2013). *Practical research: Planning and design* (10th ed.). Boston, MA: Pearson Education, Inc.
- Leonard, D., & Sensiper, S. (1998). The role of tacit knowledge in group innovation. *California Management Review, 40*(3), 112–132. doi:10.1108/CMR-01-1997-0058
- Lewis, S. (2015). Qualitative inquiry and research design: Choosing among five approaches. *Health Promotion Practice, 16*, 473–475.
doi:10.1177/1524839915580941
- Lievre, P., & Tang, J. (2015). SECI and inter-organizational and intercultural knowledge transfer. A case study of controversies around project of co-operation between France and China in the health sector. *Journal of knowledge Management, 19*, 1069-1086. doi:10.1108/JKM-02-2015-0054
- Litchfield, K., Javernick-Will, A., & Maul, A. (2016). Technical and professional skills of engineers involved and not involved in engineering service. *Journal of Engineering Education, 105*(1), 70-92. doi:10.1002/jee.20109
- Macmillen, J., & Stead, D. (2014). Learning heuristic or political rhetoric? Sustainable mobility and the functions of ‘best practice’. *Transport Policy, 35*, 79-87. doi: 10.1016/j.tranpol.2014.05.017
- Makhmutov, I. I., Isavnin, A. G., & Karamyshev, S. A. S. (2016). Classification approach

- in determination of knowledge in context of organization. *Academy of Strategic Management Journal*, 15, 39-45. Retrieved from <https://www.abacademies.org/articles/Volume15,SpecialIssue.pdf#page=44>
- Manpower Group (2016). *2016-2017 Talent shortage survey*. Milwaukee, WI: Manpower Group. Retrieved from <https://www.manpowergroup.us>
- Mantere, S., & Ketokivi, M. (2013). Reasoning in organization science. *Academy Of Management Review*, 38(1), 70-89. doi:10.5465/amr.2011.0188
- Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. In *Forum qualitative Sozialforschung/Forum: Qualitative social research*, 11(3). Retrieved from <http://www.qualitative-research.net>
- Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research? A review of qualitative interviews in research. *Journal of Computer Information Systems*, 54(1), 11-22. Retrieved from <http://www.tandfonline.com/loi/ucis20>
- Marshall, C., & Rossman, G. B. (2014). *Designing qualitative research* (5th ed.). London, England: Sage.
- McCusker, K., & Gunaydin, S. (2015). Research using qualitative, quantitative or mixed methods and choice based on the research. *Perfusion*, 30, 537-542. doi:10.1177/0267659114559116
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: Sage.
- Millar, C. C., Chen, S., & Waller, L. (2017). Leadership, knowledge and people in

knowledge-intensive organizations: Implications for HRM theory and practice.

The International Journal of Human Resource Management, 28(2) 261-275.

doi:10.1080/09585192.2016.1244919

Mills, A. J., Durepos, G., & Wiebe, E. (2010). *Encyclopedia of case study research* (Vols. 1-0). Thousand Oaks, CA: SAGE Publications Limited.

doi:10.4135/9781412957397

Mishra, P., & Schmidt, G. B. (2018). How can leaders of multinational organizations be ethical by contributing to corporate social responsibility initiatives? Guidelines and pitfalls for leaders trying to do good. *Business Horizons*, 61(6), 833-843. doi:

10.1016/j.bushor.2018.07.011

Morse, J. (2015). Using qualitative methods to access the pain experience. *British Journal of Pain*, 9(1), 26-31. doi:10.1177/2049463714550507

Moorosi, P., & Grant, C. (2018). The socialization and leader identity development of school leaders in Southern African countries. *Journal of Educational Administration*, 56(6), 643-658. doi:10.1108/JEA-01-2018-0011

Moss, J. M., Gibson, D. M., & Dollarhide, C. T. (2014). Professional identity development: A grounded theory of transformational tasks of counselors. *Journal of Counseling & Development*, 92, 3-12. doi: 10.1002/j.1556-6676.2014. 00124.x

Munn, Z., Porritt, K., Lockwood, C., Aromataris, E., & Pearson, A. (2014). Establishing confidence in the output of qualitative research synthesis: The conqual approach. *BMC Medical Research Methodology*, 14, 1-7. doi:10.1186/1471228814108

Mutchler, M. G., McKay, T., McDavitt, B., & Gordon, K. K. (2013). Using peer

ethnography to address health disparities among young urban Black and Latino men who have sex with men. *American Journal of Public Health, 103*, 849-852. doi:10.2015/AJPH.2012.300988

- Nadal, K. L., Davidoff, K. C., Davis, L. S., Wong, Y., Marshall, D., & McKenzie, V. (2015). A qualitative approach to intersectional micro-aggressions: Understanding influences of race, ethnicity, gender, sexuality, and religion. *Qualitative Psychology, 2*, 147-163. doi:10.1037/qup0000026
- Naim, M. F., & Lenka, U. (2018). Organizational learning and Gen Y employees' affective commitment: The mediating role of competency development and moderating role of strategic leadership. *Journal of Management & Organization, 1*(17). doi:10.1017/jmo.2018.19
- Nam Nguyen, H., & Mohamed, S. (2011). Leadership behaviors, organizational culture and knowledge management practices: An empirical investigation. *Journal of Management Development, 30*(2), 206-221. doi:10.1108/02621711111105786
- Neukam, M. N. (2017). Managing the fuzzy front-end in multicultural teams. *European Journal and Innovation Management, 20*, 578-598. doi:10.1108/EJIM-11-2016-0112
- Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence-based nursing, 18*(2), 34-35. Retrieved from <http://eprints.hud.ac.uk/id/eprint/23995/1/SmithIssues.pdf>
- Northouse, P. G. (2018). *Leadership: Theory and practice*. Thousand Oaks, CA: Sage
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization*

Science, 5(1), 14–37. doi:10.1287/orsc.5.1.14

- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York, NY: Oxford University Press.
- Omotayo, F. O. (2015). Knowledge management as an important tool in organizational management: A review of literature. *Library Philosophy and Practice (e-journal)*. Retrieved from <http://digitalcommons.unl.edu/libphilprac/1238>.
- Oye, C., Sorensen, N. O., & Glasdam, S. (2016). Qualitative research ethics on the spot. *Nursing Ethics*, 23, 455-464. doi:10.1177/096973301456702
- Papa, A., Dezi, L., Gregori, G. L., Mueller, J., & Miglietta, N. (2018). Improving innovation performance through knowledge acquisition: The moderating role of employee retention and human resource management practices. *Journal of Knowledge Management*. doi:10.1108/JKM-09-2017-0391
- Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.). Thousand Oaks, CA: Sage.
- Perjanik, N. S. (2016). *Tacit knowledge capture and the brain-drain at electrical utilities* (Doctoral dissertation). Retrieved from <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=3524&context=dissertations>
- Pereira, C. A. B., Alves, H. M. B., & Ferreira, J. J. M. (2016). Impact of tacit knowledge on customer loyalty. *The Service Industries Journal*, 36(15-16), 827-845. doi:10.1080/02642069.2016.1272596

- Pérez-Luño, A., Saporito, P., & Gopalakrishnan, S. (2016). Small and medium-sized enterprise's entrepreneurial versus market orientation and the creation of tacit knowledge. *Journal of Small Business Management*, 54(1), 262-278.
doi:10.1111/jsbm.12144
- Polanyi, M. (1974). *Personal knowledge: Towards a post-critical philosophy*. Chicago, IL: The University of Chicago Press.
- Puche, J., Ponte, B., Costas, J., Pino, R., & De la Fuente, D. (2016). Systemic approach to supply chain management through the viable system model and the theory of constraints. *Production planning & control*, 27(5), 421-430.
doi:10.1080/09537287.2015.1132349
- Qu, R., Janssen, O., & Shi, K. (2015). Transformational leadership and follower creativity: The mediating role of follower relational identification and the moderating role of leader creativity expectations. *The Leadership Quarterly*, 26(2), 286–299. doi: 10.1016/j.leaqua.2014.12.004
- Quintas, P., Paul, L., & Geoff, J. (1997). Knowledge management: A strategic agenda. *Long Range Planning*, 30(3), 385-391. doi:10.1016/S0024-6301(97)90252-1
- Ragsdale, J. (2018, May 8). The state of knowledge management: 2017. *Technology Services Industry Association*, Retrieved from www.tsia.com/resources/the-state-of-knowledge-management-2017
- Ravitch, S. M., & Carl, N. M. (2016). *Qualitative research: Bridging the conceptual, theoretical, and methodological*. Thousand Oaks, CA: Sage.
- Reder, W., Bose, A., Flueck, A., Lauby, M., Niebur, D., Randazzo, A., & Wayno, F.

- (2010). Engineering the future. *IEEE Power and Energy Magazine*, 8(4), 27-35.
doi:10.1109/MPE.2010.937125
- Ren, X., Deng, X., & Liang, L. (2018). Knowledge transfer between projects within project-based organizations. The project nature perspective. *Journal of Knowledge Management*, 22, 1082-1103. doi:10.1108/JKM-05-2017-0184
- Richardson, T. M., Earnhardt, M. P., & Marion, J. W. (2015). Is project management still an accidental profession? A qualitative study of career trajectory. *Sage Open*, 1, 10. doi:10.1177/2158244015572098
- Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers*. Thousand Oaks, CA: Sage.
- Rosário, C. R., Kipper, L. M., Frozza, R., & Mariani, B. B. (2015). Methodology for acquisition of collective tacit knowledge used in diagnosis of defect cause in industrial processes. *VINE*, 45(1), 22-45. doi:10.1108/VINE-03-2013-0013
- Roy, S., & Mitra, J. (2018). Tacit and explicit knowledge management and assessment of quality performance of public R&D in emerging economies. An India perspective. *Journal of Organizational Change Management*, 31, 188-214.
doi:10.1108/JOCM-06-2017-0236
- Rubin, H. J., & Rubin, I. S. (2012). *Qualitative interviewing: The art of hearing data* (3rd ed.). Thousand Oaks, CA: Sage.
- Rubin, M. (2015). The promise and perils of hybrid moral semantics for naturalistic moral realism. *Philosophical Studies*, 172, 691-710. doi:10.1007/s11098-014-

0329-5

- Saifi, S. A. (2015). Positioning organizational culture in knowledge management research. *Journal of Knowledge Management, 19*, 164-189. doi:10.1108/JKM-07-2014-0287
- Saldaña, J. (2015). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.
- Saks, A. M., & Grumman, J. A. (2018). Socialization resources theory and newcomers work engagement. A new pathway to newcomer socialization. *Career Development International, 23*, 12-32. doi:10.1108/CDI-12-2016-0214
- Sandybayev, A., & Yılmaz, B. (2015). Charismatic leadership and organizational culture: A Northern Cyprus perspective on the police service employees. *International Journal of Research in Management, 5*(2). Retrieved from <http://www.rpublication.com/>
- Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014). Ethical challenges of researchers in qualitative studies: The necessity to develop a specific guideline. *Journal of medical ethics and history of medicine, 7*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4263394/>
- Saxena, A., Davies, M., & Phillippon, D. (2018). Structure of healthcare dyad leadership. An organization's experience. *Leadership in Health Services, 31*, 238-253. doi:10.1108/LHS-12-2017-0076
- Schwab, K. (2010, September). The global competitiveness report 2010-2011. Geneva: World Economic Forum. Retrieved from

https://www.ngkok.co.za/Artikels/WEF_GlobalCompetitivenessReport_2010-11.pdf

- Seidman, I. (2013). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York, NY: Teachers College Press.
- Seidler-de Alwis, R., & Hartmann, E. (2008). The use of tacit knowledge within innovative companies: Knowledge management in innovative enterprises. *Journal of Knowledge Management*, 12(1), 133-147. doi:10.1108/13673270810852449
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22, 63–75. doi:10.3233/EFI-2004-22201
- Şimşit, Z. T., Günay, N. S., & Vayvay, Ö. (2014). Theory of constraints: A literature review. *Procedia-Social and Behavioral Sciences*, 150, 930-936. doi: 10.1016/j.sbspro.2014.09.104
- Simundic, A. M. (2013). Bias in research. *Biochemia Medica*, 23, 12-15. doi:10.11613/BM.2013.003
- Sinkovics, R. R., & Alfoldi, E. A. (2012). Progressive focusing and trustworthiness in qualitative research: The enabling role of computer-assisted qualitative data analysis software (CAQDAS). *Management International Review*, 52, 817-845. doi:10.1007/s1157501201405
- Soliman, F., & Spooner, K. (2000). Strategies for implementing knowledge management: role of human resources management. *Journal of Knowledge Management*, 4(4), 337–345. doi:10.1108/13673270010379894
- Stahl, B., Doherty, N., Shaw, M., & Janicke, H. (2014). Critical theory as an approach to

- the ethics of information security. *Science and Engineering Ethics*, 20(3), 675–699. doi:10.1007/s11948-013-9496-6
- Srivastava, P., & Jain, S. (2017). A leadership framework for distributed self-organized scrum teams. Team performance management. *International Journal*, 23(5/6), 293-314. doi:10.1108/TPM-06-2016-0033
- Su, H. Y. (2014). Business ethics and the development of intellectual capital. *Journal of Business Ethics*, 119, 87-98. doi:10.1007/s10551-013-1623-4
- Sunalai, S., & Beyerlein, M. (2015). Exploring knowledge management in higher education institutions: Processes, influences, and outcomes. *Academy of Educational Leadership Journal*, 19(3), 289. Retrieved from <http://oaktrust.library.tamu.edu/bitstream/handle/1969.1/156246/SUNALAI-DISSERTATION-2015.pdf?sequence=1&isAllowed=y>
- Swensen, S., Gorringer, G., Caviness, J., & Peters, D. (2016). Leadership by design. International organization development of physician leaders. *Journal of Management Development*, 35, 549-570. doi:10.1108/JMD-08-2014-0080
- Tadajewski, M. (2016). Focus groups: History, epistemology and non-individualistic consumer research. *Consumption, Markets, and Culture*, 19, 319-345. doi:10.1080/10253866.2015.1104038
- Thomson, R. (2015). *What is qualitative longitudinal research*. London, England: Sage.
- Tiba, S., & Omri, A. (2017). Literature survey on the relationships between energy, environment and economic growth. *Renewable and Sustainable Energy Reviews*, 69, 1129-1146. doi: 10.1016/j.rser.2016.09.113

- Tight, M. (2016). Phenomenography: The development and application of an innovative research design in higher education research. *International Journal of Social Research Methodology*, 19(3), 319-338. doi:10.1080/13645579.2015.1010284.
- Tobin, G. A., & Begley, C. M. (2004), Methodological rigor within a qualitative framework. *Journal of Advanced Nursing*, 48, 388–396. doi:10.1111/j.1365-2648.2004.03207.x
- Tsai, Y., Wang, H., & Yuan, C. (2015). Transformational leadership and job performance: The case of SMEs in Taiwan. *International Journal of Arts and Commerce*, 4(8), 57–71. Retrieved from https://www.ijac.org.uk/images/frontImages/gallery/Vol._4_No._8/7._57-71.pdf
- Tse, H. M., Huange, X., & Lam, W. (2013). Why does transformational leadership matter for employee turnover? A multi-foci social exchange perspective. *The Leadership Quarterly*, 24(5), 763–776. doi: 10.1016/j.leaqua.2013.07.005
- Tomas, G., & Hult, M. (2003). An integration of thoughts on knowledge management. *Decision Sciences*, 34(2), 189–195. doi:10.1111/1540-5915.02264
- Todres, L., & Galvin, K. (2005). Pursuing both breadth and depth in qualitative research: Illustrated by a study of the experience of intimate caring for a loved one with Alzheimer's disease. *International Journal of Qualitative Methods*, 4(2), 20-31. doi. 10.1177/160940690500400202
- Urbancová, H., & Linhartová, L. (2011). Staff turnover as a possible threat to knowledge loss. *Journal of competitiveness*, 3(3), 84-98. Retrieved from https://www.researchgate.net/profile/Lucie_Vnouckova/publication/265237334_S

taff_Turnover_as_a_Possible_Threat_to_Knowledge_Loss/links/56e00a9208ae77a15fe8682.pdf

- Van Genderen, E. (2014). Strategic knowledge sharing: Culture acting as an inhibitor. *Middle East Journal of Business*, 9(4), 3-8. doi:10.5742/mejb.2014.92566
- Van Maanen, J. V. (2015). The present of things past: Ethnography and career studies. *Human Relations*, 68, 35-53. doi:10.1177/0018726714552287
- Vogt, W. P., & Johnson, R. B. (2011). Dictionary of statistics & methodology: A nontechnical guide for the social sciences. New York, NY: Sage Publications.
- Wahba, M. (2015). The impact of organizational structure on knowledge management processes in Egyptian context. *The Journal of Developing Areas*, 49(3), 275–292. doi:10.1353/jda.2015.0173
- Wahda. (2017). Mediating effect of knowledge management on organizational learning culture in the context of organizational performance. *Journal of Management Development*, 36(7), 846–858. doi:10.1108/jmd-11-2016-0252
- Wang, L. (2018). Study on the influence of leadership style on employee's organizational commitment. IOP conference series: *Materials Science and Engineering*, 322, 052022. doi:10.1088/1757-899x/322/5/052022
- Wang, Z., Zhou, H., & Ding, Y. (2010). Knowledge sharing and new business development in engineering consulting organizations. In *Information Science and Engineering (ICISE), 2010 2nd International Conference on* (pp. 310-314). IEEE. doi: 10.1109/ICISE.2010.5691164
- Weis, L., & Fine, M. (2012) Critical bifocality and circuits of privilege: Expanding

- critical ethnographic theory and design. *Harvard Educational Review*, 82, 173-201. doi:10.17763/haer.82.2. v1jx34n441532242
- Witmer, A. (2018). Contextual engineering assessment using an influence identification tool. *Journal of Engineering Design and Technology*, 16(6), 889-909. doi:10.1108/JEDT-05-2018-0091
- Wipawayangkool, K., & Teng, J. C. (2016). Assessing tacit knowledge and sharing intention: A knowledge internalization perspective. *Knowledge & Process Management*, 23(3), 194-206. doi:10.1002/kpm.1505
- Xu, H., Po-An Hsieh, J. J., & Wei, H. (2014). Expertise dissimilarity and creativity: the contingent roles of tacit and explicit knowledge sharing. *Journal of Applied Psychology*, 99(5), 816-830. doi:10.1037/a0036911
- Yazan, B. (2015). Three approaches to case study methods in education: Yin, Merriam, and Stake. *The Qualitative Report*, 20(2), 134-152. Retrieved from <https://nsuworks.nova.edu/tqr/vol20/iss2/12>
- Yıldız, S., Baştürk, F., & Boz, İ. T. (2014). The effect of leadership and innovativeness on business performance. *Procedia - Social and Behavioral Sciences*, 150, 785–793. doi: 10.1016/j.sbspro.2014.09.064
- Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *European Journal of Education*, 48, 311-325. doi:10.1111/ejed.12014
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Thousand Oaks, CA: Sage.

- Yin, R. K. (2014). *Case study research: Designs and methods* (5th ed.). Thousand Oaks, CA: Sage.
- Yuksel, P., & Yildirim, S. (2015). Theoretical frameworks, methods, and procedures for conducting phenomenological studies in educational settings. *Turkish Online Journal of Qualitative Inquiry*, 6, 1-20. doi:10.17569/tojqi.59813
- Zhang, Y., Gregory, M., & Neely, A. (2016). Global engineering services: Shedding light on network capabilities. *Journal of Operations Management*, 42-43, 80-94. doi: 10.1016/j.jom.2016.03.006
- Zhang, Z., Ren, R., Zheng, X., Ma, L., & Yu, Y. (2017). How Does a Creative Leader Facilitate or Hinder Employee Creativity? A Six-Week Longitudinal Study. In *Academy of Management Proceedings*, 1(2017), 12637). Retrieved from <https://journals.aom.org/doi/pdf/10.5465/AMBPP.2017.102>
- Zhou, L., Zhao, S., Tian, F., Zhang, X., & Chen, S. (2018). Visionary leadership and employee creativity in China. *International Journal of Manpower*, 39(1), 93–105. doi:10.1108/ijm-04-2016-0092

Appendix A: Interview Questions

1. What are the visible or practical processes or programs that you implemented that promoted knowledge transfer in your organization?
2. What criteria were present at work that assisted in knowledge transfer implementation?
3. What were the performance appraisal techniques used in implementing knowledge transfer in your organization?
4. How did you plan for change in human resource along with plans for knowledge transfer?
5. What were the knowledge development programs that you put in place to achieve knowledge transfer strategy in your organization?
6. How did socialization; interaction between individuals which can be through observation and imitation of others help in knowledge transfer implementation?
7. How did externalization; exposing staff to other organizations help in achieving knowledge transfer in your organization?
8. How did internal work rotation help in knowledge transfer implementation in your organization?
9. How did the combination of all these strategies help in achieving knowledge transfer in your organization?

Appendix B: Interview Protocol

Location of Interview: _____

Date of Interview: _____

Start Time: _____

Finish Time: _____

Hello, thank you for agreeing to be part of the study. I am a Ph.D. student from Walden University. My research work is to gain understandings of how leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees. The focus of this study is engineering consulting organizations in United States. The interview will involve about 10-15 participants. The answers from all the participants will be combined for analysis and report. Nothing you say will ever be identified with you personally.

The interview will take about 20-30 minutes. Questions will relate to leaders' role in facilitating the transfer of tacit knowledge in an engineering consulting organization, a study that focuses on how leaders are facilitating the transfer of tacit among employees. The purpose of the interview is to gain an understanding of the transfer of tacit knowledge at a knowledge-based organization. Do I have your permission to tape-record the interview for me to get an inclusive record of your responses? The interview will involve notetaking as you respond to the questions. Are there any questions or clarifications you would like me to make before we begin? You may stop the interview at any time based on the consent agreement you signed. Any questions before we begin?

RQ: How do leaders in an engineering consulting organization facilitate the transfer of tacit knowledge among employees?

Interview Questions

1. What are the visible or practical processes or programs that you implemented that promoted knowledge transfer in your organization?
2. What support systems were present at work that assisted in knowledge transfer implementation?
3. What were the performance appraisal techniques used in implementing knowledge transfer in your organization?
4. How did you plan for change in human resource along with plans for knowledge transfer?
5. What were the knowledge development programs that you put in place to achieve knowledge transfer strategy in your organization?
6. How did socialization; interaction between individuals which can be through observation and imitation of others help in knowledge transfer implementation?
7. How did externalization; exposing staff to other organizations help in achieving knowledge transfer in your organization?
8. How did internal work rotation help in knowledge transfer implementation in your organization?
9. What other strategies did you explore in developing a knowledge transfer plan in your organization?

Thanks again for your participation in this study.