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Understanding the Role of Tacit and Explicit Knowledge Hiding in Organizations

Darren Wiggins

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by

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A dissertation submitted in partial fulfillment of the requirements for the degree of

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We hereby certify that this dissertation, submitted by Darren Wiggins conforms to acceptable standards and is fully adequate in scope and quality to fulfill the dissertation requirements for the degree of Doctor of Philosophy.

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Knowledge Hiding (KHi) is the deliberate act of withholding knowledge from others, driven by distrust. This distrust stems from three key factors: rationalized hiding, evasive hiding, and playing dumb. The latter two, evasive hiding and playing dumb, are particularly detrimental as they foster a cycle of mutual distrust within the workplace. To counteract this, organizations have significantly invested in promoting Tacit Knowledge (TK) and Explicit Knowledge (EK) sharing. These initiatives aimed to facilitate knowledge transfer, foster collaboration, enhance problem-solving capabilities, and strengthen social and interpersonal relationships.

Recent studies highlighted the importance of understanding the attributes linked to TK and EK. Research also underscored the challenge of distinguishing between general and intrinsic knowledge, which the TK holder keeps. TK is most difficult to express, making the information sought valuable and scarce. Understanding the intentions, motivations, and behaviors that contribute to KHi and Knowledge Hoarding (KHo), which is often a fear-based response, can be beneficial. The study aimed to identify the characteristics and motivators influencing an individual's decision to share TK versus exhibiting KHi or KHo behaviors in the workplace.

A Survey Design methodology comprised an 11-stage systematic data collection and analysis approach. Over 42 days, a quantitative survey was administered to Knowledge Management professionals based in Belgium, Germany, Italy, the United Kingdom, and the United States. This effort resulted in a total of 285 completed responses.

The findings from the research questions indicated that the survey participants were not only aware of but also actively engaged in KHi, KHo, and knowledge sharing behaviors in their workplaces. Furthermore, the participants recognized that their coworkers who possess TK made deliberate decisions about how and when to share this knowledge. Factors such as trust, sincerity, skillsets, and expertise significantly influenced the decision-making process of TK holders when considering sharing their knowledge. Leadership influences should be included in future studies, as these factors significantly affect the KHI and KHo behavior of individuals in the workplace.

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In conclusion, I wish to convey my heartfelt appreciation to my family, both biological and by choice, my colleagues, and my partner. Their encouragement, curiosity, and steadfast support have been invaluable. I am deeply grateful for their presence in my life.

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Chapter 1

Introduction

Background

Knowledge Hiding (KHi) is a phenomenon that occurs when individuals choose not to share relevant information with coworkers because of organizational conditions, politics, behavior, or treatment within the workplace. Connelly et al. (2012) defined KHi as an intentional effort to conceal or hide knowledge from another individual based on distrust derived from rationalized hiding, evasive hiding, and playing dumb.

Rationalized hiding is the least destructive of the three behaviors, as the requested information may not be shared under the guise that it is sensitive or confidential, which may be partially or wholly truthful but creates an element of distrust by the knowledge owner (Bari et al., 2020; Connelly et al., 2012; Tian et al., 2021). Tian et al. (2021) concluded that evasive hiding occurs when an individual shares only portions of the requested information, intentionally hiding potentially valuable data or providing an inaccurate or misleading response to the requestor. Finally, Bari et al. (2020) noted that playing dumb is a behavior where the individual claims to have no reference, relatable, or helpful information that could be of use to the requestor or promises the requestor the information sought at a later point with no intention of following through on the request.

Bari et al. (2020) stated that the most dangerous behaviors are evasive hiding and playing dumb, leading to reciprocal mistrust in the workplace, employee silence, reduced team and interdepartmental collaboration, and organizational politics. The rationale for KHi for individuals can occur intentionally or inadvertently because of organizational policies or structure, leadership, being publicly reprimanded, antisocial behaviors, losing

control of ownership, knowledge advantage, workplace exclusion, or workplace bullying (Banagou et al., 2021; Bari et al., 2020; Pradhan et al., 2019; Serenko, 2020; Yao, Zhang, et al., 2020). Banagou et al. (2021) stated that Knowledge Hoarding (KHo), which is the act of amassing knowledge that may or may not be shared, is associated with the KHi (Knowledge Hiding) phenomenon but deviates from the characteristic intentional KHi behavior.

Bilginoğlu (2018) characterized KHo as a deliberate act by an individual to withhold pertinent information. The author further states that this strategic behavior is driven by a specific need or the desire to retain knowledge. The underlying fear is that sharing critical information might diminish their power or influence (Bilginoğlu, 2018). De Garcia (2020) stressed that KHo is as behaviorally problematic as KHi because the output reduces Knowledge Sharing (KS) or collaboration, often creating tension and weakening interpersonal and organizational exchange performance.

As mentioned earlier, KHi and KHo are specific approaches individuals use to either retain or conceal information when they feel threatened, but the methods can also be used to protect themselves or their coworkers from uncertain circumstances and outcomes (Bilginoğlu, 2018; de Garcia, 2020). Therefore, further research about KHo is needed because although KHi and KHo differ in their behavioral intentions (i.e., hiding requested information versus hiding or concealing unrequested information), both share valuable characteristics and definitions for the study (de Garcia, 2020). The research delved into the interactions between KHi and KHo in the workplace context of Tacit Knowledge (TK) sharing.

Problem Statement

A significant amount of published research has examined and interpreted the antecedents, behaviors, and motivators of KHi (Knowledge Hiding) for individuals in the workplace. However, in a recent literature review on KHi and KHo (Knowledge Hoarding), Oliveira et al. (2021) identified substantial gaps in the published research that show differing results on the causal relationships between KHi and KHo and what factors (i.e., recognition, risk, reward, financial compensation) motivate the individual. In addition to the varying results of research findings related to antecedents, behaviors, and motivators, further research is needed to understand the intentions, attitudes, and roles of mediators and moderators contributing to KHi and KHo. The intentions, attitudes, and behaviors mentioned were the focus of Peng (2013), who concluded that psychological ownership behavior, territoriality, protection of TK (Tacit Knowledge) and Explicit Knowledge (EK), and an individual's willingness to share knowledge are linked.

Leonard and Sensiper (1998) defined TK as information that is considered relevant and valuable, based on some experience or subject matter expertise, and is often an internalized process of an individual. Perraton and Tarrant (2007) discussed Polanyi's concept of TK. Polanyi described TK as a way human beings can perform various actions without explicit instruction, a complete or intelligible account of their actions, or the ability to explain why specific steps in an activity are necessary. Examples of TK are often rooted in creativity and innovation, as is typical for gourmet chefs, the creative arts (i.e., dancing, performing, painting, writing), sales and leadership, technology, and problem solvers with experience and expertise in solving issues. However, Polanyi remarked, "we know more than we can tell," which is relevant for individuals who may

not be creative types but may have been in a profession long enough to have learned substantive or critical ideas, concepts, and solutions that may never have been documented (Perraton & Tarrant, 2007).

On the other hand, EK relies on the externalization of TK, which ensures it can be documented and reused in the future (Leonard & Sensiper, 1998). EK can be defined as easily explained and expressed information, has a clear objective, and often takes the form of traditional or digital documents or other media that can easily be transferred without obstructing geographical boundaries (Gamble, 2020).

Perraton and Tarrant (2007) pointed out that the difference between TK and EK is that TK can and frequently is owned by an individual, whereas EK, and all knowledge, is rooted in TK. For example, Marty Cooper, a Motorola Engineer, placed the very cellular call on a portable phone on April 3, 1973, and it took another ten years before the cellular phone could be rescaled to be truly portable and provide decent talk time (Gupta, 2013). Although Motorola protected its intellectual property, the general concept and design captured by EK was the driver for Nokia to market their cellular phone in 1987, and the cycle of TK captured as EK drove innovation to the invention of the first smartphone by Nokia in 2002 (Gupta, 2013).

Organizations have invested significant amounts of money in promoting the KS of TK and EK amongst their employees, within workgroups, and across departments to encourage knowledge transfer, collaboration, problem-solving, and the strengthening of social and interpersonal relationships that will stimulate success and competitive advantage (Arain et al., 2020; Connelly et al., 2012; Pradhan et al., 2019; Yao, Luo, & Zhang, 2020).

Based on the literature review, there has been more of an emphasis on the pros and cons of KS (Knowledge Sharing), KHi, and KHo behavior than on understanding the specific impact intrinsic and extrinsic motivators have on TK in an organization (Pradhan et al., 2019). As a result, organizational leadership tends to focus more on EK, potentially neglecting TK due to the challenges associated with its collection (Gamble, 2020). Additionally, the author explained leadership might not be cognizant of how employees utilize KHi or KHo in the workplace.

Ali and Sagsan (2021) and Gubbins and Dooley (2021) identified TK over EK as more complicated to capture and measure because of its subtle characteristics. Too often, research is focused on both, whereas research specific to TK alone is needed, especially in understanding the paradigms and perspectives associated with KHi and KHo. Oliveira (2021) concluded that further research and measurement of TK are necessary because the type of information tends to take longer to share and is subjected to KHi.

When polled, employees admitted to knowing or participating in knowledge sabotage, being aware of workplace bullying, and being mindful of or participating in some form of KHi or KHo based on the workplace climate, distrust in the organization's direction or ethical consistencies, colleague interaction, or employee-supervisor relationship (Arain et al., 2020; Pradhan et al., 2019; Serenko, 2020; Tian et al., 2021; Yao, Luo, & Zhang, 2020; Yao, Zhang et al. 2020). In academia, the practice of tacit and explicit KHi has been often documented, and scholars tend to hide tacit-based knowledge more frequently than EK. However, an understanding of the competitive motivators of KHi and KHo is still needed (Hernaus et al., 2019).

Singh's (2019) research, which focused on territoriality, also pointed out that distinguishing between TK and EK in data analysis is a study limitation and an area that needs further exploration, especially where the impact on performance can create deviance within the workplace. Finally, in the section on limitations, Pradhan et al. (2019) documented the importance of understanding the type of data (i.e., TK versus EK) that is more likely to be hidden from other employees when they feel threatened or abused.

Peng (2013) stated that there were insufficient characteristics in the research analysis to determine if the hidden knowledge was derived from TK. Peng asserted that TK is challenging to identify as it is, often in an individual's head, and sometimes is not voluntarily shared, whereas EK is consistently documented, readily available, and usually structured to make discovery possible. TK can be challenging to differentiate from general or explicit data because of its intrinsic characteristics that are often only known by an individual, or the information is too complex to articulate, quickly creating value for the knowledge holder and a rare resource of information for others (Gubbins & Dooley, 2021; Peng, 2013; Singh, 2019). Understanding the characteristics of individuals and groups and how they interact and respond to one another may provide insight into whether TK sought flows from the owner to others, creating an opportunity for KS (Knowledge Sharing) and learning (Gubbins & Dooley, 2021).

Research continues to show a need for further investigation to understand the types of knowledge (i.e., tacit or explicit) being hidden, its motivators (i.e., intrinsic and discretionary versus explicit and extrinsic), and the unique characteristics associated with TK and EK (Ali & Sagsan, 2021; Pradhan et al., 2019; Singh, 2019). In addition, TK and

EK have different characteristics that need further exploration to understand an individual's decision-making based on physiological, territoriality, or assumed data ownership. The studies explored by the authors above delved into this problem by examining the types of knowledge sharing (i.e., tacit or explicit) and its motivators and unique characteristics that contribute to KHi and Kho, as evidenced by individuals' decisions in a workplace context.

Dissertation Goal

The study aimed to identify the characteristics and motivators that influence an individual's decision to disclose or share TK (Tacit Knowledge) and how an individual's Counterproductive Knowledge Behavior (CKB) contributes to KHi (Knowledge Hiding) and KHo (Knowledge Hoarding) behavior within an organization. The research helped further understand the role of tacit and explicit knowledge hiding and hoarding in organizations.

Research Questions

The four overarching research questions that were assessed explored an individual's understanding and motivation to exhibit KHi and KHo behavior, to share TK, the behavioral characteristics of KHi, KHo, and TK sharing, and what motivators would encourage explicit and tacit KS (Knowledge Sharing) in the workplace.

RQ1: How well do individuals understand the behaviors of knowledge hiding or knowledge hoarding in the workplace?

RQ2: What motivators lead an individual to share tacit knowledge with others in the workplace?

RQ3: Which behavioral characteristics influence an individual's decision to exhibit behaviors of knowledge hiding, knowledge hoarding, or to not share tacit knowledge?

RQ4: Which motivators of trust facilitate tacit knowledge sharing?

With respect to the first research question, Ali and Sagsan (2021) alluded to engagement and motivations associated with Psychological Ownership Theory (POT) to help explain why individuals develop a psychological association between KHi or KHo and ownership over others in the workplace. The authors suggested that KHi and KHo behavior can stem from the creation of knowledge artifacts and the need for possession of information but often results from a desire for control and power over others where bargaining power could be leveraged for importance and position within an organization.

The second research question explored a willingness to share EK, which is not easily identified, and TK, which is often unidentified or protected information an individual possesses. Social Exchange Theory (SET) examines how workplace relationships are developed based on interpersonal experiences and transactions (Singh, 2019). Singh stated that positive social exchange relationships are necessary for coworkers to share EK and TK, whereas, with conflict or negative associations, EK and TK are withheld.

TK is shared when the individual feels valued in the workplace. The third research question focused on understanding Emotional Intelligence (EI) and an individual's motivation and attitudes associated with KS. Tian et al. (2021) discussed the importance of individuals possessing high levels of EI to moderate the correlation more effectively between Knowledge-Based POT and KHi or KHo. The authors also suggested

that individuals with high levels of EI are more aware of the emotional state of others and can use their skills to interact positively to mediate or avoid work conflicts and influence others by demonstrating a positive and team-oriented attitude.

The fourth research question explored an individual's trust with others in deciding if knowledge will be shared. Gubbins and Dooley (2021) discussed how four trust levels (i.e., Cognition-based, Competence-Based, Benevolence-based, and Ability-based) can be beneficial for a knowledge seeker to solicit TK. Chowdhury (2005) explained that two generally accepted levels of trust (i.e., Affect-based, Cognition-based) allow for TK sharing. Chowdhury further explained that an individual with affect-based trust typically evaluates others based on their high level of citizenship behavior and frequent social interactions to determine the level of trust to be established, whereas cognition-based trust by the evaluator is based on perceived exceptional professional credentials (e.g., education, subject matter expertise, relevant professional successes), which leads to trust and willingness to share TK.

Levin and Cross (2004) found that individuals seeking knowledge from TK holders must exhibit benevolence-based and competence-based trust for a successful interaction and result. They explained that although benevolence-based trust (i.e., seeking information based on lack of knowledge), competence-based trust, like cognition-based trust, allows the TK holder to evaluate and be willing to share TK more easily. Ability-based trust works reversely, where individuals seeking TK will assess whom they solicit based on their abilities, standing, or credibility within the workplace (Gubbins & Dooley, 2021).

Relevance and Significance

Connelly et al. (2012) identified a new construct in 2011, which has become a phenomenon in the knowledge management body of work defined as KHi (Knowledge Hiding), encompassing other behaviors such as deception, social undermining, incivility, aggression, and counterproductive workplace behavior. CKB (Counterproductive Knowledge Behavior), which is the driver behind counterproductive workplace behavior, is separated into six categories: disengagement from KS (Knowledge Sharing), KS ignorance, partial KS, KHo (Knowledge Hoarding), counter-KS, and KHi. CKB categories are discussed in Chapter 2 of the literature review (Serenko, 2020).

In addition, much has been researched about inspirational and transformational leadership, functional organizational structures, and well-designed policies that encourage positive and productive employee behaviors that lead to KS. However, toxic, dysfunctional, or inconsistent leadership and policy, which may favor some individuals over others versus a fair playing field, often result in negative behavior (Pradhan et al., 2019; Serenko, 2020). Tian et al. (2021) described the negative behavior of KHi as a Knowledge-Based POT (Psychological Ownership Theory), where individuals who experience negative responses or are confused by workplace behavior are provoked to defend the knowledge under their control against coworkers perceived would mishandle the information.

Individuals also choose to protect knowledge because of their competitive advantage over coworkers (Banagou et al., 2021; Tian et al., 2021). The authors also found that having an edge over others results in job security and could lead to

advancement in the organization, based on their appearance to be resourceful, highly perceptive, and timely in their selective knowledge disclosure.

Bari et al. (2020) described KHi behaviors as a “climate of silence” where workplace exclusion becomes a type of punishment, and the individuals who are aware of the behaviors of others choose to stay silent or only speak confidently and privately with select coworkers. However, workplace bullying is the most egregious of the KHi behaviors discussed, even worse than workplace exclusion (Yao, Zhang et al., 2020). Yao, Zhang, et al. (2020) stated that some KHi behavior is a direct action of workplace bullying, where individuals perceive increased anxiety, isolation, unfair treatment, or accusations by coworkers, supervisors, or leadership.

Since 2015, there has been increasing interest in understanding the phenomena related to KHi and CKB since its first appearance in academic journals (Serenko, 2020). However, research shows that data sample sizes are often too small and geographically limited, that the self-reporting methods introduce bias, and the cross-sectional studies are not sufficient to explore KHi in an organizational climate fully (Banagou et al., 2021; Bari et al., 2020; Yuan et al., 2020).

KHi is an intentional CKB exhibited by some individuals within organizations, and interest and research in CKB have intensified over the years to understand and differentiate the six behaviors (Serenko, 2020). The motivators of KHi are not solely related to the behavioral conditions of an individual but are sometimes the result of toxic organizational culture, mistreatment or intimidation by supervisors, a feeling the supervisor may be withholding information, and supervisor-directed mistrust (Arain et al., 2020; Bari et al., 2020).

While research indicated that colleagues are often the saboteurs of KHi in the workplace, supervisors also play a role in contributing to KHi (Serenko, 2020). Serenko's research revealed that when provoked by the requestor, supervisors provided inaccurate or incomplete information 18% of the time. Interestingly, even without provocation, this occurred 24% of the time, suggesting the presence of negative learned behavior (Serenko, 2020). In addition, Serenko documented that 81% of individuals who reported they were publicly humiliated by their supervisor showed a reduction in job performance, psychological degradation, tardiness or increased absences, increased stress, voluntary resignation, or wrongful dismal.

Barriers and Issues

Based on the literature reviewed, a barrier that may prevent individuals participating in a study from responding to survey questions more accurately is their EI (Emotional Intelligence) (Rechberg, 2020). Goleman (2004) defined EI as a trait highly successful individuals have, which includes self-awareness, self-regulation, motivation, empathy, and social skills. Rechberg (2020) stated that although theoretical, there is reason to believe that individuals who understand the impact of KHi (Knowledge Hiding) and KHo (Knowledge Hoarding) often also possess a degree of EI.

TK (Tacit Knowledge) is also considered a barrier that has stopped researchers from fully understanding the behaviors of KHi and KHo amongst its subjects. An issue that repeatedly comes up is the inability to differentiate TK from EK (Explicit Knowledge) because it is difficult to formalize and define linkages to antecedents and outcome variables and because the data is often general knowledge residing with an

individual (Duan et al., 2022; Gubbins & Dooley, 2021; Jahanzeb et al., 2020; Peng, 2013; Singh, 2019).

Anonymity is a significant barrier when asking individuals within an organization to provide feedback about their experiences with KHi and KHo (Yuan et al., 2020). Even knowledge sabotage may create an irrational fear among coworkers or may feel too specific to an individual who exhibits the CKB (Counterproductive Knowledge Behavior) identified in the survey, which can lead to inaccurate or underreported information versus actual experiences (Banagou et al., 2021; Feng & Wang, 2019; Hernaus et al., 2019).

The barriers and issues discussed above challenge future research based on the participants' solid understanding of TK and how they may show signs of KHi and KHo without fully recognizing the behavior. Individuals understanding and participating in the behaviors associated with KHi and KHo could impact the current study. However, the researcher cannot assume all individuals participating in the survey will have EI based on past and current experiences with coworkers in the technical field.

Although anonymity will be communicated in advance, there is a concern that some may still not trust that their responses are anonymous. In addition, understanding the participants' survey responses concerning TK may be challenging. For example, unanticipated issues could arise where the participants are unclear about the definition of TK or how it applies to their daily activities, possibly impacting the study's responses. There are also limitations, such as an inability to quickly follow up with the survey participants to clarify responses or to delve deeper. The following section will discuss these and other aspects of TK and EK (Explicit Knowledge) sharing in more detail.

Assumptions, Limitations, and Delineations

Assumptions

Being able to differentiate between TK and EK is frequently identified as a barrier to fully understanding research results because studies fail to focus on the factors and influences that encourage TK seeking (Gubbins & Dooley, 2021). Gubbins and Dooley concluded that the focus is often on social factors but fails to consider a broader understanding surrounding an organizational or environmental context, as psychological, trust, and social association exist too. Including individual, team, and organizational-specific variables (i.e., financial, productivity, job satisfaction, job involvement, leadership style) can help better understand why individuals may deliberately conceal knowledge (Banagou et al., 2021; Cegarra-Navarro et al., 2015; Nguyen et al., 2022; Singh, 2019).

Limitations

A significant limitation is that previous studies have been too narrow when considering geographical population sampling and organizational or external diversity. Although the constraints are reasonably understood, there is considerable value in observing and contrasting data related to KHi (Knowledge Hiding) and KHo (Knowledge Hoarding) behaviors from many perspectives: students versus professionals; public and private sectors; western and non-western countries; culture and social structures; all levels of education and wealth; and from varying professions (Bari et al., 2020; Connelly et al. 2012; Hernaus et al., 2019; Jahanzeb et al., 2020; Koay & Lim, 2022; Nguyen et al., 2022; Serenko, 2020; Wang et al., 2018; Wang & Dong, 2021).

A substantial limitation to analyzing data from surveys concerning KHi and KHo is that it is difficult or nearly impossible to follow up with additional questions to clarify the answers provided and gain further information (Tian et al., 2021). In addition, self-reporting is a limitation frequently raised by researchers due to its concerns about recall ability, perceptual accuracy, and response bias; because of this, it has been recommended that data from other sources be considered (i.e., employees, managers) to analyze perceptions and strengthen the study (Aljawarneh et al., 2022; Banagou et al., 2021; Duan et al., 2022; Ford & Staples, 2010).

Another limitation of self-reporting is that an employee or supervisor may be an individual practicing CKB (Counterproductive Knowledge Behavior) and might not report honestly about individuals performing their role with other supervisors or employees, so coming up with an alternative method like open-ended questions when asking about the KHi and KHo behavior of individuals versus evaluating themselves may allow for a more honest response versus a constrained closed-ended question (Connelly et al. 2012; Koay & Lim, 2022). Finally, an experimental design approach has been suggested because it will strengthen causal inferences and better capture participant responses in the survey related to KHi and KHo (Banagou et al., 2021; Ford et al., 2015; Peng, 2013; Singh, 2019; Tian et al., 2021; Wen et al., 2022).

Delimitations

Every organization has its unique organizational culture; couple that with country-related values, reasoning, and behaviors and the wide variety of professions that encompass financial, technical, life sciences, or humanities, and there is a need to discover if there are like behaviors related to KHi and KHo (Hernaus et al., 2019;

Nguyen et al., 2022; Serenko, 2020). The research reviewed was often narrowed in the scope of industries (i.e., healthcare, information technology, insurance) to ensure the quality of data was high and that their technical abilities and comprehension were consistent with their fields (Aljawarneh et al., 2022; Skerlavaj et al., 2018; Wang & Dong, 2021).

However, the same approach is taken by other researchers to understand demographic populations in the public sector, as is the case for a Malaysian study (Koay & Lim, 2022), or to use previously captured data to analyze the characteristics of different cultures around a single topic like KHi (Banagou et al., 2021). For some research studies that delve into understanding the differences in cultures, their survey may be more constricted due to translation, interpretation, and cultural attitudes toward the questions asked (Nguyen et al., 2022).

Enhancing the data collection scope of the study, based on prior discussions, and incorporating data evaluation from multiple countries will not only ensure a higher and more diverse response rate but also increase the sample size (Banagou et al., 2021; Nguyen et al., 2022). The authors' approach will satisfy the criteria for a geographically diverse population sample, addressing organizational and external diversity needs. In addition, Duan et al. (2022) highlighted the importance of including external diversity as part of a study, as the results from countries with different cultural and institutional backgrounds may contribute to a further understanding of TK (Tacit Knowledge) KHi or KHo.

Skerlavaj et al. (2018) responded similarly in that a limited study might not show the organizational and external diversity if the study is focused on participants with

similar population attributes. They concluded that limited studies could result in all participants knowing one another and potentially influencing their behavior and responses. Finally, it is recommended that the more geographically, organizationally, intuitionally, and culturally diverse a study is, the more it will contribute to the statistical and accurate estimation of the data being analyzed (Banagou et al., 2021; Duan et al., 2022; Nguyen et al., 2022; Skerlavaj et al., 2018).

Researchers have frequently addressed the cross-sectional design as a significant limitation related to many factors. Cegarra-Navarro et al. (2015) rationalized the shortcoming as an extension of an individual's behavior and self-awareness changes with specific situations and outcomes, generally over time. Researchers suggested that a longitudinal study is needed, based on their business schedule (i.e., Performance Periods, Quarterly, Semi-Annual) and internal business practices, such as high sales performers intentionally KHi or KHo to maintain their competitive advantage over some time (Wang et al., 2018; Wang & Dong, 2021). A longitudinal study will track an individual's behavior related to KHi and KHo versus a cross-sectional study that only provides one data point, and when considering independent and dependent variables, the more data points available to make a definitive statement based on the results (Aljawarneh et al., 2022; Cegarra-Navarro et al., 2015; Koay & Lim, 2022; Wang et al., 2018; Wang & Dong, 2021; Wen et al., 2022).

One of the biggest hurdles of the study will be effectively explaining the differences between TK and EK (Explicit Knowledge) to the participants and being able to design the survey to capture the nuances often missed between individuals, teams, and organizations with KS (Knowledge Sharing). To that extent, it is essential to ensure the

study is broad enough to capture the KHi and KHo behaviors from different perspectives (i.e., cultural, social, hierarchical, and structured) while also ensuring the questions asked to reduce the need for asking further questions.

Also mentioned in the section on barriers and issues is the concern that those individuals with high EI (Emotional Intelligence) may falsely report actual conditions in the work environment to protect themselves. Therefore, RQ2 and RQ3 will indirectly assess the survey participants' EI based on the motivators and trust levels associated with EK and TK sharing, determining to what extent it is a part of their workplace behaviors and decision-making processes.

The delineations imposed on past studies have resulted in an informational but limited understanding of the potential for KHi and KHo concerning TK and KS in the workplace. Finally, the study aimed to focus on TK concerning KHi and KHo as a whole, inviting as many different perspectives as possible, given the researcher's current access to American and German Information Technology professionals working for technology-based organizations and companies in Belgium, England, Germany, Italy, and the United States.

Definition of Terms

Many research disciplines are interested in Knowledge Management (KM). As a result, ambiguity in terminology occurs. The following definitions are intended to mitigate and eliminate a fragmented understanding of the KM terminology used in this study.

Ability-Based Trust – A situation where the knowledge seeker identifies TK holders based on their abilities, standing, or credibility within the workplace (Gubbins & Dooley, 2021).

Benevolence-Based Trust – A situation where a TK holder evaluates the knowledge seekers based on their sincere apparent lack of knowledge and shows goodwill in sharing knowledge (Gubbins & Dooley, 2021).

Cognition-Based Trust – Trust that is determined by the individuals possessing TK (Tacit Knowledge) evaluating an individual based on perceived exceptional professional credentials (e.g., education, subject matter expertise, relevant professional successes), which leads to trust and willingness to share TK (Chowdhury, 2005).

Competence-Based Trust – Trust is similar to cognition-based trust, where the individual evaluated by the TK holder is considered qualified in their area of expertise to share TK (Levin & Cross, 2004).

Conservation of Resources Theory (COR) – A stress theory describes humans' motivation to maintain their current resources and pursue new ones (Hobfoll, 1989).

Counter-Knowledge Sharing – Occurs when an individual or group creates inappropriate or untrue explanations of events that distort the whole truth and often make it difficult for the individuals requesting the information to proceed with actionable data to inform their next steps in a process (Cegarra-Navarro et al., 2015).

Counterproductive Knowledge Behavior (CKB) – Counterproductive knowledge behaviors represent six categories: disengagement from knowledge sharing, knowledge sharing ignorance, partial knowledge, knowledge hoarding, counter-knowledge sharing, and knowledge hiding (Serenko, 2020).

Disengagement from Knowledge Sharing – This occurs when individuals do not actively communicate general knowledge in their possession or are motivated or engaged in protecting the information for others or the organization (Ford et al., 2015).

Emotional Intelligence (EI) – A trait highly successful individuals have, which includes self-awareness, self-regulation, motivation, empathy, and social skills (Goleman, 2004).

Explicit Knowledge (EK) – Information that is easily explained, has a clear objective, and often takes the form of traditional or digital documents or other media that can easily be transferred without obstructing geographical boundaries (Gamble, 2020).

Institutional Review Board (IRB) – An institutional review board, also known as an independent ethics committee, ethical review board, or research ethics board, is a committee that applies research ethics by reviewing the methods proposed for research to ensure that they are ethical.

Knowledge-Based Psychological Ownership Theory – Individuals who experience negative responses or are confused by workplace behavior are provoked to defend the information under their control from coworkers who would mishandle it (Tian et al., 2021).

Knowledge Hiding (KHi) – An intentional effort to conceal or hide knowledge from another individual based on distrust (Connelly et al., 2012).

Knowledge Hoarding (KHo) – The act of amassing knowledge that may or may not be shared has a definite association with the KHi phenomenon but deviates from the characteristic intentional KHi behavior. (Banagou et al., 2021; Serenko, 2020).

Knowledge Sabotage – The deliberate act of providing misinformation to coworkers or purposely concealing or withholding critically important information needed (Serenko, 2020).

Knowledge Sharing Collection (KSc) – Where intellectual information is consulted by the individual possessing the TK (Tacit Knowledge) in the hope of KS (Oliviera et al., 2021).

Knowledge Sharing Donation (KSd) – Where intellectual information is communicated or shared with others, similar to cooperative tacit KS (Oliviera et al., 2021).

Knowledge Sharing Ignorance – Divided into two categories that are employee ignorance and organizational ignorance; it occurs when there is a lack of awareness or the inability to understand the subject area related to knowledge, information, or education based on the employee's current education level associated with the subject matter (Israilidis et al., 2015).

Partial Knowledge Sharing – A behavior carried out by an individual who believes the information or knowledge to be shared is confidential, or that sharing the information may put the individual or organization at risk (Ford & Staples, 2010).

Principal Investigator – A Principal Investigator is the primary individual responsible for the preparation, conduct, and administration of a research grant, cooperative agreement, training or public service project, contract, or other sponsored project in compliance with applicable laws and regulations and institutions (Nova Southeastern University, 2013).

Psychological Ownership Theory (POT) – Where individuals develop ownership of a target over which they have constant control, sometimes causing them to feel negative or lost if they must share or lose the information (Peng, 2013).

Social Exchange Theory (SET) – Interpersonal transactions and relationships in the workplace between two individuals where information, knowledge, advice, ideas, suggestions, and expertise are shared when a situation requires their expertise (Singh, 2019).

Survey Design – Survey Design is an 11-stage systematic approach to collecting information about a group of people by asking them questions, generating quantitative or numerical statistics, and analyzing the results (Rea & Parker, 2014).

Tacit Knowledge (TK) – Hard to explain information considered relevant, valuable, based on some experience or subject matter expertise, and is often the internalized process of an individual (Leonard & Sensiper, 1998).

List of Acronyms

ABT – Ability-Based Trust

BBT – Benevolence-Based Trust

CBT – Cognition-Based Trust

CKB – Counterproductive Knowledge Behavior

CoBT – Competence-Based Trust

COR – Conservation of Resources

EI – Emotional Intelligence

EK – Explicit Knowledge

IRB – Institutional Review Board

KHi – Knowledge Hiding

KHo – Knowledge Hoarding

KS – Knowledge Sharing

KSc – Knowledge Sharing Collection

KSd – Knowledge Sharing Donation

NSU – Nova Southeastern University

POT – Psychological Ownership Theory

PI – Principal Investigator

SD – Survey Design

SET – Social Exchange Theory

TK – Tacit Knowledge

USEUCOM - United States European Command

Summary

KHi (Knowledge Hiding), primarily and to a lesser degree KHo (Knowledge Hoarding), is a phenomenon that can contribute to disconnects and distrust between individuals and managers within an organization. The behavior also contributes to the stifling of collaboration and innovation. The motivations of individuals to participate in KS (Knowledge Sharing) versus KHo or KHi cannot be quickly resolved, especially when the information being sought is TK (Tacit Knowledge), as the rationale and behavior to share knowledge vary greatly. The study aimed to understand the characteristics and motivators contributing to KHi and KHo, considering the barriers, issues, assumptions, limitations, and delineations learned from the literature review that will ensure the research offers a new contribution to the body of knowledge.

Chapter 2

Review of the Literature

Overview

When individuals are introduced to the concepts behind CKB (Counterproductive Knowledge Behavior), KS (Knowledge Sharing), KHi (Knowledge Hiding), and KHo (Knowledge Hoarding), they realize what seems like a unique problem for some organizations is a problem most individuals face in the workplace. A literature review was conducted to discuss the importance of KS, the destructive aspects of knowledge sabotage, CKB, KHo, and KHi, the importance of TK (Tacit Knowledge), and the current state of KHi and KHo with a high-level view of the concepts detailed in Table 1, closing with a summary.

Knowledge Sharing

Gubbins and Dooley (2021), Oliveira et al. (2021), and Pradhan et al. (2019) described KS as the conscious act and willingness by individuals to make knowledge available to one another within an organization mutally, as well as share knowledge in their possession that may not be widely distributed or accessible. KS is a key process for organizations in helping reduce rework, promoting innovation, increasing the value of intangible assets, and shortening response time for product and employee productivity (de Garcia et al., 2020; Oliveira et al., 2021). KS also ensures knowledge and information are captured, documented, and stored, providing EK (Explicit Knowledge) resources for future inquiries within the organization (de Garcia et al., 2020).

When EK is a part of the KS process, a reduction in the learning curve can accelerate innovation, especially in situations where knowledgeable individuals are no

longer associated with the organization (de Garcia et al., 2020; Oliveira et al., 2021). However, KS does not just happen independently. For a thriving KS environment to sustain itself, it requires education, motivation, promotion, and facilitating by organizational and transformational leaders who understand the importance of KS and the benefits it provides to individuals and the organization (Oliveira et al., 2021; Pradhan et al., 2019). KS has only partially succeeded due to the CKB associated with individuals within organizations (Oliveira et al., 2021).

Counterproductive Knowledge Behavior

CKB (Counterproductive Knowledge Behavior) is divided into six categories: disengagement from KS (Knowledge Sharing), KS ignorance, partial KS, KHo (Knowledge Hoarding), counter-KS, and KHi (Knowledge Hiding), which are detailed in Table 1 (Serenko, 2020). Although KHi, KHo, and KS are the focus of this study, a brief discussion of disengagement from KS, KS ignorance, partial KS, and counter-KS will be provided in this chapter. A more detailed discussion on the remaining three CKBs is also provided in this study study. Disengagement from KS occurs when individuals do not actively communicate general knowledge in their possession or are motivated or engaged in protecting that knowledge from others or the organization (Ford et al., 2015).

KS ignorance is divided into two categories: employee ignorance and organizational ignorance (Israilidis et al., 2015). Isralidis et al. described employee ignorance as a lack of awareness or the inability to understand the subject area related to knowledge, information, or education based on their current education level associated with the subject matter. However, because there is not a common agreement as to what defines employee ignorance, most likely because organizations often are unique in

function, the term organizational ignorance is used to describe similar behavior at a high level, according to the study's authors.

Ford and Staples (2010) stated that partial KS is a behavior carried out by an individual who believes the information or knowledge to be shared is confidential or that sharing the knowledge may put the individual or organization at risk. The argument is that individuals engage in partial knowledge sharing (KS) for a variety of reasons. These include confusion, which arises when it's believed that the person lacks. Another reason is the perception of wasted time, which occurs when it's thought that the person doesn't require all the information but only what's necessary to accomplish their task. Lastly, the summation of an individual, which refers to pre-existing or dubious sentiments about the person who determines what information is shared, also plays a role.

Cegarra-Navarro et al. (2015) described counter-knowledge as masquerading as scientific truth when it is often the result of using facts loosely to provide evidence to back up an idea or statement. They explained that counter-KS is similar and occurs when an individual or group creates inappropriate or untrue explanations of events that distort the whole truth and often make it difficult for the individual requesting the information to proceed with actionable data to formulate their next steps in a process. Pradhan et al. (2019) described these behaviors as the result of mistreatment, dysfunctional or toxic leadership, and a discreet method to hide or not disclose knowledge without bringing attention to leadership regarding CKB.

Table 1

Knowledge Behavioral Concepts

Knowledge Sharing (KS)		The act by an individual to mutually make knowledge available that may not be broadly known or accessible to coworkers or within an organization (Gubbins & Dooley, 2021).
Counter-productive Knowledge Behavior (CKB)		
	Disengagement from KS	Disengagement occurs when an individual fails to communicate knowledge in their possession or takes on ownership to protect the knowledge from their coworkers or the organization (Ford et al., 2015).
	KS Ignorance	KS Ignorance is both employee and organizational-related and occurs when there is inability, ignorance, or a lack of awareness of the subject matter based on their role or position (Israilidis et al., 2015).
	Partial KS	Partial KS can occur when the knowledge holder believes the information requested is confidential and may negatively impact the organization, the requestor is not knowledgeable about the requested information, or the knowledge holder believes sharing is a waste of their time (Ford & Staples, 2010).
	Counter-KS	Counter-KS is based on the individual creating untrue or inappropriate explanations or distortions of the requested information, making it difficult for the requestor to ascertain if the information provided helps solve the problem or furthers the information-gathering process (Cegarra-Navarro et al., 2015).
	Knowledge Hoarding (KHo)	KHo is a conscious, deliberate, and sometimes strategic accumulation of knowledge that may not be shared later, derived from the fear that if the knowledge is shared, it could jeopardize the individual's position or power within the organization (Aljawarneh et al., (2022).

Knowledge Hiding (KHi)	KHi is an intentional effort by one or more individuals to conceal or hide knowledge from others based on perceived assumptions, misinformation, or distrust (Connelly et al., 2012)
Knowledge Sabotage	An extreme case of the six categories of CKB is where individuals deliberately provide misinformation to coworkers or the organization motivated by interpersonal conflicts, competition, attention seekers, and in some cases, gratification (Serenko, 2020).
Tacit Knowledge (TK)	TK is the unique, hard-to-explain knowledge that is not documented and exists in an individual's mind who understands the subject matter, process, or unique details beneficial or innovative for an organization (Rechberg, 2020).

Knowledge Hoarding

One of the two areas of CKB (Counterproductive Knowledge Behavior) examined in depth is KHo (Knowledge Hoarding). Aljawarneh et al. (2022), Banagou et al. (2021), and Khalid et al. (2020) have described KHo similarly as a conscious, deliberate, and sometimes strategic accumulation of knowledge that may not be shared later, based often on the fear that if the knowledge is shared, it could jeopardize the individual's position or power in the company. Both KHi (Knowledge Hiding) and KHo are forms of knowledge withholding. Still, for an individual who chooses a KHo behavior, accumulating and hoarding the knowledge is not necessarily provoked by another individual. In contrast, KHi is often a direct reaction to intentionally concealing knowledge from another individual (Banagou et al., 2021).

Khalid et al. (2020) stated that individuals often interpret the behavior of KHo as self-benefiting rather than a deliberate attempt to conceal information that can create

problems for the organization. However, they also concluded that KHo eventually leads to destructive and often cascading events impacting the hoarder's performance and work-related interactions within an organization. Bilginoğlu (2018) stated that when an individual uses their KHo to conceal knowledge for personal gain to become indispensable, it can become catastrophic for the organization.

Khalid et al. (2020) suggested that feelings of ostracism, or the perception that coworkers, supervisors, or leaders, disregard one's idea, opinions, or suggestions, can increase KHo behaviors. KHo also occurs because the organization does not have processes, venues, or a platform where effective KS (Knowledge Sharing) can occur (Bilginoğlu, 2018). The author also suggested that unhealthy competition or mistrust can build and fester over time in organizations where individuals work in silos versus in a collaborative space.

Bilginoğlu (2018) quoted Robin Morgan, who wrote, "Knowledge is power. Information is power. The secreting or hoarding of knowledge or information may be an act of tyranny camouflaged as humility" (p. 64). While the notion sounds like a selfless act, it is destructive. An individual hoards knowledge and decreases information visibility, allowing coworkers and the organization to benefit from EK (Explicit Knowledge) (Bilginoğlu, 2018). The author also suggested that individuals who hoard knowledge often do not realize that this erodes their power over time and their trust relationships with coworkers.

Knowledge Hiding

Over ten years ago, Connelly et al. (2012) identified an emerging concept known as KHi (Knowledge Hiding), which was not being researched as effectively as KS

(Knowledge Sharing). Understanding the types of KHi motivators, behaviors, and characteristics became the focus and continues to garner new research and exploration into investigating the drivers of the phenomenon in varying aspects for organizations, medical institutions, and academia alike (Connelly et al. 2012; Koay & Lim, 2022; Wang & Dong, 2021; Wen et al., 2022).

Hundreds of peer-reviewed articles were published in 2022 alone investigating and analyzing the impact of KHi, but the underlying ideas of the recent research still stem back to their groundbreaking research in further examining the relationships, dynamics, and behaviors of workplace competition, organizational communication, and the role leadership in KHi (Connelly et al., 2012). An interesting revelation of the decade-long pursuit of understanding KS and KHi is that the characteristics of KHi (i.e., playing dumb, evasive hiding, and rationalized hiding) are as important in studying today as Connelly et al. identified in 2011.

Connelly et al. (2012) explained that KHi is a deliberate action undertaken by an individual or a group to withhold or obscure knowledge from others. This behavior is often driven by certain perceived assumptions, misinformation, or distrust (Connelly et al., 2012). The authors derived from their research three types of knowledge hiding that occur in organizations: rationalized hiding, evasive hiding, and playing dumb.

Bari et al. (2020), Connelly et al. (2012), and Tian et al. (2021) stated that evasive hiding occurs when an individual chooses to share only portions of the requested information intentionally hides potentially valuable data, or provides an inaccurate or misleading response to the knowledge seeker. Bari et al. (2020) also concluded that according to the SET (Social Exchange Theory), when individuals sense knowledge is

hidden, they respond to KHi behavior. This evasive hiding further pushes trust between coworkers, causing an intentional silence among peers versus collaborating and communicating (Bari et al., 2020). Singh (2019) described SET as a set of interpersonal transactions and relationships in the workplace between two individuals where information, knowledge, advice, ideas, suggestions, and expertise are shared when a situation requires their expertise and is in alignment with the concept of KS.

Playing Dumb occurs when the individual, despite possessing the requested knowledge, feigns ignorance or pacifies the requester by promising to share the knowledge later (Bari et al., 2020). The authors also stated that playing dumb is often seen as a diplomatic dimension of knowledge hiding where information holders have difficulty justifying their rationale for KHi. Yuan et al. (2020) concluded that without the organization actively promoting positive working relationships between coworkers and teams, team efficacy is negatively affected by interpersonal distrust, evasive hiding, and playing dumb.

Bari et al. (2020) described rationalized hiding as a less deceptive behavior where the individual justifies that the information requested was not shared. Yuan et al. (2020) suggested that rationalized hiding positively moderates the relationship between interpersonal distrust and bullying hiding. Although rationalized hiding is an unproductive KHi behavior, it is considered less destructive than evasive hiding and playing dumb, as the individual possessing the knowledge has a justifiable reason for not disclosing the information, regardless of the facts associated with actual ownership of the knowledge (Bari et al., 2020).

Knowledge Sabotage

Although not the focus of the study, knowledge sabotage needs to be mentioned, as it comes up frequently in research literature related to KHi (Knowledge Hiding) and KHo (Knowledge Hoarding). For example, Serenko (2020) defined knowledge sabotage as an extreme case of CKB (Counterproductive Knowledge Behavior) that occurs when an individual deliberately provides misinformation to coworkers or purposely conceals or withholds critically essential information needed by a colleague or the organization. On the other hand, Perotti et al. (2022) put knowledge sabotage in much grimmer terms, explaining that the saboteurs can act reactively and proactively, whether their information is being sought or not.

Serenko (2020) stated that based on the survey, individuals in the workplace experienced some form of knowledge sabotage or had become the targets of the saboteur, in some cases multiple times. Perotti et al. (2022) concluded that knowledge sabotage occurs more often when interpersonal conflicts, competition, individuals seeking attention or gratification, where interests collide, and for some, an open willingness to harm coworkers and the organization. Serenko's (2020) findings were somewhat unexpected in that he thought the research would show that the saboteurs were more focused on sabotaging the organization, but the results showed that saboteurs targeted individuals most often, which is consistent with Perotti et al.'s (2020) conclusions.

Tacit Knowledge

A recently conducted literature review by Oliviera et al. (2021) established the framework for a better understanding of KHi (Knowledge Hiding), KHo (Knowledge Hoarding), and two additional aspects of KS (Knowledge Sharing), which are Knowledge

Sharing Collection (KSc) and Knowledge Sharing Donation (KSd). Although potentially unfamiliar terms, KSd is very similar to TK (Tacit Knowledge), where intellectual information is communicated or shared with others, whereas with KSc, the intellectual information is collected by the individual possessing the TK (Oliviera et al., 2021).

However, based on the 50 articles on KHi, KHo, KSc, and KCd reviewed by Oliviera et al. (2021), only six articles referenced the importance of a further understanding of how TK or EK (Explicit Knowledge) contributes to the phenomenon (Feng & Wang, 2019; Hearnus et al., 2018; Peng, 2013; Singh, 2019; Skerlavaj et al., 2018; Wang et al., 2018). All studies differed in focus, but the main issue was understanding what causes an individual to hoard or hide knowledge.

Rechberg (2020) explained that TK is always "embrained, embodied, and embedded" (p. 16) in the individual who understands the subject and that organizations develop a way to process that data into EK that an organization can leverage long-term. The challenge every organization will have is that TK is organic; it cannot be codified; an individual is not contractually obligated to share their thoughts, and an individual cannot be penalized for not sharing knowledge if the knowledge seekers are not fully aware of its totality (Lanke, 2018).

The more adverse the working conditions are where trust has not been established between the individual, coworkers, and their leadership, the less likely KS will occur, resulting in KHi or KHo behaviors (Rechberg, 2020). Hernaus et al. (2019) concluded that academic individuals are likelier to hide TK from their coworkers because it provides a competitive advantage in a space where originality and knowledge are the keys to success. Tacit KS and learning is an intrinsic bidirectional process between the individual

seeking knowledge and the knowledge source, which can oftentimes be an individual that is only successful when the balance of personal competitiveness and relationships is established (Gubbins & Dooley, 2021; Hernaus et al., 2019).

Current State of Knowledge Hiding

Bari et al. (2020) stated that the culture of KHi (Knowledge Hiding) and KHo (Knowledge Hoarding) significantly affects creativity, innovation, performance, and trust among coworkers. Furthermore, Peng (2013) discussed POT (Psychological Ownership Theory) and the frequent influence on territoriality on KHi and KHo, whereas Singh (2019) examined how territoriality in an organization and KHi and KHo affect performance and workplace deviance. POT permits individuals to quickly develop ownership of a target or object they are in constant control of; this sometimes leads to negative results or a feeling of loss if they must share or lose information (Peng, 2013). The author stated that this often leads to them exerting continuous control over it. However, this can occasionally have negative consequences or induce a sense of loss if they are compelled to share or relinquish the information (Peng, 2013).

Finally, both Feng and Wang (2019) and Skerlavaj et al. (2018) used the Conservation of Resources (COR) theory to understand how abusive supervisors can contribute to KHi and KHo in the workplace and how time pressure in the workplace contributes to hiding. COR is a stress theory that describes the motivation that drives humans to maintain their current resources and pursue new ones (Hobfoll, 1989).

Hernaus et al. (2019), and Skerlavaj et al. (2018), examined the competitive pressures of individuals, where individuals tend to exhibit KHi or KHo tendencies due to competition with coworkers resulting from rigid timelines. Wang et al. (2018) looked at

KHi, KHo, KSc (Knowledge Sharing Collection), and KCd (Knowledge Sharing Donation) from the perspective of the consequences of perceived KHi on the performance of individuals who seek knowledge individually and within the organization.

In addition to the six briefly mentioned above, four additional articles between 2018 and 2022 on KHi and KHo were reviewed (Duan et al., 2022; Jahanzeb et al., 2020; Lanke, 2018; Rechberg, 2020). Jahanzeb et al. (2020) focused on organizational injustice in the workforce and how the perceptions of favoritism and avoidance can contribute to KHi or KHo. The authors could not precisely capture the TK (Tacit Knowledge) hidden due to perceived injustice but did conclude the difficulty in identifying and formalizing the information. Duan et al. (2022) determined that tacit and explicit KHi were present in their results when the subject area was innovation quality. They used COR theory and POT to explore how tacit and explicit KS (Knowledge Sharing) behavior occurred in an organization and concluded that the relationship between TK and EK (Explicit Knowledge) and the associated variables is unclear and needs further research.

For some, the aftermath of the COVID-19 pandemic has created varying concerns. Nguyen et al. (2022) studied the antecedents of knowledge hiding behavior, role conflict, job insecurity, and cynicism. Using COR theory as a basis, they concluded that when individuals within an organization experience a crisis, the probability of KHi and KHo behavior also increases. Wang (2022) established that the connection between interpersonal competition and high-achieving individuals within an organization often leads to CKB (Counterproductive Knowledge Behavior) and, ultimately, KHi and KHo.

Wang's research does not place the blame solely on the individuals and instead suggests that with the current technological landscape and advancement in knowledge-related tools, organizations and individuals have become highly dependent on knowledge assets for individual and organizational survival. It is not difficult to see the challenge that competition, uniqueness, advantage, and power have on the individual possessing the knowledge in an organization.

Wang (2022) concluded that KS is essential to an organization's competitive advantage and innovation but understands that interpersonal competition will still create CKB and lead to KHi and KHo. She recommended that organizations engage with the human resource management group and develop, adopt, and implement practical approaches to facilitate KS in its workforce while also working to eliminate CKB.

Summary

The literature review discussed the benefits of KS (Knowledge Sharing) it creates for interpersonal communication and collaboration and for promoting organizational innovation and competitive advantage. Contrary to KS, knowledge sabotage is the extreme of CKB (Counterproductive Knowledge Behavior). The six characteristics of CKB were discussed to help the reader understand the cause and effect of these behaviors, and an in-depth discussion centered around KHo (Knowledge Hoarding) and KHi (Knowledge Hiding) was the focus of the study. The literature review concluded with a short discussion on the critical role TK (Tacit Knowledge) plays in KHi and Kho. Finally, recent research from 2022 was described, discussing the continued need to understand how to counteract CKB.

Chapter 3

Methodology

Approach

Survey Design (SD) is an 11-stage systematic approach to collecting information about a group of people by asking them questions and analyzing the results (Rea & Parker, 2014). Fowler (2009) explained that the primary objective of a survey is to generate quantitative or numerical statistics. Fowler also pointed out that statistics describe various aspects of the population under study.

A properly conducted survey has the following three components: 1) probability sampling, 2) standardized measurement, and 3) analysis (Fowler, 2009). Probability sampling assures that the selected sample is not biased, which allows for an estimation of the precision of the data (Fowler, 2009). The author explained that data from a well-selected sample significantly enhances the quality of information compared to data gathered from samples based on meeting attendance, speaking out loud, letter writing, or the convenience of polling.

Fowler (2009) stated the importance of implementing standardized measurements, which remain consistent across all survey participants to ensure the data is consistent and comparable for every individual being studied. The author also suggested that meaningful statistics would be lacking without adequate measurements.

Fowler (2009) advised that when providing specific analysis requirements, a dedicated survey may be the sole method to guarantee that all necessary data for a particular analysis are available and interconnected. The author explained that even if there is data on a specific set of events, it cannot be associated with other essential

attributes for conducting the desired analysis. For example, a hospital study on patient discharges does not collect the patient's income level, so a study that focuses on both patient discharges and income level is needed to understand the relationship (Fowler, 2009).

Survey Design Methodology

As mentioned, an SD methodology consists of 11 stages to ensure the survey is unbiased and rigorous to capture the data needed for the research objective (Rea & Parker, 2014). Table 2 depicts the 11 stages of the survey research process.

Table 2

Survey Research Stages

Stages	Survey Research Process
1	Identifying the focus of the study and method of research
2	Determining the research schedule and budget
3	Establishing an information base
4	Determining the sample frame
5	Determining the sample size and sample selection procedures
6	Designing the survey instrument
7	Pretesting the survey instrument
8	Selecting and training interviewers
9	Implementing the survey
10	Coding the completed questionnaires and computerizing the data
11	Analyzing the data and preparing the final report

Stage 1: Identifying the Focus of the Study and Method of Research

Rea and Parker (2014) stated that there are two fundamental tasks 1) defining the goals and objectives of the study and 2) identifying the format for collecting the data. The Review of Literature conducted in Chapter 2 helped define and explain how the attributes were used, which was beneficial in developing the survey. A quantitative survey design was employed to gather the participant's points of view on KHi (Knowledge Hiding) and

KHo (Knowledge Hoarding), with a focus on TK (Tacit Knowledge) behavior. The survey evaluated the participants' understanding, association, and demographic variables to knowledge-based POT (Psychological Ownership Theory) concerning KHi and KHo (Peng, 2013).

The demographic survey questions provided nominal data responses about the survey participants' characteristics. The survey questions were written and standardized to reduce ambiguity, bias, or to lead or prompt the participant to respond in a certain way (Brace, 2013). The goal was to discover and understand the antecedents (e.g., mistreatment, trust, unfairness, justice, power) associated with the constructs of KHi and KHo, which cannot always be directly observable (Connelly et al., 2012; Oliveira et al., 2019).

Stage 2: Determining the Research Schedule and Budget

Rea and Parker (2014) explained that a research schedule and budget need to be determined for the study. The research schedule for the quantitative survey design was a cross-sectional study with a time horizon of 42 days to assess the survey participant responses. The study's budget was limited. However, since NSU's School of Business provided access to Qualtrics^{XM}, and the PI (Principal Investigator) gathered 285 completed survey responses, there will be minimal financial implications.

Stage 3: Establishing an Information Base

In creating a survey instrument (i.e., questionnaire), it is crucial to collect information about the topic of interest from stakeholders and key individuals (Rea & Parker, 2014). The questions detailed in the survey were influenced by the concepts researched in a literature review on KHi and KHo (Oliveira et al., 2021).

Peng's scales related to knowledge-based or organization-based POT and territoriality will be incorporated into the survey. Malik (2022) provided helpful guidance on TK sharing and innovation in the workplace, which helped produce a survey that focused on the impact of KS (Knowledge Sharing) best practices and the survey participant's willingness to practice KS behavior. The survey also indirectly explores the EI (Emotional Intelligence) associated with TK, KHi, and KHo for RQ2 and RQ3. One of the goals was to understand if the survey participants were aware of EI based on the questions posed when considering KS, KHi, or KHo (Tian et al., 2021). Additional survey questions were derived from Park & Gabbard (2018), who focused on why individuals in the workplace remain idle or lurk instead of choosing to contribute to KS, and from Malik (2020), whose research focused on the level of willingness for individuals to share TK.

Stage 4: Determining the Sample Frame

The survey participants selected for the questionnaire were determined by applying the sampling frame of the survey study (Rea & Parker, 2014). The authors stated that it is important for the PI (Principal Investigator) to ensure that this sample has the necessary knowledge and information to meet the research study's goals. The participants recruited for the study primarily work as information technology professionals or have roles that are technology-based adjacent.

Stage 5: Determining the Sample Size and Sample Selection Procedures

Rea and Parker (2014) explained that researchers must address two interrelated factors before identifying the sample size, which is a level of confidence and confidence interval. The authors stated given the time requirements budget and to reduce drawing

incorrect conclusions from the sample, the PI should typically choose either a 95 percent level of confidence (5 percent chance of error) or a 99 percent level of confidence (1 percent chance of error), and the confidence interval determines the level of sampling accuracy that the PI obtains.

Approximately 400 – 500 participants with Information Technology and Knowledge Management skills were invited to participate in the research study via word of mouth, Facebook, and LinkedIn. Many initial survey participants know or work alongside one another, so finding participants in different departments, organizations, or countries helped ensure the responses were diverse and meaningful.

The participants reside in Belgium, England, Germany, Italy, and the United States. Most survey participants from Europe, the United Kingdom, and the United States are citizens of the United States. Their perspectives varied based on their work environment and geographical location. The survey also included contributions from individuals who are German nationals.

As the PI who also works for the United States European Command (USEUCOM) as a Senior Systems Engineer with over 20 years of professional experience focused on knowledge and records management solutions, data analysis, and emerging information system technologies, the subject matter discussed is a natural fit. In my current role, I lead a team responsible for designing, engineering, integrating, maintaining, and securing knowledge-based systems, third-party data solutions, data analytics, and implementing creative and out-of-the-box data automation solutions to support the USEUCOM.

With the leadership's endorsement, the PI invited coworkers to partake in the anonymous survey study. In addition to identifying the survey participants via LinkedIn and other social media platforms, the PI used the Prolific platform to gather additional information technology professionals. As stated earlier, the goal was to have a diverse geographical population sampling while capturing an organizational and external diversity perspective (Banagou et al., 2021; Nguyen et al., 2022).

Stage 6: Designing the Survey Instrument

The questionnaire development is a crucial component of the survey research process, and the researcher must devise a series of unbiased, well-structured questions that will systematically obtain the information identified in Stage 1 (Rea & Parker, 2014). Following the recommendations of Brace (2013), the PI developed pre-coded closed-ended questions to capture as broad a response from the survey participants as possible while also ensuring their anonymity, as getting answers in one-on-one or group interviews would likely result in a smaller response.

The core survey questions provided ordinal data responses using a 7-point Likert scale as an itemized rating scaler (e.g., Strongly Disagree, Disagree, Somewhat Disagree, Neither Agree or Disagree, Somewhat Agree, Agree, Strongly Agree). The 7-point Likert scale allows for a more discriminated response from the survey participant, translates into allocated scores (i.e., -3 to +3) ranging from negative to positive, and allows for quantitative data analysis (Brace, 2013). The survey consisted of 40 questions, arranged in sequential order, each corresponding to one of the four research questions outlined in Table 3. To facilitate easy association, each item was coded according to its respective research question and construct (e.g., RQ1/KHi1, RQ2/TK). The most common

constructs discussed throughout the study were coded, in addition to ABT (Ability-Based Trust), BBT (Benevolence-Based Trust), CBT (Cognition-Based Trust), and CoBT (Competence-Based Trust).

Table 3

Research Questions, Survey Items, and Constructs

RQ	Survey Items	KHi	KHo	KS	EK	TK	ABT	BBT	CBT	CoBT
1	14	6	5	3						
2	10				3	7				
3	8			8						
4	8						3	2	2	1

To achieve a high survey response rate from participants, the questions must be written to reduce common method biases (Podsakoff et al., 2003). The authors warn of ensuring the questions are written in a manner that does not give, for example, the impression that an answer is associated with acceptance (Social Desirability), consistently uses the same scales (i.e., Likert, semantic differential, faces) throughout, eliciting the same scale response (i.e., Common Scale Formats), or that a question is written in a way that it subtly persuades the participant to answer in a certain way (Item Characteristic Effects). Writing a survey absent of method bias will be difficult, given that there are at least 25 potential sources of common method bias (Podsakoff et al., 2003).

Yusoff et al. (2021) understood the standardization of scores as key to interpreting the survey results for observed scores, mean scores, standard deviation, and rank of scores. They also stated Ebel's method classifies scores based on the highest, lowest, and the in-between highest-lowest scores. Finally, they affirmed that the validation section

will be more relevant in the more extensive participant study, where all final amendments are made to ensure that the participants will complete all survey questions and that the responses will translate into satisfactory scoring.

Stage 7: Pretesting the Survey Instrument

A pretest of the survey is necessary to enhance the quality of the questionnaire (Rea & Parker, 2014). The authors explained that the process will help identify and rectify poorly worded questions, and the overall refinement of the survey instrument will be based on the feedback and experience of the pre-testers. The PI (Principal Investigator) made sure the written questions make sense, are not ambiguous, the terminology is precise, and the questions keep the attention and focus of the survey participants, but an expert opinion would be valuable before the survey goes out to a broader audience (Brace, 2013).

The benefit of a pilot study (i.e., pretest) is to flush out the inaccuracies related to reliability and validity and reduce the probability of survey mistakes by error testing the question language, order, and natural flow of information being presented (Brace, 2013). The survey was first assessed by Amy Williams, a Subject Matter Expert (SME), who serves as the Deputy Chief Knowledge Officer for NASA's Jet Propulsion Laboratory. A second SME, Dr. Timothy Ellis, also reviewed the survey. Dr. Ellis is a Professor Emeritus from the Graduate School of Computer and Information Sciences at NSU, specializing in KM (Knowledge Management).

Following the review conducted by the SMEs and the recommended adjustments to the survey items, a small pilot group of 14 individuals provided feedback regarding its flow, ease of use, and comprehension. Yusoff et al. (2021) recommended

that a pilot study be conducted initially with 10 to 15 participants to validate clarity and consistency and that the survey flow allowed the participants to complete the 40 survey questions in less than 30 minutes. The pilot study had a comments section that permitted the participants to provide feedback that influenced additional changes to the survey items. The pilot study participants were informed they could not participate in the official study.

The participants of the official survey are all professionals in the technology field or have roles closely related to technology, with a solid understanding of Knowledge Management (KM) concepts. These participants were directed to the official survey hosted on Qualtrics^{XM}, which outlined the qualifications required to participate in the survey.

Participants were assured that the survey was anonymous, and that no metadata had been tracked. They were also informed about the ethical standards upheld by the Principal Investigator (PI), including a commitment to anonymity and protection of survey data.

Participants were made aware that they could opt out of the survey study at any point and request the removal of their information. Further details on this topic are discussed in the subsequent section on Ethical Considerations and the Institutional Review Board.

Stage 8: Selecting and Training Interviewers

Rea and Parker (2014) emphasized the importance of the PI providing comprehensive training to potential interviewers to ensure efficient use of the survey. In this study, using interviewers is not applicable because a self-administered survey was

utilized. This method is more appropriate for the study due to the geographically diverse locations of potential survey participants. Although interviewer training is irrelevant in this context, PI is adhering to Fowler's (2009) five guiding principles to ensure that the self-administered survey adheres to good practices.

These principles are:

1. A self-administered survey should be self-explanatory and easy to comprehend without additional instructions.
2. The design of a self-administered survey should incorporate closed ended questions to minimize the likelihood of ambiguous or incomplete responses often associated with open-ended questions.
3. To maintain the respondent's focus and avoid confusion, a self-administered survey should include a limited number of questions for each research query, particularly those that may present a perspective unfamiliar to the participant's experience.
4. The presentation of a self-administered survey should be clear and uncluttered to minimize distractions and encourage a higher response rate.
5. A self-administered survey should include printed and visual cues to guide respondents through the survey, thereby reducing confusion. Platforms like Qualtrics^{XM} is designed to simplify the participant's experience and ensure the completion of responses (Qualtrics, 2023).

Stage 9: Implementing the Survey

Rea and Parker (2014) emphasized that the deployment of the survey instrument is a pivotal stage in the research process. The authors further articulated that it is

imperative to strictly adhere to the predetermined random sampling procedure, maintain the timeline, and emphasize the importance of ensuring privacy and upholding ethical standards for potential respondents. However, the survey items were presented to the participants in groups associated with the research questions.

Qualtrics^{XM} was the platform for building the survey submission, data collection, and storing the participant results (Qualtrics, 2023). The benefit of using Qualtrics^{XM} is that it offers the PI the ability to easily manage and ensure that the results will be associated with the specific survey, controls the transmission directly to the survey participants, ensures anonymity, and offers the survey participants the ability to complete the survey on a desktop computer or mobile device. Qualtrics^{XM} also offered the PI data analytics, charts, and graphs. Furthermore, Qualtrics^{XM} also complies with applicable data privacy laws as a data controller of its data and customer data.

Stage 10: Coding the Completed Questionnaires and Computerizing the Data

Rea and Parker (2014) explained that the final survey must be formatted to allow responses to be entered directly into Qualtrics^{XM} for data processing and analysis. Following the recommendations of Brace (2013), the PI developed pre-coded closed questions to capture as broad a response as possible from the survey participants while also ensuring their anonymity, as getting answers in one-on-one or group interviews would likely result in a smaller response.

Stage 11: Analyzing the Data and Preparing the Final Report

Rea and Parker (2014) emphasized the importance of summarizing survey data and presenting it in tables or graphs for effective analysis. The authors suggested that statistical tests, measures of central tendency, variability determinations, and variable

correlations are essential for illuminating the study's research questions. Furthermore, the authors explained that these formal statistics and data summaries are crucial in forming the final report, representing the culmination of the survey research process.

Data analysis evaluation began once the initial surveys were returned to Qualtrics^{XM}. The first metric was to assess how many participants completed the survey, as a minimum of 100 responses were needed out of the 400 to 500 participants who were asked to participate in the study. The sample size must also be diverse enough to show various attitudes and rationale. Given that the survey will be designed to require that the study participant completes the current question before moving on to the follow-up questions, the PI can be assured that each survey will be fully completed.

After the results and lessons learned from the study's research questions and answers have been written, the next step is to get the completed research out to individuals, organizations, and publications for post-analysis. Udovicich et al. (2017) recommended first confirming that the abstract has a meaningful impact on the reader to ensure that the unique points and contribution to the body of knowledge have been understood. They also suggest that, where applicable, using posters at events (e.g., trade show conferences) might be advantageous and create an opportunity to attract audiences unfamiliar with the research.

Tribe and Tunariu (2017) proposed implementing a peer review methodology, enabling subject matter experts to assess and provide critical feedback on the research's merit. Upon completing this dissertation, the strategy is to submit the finalized and approved research to the International Institute for Applied Knowledge Management Knowledge Management Publication. This publication has previously expressed interest

in the dissertation before completing of Chapters 3 and 4. The chair has recommended this approach, emphasizing that disseminating the completed dissertation to a broader audience could enhance its visibility and potentially facilitate its publication. In line with the findings of Tribe and Tunariu (2017), the chair advised exercising caution when selecting publications for sharing the completed work. The association with a publication lacking rigorous standards could potentially damage the reputation of the dissertation author.

Ethical Considerations and the Institutional Review Board

The guidance and training provided by the Collaborative Institutional Training Initiative (CITI Program) helped educate and prepare the dissertation candidate regarding the importance and criticality of protecting human subjects and ensuring the planned practices and protocol in the participant study are appropriate. The PI (Principal Investigator) executed the participant study and data collection after approval was granted by Nova Southeastern University's (NSU) IRB (Institutional Review Board). A copy of the IRB Exempt Initial Approval Memo can be referenced in Appendix C.

At the start of the survey, participants will be informed that the information provided will be kept confidential and their responses will be anonymous. The participants will also be informed that they can discontinue participation without penalty at any point during the survey. In addition, the researcher conducting the study will only know the participants by a pseudonym or unique code.

All data extracted from the digital online survey engines will be password protected, encrypted, and stored in a safe location on the primary device to ensure that the survey participants' information is protected. In addition, the participant data will be

backed up and stored on a secondary device for safekeeping if the survey data is damaged or destroyed on the primary device.

The survey data will be retained by the researcher conducting the research for three years, consistent with the guidelines established by the IRB. After that, unless the IRB (Institutional Review Board) renews the study, all data (i.e., paper and digital) collected from survey participants will be destroyed on both the primary and secondary devices.

Resources

The survey study primarily used the Qualtrics^{XM} platform to conduct the research, store the data, and analyze it. The Prolific platform was also used to gather insights from more survey respondents. The NSU College of Business provided a temporary Qualtrics^{XM} license.

The recruitment goal for the survey was to engage 400 to 500 participants. This ensured that 100 surveys were completed correctly after the 42-day survey campaign. The initiative to attract new candidates from the PIs network of technology professionals proved successful. Additionally, the Prolific platform expanded the survey participant pool, achieving the desired sample size for our analysis.

Chapter 4

Results

Introduction

This chapter presents the results from the data analysis, beginning with a discussion of the data collection process, the data cleaning process, and the significance of the participant demographics contributing to the overall survey study. For the Findings sections, an analysis was carried out on the four main research questions and their sub-questions, to determine the relative importance of each supporting survey question. The survey study's findings were analyzed to comprehend the participants' responses to questions about KHi (Knowledge Hiding), KHo (Knowledge Hoarding), EK (Explicit Knowledge), TK (Tacit Knowledge), trust behavior, and KS (Knowledge Sharing).

Data Analysis

The data analysis section will detail the procedures undertaken during the development of the survey, including its validation by Subject Matter Experts (SMEs) and the methodology employed for the pilot study. The latter part of this section will provide an overview of the survey study and explain the process of evaluating and validating the responses from the survey participants before delving into the discussion of the findings.

Subject Matter Experts

Before submitting the survey study, it was assessed by an SME, the Deputy Chief Knowledge Officer for NASA's Jet Propulsion Laboratory. Dr. Timothy Ellis, Professor Emeritus also reviewed the survey. Dr. Ellis is a Professor Emeritus from the Graduate School of Computer and Information Sciences at NSU, specializing in KM (Knowledge

Management). The SMEs played an important role in the study. They helped distinguish terms such as “information” and “knowledge”, ensuring the survey questions were not framed in a binary yes/no format. The SMEs also worked to maintain consistency in the language and phrasing of the questions. Additionally, they clarified definitions of key terms (i.e., KHi, KHo, EK, TK) for the participants throughout the study, enhancing the reader’s comprehension of the questions.

Pilot Study

A pilot study was carried out on 14 individuals residing in the United States and Europe, all of whom possessed expertise in knowledge management. This study aimed to evaluate and analyze the survey questions and responses after they had been revised based on the invaluable feedback from the SMEs. The duration for completing the survey varied among the participants, with the quickest completion time being 381 seconds (equivalent to 6 minutes and 21 seconds) and the longest being 2267 seconds (37 minutes and 47 seconds). The pilot study group offered valuable insights on minor grammatical issues and phrase clarifications (e.g., the difference between “how familiar are you with knowledge hiding” and “how familiar are you with the concept of knowledge hiding”), which contributed to making the survey questions more understandable for the reader.

The responses from the pilot study in Qualtrics ^{XM} were examined and analyzed. This was done to confirm that the data could be successfully exported to Microsoft Excel and further analyzed. The aim was to ensure that the responses could be correctly calculated and were comprehensible. Reviewing the pilot study data also helped confirm consistent and expected answers and possible interpretations based on the participants’ answers. The objective was to guarantee that the responses were accurately measurable

and easily understood. Analyzing the data from the pilot study aided in validating the consistency and predictability of answers and offering insights into potential interpretations arising from the participants' response choices. Understanding that they were ineligible to participate in the official survey study, all pilot study participants agreed to act as ambassadors, assisting the PI in extending the survey study to their coworkers and professional networks possessing expertise or skills in knowledge management.

Survey Study Overview

A structured, close-ended survey study was conducted to investigate the four research questions listed below to identify the characteristics and motivators that influence an individual's decision to disclose or share TK and how an individual's CKB (Counterproductive Knowledge Behavior) contributes to KHi (Knowledge Hiding) and KHo (Knowledge Hoarding) behavior within an organization. The research questions (RQ) used in this survey study are as follows: RQ1) How well do individuals understand the behaviors of knowledge hiding or knowledge hoarding in the workplace? RQ2) What motivators lead an individual to share tacit knowledge with others in the workplace? RQ3) Which behavioral characteristics influence an individual's decision to exhibit behaviors of knowledge hiding, knowledge hoarding, or to not share tacit knowledge? RQ4) Which motivators of trust facilitate tacit knowledge sharing?

To collect the data for the analysis, a survey instrument was distributed via the Qualtrics ^{XM} survey platform and exported and analyzed using Microsoft Excel. The survey questionnaire consisted of 47 questions, of which seven were demographic, and was administered to 368 participants with knowledge sharing experience and activities

(e.g., Writing, Thinking, Problem Solving, Searching, Reviewing, Assessing) as part of their daily, weekly, or monthly responsibilities. The survey study was open for 42 days from November 12th through December 23rd, 2023.

Incomplete Surveys, Unengaged Responses, and Rapid Responses

Fowler (2009) advised conducting a data cleaning process before initiating data analysis to guarantee that only accurate and complete data is considered. The survey instrument was structured in a way that necessitated the completion of all 47 questions by the participants. The participants could not proceed to subsequent research questions without answering the current ones. However, all participants were allowed to opt out of the survey at any time. The responses from the survey, which were exported from the Qualtrics XM platform, underwent evaluation using Microsoft Excel. Due to incomplete responses, 40 surveys were discarded, leaving 328 surveys for further analysis.

To evaluate unengaged responses, straightlining was leveraged to ensure the quality of the survey results. Straightlining refers to the pattern where survey respondents give the same response to a series of consecutive questions (Reuning & Plutzer, 2020). Using Microsoft Excel, each question was assessed using a sample standard deviation. This was done to ascertain whether the responses to the subset of questions linked to each of the four research queries were diverse or yielded a result of zero. A zero outcome could suggest that the participant's responses to the subset of questions were identical.

The subset of questions tied to each research question was analyzed. For RQ2, RQ3, and RQ4, a few participants provided identical responses to the subset of questions corresponding to each research question. Reuning and Plutzer (2020) stated that some participants might provide identical responses (e.g., Agree, Strongly Agree) to each

question, irrespective of the question posed. This could be attributed to a lack of attention, an unconsidered response, or rushing through the survey. However, in reviewing the questions associated with RQ2, RQ3, and RQ4, it is plausible that the participant's responses could have had the same value for each question.

A more detailed analysis of the potential straightlining responses was conducted, and the unique identifier known as ResponseID was included and compared with each subset of questions related to RQ2, RQ3, and RQ4. The additional analysis concluded that these ResponseIDs did not appear in subsequent research questions, indicating they were not associated with the same participants. Based on the conclusion, the remaining survey count remains at 328.

The last step of ensuring the data quality was satisfactory before analysis was to evaluate the participants' response times. Of the 328 responses, 43 participants completed the response in less than 245 seconds, or 4 minutes and 5 seconds. The number was derived from looking at the mode of the duration to complete the survey. When evaluating the 43 participant responses that took less than 245 seconds, it was found that the median completion time was 173 seconds (equivalent to 2 minutes and 53 seconds), while the mode was 153 seconds (or 2 minutes and 33 seconds). These durations are insufficient for participants to read and responded to the survey questions thoroughly. As a result, these responses were excluded from the final analysis. Therefore, the total number of survey responses included in the final analysis is 285.

Before removing 43 participant responses, an additional ResponseID was reviewed to check for any straightlining abnormalities. Out of the 43 participant responses, only five for RQ2, RQ3, and RQ4 took less than 245 seconds, or 4 minutes

and 5 seconds. Reuning and Plutzer (2020) suggested that straightlining is more likely to occur in self-administered surveys than in-person interviews. However, based on the supplementary review, straightlining was not a factor in this self-administered survey study.

Findings

The following sections elaborate on the seven demographic inquiries and the 40 quantitative queries that bolster the research questions in the survey. Tables and figures offer a comprehensive summary of the survey questions related to the participants. For the 40 supporting questions that align with the research questions, frequencies are computed for each value on the 7-Point Likert Scale. This is done in tandem with calculating the mean and standard deviation.

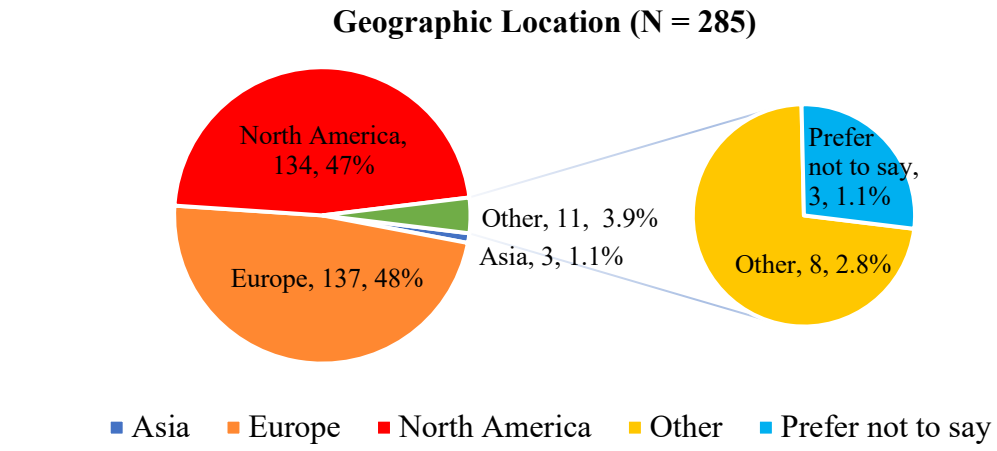
Demographic Data

An analysis was performed of the 285 completed survey responses. This analysis included gender, age groups, ethnicity, geographic location, education level, work experience, and industry. The demographic analysis results reveal a diverse range of responses to the survey.

Geographic. As illustrated in Figure 1, the participant geographic distribution was relatively balanced, with 137 participants (48%) residing in Europe and 134 participants (47%) in North America.

Figure 1

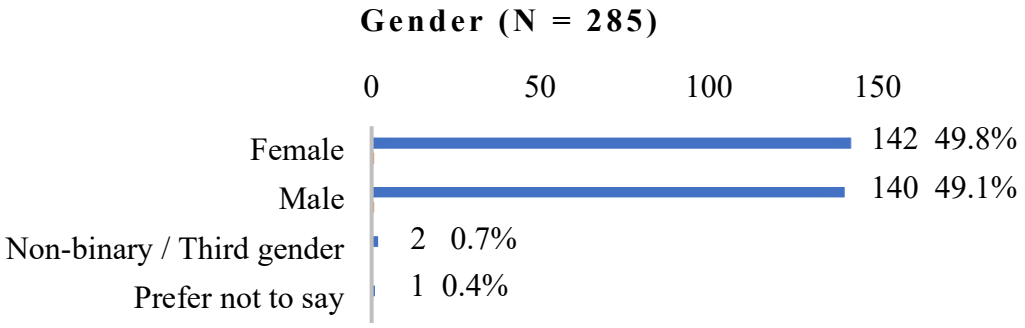
Geographic Location



Gender. Figure 2 illustrates a balanced gender distribution among the respondents. Females account for 142 (49.8%) of the responses, while males represent 140 (49.1%), indicating a nearly equal representation of both genders.

Figure 2

Gender

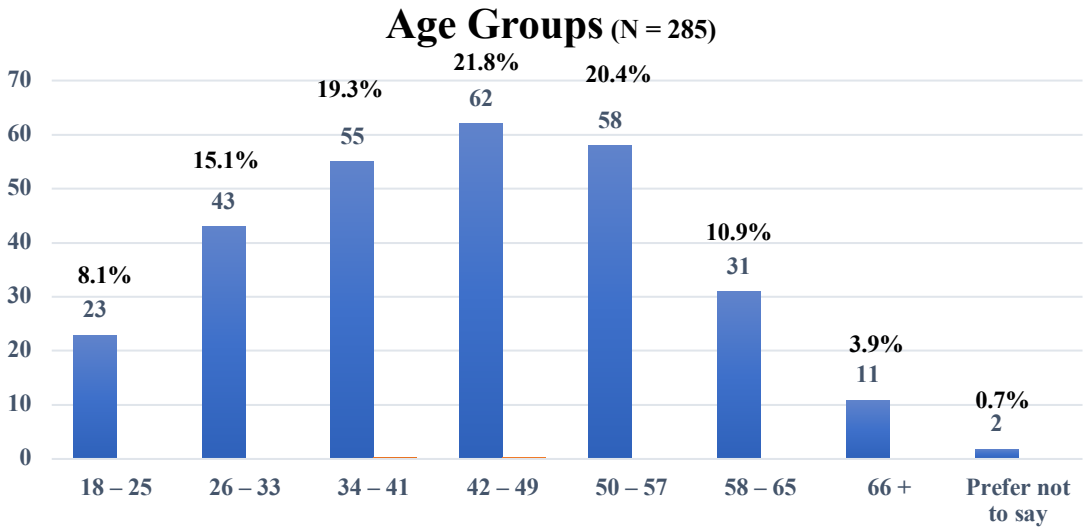


Age Groups. Figure 3 presents the distribution of age groups, demonstrating a fairly balanced participation across the categories. The age group of 34 to 41 years had 55 participants, accounting for 19.3%. The 42 to 49 age group had slightly more participants, with 62 individuals making up 21.8%. Lastly, the age group of 50 to 57

years comprised 58 participants, representing 20.4%. The groups with the least representation were those either at the onset of their careers or transitioning toward retirement.

Figure 3

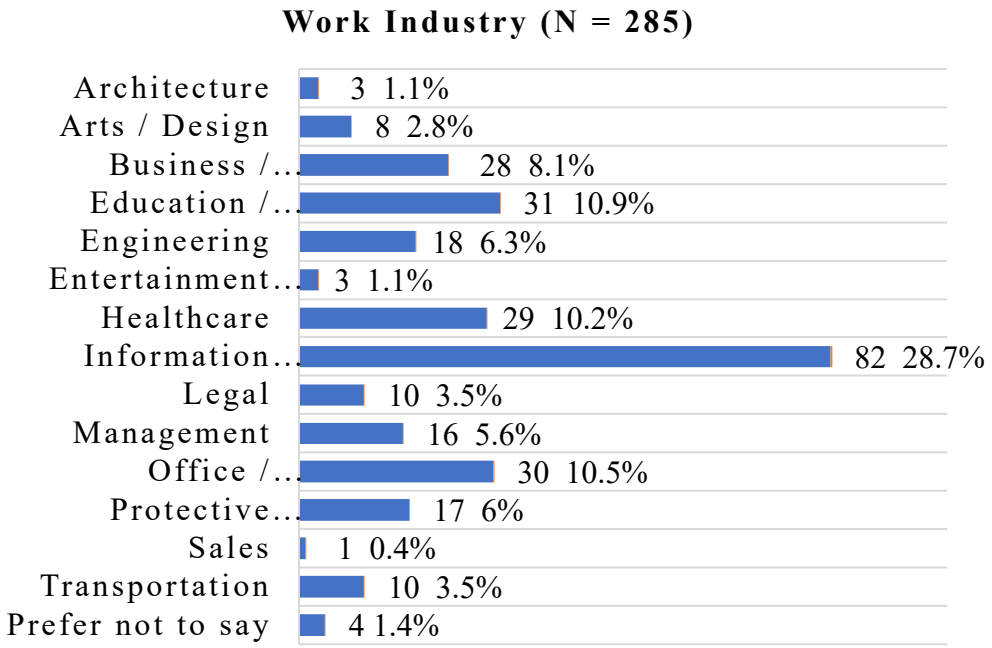
Age Groups



Work Industry. Figure 4 pertains to the participants' work industry. As previously mentioned in the Limitations section of Chapter 1, there was a concern that past published research was too narrowly focused, resulting in a limited study. The survey responses, which are based on factors such as gender, age, geographic location, education level, work experience, and work industry, ensure a more comprehensive understanding of an individual's decision to exhibit KHi or KHo behaviors as opposed to KS (Knowledge Sharing), specifically in the context of tacit KS.

Figure 4

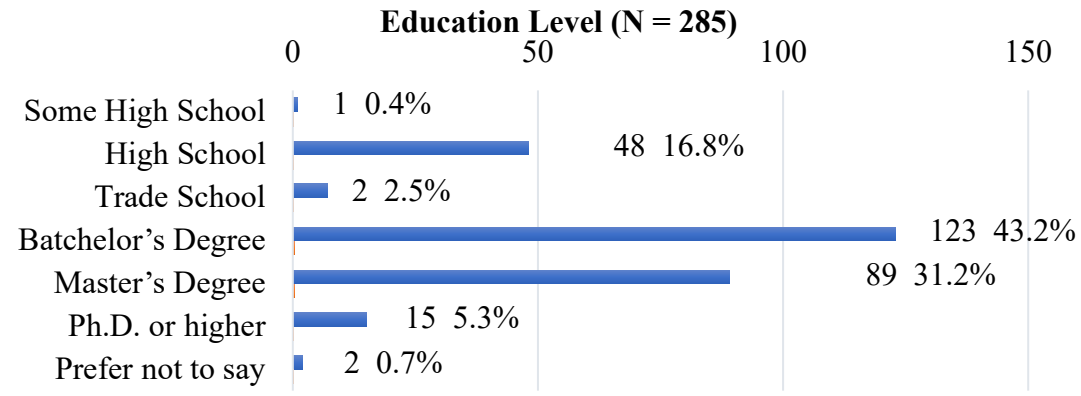
Work Industry



Education Level. The educational statistics in Figure 5 indicate that 123 participants (43.2%) hold a Bachelor's degree, 89 participants (31.2%) have a Master's degree, and 48 participants (16.8%) possess a High School diploma. While the responses encompass all educational levels, most participants hold at least a college degree.

Figure 5

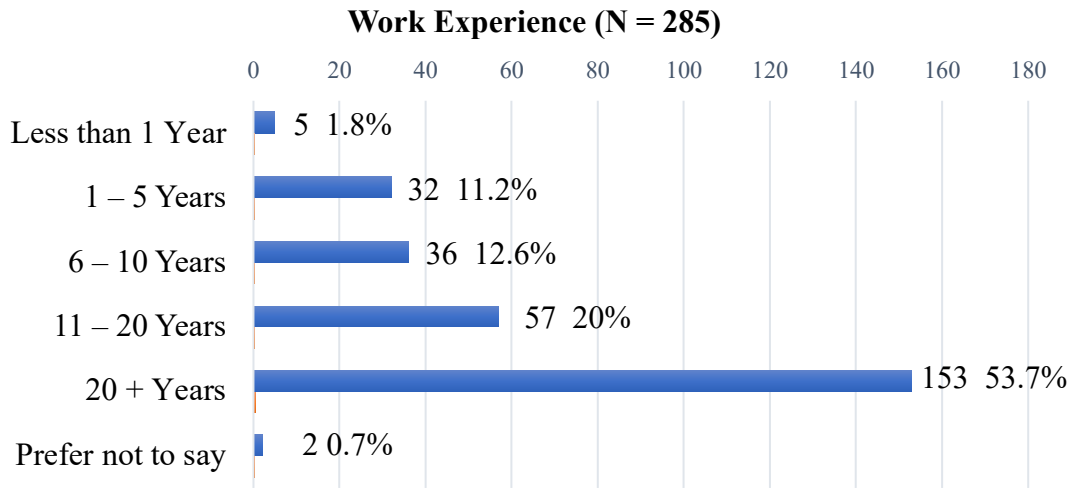
Education Level



Work Experience. As shown in Figure 6, the work experience distribution reveals that most participants, 153 (53.7%), have more than 20 years of experience. Additionally, 57 participants (20%) have work experience ranging from 11 to 20 years. Despite the uneven distribution, this is advantageous in this context, as participants with more work experience are likely to provide more valuable feedback.

Figure 6

Work Experience



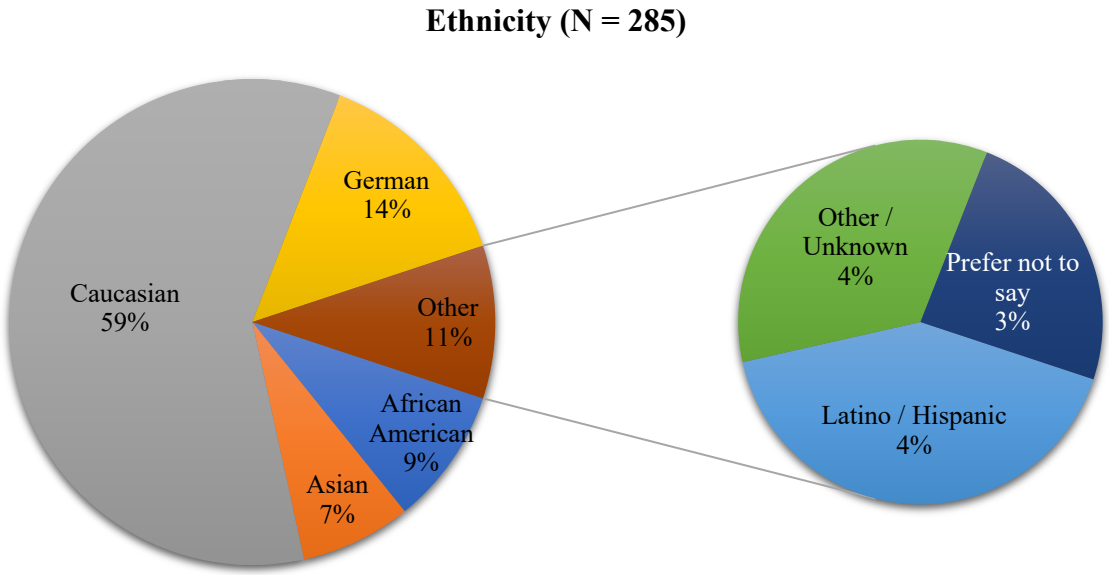
Ethnicity. The final demographic data represented in Figure 7 is ethnicity, which is the least evenly distributed among all the demographics discussed. However, although the numbers are not as robust as those of the Caucasian demographic, they are represented by a wide range of ethnicities. Also notable is the category for German. During the pilot study the feedback provided was that German nationals prefer to be associated with being German rather than Caucasian.

Figure 7 presents the final demographic data, focusing on ethnicity. This demographic is the least evenly distributed among all those examined. Despite the Caucasian demographic having more robust numbers, a broad spectrum of ethnicities is

still represented. The category for Germans is particularly noteworthy. Feedback from the pilot study indicated that German nationals prefer to identify as German rather than Caucasian.

Figure 7

Ethnicity



Supporting Survey Questions

To capture the prevailing sentiment of the survey participants towards the supporting survey questions, a "Decision" column has been integrated into the subsequent tables to rank low and high perceptions. Ho (2017) concluded using a linear Likert-type scale to measure participants' perceptions and attitudes is item-centered. This means that any differences in participant responses can be attributed to the specific questions asked in the survey. Ho also noted that each participant's response is considered independent of that of others. The psychological distances between different participant responses are assumed to be equal (Ho, 2017). Nonetheless, a weighted average was employed to gauge the prevailing perception among the 285 responses,

offering a quick overview (i.e., perception) of the general sentiment towards the survey questions. The calculation of the weighted average is used to determine the relative significance of the values associated with the observations from the supporting research questions related to the four main research questions.

The ranking of "low perception" or "high perception" for each supporting survey question is established by comparing the mean (average) with the weighted average. If the mean of a supporting survey question falls below the weighted average, it is classified as having a "low perception." Conversely, if the mean equals or exceeds the weighted average, the supporting survey question is classified as having a "high perception". This does not diminish the importance of other responses above or below the weighted average. Instead, it primarily signifies the current trend among most survey participants.

RQ1 Supporting Survey Questions. Before delving into the survey questions that support RQ1, a brief overview of the methodology used to calculate the weighted average, which distinguishes between "low perception" and "high perception", will be discussed. Before calculating the weighted average, the mean must be computed first. The mean is calculated by taking the sum of multiplying response frequency (i.e., Likert Scale value) by the number of responses to that frequency. The sum is subsequently divided by the aggregate of the total number of responses to determine the mean.

The next step involves computing the weighted average of the supporting survey questions for RQ1. This is achieved by summing up the means of each supporting survey question for RQ1 and dividing this sum by the total count of supporting survey questions for RQ1. The weighted average for all supporting survey questions for RQ1 is 3.71. By comparing the weighted average with the mean for each survey question, the high

perception and low perception are determined. Table 4 presents the RQ1 supporting survey questions, their means, and the determination of high perception or low perception.

The survey questions backing RQ1 evaluated the participants' comprehension of KHi (Knowledge Hiding), KHo (Knowledge Hoarding), and KS (Knowledge Sharing). These questions further delved into the participants' viewpoints on how their coworkers demonstrate behaviors related to KHi, KHo, and KS, in addition to their perspectives.

Table 4

RQ1 Supporting Survey Questions

Question	VU	U	SU	N	SF	F	VF	$\bar{X}$	σ	Decision
Q1) How familiar are you with the concept of KS in the workplace?	5	8	5	10	50	8	108	5.87	1.33	High Perception
Q2) How familiar are you with the concept of KHi in the workplace?	10	38	31	32	64	68	42	4.66	1.74	High Perception
Q3) How familiar are you with the concept of KHo in the workplace?	10	27	30	33	64	74	47	4.84	1.69	High Perception

Note. N = 285, VU = Very Unfamiliar, U = Unfamiliar, SU = Somewhat Unfamiliar, N = Neither Familiar or Unfamiliar, SF = Somewhat Familiar, F = Familiar, VF = Very Familiar.

Question	VU	U	SU	N	SA	A	VA	$\bar{X}$	σ	Decision
Q4) How aware are you of coworkers choosing not to share knowledge?	12	37	23	21	69	68	55	4.83	1.80	High Perception

Q5) How aware are you of coworkers choosing to partially share knowledge?	7	27	19	16	80	83	53	5.09	1.61	High Perception

Note. N = 285, VU = Very Unaware, U = Unaware, SU = Somewhat Unaware, N = Neither Aware or Unaware, SA = Somewhat Aware, A = Aware, VA = Very Aware.

Question	STD	D	SD	N	S	A	SA	$\bar{X}$	σ	Decision
Q6) Coworkers may withhold knowledge because they consider you a threat.	22	26	36	27	70	66	38	4.57	1.80	High Perception
Q7) Coworkers withhold knowledge from you because of personality differences.	18	33	33	35	78	63	25	4.44	1.70	High Perception
Q8) Coworkers withhold knowledge because they don't want you to succeed on a task or project.	24	49	50	33	73	37	19	3.94	1.73	High Perception

Note. N = 285, STD = Strongly Disagree, D = Disagree, SD = Somewhat Disagree, N = Neither Agree or Disagree, S = Somewhat Agree, A = Agree, SA = Strongly Agree.

Question	N	R	O	S	F	U	E	$\bar{X}$	σ	Decision
Q9) Have you ever refrained from sharing knowledge with a coworker due to personality differences?	87	142	31	16	6	3	0	2.02	1.00	Low Perception
Q10) When asked a question by a coworker, I respond to suit my needs or	50	109	52	37	28	8	1	2.69	1.35	Low Perception

outcome.										
Q11) I keep what I am working on private from coworkers until an appropriate time to share the knowledge.	47	101	56	30	36	13	2	2.84	1.46	Low Perception
Q12) I keep documents and/or resources from coworkers to maintain control of knowledge.	122	103	24	17	11	6	2	2.01	1.27	Low Perception
Q13) I keep innovative achievements to myself until I can receive recognition.	121	89	23	29	8	11	4	2.17	1.45	Low Perception
Q14) I choose not to let coworkers know all that I know, even if it could help the coworkers or the organization.	128	99	25	18	11	4	0	1.94	1.17	Low Perception

Note. N = 285, N = Never, R = Rarely, O = Occasionally, S = Sometimes, F = Frequently, U = Usually, E = Every Time.

RQ2 Supporting Survey Questions. The survey questions presented in Table 5 aim to assess the participants' understanding of EK (Explicit Knowledge) and TK (Tacit Knowledge). The supporting survey questions mostly depicted a high perception of whether they share explicit or TK upon request. Utilizing the weighted average calculation method outlined in the preceding section (i.e., RQ1 Supporting Questions), the weighted average for all the supporting survey questions related to RQ2 is 5.22.

Table 5 presents the RQ2 supporting survey questions, their means, and the determination of high perception or low perception.

Table 5

RQ2 Supporting Survey Questions

Question	N	R	O	S	F	U	E	$\bar{X}$	σ	Decision
Q15) I share EK when requested.	2	4	2	9	38	104	126	6.13	1.07	High Perception
Q16) I share TK when requested.	3	5	6	30	54	103	84	5.71	1.25	High Perception

Note. N = 285, N = Never, R = Rarely, O = Occasionally, S = Sometimes, F = Frequently, U = Usually, E = Every Time.

Question	STD	D	SD	N	S	A	SA	$\bar{X}$	σ	Decision
Q17) I share TK with coworkers when it is reciprocated.	10	17	16	48	47	76	71	5.16	1.65	High Perception
Q18) I would help coworkers tackle their issues in the workplace using my TK if compensated through rewards, bonuses, or acknowledgments.	25	32	15	64	41	59	49	4.53	1.88	High Perception
Q19) Sharing EK will elevate my status within the workplace.	11	15	13	68	80	73	25	4.79	1.44	High Perception
Q20) Sharing TK will elevate my status within the workplace.	12	11	12	59	82	78	31	4.92	1.45	High Perception
Q21) Sharing TK will gain me more	3	9	9	54	85	85	40	5.19	1.26	High Perception

acceptance among coworkers.										
Q22) Sharing EK increases my competitive advantage in the workplace.	8	16	33	78	73	51	26	4.58	1.44	Low Perception

Note. N = 285, STD = Strongly Disagree, D = Disagree, SD = Somewhat Disagree, N = Neither Agree or Disagree, S = Somewhat Agree, A = Agree, SA = Strongly Agree.

Question	**VU**	**U**	**SU**	**N**	**SA**	**A**	**VA**	$\bar{X}$	**σ**	**Decision**
Q23) Leadership knows I possess TK useful for solving problems.	1	7	6	35	74	98	64	5.54	1.20	High Perception
Q24) Coworkers know I possess TK useful for solving problems.	1	4	3	27	77	110	63	5.66	1.08	High Perception

Note. N = 285, VU = Very Unaware, U = Unaware, SU = Somewhat Unaware, N = Neither Aware or Unaware, SA = Somewhat Aware, A = Aware, VA = Very Aware.

RQ3 Supporting Survey Questions. The survey questions in Table 6 explore KHi, KHo, and the reasons behind an individual's choice to withhold TK. Applying the weighted average calculation method outlined in the preceding section (i.e., RQ1 Supporting Questions), the weighted average for all the supporting survey questions related to RQ3 is 3.98. Table 6 presents the RQ3 supporting survey questions, their means, and the determination of high perception or low perception.

Table 6

RQ3 Supporting Survey Questions

Question	STD	D	SD	N	S	A	SA	$\bar{X}$	σ	Decision
Q25) Time is a factor when choosing not to share TK with coworkers.	7	26	26	42	102	62	20	4.66	1.45	High Perception
Q26) A lack of trust in coworkers is a factor when choosing not to share tacit knowledge.	14	33	28	33	89	62	26	4.54	1.65	Low Perception
Q27) Understanding the power of knowledge is a factor when choosing not to share tacit knowledge with coworkers.	20	39	18	55	73	66	14	4.32	1.67	High Perception
Q28) Individuals who possess tacit knowledge choose not to share the knowledge with coworkers.	8	42	41	89	69	32	4	3.99	1.35	High Perception
Q29) Trust of coworkers is a factor when choosing not to share tacit knowledge.	5	20	10	38	112	74	26	3.28	1.55	Low Perception
Q30) There is not an advantage in sharing tacit	36	104	55	40	26	20	4	2.97	1.50	Low Perception

knowledge with coworkers.										
Q31) There are no negative consequences for not sharing tacit knowledge with coworkers.	29	82	54	57	31	27	5	3.28	1.55	Low Perception
Q32) The decision not to share tacit knowledge can often be influenced by a feeling of importance or power.	8	25	17	47	87	73	28	4.79	1.50	High Perception

Note. N = 285, STD = Strongly Disagree, D = Disagree, SD = Somewhat Disagree, N = Neither Agree or Disagree, S = Somewhat Agree, A = Agree, SA = Strongly Agree.

RQ4 Supporting Survey Questions. The survey questions presented in Table 7 are designed to examine the factors that motivate trust in the context of TK. Using the weighted average calculation method outlined in the preceding section (i.e., RQ1 Supporting Questions), the weighted average for all the supporting survey questions related to RQ4 is 5.27. Table 7 presents the RQ4 supporting survey questions, their means, and the determination of high perception or low perception.

Table 7

RQ4 Supporting Survey Questions

Question	STD	D	SD	N	S	A	SA	$\bar{X}$	σ	Decision
Q33) I share relevant TK with coworkers based on their abilities in the workplace.	7	25	19	37	94	81	22	4.81	1.46	Low Perception
Q34) I share relevant TK with	4	7	11	43	87	107	26	5.20	1.21	Low Perception

coworkers who are perceived as being credible in the workplace.										
Q35) I share relevant TK with coworkers who have high standing in the workplace.	5	9	15	66	81	82	27	4.98	1.30	Low Perception
Q36) I share relevant TK with coworkers who lack knowledge but are sincere in their request.	2	9	4	24	63	119	64	5.63	1.21	High Perception
Q37) I show goodwill in sharing relevant TK with coworkers after evaluating their sincerity and potential skill set.	2	9	4	44	79	105	42	5.36	1.20	High Perception
Q38) I share relevant TK with coworkers who possess subject matter expertise in the workplace.	3	4	8	34	72	109	55	5.51	1.19	High Perception
Q39) I share relevant TK with coworkers who possess exceptional credentials in the workplace.	2	5	9	69	57	104	39	5.25	1.22	Low Perception
Q40) I share relevant TK with coworkers who are perceived as subject matter experts	2	3	16	39	60	114	51	5.45	1.22	High Perception

qualified to share tacit knowledge.	

Note. N = 285, STD = Strongly Disagree, D = Disagree, SD = Somewhat Disagree, N = Neither Agree or Disagree, S = Somewhat Agree, A = Agree, SA = Strongly Agree.

Comparisons and Contrasts of RQ1 and RQ3 Supporting Survey Questions

The preliminary results for RQ1 and RQ3 have been previously discussed in the "Supporting Survey Questions" section. This section presents a comparative analysis, highlighting the similarities and differences between the supporting survey questions for RQ1 (Q9 – Q14) and RQ3 (Q25 – Q32). Additional figures for Q1 – Q8 can be found in Appendix D.

The supporting survey questions for RQ1, specifically Q9 – Q14, investigated the prevalence of KHi (Knowledge Hiding) and KHo (Knowledge Hoarding) behaviors in the workplace. The supporting survey questions Q25 through Q32 RQ3 concentrated on the CKB (Counterproductive Knowledge Behavior) traits that participants demonstrate in their decisions to engage in KHi, KHo, and TK hiding. In addition, those same supporting survey questions also focused on the CKB characteristics that survey participants show regarding their decisions to exhibit KHi, KHo, and TK hiding.

Comparative Analysis of RQ1 (Q9) and RQ3 (Q32). Figures 8 and 9 illustrate the dichotomy between the inclination to disseminate TK and the comprehension of the power of TK, leading to a decision to withhold knowledge. The conclusions drawn from Figure 8 and Figure 9 are elaborated in Chapter 5.

Figure 8

RQ1: Q9

Q9) Have you ever refrained from sharing knowledge with a coworker due to personality differences?

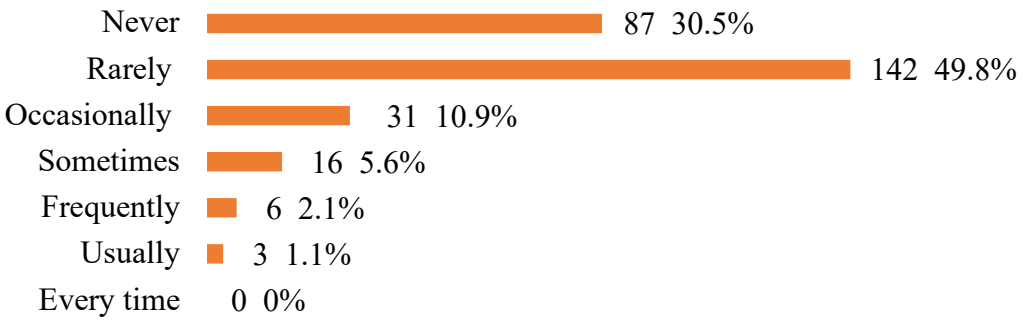
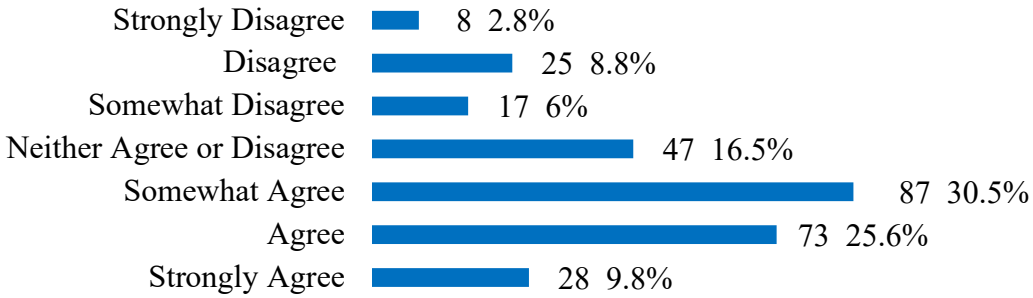


Figure 9

RQ3: Q32

Q32) The decision not to share tacit knowledge can often be influenced by a feeling of importance or power.



Comparative Analysis of RQ1 (Q10) and RQ3 (Q25, Q26, & Q29). Figure 10 shows the responses of survey participants to Q10, which probes the responsiveness of coworkers when asked a question. Figures 11 (Q25), 12 (Q26), and 13 (Q29) explore the role of time and trust in the decision to share TK with coworkers. The conclusions from Figures 10, 11, 12, and 13 are discussed in detail in Chapter 5.

Figure 10

RQ1: Q10

Q10) When asked a question by a coworker, I respond to suit my needs or outcome.

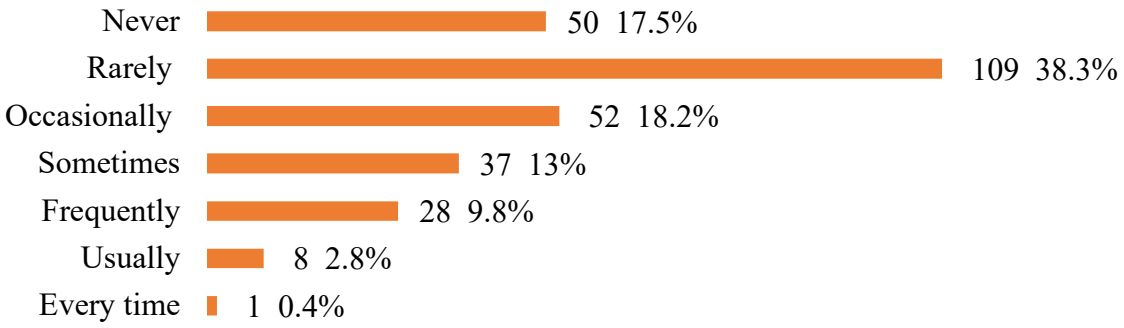


Figure 11

RQ3: Q25

Q25) Time is a factor when choosing not to share tacit knowledge with coworkers.

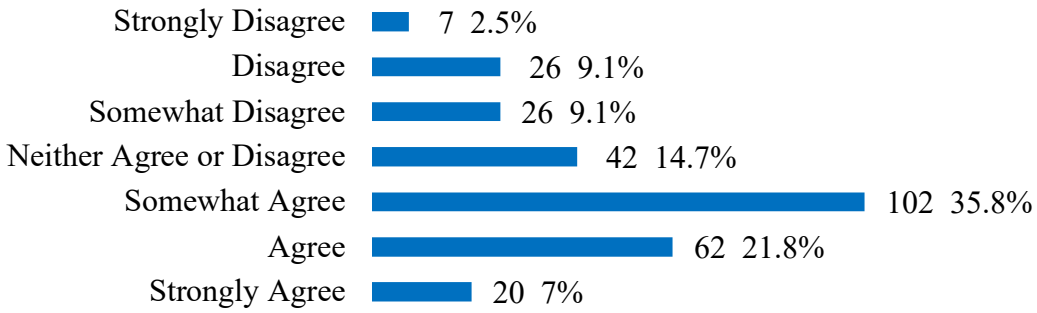


Figure 12

RQ3: Q26

Q26) A lack of trust in coworkers is a factor when choosing not to share tacit knowledge.

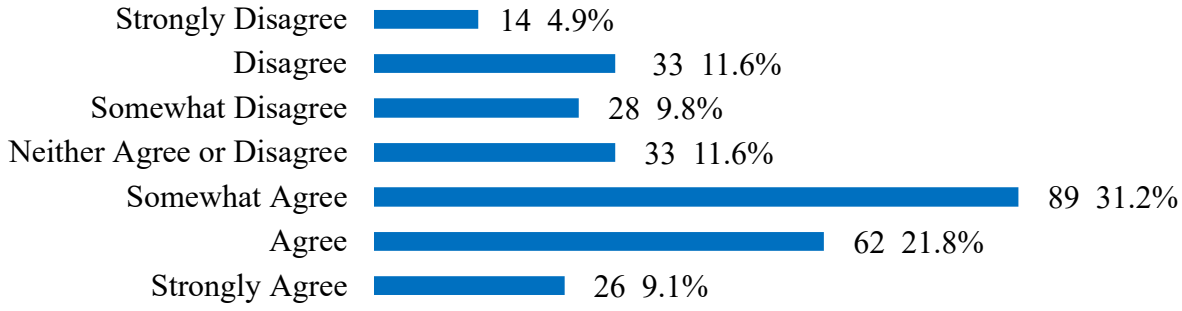
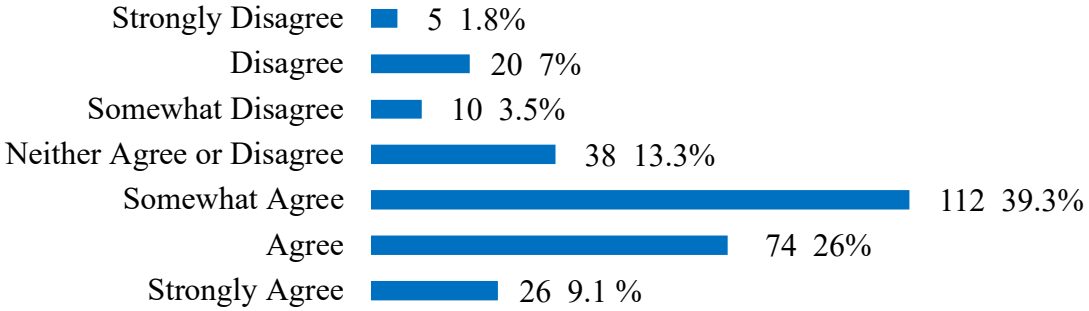


Figure 13

RQ3 - Q29

Q29) Trust of coworkers is a factor when choosing not to share tacit knowledge.



Comparative Analysis of RQ1 (Q11) and RQ3 (Q27). Figure 14 (Q11) shows the responses of survey participants to Q11, which probes KHi or KHo behavior until an advantageous time to share. Figure 15 (Q27) explored if the power of knowledge was a decider in withholding TK. The conclusions derived from Figures 14 and 15 are discussed in detail in Chapter 5.

Figure 14

RQ1: Q11

Q11) I keep what I am working on private from coworkers until an appropriate time to share the knowledge.

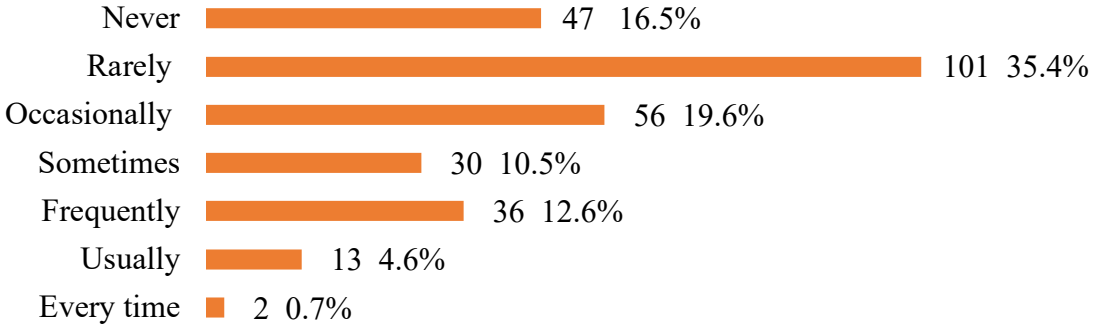
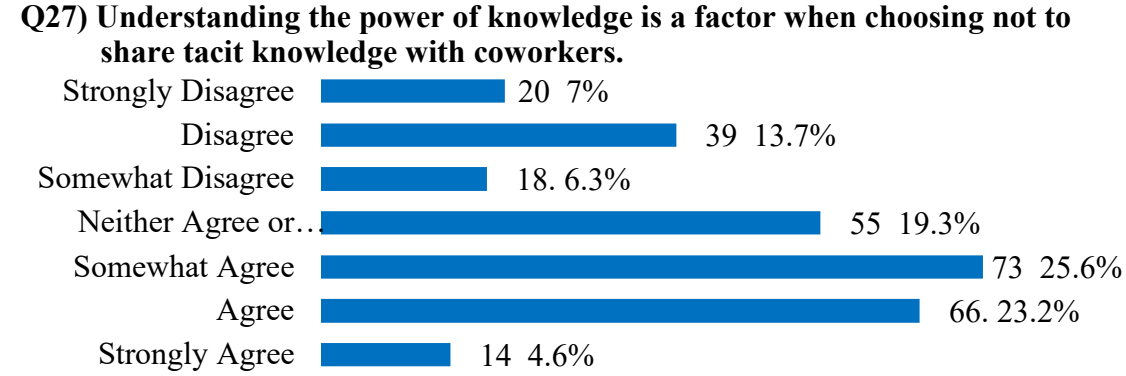


Figure 15

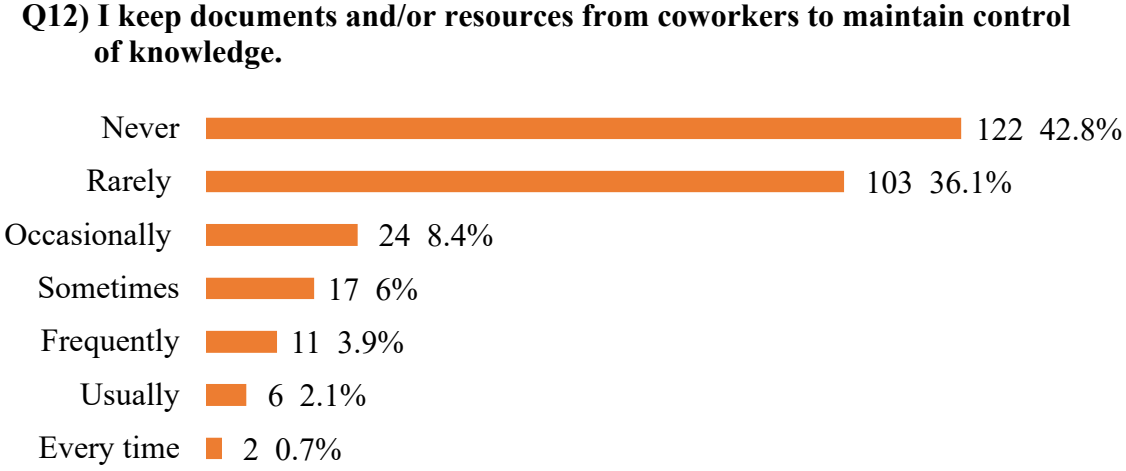
RQ3: Q27



Comparative Analysis of RQ1 (Q12) and RQ3 (Q27). Figure 16 analyzed the responses of survey participants to Q12, focusing on those who exhibited KHo behavior to maintain control. As mentioned earlier, Figure 15 (Q27) delves into the influence of knowledge power and the decision-making process regarding knowledge sharing. The conclusions drawn from Figures 15 and 16 are elaborated in Chapter 5.

Figure 16

RQ1: Q12



Comparative Analysis of RQ1 (Q13) and RQ3 (Q30 & Q31). Figure 17 presents an analysis of the responses to Q13 from survey participants, specifically those who withheld their innovative achievements until they received recognition. Figures 18 (Q30) and 19 (Q31) explore the pros and cons of sharing TK with coworkers. The conclusions from Figures 17, 18, and 19 are discussed in detail in Chapter 5.

Figure 17

RQ1: Q13

Q13) I keep innovative achievements to myself until I can receive recognition.

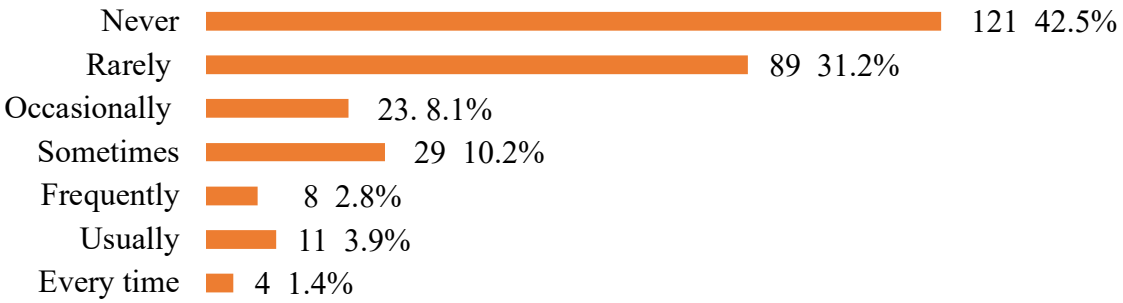


Figure 18

RQ3: Q30

Q30) There is not an advantage in sharing tacit knowledge with coworkers.

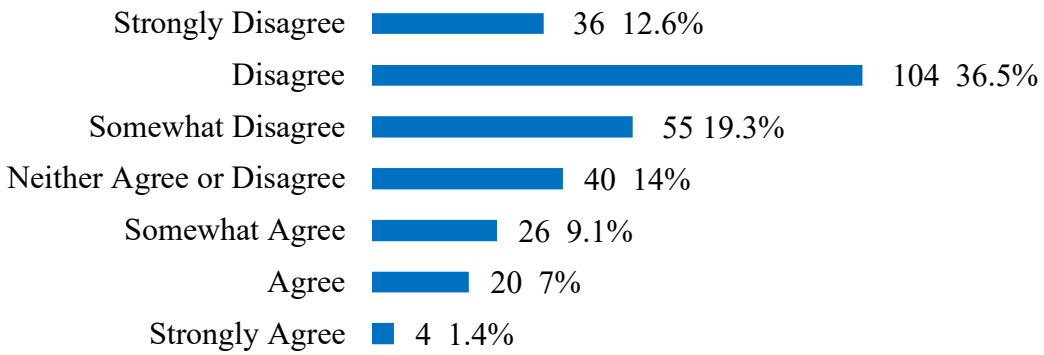
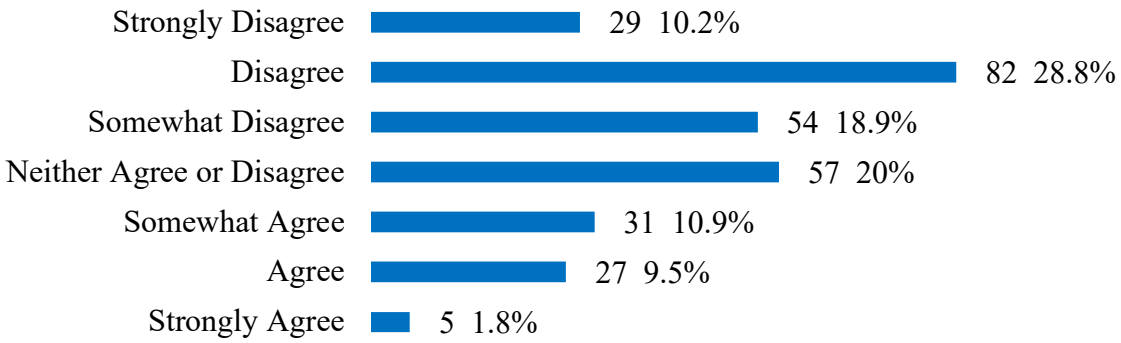


Figure 19

RQ3: Q31

Q31) There are no negative consequences for not sharing tacit knowledge with coworkers.



Comparative Analysis of RQ1 (Q14) and RQ3 (Q28 & Q29). Figure 20 presents an analysis of the responses to Q14 from survey participants, specifically those who withheld knowledge even though it could help coworkers. Figures 13 (Q29) and 21 (Q28) explore the pros and cons of trust when choosing to share TK with coworkers. The conclusions derived from Figures 13, 20, and 21 are discussed in detail in Chapter 5.

Figure 20

RQ1: Q14

Q14) I choose not to let coworkers know all that I know, even if it could help the coworkers or the organization.

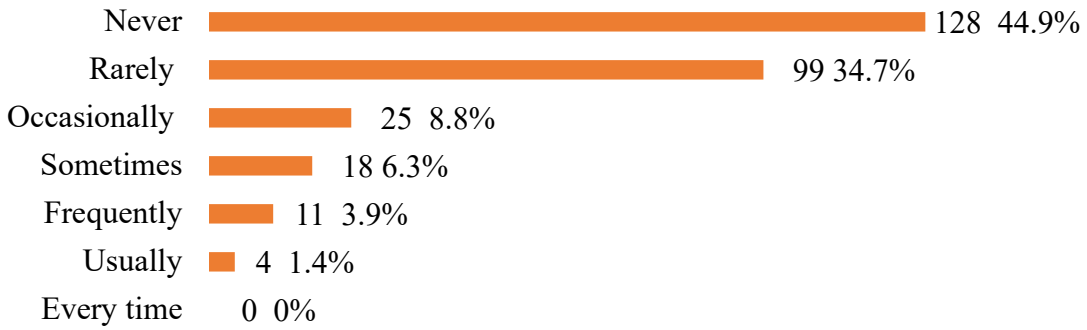
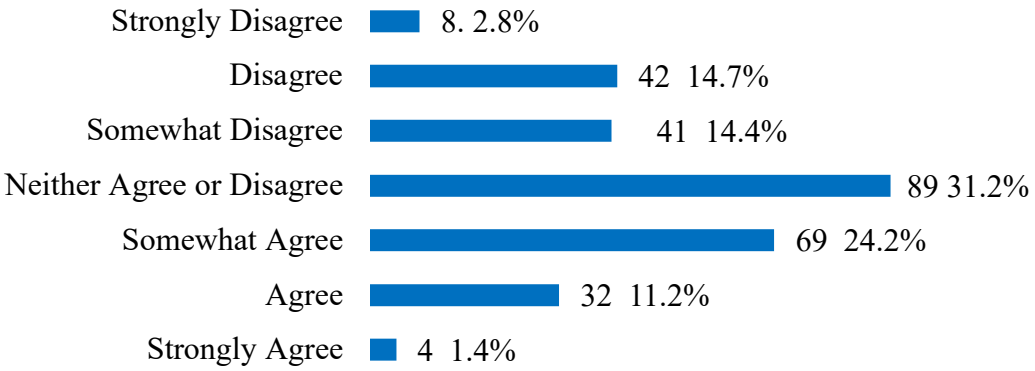


Figure 21

RQ3: Q28

Q28) Individuals who possess tacit knowledge choose not to share the knowledge with coworkers.



Summary

Chapter 4 delved into the data analysis and findings of the survey study. Two SMEs internally validated it during the field study phase. External validation was achieved through a pilot study, which included 14 individuals whose roles and responsibilities were pertinent to knowledge management. In the Data Analysis section, the PI (Principal Investigator) elaborated on the methodology of how the survey questions align with the RQs. The PI also explained the validation process of the data responses and the criteria for their removal, which included inaccuracies, rapid responses, and incomplete surveys.

The participants' demographic details in the survey study were examined to present pertinent data. Key observations included an equal representation of female and male participants from North America and Europe. Survey participants spanned 14 work industries; most held a Bachelor's degree or higher. The work industry diversity was

particularly noteworthy, as previous survey studies were typically confined to a specific sector.

There was a discussion on the findings of the supporting survey questions and how they relate to the RQ. The analysis of these supporting survey questions included frequency, mean, standard deviation, and a decision category determined by a weighted average. A decision category, which distinguishes between “low perception” and “high perception”, is utilized to discuss the findings of the supporting survey questions.

The results from RQ1 consistently showed that most survey participants knew of KHi, KHo, and KS behaviors. They were cognizant of instances where their coworkers had withheld or concealed information when it was sought or requested. Intriguingly, despite their awareness of KHi and KHo behaviors, all participants indicated that they did not exhibit such tendencies in their professional interactions.

The findings for RQ2 concentrated on the interplay between EK (Explicit Knowledge) and TK (Tacit Knowledge). The survey respondents positively viewed exchanging EK and TK, particularly when their coworkers initiated the sharing. They recognized that possessing TK could yield financial advantages, elevate their professional standing, foster acceptance in their workplace, and provide a competitive advantage. Despite understanding the potential benefits of TK, most respondents did not view it as a means to obtain rewards, bonuses, acknowledgments, or personal gains. They also acknowledged that their coworkers and superiors knew about their possession of TK.

The results for RQ3 indicated that while survey participants were generally open to sharing TK when prompted by a colleague, they typically do not proactively share their TK. Most participants did not view trust or perceived advantage as compelling

reasons to withhold TK. However, they concurred that time constraints could often inhibit TK sharing. Furthermore, participants expressed that possessing TK does not necessarily confer an advantage over others, nor does it negatively affect TK holders who choose not to share their knowledge.

Responding to RQ4, participants exhibited a low inclination to share TK based solely on a colleague's general abilities. The findings suggested that despite exceptional abilities, individuals were not precluded from receiving TK. Participants indicated that TK owners were willing to share information if a colleague lacked the necessary skillset or substantial knowledge but demonstrated sincerity. TK owners had a strong tendency to share TK with SMEs, particularly those capable and qualified. Interestingly, and perhaps counterintuitively, participants did not perceive sharing TK with coworkers possessing exceptional credentials as more significant than sharing with those without such credentials.

Chapter 5

Conclusions, Implications, Recommendations, and Summary

Introduction

Chapter 5 presents the conclusions, implications, and recommendations derived from the study of 285 survey participants utilizing the Qualtrics ^{XM} survey platform. These findings are based on the four research questions that will be further discussed in the Conclusions section. All survey participants brought their expertise in knowledge management or experience in knowledge sharing activities. These activities include, but are not limited to, writing, thinking, problem-solving, searching, reviewing, and assessing, which form part of their daily, weekly, or monthly responsibilities.

The study focused on identifying characteristics, traits, and motivators that sway an individual's choice to disclose or disseminate EK (Explicit Knowledge) or TK (Tacit Knowledge). It also explored how an individual's CKB (Counterproductive Knowledge Behavior) fosters KHi (Knowledge Hiding) and KHo (Knowledge Hoarding) within an organization.

This study proposed four research questions: 1) How well do individuals understand the behaviors of knowledge hiding or knowledge hoarding in the workplace? 2) What motivators lead an individual to share tacit knowledge with others in the workplace? 3) Which behavioral characteristics influence an individual's decision to exhibit behaviors of knowledge hiding, knowledge hoarding, or to not share tacit knowledge? 4) Which motivators of trust facilitate tacit knowledge sharing? The conclusion section also offers suggestions on how to encourage TK sharing in a workplace.

Conclusions

Demographics

The demographic analysis of the survey yielded seven key findings, demonstrating diversity across all categories among the participants. In terms of gender, the distribution was nearly equal, with 142 females and 140 males out of 285 participants, as shown in Figure 2. Geographically, the number of participants was also well-balanced, with 134 depicted as from North America and 137 from Europe, as depicted in Figure 1.

Figure 3 illustrates a well-distributed representation across all age groups, ranging from 18 to 66+. Notably, the proportions of each age group fluctuated in a balanced manner. For instance, the age groups of 26-33, 34-41, 42-49, 50-57, and 58-65 were represented by 15.1%, 19.3%, 21.8%, 20.4%, and 10.9% of the survey participants, respectively. As for the work industry, Figure 4 shows a diverse representation. Information Systems professionals made up 28.7% (82 out of 285) of the participants, while 14 other professions were also represented among the survey participants.

Hernaus et al. (2019) argued that future investigations into KHi (Knowledge Hiding) and KHo (Knowledge Hoarding) should not confine the scope of the study to a single country or profession. The present study's findings encompassed various perspectives from knowledge management professionals across five countries and 15 unique professions.

As depicted in Figure 5, a significant majority of the survey participants, precisely 79.7%, possess an academic degree at the level of Bachelor's, Master's, or Ph.D. The remaining 19.7% of participants, representing categories from some High School to Trade School, constitute the minority. Similar to research conducted by Wang and Dong

(2021), the findings show that education level was a significant factor in the necessary skill sets for examining knowledge management behaviors in survey participants.

Figure 6, which illustrates the work experience category, reveals that 53.7% of the participants boast more than 20 years of professional experience. This observation aligns with the age group category, where there is a proportional increase in work experience over the years. This trend is anticipated, given the level of expertise required to participate in the survey study.

The final category of the survey concentrated on ethnicity. The data revealed that 59% of the participants self-identified as Caucasian. The remaining 41% of participants identified themselves as either African American, Asian, German, Latino/Hispanic, or other ethnicities. The seven demographic categories contribute significantly to the survey study by ensuring a culturally diverse population.

RQ1

The primary objective of RQ1 was to evaluate individuals' understanding of KHi and KHo behaviors in a workplace setting. Survey participants were presented with 14 questions related to RQ1 aimed at gauging their familiarity with KHi and KHo and ascertaining if they had encountered KHi or KHo from their coworkers. After examining the responses to the initial three supporting survey questions for RQ1 (i.e., Q1, Q2, and Q3), as shown in Table 4, it became clear that the participants demonstrated a strong understanding of both KHi and KHo behaviors in the workplace, along with the occurrence of KS.

The survey participants indicated in Q4, Q5, Q6, Q7, and Q8 that they also highly perceived that coworkers occasionally withhold information. This reluctance to share

could be attributed to personality clashes or because the information holder perceives the participant as a potential threat. This observation aligns with the tendency of individuals to exhibit KHo behaviors in their professional environment as a strategy to safeguard their status and area of expertise (Bilginoğlu, 2018). KHo behavior is also consistent with Psychological Ownership Theory (POT), where the possessor develops a psychological association with and ownership of knowledge over others in the workplace (Ali & Sagsan, 2021).

While survey participants highly perceived that a coworker might hide or hoard information due to perceived threats or personal conflicts, the majority had a low perception (i.e., rarely, or never) when asked if they have demonstrated KHi or KHo behaviors in the workplace. For Q9, Q10, Q11, Q12, Q13, and Q14, withholding knowledge could be linked to not wanting the individual to succeed in a task or project. Interestingly, although the majority of survey respondents exhibited a low perception when identifying themselves as exhibiting KHi or KHo tendencies, they were highly aware of the behavior of their coworkers.

RQ2

The survey questions (Q15 – Q24) presented in Table 5 aimed at assessing the survey participants understanding of EK and TK. The supporting survey questions mostly depicted a high perception when asked if they share explicit or tacit knowledge upon request. However, certain questions (Q17, Q18, Q19, Q20, Q21, Q22) exhibited a mean that was lower than the overall weighted average. This discrepancy was influenced by the responses to Q15 and Q16, which had a high response rate at the upper end of the Likert Scale, thereby distorting the perception scale at both ends.

The survey participants showed a high perception that reciprocating becomes easier when others share their EK or TK first, as was demonstrated in Q15, Q16, and Q17. The findings align with the Social Exchange Theory (SET). According to SET, the sharing of EK and TK becomes more reciprocal when interpersonal and transactional workplace relationships have been established (Singh, 2019).

A significant portion of the participant's perception is favorable (Q19, Q20, & Q21) in that sharing explicit or tacit knowledge could lead to financial benefits, elevate their status, enhance their acceptance in the workplace, or provide them with a competitive edge. Oliveira et al. (2021) discussed the causal relationship between KHi and KHo and also identified how financial compensation and recognition influence the decision to share knowledge.

Participants also showed a high perception in Q23 and Q24 that their coworkers and leadership were aware that they possess TK that could be beneficial in the workplace and for the organization. Participants indicated in Q18 and Q22 that there is a low perception of sharing EK or TK based on rewards, bonuses, acknowledgments, or the prospect of gaining a competitive advantage in the workplace.

RQ3

The survey questions (Q25 – Q32) presented in Table 6 delved into exploring of KHi, KHo, and the reasons behind an individual's choice to withhold TK. Survey participants in Table 6 largely agreed (i.e., high perception) that for Q25, sharing TK becomes challenging when their schedules are tight. Interestingly, many responses in Q28 indicated that individuals with TK often choose not to share their information.

The final two supporting survey questions (i.e., Q27 & Q32) also received substantial agreement (i.e., high perception), related to the sense of power or importance TK owners feel when they possess information. Tian et al. (2021) suggested possessing knowledge inherently bestows power. The authors elaborated that individuals with unique or essential knowledge within an organization can potentially wield bargaining power, which could subsequently permeate and influence decision-making processes. This sentiment aligns closely with the notion of TK owners recognizing the inherent power in possessing data.

Upon examining the remaining four questions in Table 6 that were rated as having low perception, it was found that trust, advantage, and consequences were key factors in participant reasoning. The level of trust (i.e., Q26 & Q29), or lack thereof, in coworkers, emerged as a significant concern for survey participants. Arain et al. (2020) proposed that integrating SET could occasionally lead to unintended consequences, particularly where KHi is implicated. The authors suggested it could provoke a cycle of distrust among coworkers, potentially culminating in adverse effects on productivity. Most participants concurred with Q30 that sharing TK with coworkers does not confer any particular advantage. Additionally, participants perceived minimal negative consequences associated with the decision not to share TK for Q31.

RQ4

The survey questions (Q33 – Q40) presented in Table 7 were designed to examine the factors motivating trust in TK sharing. The questions were evenly distributed with low and high perception responses.

Participants responded in Q33 with a low perception of a willingness to share their TK with coworkers based on their abilities, suggesting a propensity to assist others regardless of their skill level. Gubbins and Dooley (2021) found that individuals possessing TK are more inclined to disseminate their knowledge to members of their "in-group" (i.e., their circle of coworkers), typically those whom they deem credible and deserving of such knowledge. This low perception was also observed for Q34 and Q35 regarding sharing TK with individuals who are credible or hold a high standing in the workplace. This would suggest that individuals possessing TK are willing to share regardless of their ranking within the workplace as long as there is some association with the individual.

The final low perception question (Q39) explored CBT (Cognition-Based Trust) and whether TK holders would restrict information sharing to individuals with perceived exceptional abilities (Chowdhury, 2005). A low perception was observed once more, indicating that an individual's lack of exceptional abilities would not disqualify them from receiving TK. However, the mean score for this question was 5.25, which is remarkably close to the weighted average of 5.27, indicating an equilibrium in the perception that some individuals possessing TK are potentially more willing to share TK based on a coworker's exceptional professional credentials.

Questions that demonstrated a high level of perception strike a balance between trust based on benevolence (i.e., Q36 & Q37) and trust rooted in competence (i.e., Q40) or cognition (i.e., Q38). Participants in Q36 are inclined to share their TK with coworkers who may lack certain skills but are genuine in their requests for help. While it was previously noted that ability-based trust in TK sharing is generally linked with "in-group"

coworkers, benevolence-based trust is relevant for individuals in an "out-group" (i.e., those outside their circle of coworkers) (Gubbins & Dooley, 2021). In this context, Gubbins and Dooley suggested that the sincerity of these individuals is considered more significant than their lack of knowledge of a particular subject where TK sharing is under. Q37 indicates that TK owners are also willing to assist others with a specific skill set, provided these individuals are sincere in their requests.

Participants responses to Q38 (i.e., CBT) and Q40, which focused on CoBT (Cognition-Based Trust), showed a strong inclination to share TK with SMEs, especially when those individuals evaluated were considered capable and qualified to share TK (Levin & Cross, 2004). Interestingly, contrary to what might be expected, participants did not have a high perception of sharing TK with coworkers who only have exceptional credentials as a significant factor.

Comparisons and Contrasts of RQ1 and RQ3 Supporting Survey Questions

A comparative analysis was carried out between the supporting survey questions of RQ1 and RQ3 due to the observed contradictions in the responses. These contradictions were particularly noticeable between the respondents' initial claims of not displaying KHi or KHo behaviors and their subsequent answers in the survey. However, the supporting survey questions for RQ2 and RQ4 addressed the motivators for sharing TK, and the aspect of trust in TK sharing, was excluded from this comparative analysis. This exclusion was because the responses to these questions did not present any contradictions with the supporting survey questions responses of RQ1 or RQ3.

Comparative Analysis of RQ1 (Q9) and RQ3 (Q32). While the survey participants were certainly aware of CKB, when queried about their specific behaviors

related to the focus of RQ1, most responses to Q9 – Q14 indicated that they never or rarely exhibited KHi or KHo behaviors. This was consistent for most survey participants regardless of whether the behavior was associated with personality differences, an attempt to maintain control or achieve a certain outcome, or to gain recognition or praise.

In contrast, when survey participants were asked in Figure 13 about the influence of personality differences on knowledge sharing (Q9), 91.2% agreed that it was not a significant factor to share. However, this notion was contradicted by the responses to Q32 in Figure 14, where 65.9% of the survey participants somewhat to strongly agree that they chose not to share TK with individuals who may appear to be self-important or perceived to have power over others. In addition, 16.5% of survey participants in Q32 neither agree or disagree, suggesting that personality differences do matter when deciding to display KHi or KHo behavior.

Comparative Analysis of RQ1 (Q10) and RQ3 (Q25, Q26, & Q29). In Figure 15, when survey participants were queried about their willingness to share knowledge upon request, 55.8% indicated they rarely or never responded to suit their needs. In addition, 18% of the survey participants occasionally feel the same. However, the responses for Q25, Q26, and Q29 diverged from those for Q10 in Figure 15.

As depicted in Figure 16, 64.6% of survey participants' in Q25 somewhat to strongly agree that time limitations affect their choice to withhold TK from colleagues. Figure 17 discloses that a lack of trust influences 62.1% of survey participants decisions to refrain from sharing TK with their coworkers in Q26. Additionally, Figure 18 demonstrates that the degree of trust substantially affects the decision to share or withhold TK for 74.4% of the survey participants in Q29. Despite the openness to share

knowledge when asked in Figure 15, the data in Figures 16, 17, and 18 suggest that time and trust are critical factors influencing participants' willingness to share TK.

Comparative Analysis of RQ1 (Q11) and RQ3 (Q27). In Figure 19, 71.5% of survey participants indicated for Q11 that they occasionally to never withhold knowledge they are working with from coworkers until a suitable time. Conversely, Figure 20 shows 53.4% of survey participants ranging from somewhat to strongly agreeing that for Q27, they comprehend the power inherent in possessing and opting not to share TK.

Comparative Analysis of RQ1 (Q12) and RQ3 (Q27). Figure 21 shows that 78.9% of the survey participants for Q12 expressed reluctance to withhold documents from their coworkers to maintain control over knowledge. However, compared with Figure 20, already mentioned above, 53.4% of survey participants for Q27 are cognizant of the influence they wield by controlling access to documents and their knowledge. Interestingly, 19.3% of the participants neither agree nor disagree. This could suggest that the proportion of participants who might opt not to share their TK with coworkers could potentially be higher.

Comparative Analysis of RQ1 (Q13) and RQ3 (Q30 & Q31). Figure 22 reveals that in response to Q13, 73.3% of the survey participants seldom or never conceal innovative knowledge until reward opportunities arise. However, Figure 23, which represents the responses to Q30, indicates a contrasting view. It shows that 49.1% of the participants either disagree or strongly disagree with the statement that withholding TK has no advantage. Furthermore, an additional 19.3% somewhat disagree with this statement. This data suggests a discrepancy; while the majority of participants claim not

to withhold potentially beneficial TK until a recognition opportunity presents itself, a significant 68% acknowledge the value of retaining knowledge.

Figure 24 presents intriguing data: slightly more than half (57.9%) of the survey participants responded to Q31, indicating that they do not foresee negative consequences for choosing not to share TK with their coworkers. Meanwhile, 20% of the participants neither agree nor disagree about the potential negative repercussions, leaving the remaining 22.2% who believe there are indeed repercussions. Considering the responses to Q30 and Q31, it is highly probable that the participants are inclined to withhold knowledge until a moment arises when they can gain recognition.

Comparative Analysis of RQ1 (Q14) and RQ3 (Q28 & Q29). Figure 25 reveals that 79.6% of the survey participants, in response to Q14, either rarely or never opt to withhold knowledge, particularly TK, from their coworkers. However, a contrasting view emerges in Figure 26, representing responses to Q28. There, 36.8% of the participants somewhat to strongly agree that individuals possessing TK often choose not to share their knowledge with coworkers. This finding appears to contradict the responses to Q14 in Figure 25.

As previously discussed in Figure 18, Q29 explores the influence of trust levels between coworkers on the decision to share TK. Interestingly, 74.4% of survey participants indicated they would not share TK with coworkers if they felt a lack of trust. This finding presents a contradiction when compared to responses to Q14 in Figure 25, where the same participants claimed they do not withhold TK from their coworkers.

Implications

Three implications emerged from the survey study. The first implication pertained to the initial supporting survey questions addressing RQ1. The survey participants demonstrated familiarity with workplace behaviors such as KHi (Knowledge Hiding), KHo (Knowledge Hoarding), KS (Knowledge Sharing), EK (Explicit Knowledge), and TK (Tacit Knowledge) for Q1 – Q8. Wang (2022) deduced that in the high-stress and competitive climates of contemporary organizational work environments, CKB (Counterproductive Knowledge Behaviors) such as KHi and KHo are prevalent.

These behaviors are typically induced by work-related stress and a disconnect in moral values among coworkers (Wang, 2022). Although POT (Psychological Ownership Theory) is not the focus of the study, the textbook definition of how individuals develop ownership or control behaviors over knowledge, based on feelings of negativity, lack of purpose, or a loss of control in the workplace, was exhibited in the study related to KHi and KHo conduct (Tian et al., 2021).

The subsequent six questions (Q9 – Q14) explored whether participants would conceal or withhold TK from their coworkers. Most participants indicated they would only occasionally, rarely, or never engage in such behavior. However, a contradiction emerged in the responses to the supplementary questions (Q25 – Q32) for RQ3. Gubbins and Dooley (2021) emphasized the significance of comprehending the traits of individuals and groups and their interactions and responses to each other. The authors stated that these interactions could provide insight into whether TK sought flows from the owner to others, creating an opportunity for KS or influencing KHi.

The responses from the survey participants to questions Q25 – Q32 revealed that

they do withhold TK due to factors such as time constraints and trust issues. Individuals who exhibit BBT (Benevolence-Based Trust), which involves seeking information due to a lack of knowledge, and CoBT (Competence-Based Trust), similar to CBT (Cognition-Based Trust), enable the holder of TK to evaluate and share TK more readily, and not justify a shortage of time (Levin & Cross, 2004).

Survey participants also acknowledged that the possession and control of knowledge can motivate them to withhold TK, which is consistent with POT. Interestingly, the same survey participants contradict the notions of TK sharing expressed in their responses to supporting survey questions (Q9 – Q14) for RQ1. The survey participants indicated that there are benefits or a lack of consequences associated with not sharing TK, which starkly contrasts with their earlier responses.

The survey questions supporting RQ1 and RQ3 highlighted a contrast, suggesting that CKB is prevalent across various industries. There may be a lack of processes, procedures, or policies to educate and guide employees toward promoting TK sharing. Andreeva and Zappa (2023) posited that understanding the roles of females and males in an organization, often male-dominated, could influence the CKB discussed earlier and the culture of TK sharing. The authors suggested that females in an organizational hierarchy tend to be more conspicuous with knowledge than their male counterparts, who are likelier to exhibit KHi or KHo behaviors as legitimate attempts to conceal their knowledge. In future studies, exploring the dynamics of KHi, KHo, and TK sharing between female and male leaders could produce interesting outcomes. This is particularly relevant, as subordinates often emulate the behaviors of their supervisors. This absence could potentially lead to the demonstration of KHi or KHo behaviors in the workplace.

The second implication drawn from this study hinges on the feedback received from the supporting survey questions (Q17 – Q24) pertaining to RQ2. The survey revealed that participants were open to sharing EK and TK when solicited by a coworker or when a coworker initially reciprocated such knowledge sharing. Although the study does not explicitly examine participant data through the lens of SET (Social Exchange Theory), which encourages interpersonal exchanges between two entities, the trends identified in the survey responses superficially display behavior that aligns with this theory (Singh, 2019).

These exchanges often involve sharing information, knowledge, advice, ideas, suggestions, and expertise (Singh, 2019). The participant responses indicate that they recognize the potential benefits of timely TK sharing, such as enhancing their workplace stature or bolstering their credibility and acceptance among peers. The participant responses suggest that the participants had some level of understanding of EI (Emotional Intelligence) when deciding how they would respond to coworkers' requests for TK. They chose to share it even if they did not possess similar or higher abilities or credentials, demonstrating characteristics of self-awareness and empathy.

The survey participants refuted that withholding EK or TK served to gain rewards, bonuses, or competitive advantage. They also knew their coworkers and organizations know of their unique TK possession. This underscores that EI is a characteristic commonly observed in highly successful individuals (Goleman, 2004). He also stated that these individuals typically exhibit self-awareness, motivation, possess strong social skills, and demonstrate empathy towards others. The derived inference is that those possessing TK are amenable to sharing their knowledge when solicited.

However, this implies that members within an organization must initially be aware that an individual possesses TK, and it must be shared before it can be sought.

Perotti et al. (2022) proposed the concepts of KSC (Knowledge Sharing Collection) and KSD (Knowledge Sharing Donation) to enhance TK awareness among coworkers. KSC encourages coworkers to communicate and learn from each other willingly, while KSD emphasizes the need for an organization to capture, organize, and transfer the acquired knowledge. The aim is to make EK and TK accessible to others. Implementing of KSC and KSD could potentially boost TK sharing among coworkers and foster a positive knowledge sharing culture within the organization.

The final implication pertains to the supporting survey questions (Q33 – Q40) for RQ4, which explored the potential influence of trust behaviors on TK sharing. The initial three questions (Q33 – Q35) dealt with ABT (Ability-Based Trust). Here, survey participants expressed varying degrees of agreement, from somewhat to strongly, that they would share TK with coworkers who demonstrated abilities related to the knowledge sought, exhibited perceived credibility, or held a high standing within the organization. Gubbins and Dooley (2021) emphasized that a social network of coworkers bolsters ABT. They explained that individuals in the workplace actively seek TK holders, drawing on their collective experience, expertise, and reliable guidance.

Questions Q36 and Q37 employed BBT. Most survey participants concurred that they would share their TK with coworkers who might be lacking in knowledge, provided these coworkers demonstrated sincerity in their request. Additionally, TK holders would decide to share their knowledge after assessing the coworker's skill set and the genuineness of their request. Gubbins and Dooley (2021), and Levin and Cross (2004),

concur that the establishing BBT is a prerequisite for a TK exchange. They agreed that the initial step facilitates the exchange of knowledge and fosters the development of interpersonal relationships.

Questions Q38 and Q39 were based on CBT. For Q38, survey participants responded positively, indicating they would share TK if the coworker seeking knowledge were recognized as an SME (Subject Matter Expert). Survey participants likely perceive the SME as reliable due to their role within an organization (Chowdhury, 2005). Chowdhury also suggested that SMEs often possess professional credentials that distinguish them from their colleagues. However, for Q39, when asked if they would share their knowledge with coworkers who had exceptional credentials in the workplace, the response was largely favorable. Nonetheless, out of 285 respondents, 69 neither agreed nor disagreed. Chowdhury (2005) proposed an explanation for Q39, suggesting that Affect-Based Trust can supersede CBT in certain scenarios. This occurs when individuals form strong personal and emotional connections with their coworkers (Chowdhury, 2005).

The final question (Q40) centered on CoBT. Most of survey participants (225 out of 285) concurred that they would be comfortable sharing their TK with a coworker in the organization, provided this coworker was recognized as an SME capable of comprehending and managing the shared knowledge. Levin and Cross (2004) emphasized that both CoBT and BBT when used together, play a crucial role in establishing robust relationships and facilitating the sharing of valuable knowledge. Similar to the responses from RQ3, the survey participants in RQ4 demonstrated that knowledge holders will share their TK when there is sincerity and trust.

Limitations

There were three observed limitations of this study. The first limitation is that it concentrated on the comprehension and motivations of the survey participants to KHi (Knowledge Hiding), KHo (Knowledge Hoarding), KS (Knowledge Sharing), Explicit Knowledge (EK), and TK (Tacit Knowledge) behaviors. However, the survey study focused on coworkers, excluding supervisors, organizational leaders, organizational processes, procedures, or policies. Koay and Lim (2022) emphasized the importance of examining ethical leadership within an organization and understanding how charismatic, authentic, authoritative, responsible, or abusive leadership can influence how subordinates engage in KHi or KHo behavior. Including these elements could have offered additional insights into how the survey participants might have reacted to the CKB (Counterproductive Knowledge Behavior) mentioned earlier, along with their willingness to share EK and TK.

The second limitation is that a cross-sectional study yielded a diverse and balanced population for the survey. While the geographical diversity of the sample size was welcomed, previous research suggests that a larger participant count could have enhanced the accuracy and diversity of the responses (Banagou et al., 2021; Bari et al., 2020). However, a limitation of this approach is that the cross-sectional study only provided a single data point, which restricts the comprehensiveness of the results. Nguyen et al. (2022) highlighted that a longitudinal study is beneficial in tracking the behavioral changes of survey participants over time. This could have facilitated the posing of further questions to the survey participants based on the initial responses collected. Moreover, it could have broadened the study's scope to investigate the

influence of supervisors, organizational leaders, organizational processes, procedures, or policies related to CKB, EK, and TK sharing within an organization.

The third limitation is related to the planning phase of the survey study. The PI (Principal Investigator) opted for an anonymous survey approach. This decision was influenced by the nature of the research questions, which directly inquired whether the participants engaged in KHi and KHo behavior or refrained from sharing TK with their coworkers. Unexpectedly, about 18% (50 out of 285) of the participants contacted the PI post-survey. They wanted to discuss what they learned from the study, pose additional questions, and share their experiences related to CKB and TK sharing in their workplace. Reflecting on this, it would have been beneficial to include an option in the survey for participants to request a follow-up discussion with the PI. This could have facilitated more structured one-on-one conversations. This approach would have also nicely complemented a cross-sectional study.

Recommendations

The first recommendation suggests that future TK (Tacit Knowledge) hiding research should transition from cross-sectional to longitudinal studies. This survey comprised of 40 main questions, supplemented by seven additional demographic questions. To maintain the survey participants' focus, a decision was made to keep the survey reasonably concise. However, if there was an opportunity to collect responses at a second data point, the study could be expanded to understand better the influence of leadership, processes, and policies within an organization on behaviors related to KHi (Knowledge Hiding), KHo (Knowledge Hoarding), KS (Knowledge Sharing), Explicit Knowledge (EK), and TK.

The second recommendation is to implement validity checks at least at the beginning, middle, and end of the survey process to mitigate straightlining (Reuning & Plutzer, 2020). The PI (Principal Investigator) used various methods to advance the survey study among coworkers and colleagues. These included word-of-mouth, personal emails, and LinkedIn. Additionally, the PI capitalized on the individuals from the pilot study who shared the survey with their colleagues. An academic survey site, Prolific, was also utilized. Using Prolific, the sample size was increased from 150 to 368 survey participants. Reuning and Plutzer (2020) suggested including at least one reverse-coded survey question as a good validity check. This is particularly useful towards the middle and end of the survey, where fatigue may set in for participants when answering questions related to KHi, KHo, and TK.

The third recommendation pertains to conducting in-person surveys. As previously noted in the limitations, one-on-one surveys were not conducted due to the sensitive nature of the survey study topic. However, the PI recognized that offering this opportunity to survey participants could have been advantageous and well-received. A one-on-one discussion could enrich the survey study analysis, particularly concerning KHi, KHi, and TK sharing behaviors. Nonetheless, Fowler (2009) proposed that one-on-one surveys may entail higher costs in terms of time and training. This guarantee that the questions posed remain consistent across all study participants, ensuring uniform responses that can be effectively evaluated and analyzed.

The final recommendation involves conveying to organizational leadership the detrimental effects of KHi and KHo in the workplace. The survey study revealed that individuals in the workplace actively withhold knowledge due to various factors

previously discussed. While some KHi and KHo behaviors stem from individual performance, perceived competition among coworkers, and goal-oriented actions, these behaviors create missed opportunities for collaboration (Andreeva and Zappa, 2023). The authors suggest that fostering collaboration enhances trust among coworkers, facilitates more effective communication during problem-solving, and broadens the scope for creativity and innovation. These strategies diminish CKB and enhance opportunities for coworkers to share TK.

Summary

CKB (Counterproductive Knowledge Behavior), which encompasses KHi (Knowledge Hiding) and KHo (Knowledge Hoarding), is prevalent in various organizations across North America and Europe. The first of four research questions evaluated how familiar the survey participants were with the concepts of KHi and KHo in the workplace. It was learned that participants in these organizations are cognizant that their colleagues are capable of and often exhibit KHi and KHo behaviors. Interestingly while acknowledging the prevalence of CKB among their colleagues in RQ1, these same individuals asserted that they do not engage in such detrimental behaviors. However, the survey data contradicts this claim, revealing that these individuals also practice KHi and KHo behaviors when presented with different scenarios in RQ3.

In addition to the surprising responses from survey participants who claimed they did not demonstrate CKB, they were not only cognizant of EK (Explicit Knowledge) and TK (Tacit Knowledge) but also knew which coworkers held this knowledge. The second of four research questions explored what motivators led an individual to share TK with others in the workplace. An analysis of the survey participant responses revealed that

participants also regulated their TK, similar to KHi or KHo. Participants in the survey were more inclined to share their tacit knowledge (TK) when it was initially reciprocated. They were cognizant of the potential benefits of TK, including monetary gain, status elevation, acceptance, and gaining a competitive edge. The participants also recognized that their coworkers and leaders knew they possessed valuable and beneficial TK. However, they stressed that incentives such as rewards, bonuses, acknowledgments, or the possibility of securing a competitive advantage in the workplace did not deter them from sharing their TK.

The third research question of four investigated the behavioral traits that cause individuals to withhold TK and display KHi and KHo behaviors in the workplace. Time emerged as a recurring factor influencing the willingness of survey participants to share TK. Interestingly, it was also observed that individuals who possess TK often resist sharing it with others, recognizing the power that comes with knowledge possession and control. The participants rationalized their behavior with reasons such as lack of trust in others, perceived lack of personal advantage, and the absence of significant consequences for not sharing knowledge.

The last research question delved into the incentives that might promote the sharing of TK among colleagues within a professional setting. A crucial finding was the pivotal role of trust in the decision-making process related to TK sharing. Some participants preferred sharing their knowledge only with coworkers who demonstrated certain abilities, possessed Subject Matter Expertise (SME), or held specific professional qualifications. Interestingly, some TK holders expressed a willingness to share their

knowledge if they deemed the request from their colleague to be sincere, irrespective of the colleague's abilities.

The primary insight gained from this survey study is that mitigating CKB within an organization largely depends on coworkers' trust. It also significantly relies on establishing processes, procedures, and policies endorsed by the organization to foster TK sharing. While most survey participants recognize the advantages of EK and TK sharing, various factors such as personal conflicts, perception, and trust often lead to knowledge being withheld rather than shared. Cultivating an environment that promotes communication, openness, and trust among coworkers increases the likelihood of TK sharing within the organization.

Organizations must acknowledge and address CKB to cultivate a more conducive environment for knowledge sharing. By advocating for transparency, fostering open communication, and prioritizing the building of trust, organizations can lessen the effects of KHi and KHo behaviors. This, in turn, can significantly boost overall productivity and allow for more TK collaboration.

Appendices

Appendix A: Survey Questions

The following anonymous survey is part of a doctoral dissertation research, which will take approximately 5 to 10 minutes to complete. The doctoral dissertation research will focus on Knowledge Management, Tacit Knowledge, and Explicit Knowledge.

Knowledge Management is identifying, creating, using, sharing collective knowledge, organizing, storing, and disseminating relevant or critical information within an organization.

Tacit knowledge is information considered relevant and valuable, based on some experience or subject matter expertise, and is often an internalized process of an individual.

Explicit knowledge is information that is easily explained, has a clear objective, and often takes the form of traditional or digital documents or other media that can easily be transferred without obstructing geographical boundaries.

RQ1: Do individuals engage in knowledge hiding or knowledge hoarding behaviors based on motivators in the workplace?

1) How familiar are you with knowledge sharing in the workplace (RQ1/KS1)?

Very Unfamiliar	Unfamiliar	Somewhat Unfamiliar	Neither Familiar or Unfamiliar	Somewhat Familiar	Familiar	Very Familiar
○	○	○	○	○	○	○

2) How familiar are you with knowledge hiding in the workplace (RQ1/KHi1)?

Very Unfamiliar	Unfamiliar	Somewhat Unfamiliar	Neither Familiar or Unfamiliar	Somewhat Familiar	Familiar	Very Familiar
○	○	○	○	○	○	○

3) How familiar are you with knowledge hoarding in the workplace (RQ1/KHo1)?

Very Unfamiliar	Unfamiliar	Somewhat Unfamiliar	Neither Familiar or Unfamiliar	Somewhat Familiar	Familiar	Very Familiar
○	○	○	○	○	○	○

4) How aware are you of coworkers choosing not to share knowledge (RQ1/KS2)?

Very Aware	Unaware	Somewhat Unaware	Neither Aware or Unaware	Somewhat Aware	Aware	Very Aware
○	○	○	○	○	○	○

5) How aware are you of coworkers choosing to partially share knowledge (RQ1/KS3)?

Very Aware	Unaware	Somewhat Unaware	Neither Aware or Unaware	Somewhat Aware	Aware	Very Aware
○	○	○	○	○	○	○

6) Coworkers may withhold knowledge because they consider you a threat (RQ1/KHi2).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

7) Coworkers withhold knowledge from you because of personality differences (RQ1/KHi3).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

8) Coworkers withhold knowledge because they don't want you to succeed on a task or project (RQ1/KHi4).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

9) Have you ever refrained from sharing knowledge with a coworker due to personality differences (RQ1/KHi8)?

Never	Rarely (< than 10% of the time)	Occasionally (about 30% of the time)	Sometimes (about 50% of the time)	Frequently (about 70% of the time)	Usually (about 90% of the time)	Every time
○	○	○	○	○	○	○

10) When asked a question by a coworker, I respond to suit my needs or outcome (RQ1/KHi9).

Never	Rarely (< than 10% of the time)	Occasionally (about 30% of the time)	Sometimes (about 50% of the time)	Frequently (about 70% of the time)	Usually (about 90% of the time)	Every time
○	○	○	○	○	○	○

11) I keep what I am working on private from coworkers until an appropriate time (RQ1/KHo2).

Never	Rarely (< than 10% of the time)	Occasionally (about 30% of the time)	Sometimes (about 50% of the time)	Frequently (about 70% of the time)	Usually (about 90% of the time)	Every time
○	○	○	○	○	○	○

12) I keep documents and/or resources from coworkers to maintain control of knowledge (RQ1/KHo3).

Never	Rarely (< than 10% of the time)	Occasionally (about 30% of the time)	Sometimes (about 50% of the time)	Frequently (about 70% of the time)	Usually (about 90% of the time)	Every time
○	○	○	○	○	○	○

13) I keep innovative achievements to myself until I can receive recognition (RQ1/KHo4).

Never	Rarely (< than 10% of the time)	Occasionally (about 30% of the time)	Sometimes (about 50% of the time)	Frequently (about 70% of the time)	Usually (about 90% of the time)	Every time
○	○	○	○	○	○	○

14) I choose not to let coworkers know all that I know, even if it could help the coworkers or the organization (RQ1/KHo5).

Never	Rarely (< than 10% of the time)	Occasionally (about 30% of the time)	Sometimes (about 50% of the time)	Frequently (about 70% of the time)	Usually (about 90% of the time)	Every time
○	○	○	○	○	○	○

RQ2: What motivators lead an individual to share tacit knowledge with others in the workplace?

15) I share explicit knowledge when requested (RQ2/EK1).
(Explicit knowledge is information that is easily explained, has a clear objective, and often takes the form of traditional or digital documents or other media forms)

Never	Rarely (< than 10% of the time)	Occasionally (about 30% of the time)	Sometimes (about 50% of the time)	Frequently (about 70% of the time)	Usually (about 90% of the time)	Every time
○	○	○	○	○	○	○

16) I share tacit knowledge when requested (RQ2/TK1).
(Tacit knowledge is hard to explain information considered relevant, and valuable, based on some experience or subject matter expertise, and is often an internalized process of an individual)

Never	Rarely (< than 10% of the time)	Occasionally (about 30% of the time)	Sometimes (about 50% of the time)	Frequently (about 70% of the time)	Usually (about 90% of the time)	Every time
○	○	○	○	○	○	○

17) I share tacit knowledge with coworkers when it is reciprocated (RQ2/TK2).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

18) I would help coworkers tackle their issues in the workplace using my tacit knowledge if compensated through rewards, bonuses, or acknowledgments (RQ2/TK3).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

19) Sharing explicit knowledge will elevate my status within the workplace (RQ2/EK2).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

20) Sharing tacit knowledge will elevate my status within the workplace (RQ2/TK4).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

21) Sharing tacit knowledge will gain me more acceptance among coworkers (RQ2/TK5).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

22) Sharing explicit knowledge increases my competitive advantage in the workplace (RQ2/EK3).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

23) Leadership knows I possess tacit knowledge useful for solving problem (RQ2/TK6).

Very Aware	Unaware	Somewhat Unaware	Neither Aware or Unaware	Somewhat Aware	Aware	Very Aware
○	○	○	○	○	○	○

24) Coworkers know I possess tacit knowledge useful for solving problems (RQ2/TK7).

Very Aware	Unaware	Somewhat Unaware	Neither Aware or Unaware	Somewhat Aware	Aware	Very Aware
○	○	○	○	○	○	○

RQ3: Which behavioral characteristics influence an individual's decision to exhibit behaviors of knowledge hiding, knowledge hoarding, or to not share tacit knowledge?

25) Time is a factor when choosing not to share tacit knowledge with coworkers (RQ3/KS1).
(Tacit knowledge is hard to explain information considered relevant, and valuable, based on some experience or subject matter expertise, and is often an internalized process of an individual)

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

26) A lack of trust in coworkers is a factor when choosing not to share tacit knowledge (RQ3/KS2).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

27) Understanding the power of knowledge is a factor when choosing not to share tacit knowledge with coworkers (RQ3/KS3).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

28) Individuals who possess tacit knowledge choose not to share the knowledge with coworkers (RQ3/KS4).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

29) Trust of coworkers is a factor when choosing not to share tacit knowledge (RQ3/KS5).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

30) There is not an advantage in sharing tacit knowledge with coworkers (RQ3/KS6).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

31) There are no negative consequences for not sharing tacit knowledge with coworkers (RQ3/KS7).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

32) When choosing not to share tacit knowledge, a feeling of importance or attention is a factor (RQ3/KS8).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

RQ4: Which motivators of trust facilitate tacit knowledge sharing?

33) I share relevant tacit knowledge with coworkers based on their abilities in the workplace (RQ4/TK1, RQ4/ABT1).
(Tacit knowledge is hard to explain information considered relevant, and valuable, based on some experience or subject matter expertise, and is often an internalized process of an individual)

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

34) I share relevant tacit knowledge with coworkers who are perceived as being credible in the workplace (RQ4/TK2, RQ4/ABT2).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

35) I share relevant tacit knowledge with coworkers who have high standing in the workplace (RQ4/TK3, RQ4/ABT3).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

36) I share relevant tacit knowledge with coworkers who lack knowledge but are sincere in their request (RQ4/TK4, RQ4/BBT1).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

37) I show goodwill in sharing relevant tacit knowledge with coworkers after evaluating their sincerity and potential skillsets (RQ5/TK4, RQ4/BBT2).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

38) I share relevant tacit knowledge with coworkers who possess subject matter expertise in the workplace (RQ4/TK5, RQ6/CBT1).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

39) I share relevant tacit knowledge with coworkers who possess exceptional credentials in the workplace (RQ4/TK5, RQ7/CBT2).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

40) I share relevant tacit knowledge with coworkers who are perceived as subject matter experts qualified to share tacit knowledge (RQ4/TK8, RQ4/CoBT1).

Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree	Strongly Agree
○	○	○	○	○	○	○

Appendix B: Demographic Questions

1) What gender do you identify as?

Male	Female	Transgender	Non-binary/Non-conforming	Prefer not to say
○	○	○	○	○

2) What is your age group?

18–25	26–33	34-41	42–49	50-57	58-65	66 +	Prefer not to say
○	○	○	○	○	○	○	○

3) What is your ethnicity?

African American	○
Asian	○
Caucasian	○
European	○
Latino or Hispanic	○
Native American	○
Native Hawaiian or Pacific Islander	○
Other/Unknown	○
Prefer not to say	○

4) Where is your home located?

Africa	○
Asia	○
Australia	○
Caribbean Islands	○
Central America	○
Europe	○
North America	○
Pacific Islands	○
South America	○
Other	○
Prefer not to say	○

5) Education?

Some High School	○
High School	○
Bachelor's Degree	○
Master's Degree	○
Ph.D. or higher	○
Trade School	○
Prefer not to say	○

6) Work Experience?

Less than 1 Year	○
1 – 5 Years	○
6 – 10 Years	○
11 – 20 Years	○
20 + Years	○
Prefer not to say	○

7) Work Industry?

Architecture	○
Arts & Design	○
Business & Finance	○
Education & Training	○
Engineering	○
Entertainment & Sports	○
Healthcare	○
Information Technology	○
Legal	○
Management	○
Office & Administrative	○
Physical & Social Science	○
Protective Service	○
Sales	○
Transportation	○
Prefer not to say	○

Appendix C: IRB Exempt Initial Approval Memo

NSU Florida
NOVA SOUTHEASTERN UNIVERSITY

INSTITUTIONAL REVIEW BOARD
3301 College Avenue
Fort Lauderdale, Florida 33314-7796
PHONE: (954) 262-5369

MEMORANDUM

To: Darren Wiggins
College of Engineering and Computing

From: Ling Wang, Ph.D.
College Representative, College of Engineering and Computing

Date: March 29, 2023

Subject: IRB Exempt Initial Approval Memo

TITLE: Understanding the Role of Tacit and Explicit Knowledge Hiding in Organizations– NSU IRB Protocol Number 2023-172

Dear Principal Investigator,

Your submission has been reviewed and Exempted by your IRB College Representative or their Alternate on **March 29, 2023**. You may proceed with your study.

NOTE: Exempt studies do not require approval stamped documents. If your study site requires stamped copies of consent forms, recruiting materials, etc., contact the IRB Office.

Level of Review: Exempt

Type of Approval: Initial Approval

Exempt Review Category: Exempt 2: Interviews, surveys, focus groups, observations of public behavior, and other similar methodologies

Annual Status of Research Update: You are required to notify the IRB Office annually if your research study is still ongoing via the *Exempt Research Status Update xForm.*

Changes: Any changes in the study (e.g., procedures, consent forms, investigators, etc.) must be approved by the IRB prior to implementation using the *Amendment xForm*.

NSU Florida
NOVA SOUTHEASTERN UNIVERSITY

INSTITUTIONAL REVIEW BOARD
3301 College Avenue
Fort Lauderdale, Florida 33314-7796
PHONE: (954) 262-5369

Post-Approval Monitoring: The IRB Office conducts post-approval review and monitoring of all studies involving human participants under the purview of the NSU IRB. The Post-Approval Monitor may randomly select any active study for a Not-for-Cause Evaluation.

Final Report: You are required to notify the IRB Office within 30 days of the conclusion of the research that the study has ended using the *Exempt Research Status Update xForm*.

Translated Documents: No

Retain this document in your IRB correspondence file.

CC: Ling Wang, Ph.D.

Ling Wang, Ph.D.

Appendix D: Supporting Survey Question Graphs for RQ1

Figure 22

RQ1: Q1

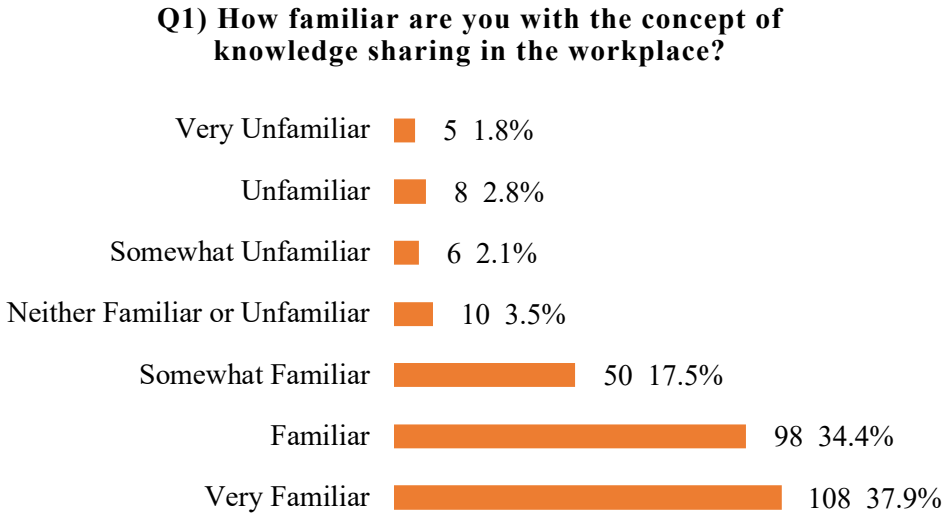


Figure 23

RQ1: Q2

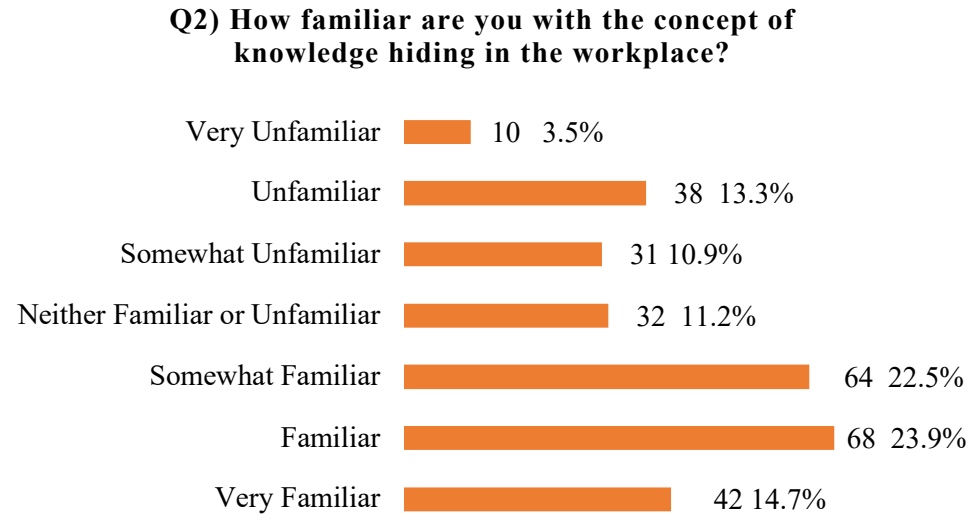


Figure 24

RQ1: Q3

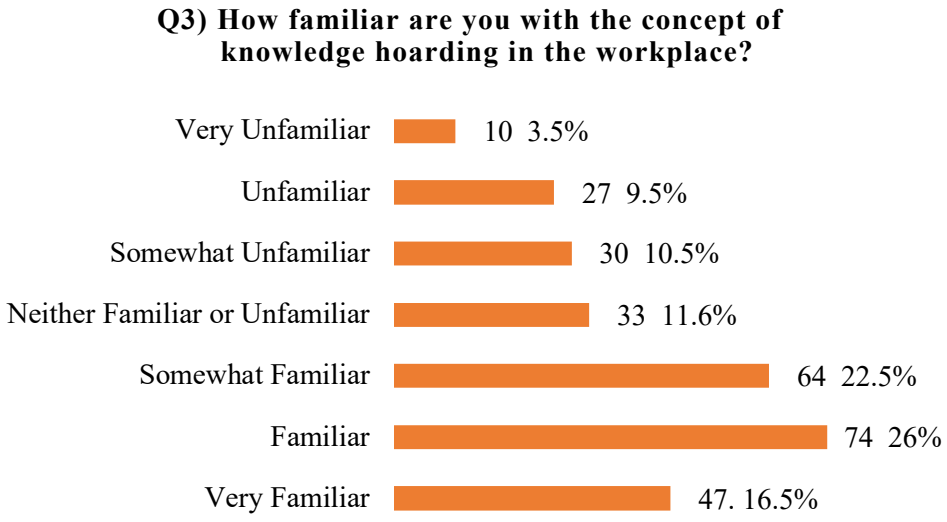


Figure 25

RQ1: Q4

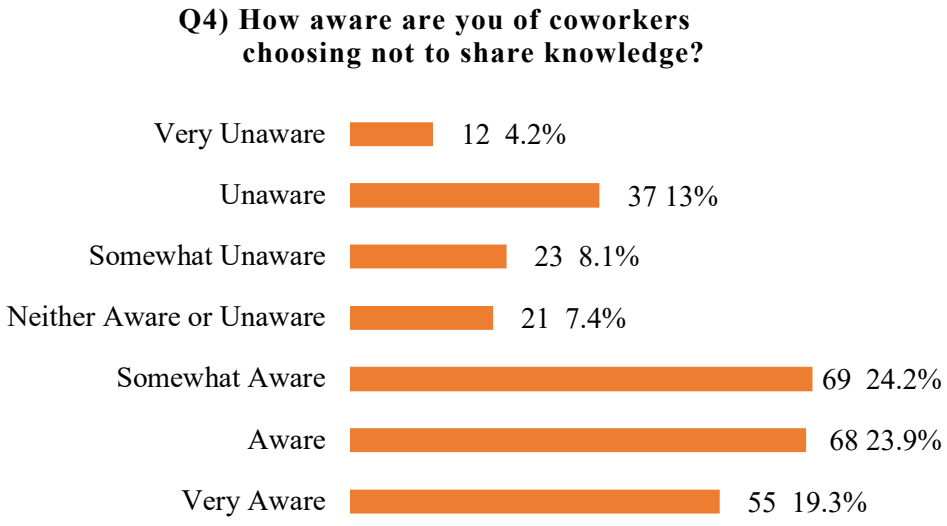


Figure 26

RQ1: Q5

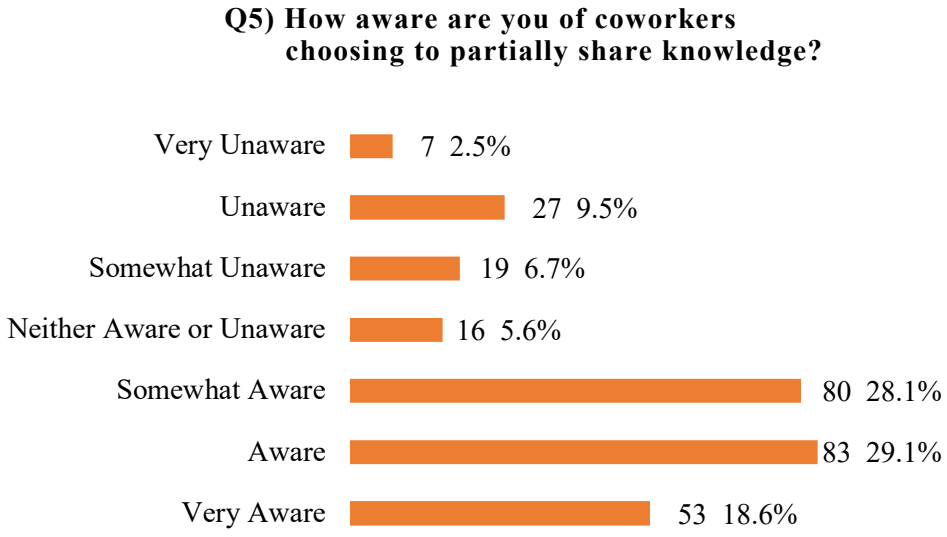


Figure 27

RQ1: Q6

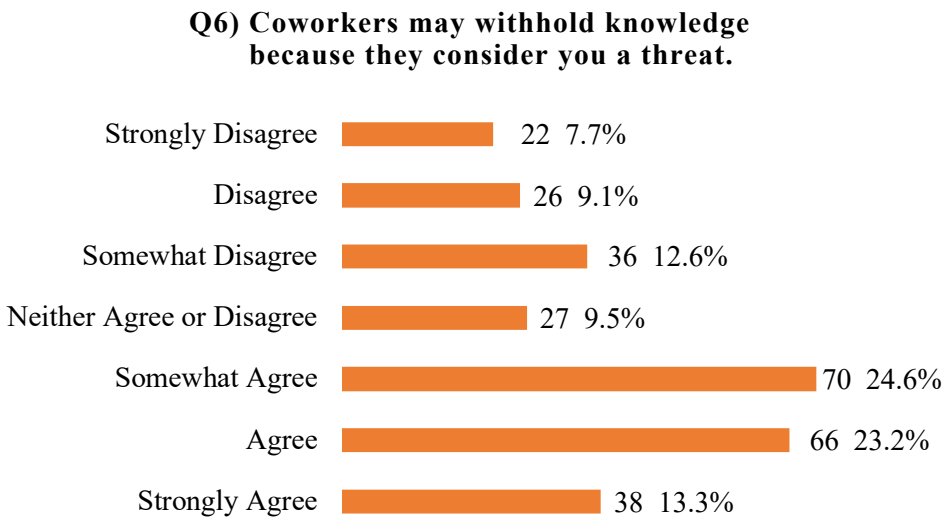


Figure 28

RQ1: Q7

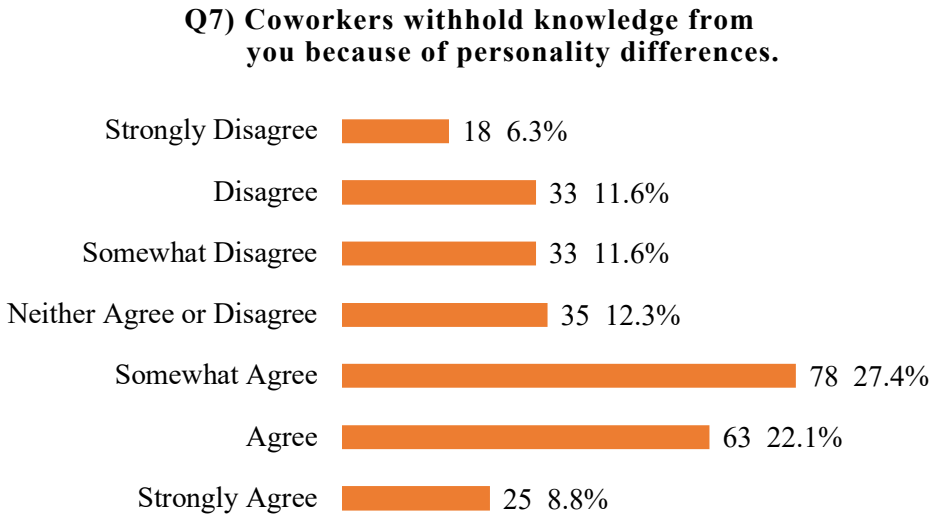
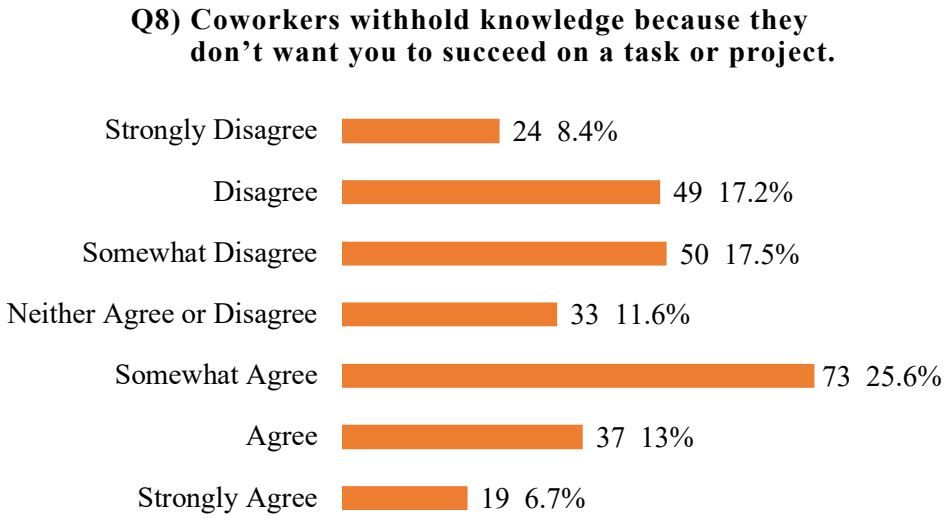


Figure 29

RQ1: Q8



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