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Knowledge Sharing Intentions in Wholesale Distribution Organizations

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2016

Abstract

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MBA, Walden University, 2007

BS, Walden University, 2006

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Millions of American employees are eligible to retire through 2026, which may contribute to lowered organizational performance stemming from the resultant void in knowledge. Increasing knowledge sharing (KS) among organizational members may improve employee efficiency and company performance, and therefore may be of value to wholesale distribution leaders. Although researchers have suggested that sense of self-worth, subjective norms, and attitudes influence employees' inclinations to share knowledge, researchers have not analyzed the relationships between a subset of predictor variables and KS intentions in wholesale distribution organizations. The purpose of this correlational study, grounded in the theory of planned behavior, was to assess the relationship between employees' sense of self-worth, subjective norms, attitudes, and personal intentions to share knowledge with other organizational members. A purposive sample of 82 employees from Northeastern United States wholesale distribution organizations involved in enterprise resource planning implementations completed a survey to examine the propensity for KS. The analysis of the data using multiple linear regression indicated the model was adequate to predict employees' KS intentions. The results of the study further indicated that subjective norms and attitudes were significantly related to personal inclinations to share knowledge. These findings may hold positive social change implications as astute knowledge management can provide for greater employee job security and a more financially secure community. These findings may also be of value to leaders in proactively implementing KS strategies of retiring and other employees in the quest for continued business growth and performance.

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Section 1: Foundation of the Study

Knowledge sharing (KS), considered a subset of knowledge management (KM), has been shown to influence organizational outcomes such as performance, turnover, innovativeness, and competitiveness (Bracci & Vagnoni, 2011; Daghfous, Belkhodja, & Angell, 2013; Lin & Joe, 2012; Reychav & Weisberg, 2010; Vij & Farooq, 2014). KM encompasses the strategy, creation, and administration of an environment where leaders encourage creating, learning, organizing, and sharing knowledge for the benefit of other organizational members (Kale & Karaman, 2012). KS includes the exchange of information, ideas, experiences, and best practices between two or more employees in order to create new knowledge (Wu, Yeh, & Hung, 2012). Organizational leaders may benefit from KS; however, some struggle to find methods to facilitate transferring tacit and explicit knowledge among employees (Hoof, Schouten, & Simonovski, 2012; Lin & Joe, 2012).

Leaders should encourage KS within project management because employees can access saved project information for the benefit of future projects, thereby increasing efficiencies (Santos, Soares, & Carvalho, 2012). KM and KS could even increase project success; however, project managers and organizational leaders often do not prioritize KM (Hanisch, Lindner, Mueller, & Wald, 2009; Santos et al., 2012). To understand why organizational leaders may struggle with KS, I examined the relationship between employees' sense of self-worth, subjective norms, attitudes, and personal intentions to share knowledge with other employees. Participants in the study included employees

within distribution organizations involved in enterprise resource planning (ERP) software implementations.

Background of the Problem

A goal of KS is transforming tacit knowledge into explicit knowledge (Hoof et al., 2012; Suppiah & Manjit, 2011). Tacit knowledge includes skills, insights, intuition, expertise, routine knowledge, and practical knowledge that employees retain and have not yet converted to explicit or documented knowledge (Okyere-Kwakye & Nor, 2011; Polayni, 1966). Further, tacit KS emerges when employees share lived experiences, best practices, and knowledge with other organizational members, which sometimes results in creative and innovative ideas (Franssila, 2013; Subashini, 2010). Employees may be reluctant to share knowledge because of organizational culture norms, lack of trust, poor management support, absence of reciprocity, or fear of losing power (Gagné, 2009; Jennings, 2011; Sharma, Singh, & Neha, 2012; Suppiah & Manjit, 2011). KS may be valuable to employees in identifying efficient work procedures, finding information quickly, and reducing time investments for employees to learn new things (Reychav & Weisberg, 2010).

Improving KS activities and leveraging intellectual organizational assets could promote employee innovation and efficiencies, subsequently yielding organizational sustainability (Ren-Zon & Gwo-Guang, 2011; Tsai, Chang, Cheng, & Lien, 2013). Through deploying KS activities, organizational and project leaders may overcome challenges of retiring employees, escalating costs, reducing budgets, increasing project pressures, and finding ways to become progressively efficient and productive (Gasik,

2011). With up to 24% of projects canceled before completion and organizational leaders struggling with project failure, integrating KS may yield favorable results, leading to innovation, competitive advantage, and project attainment (Cockrell, Robinson, & Stone, 2013; Hanisch et al., 2009; Susser, 2012).

Some project and organizational leaders have limited the integration of KM concepts within project management based on lack of recognition for the value of sharing knowledge between projects (Almeida & Soares, 2014; Hanisch et al., 2009; Naftanaila, 2011; Santos et al., 2012). KS within projects includes information and requirements to execute the tasks of a project (Santos et al., 2012). Knowledge could be lost after project completion if not shared, resulting in lost best practices, increased costs, and unnecessary resource usage for future projects (Santos et al., 2012).

Few research studies included quantifiable data about the intention of employees to share knowledge in relation to managerial support or subjective norms for KS (Holste & Fields, 2010; Reychav & Weisberg, 2010; Wang & Noe, 2010). For the study, I examined to what extent, if any, a relationship existed between employees' sense of self-worth, subjective norms, attitudes, and personal inclinations to share knowledge with other organizational members. Participants for the study included employees of wholesale distribution organizations involved in ERP software implementations. Organizational leaders could gain an understanding of employees' intentions and attitudes toward KS from the correlational study results, which may have yielded insights about the importance of integrating KS activities into organizations.

Problem Statement

Retiring employees may leave a knowledge gap within an organization (Durst & Wilhelm, 2013; Lopez & Sune, 2013). Although an estimated 75 million Americans are eligible to retire between 2008 and 2026 (Martin, Rose, & Beach, 2012), many organizational leaders struggle to capture knowledge because barriers such as employees' sense of self-worth, subjective norms, and attitudes may influence reluctance to share knowledge (Amayah, 2013; Sharma et al., 2012; Tsai et al., 2013). The general business problem is the lack of KS among employees often results in loss of knowledge and productivity in wholesale distribution organizations (Amayah, 2013; Bracci & Vagnoni, 2011; Lin & Joe, 2012). The specific business problem is some wholesale distribution managers do not know the relationship between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge with other employees (Boh & Wong, 2013; Wu & Lin, 2013; Zhang & Ng, 2012).

Purpose Statement

The purpose of the quantitative correlational study was to examine the relationship between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge with other organizational members. The independent variables for the study were sense of self-worth, subjective norms, and attitudes. The dependent variable was employees' intention to share knowledge. The participants included employees of wholesale distribution organizations in the Northeastern United States involved in ERP implementations. I surveyed this population because employees

involved in an ERP implementation would likely represent organizational members with knowledge about project management.

The study results may contribute to positive social change by increasing productivity and reducing gaps in knowledge left by departing employees, thereby enhancing social and economic value within the organizations sphere of operations and influence. Distribution leaders may effect change by implementing new strategies to improve employees' intentions to share knowledge with other organizational members. KS is significant in providing value to organizations in which managers can apply knowledge to make business decisions, respond quickly to change, and remain competitive (Jennings, 2011). For project managers, KS support facilitates sharing knowledge across projects, thereby maintaining project knowledge such as best practices, which may improve project success (Santos et al., 2012).

Nature of the Study

The study included the use of a quantitative correlational research method and design to examine the relationships between employees' sense of self-worth, subjective norms, attitudes, and personal inclinations to share knowledge. Quantitative research was more appropriate than a qualitative method because the aim was not to understand participants' emotions, reactions, or personal experiences to a phenomenon (Arghode, 2012; Kumar, 2011; Leedy & Ormrod, 2013). I also ruled out a mixed-methods approach because it was not necessary to triangulate data, generate hypotheses, expand on research tools, or combine qualitative and quantitative methods (Leedy & Ormrod, 2013; Venkatesh, Brown, & Bala, 2013). The study included a 5-point Likert-type scale survey

and multiple linear regression to address the research hypothesis. Multiple linear regression was used to examine the degrees of relationships between independent and dependent variables, thus reflective of a correlational quantitative method (Arghode, 2012; Fowler, 2009; Leedy & Ormrod, 2013; Nimon & Oswald, 2013).

For the study, I used an Internet-administered and adapted survey with a design that allowed participants to respond to a series of 5-point Likert-type scale statements along with qualification and demographic questions (see Appendix A). Multiple linear regression was the technique used to analyze the survey output data to test degrees of relationships between a set of independent variables (sense of self-worth, subjective norms, and attitudes) and a dependent variable (intention to share knowledge).

A quantitative experimental study may not have aligned with study objectives. Quantitative experimental researchers seek to identify cause-and-effect relationships between independent and dependent variables by providing an intervention to a treatment group and withhold the intervention from a control group to determine how both groups score on an outcome (Kumar, 2011; Leedy & Ormrod, 2013). For the experimental design to work, researchers need to assign participants randomly to the treatment and control groups, and collect data on participants prior to and after the treatment to determine whether the treatment had a casual effect (Leedy & Ormrod, 2013). Because I did not seek to determine how a treatment influenced an outcome, an experimental design did not align with the study.

I also considered, but ruled out, a phenomenological design. Researchers use a phenomenological design to gather data through structured or unstructured interviews to

identify the essence of lived human experiences and perceptions of phenomena (Arghode, 2012; Kumar, 2011; Leedy & Ormrod, 2013). Researchers then analyze the interviews through a coding method to determine common themes and divergent perspectives about phenomena (Arghode, 2012). Researchers also use a phenomenological design to gain knowledge of occurrences where small amounts or gaps of empirical knowledge might exist, whereas a correlational study involves an examination of relationships between variables from existing theory through surveying larger populations (Arghode, 2012; Leedy & Ormrod, 2013). I relied on existing theory about KS and KM for the study and utilized a standardized instrument to survey a larger population; therefore, a phenomenological design was unsuitable.

Besides the correlational, experimental, and phenomenological research methods, I also ruled out a case study design. The primary objective for using a case study methodology is conducting an in-depth contextual analysis of a limited number of events or conditions and relationships through the collection of detailed information about individuals or groups using multiple data collection methods such as documents, observations, and interviews (Lilleoere & Hansen, 2011). Researchers use a case study to learn about organizational cultures, processes, activities, programs, or interactions of multiple individuals, and identify overarching models or theories to characterize the groups (Lilleoere & Hansen, 2011). Findings from case studies may have limited generalizability to a population because of small sample sizes (Lilleoere & Hansen, 2011). Because the study objectives were not to understand the context of KS and KM in organizational life, rather to examine the specific relations between variables, a case

study was unsuitable. A quantitative correlational design was the appropriate research method for examining relationships between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge. With the purpose of the correlational study in mind, research questions are integral for guiding related activities.

Research Question

The purpose of the study was to gain an understanding of how different factors relate to employees' KS intentions. The following research question guided the study:

What is the relationship between employees' sense of self-worth, subjective norms, attitudes, and the intentions of employees' to share knowledge with other employees?

Hypothesis

The results from hypothesis testing aided in answering the research question. For the study, I tested the following hypothesis:

Null Hypothesis (H_0): There is no statistically significant correlation between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge.

Alternative Hypothesis (H_1): There is a statistically significant correlation between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge.

Survey Questions

J. I. DeGross, a manager from *MIS Quarterly*, granted permission (see Appendix B) to adapt a survey created by Bock, Zmud, Kim, and Lee (2005) for the study. The

Bock et al. survey included questions pertaining to sense of self-worth, subjective norms, attitudes, and intentions to share knowledge. The survey consisted of two qualification and two demographic questions. The survey also included 21 five-point Likert-type scale statements based on a range from very rarely to very frequently, or extremely unlikely to extremely likely (see Appendix A).

Sense of Self-Worth Scale

1. My knowledge sharing helps other members in the organization solve problems.
2. My knowledge sharing creates new business opportunities for the organization.
3. My knowledge sharing improves work processes in the organization.
4. My knowledge sharing increases productivity in the organization.
5. My knowledge sharing helps the organization achieve its performance objectives.

Attitude Toward KS Scale

6. My knowledge sharing with other organizational members is good.
7. My knowledge sharing with other organizational members is harmful.
8. My knowledge sharing with other organizational members is an enjoyable experience.
9. My knowledge sharing with other organizational members is valuable to me.
10. My knowledge sharing with other organizational members is a wise move.

Subjective Norm Scale

11. My CEO thinks that I should share my knowledge with other members in the organization.
12. My boss thinks that I should share my knowledge with other members in the organization.
13. My colleagues think that I should share my knowledge with other members in the organization.
14. Generally speaking, I try to follow the CEO's policy and intention.
15. Generally speaking, I accept and carry out my boss's decision even though it is different from mine.
16. Generally speaking, I respect and put in practice my organization's decision.

Intention to Share Scale

17. I will share my work reports and official documents with members of my organization more frequently in the future.
18. I will always provide my manuals, methodologies, and models for members of my organization.
19. I intend to share my experience of know-how from work with other organizational members more frequently in the future.
20. I will always provide my know-how or know-whom at the request of other organizational members.

21. I will try to share my expertise from my education or training with other organizational members in a more effective way.

Theoretical Framework

The theory of planned behavior (TPB), founded by Ajzen (1991) served as the theoretical point of reference to underpin the study. Ajzen developed the TPB to capture motivational factors toward behavior through interpreting characteristics such as attitude, intentions, perceived behavior controls, and subjective norms (Ajzen, 1991). The author of the TPB suggested that actions and behaviors reliably follow employees' intentions; therefore, KS actions would reliability follow KS intentions (Krok, 2013; Lin & Joe, 2012; Witherspoon, Bergner, Cockrell, & Stone, 2013). To determine whether an employee would complete a certain behavior, researchers analyze factors related to attitude, subjective norms, and behavior controls to understand whether the employee has the intention to perform the behavior (Ajzen, 1991; Krok, 2013).

The characteristic of attitude includes the degree to which an employee may determine whether the behavior is favorable (Ajzen, 1991). Behavior controls include the required abilities, resources, and opportunities to participate in the behavior (Gagné, 2009; Krok, 2013). Subjective norms include the perception of social pressure and acceptance received when choosing to perform the behavior (Gagné, 2009; Krok, 2013).

The TPB is an extension of the theory of reasoned action (TRA; Reychav & Weisberg, 2010). The authors of the TRA, Icek Azjen and Martin Fishbein, focused on how attitudes and subjective norms influenced employees' intentions to engage in a certain behavior (Ajzen, 1991; Reychav & Weisberg, 2010). The TPB and TRA have

been commonly used to study KS behavior because leaders who succeeded in developing knowledge advantages also gained a sustainable advantage over competitors (Krok, 2013; Reychav & Weisberg, 2010; Witherspoon et al., 2013). Researchers can apply TPB in the study of KS because the theorists considered psychological elements such as willingness and ability for employees to share information (Ajzen, 1991; Krok, 2013; Lin & Joe, 2012). I chose the TPB for the study to understand relationships between sense of self-worth, subjective norms, attitudes, and KS intentions. The TPB aligns with each of the constructs as actions and behaviors reliably follow employees' intentions (Krok, 2013; Lin & Joe, 2012; Witherspoon et al., 2013).

Definition of Terms

Operational terms relevant to KS were integral to guiding the study. Several terms used in the study may have different applications or convey different meanings to readers; a definition is appropriate for each:

Explicit knowledge. Explicit knowledge is information that employees can easily express as codes or symbols and is readily documented, communicated, transmitted, or stored (Subashini, 2010; Suppiah & Manjit, 2011).

Knowledge management. Knowledge management includes the strategy, creation, and administration of an environment that encourages creating, learning, organizing, and sharing knowledge for the benefit of an organization (Kale & Karaman, 2012).

Knowledge sharing. Knowledge sharing is the exchange of useful information, ideas, experiences, and best practices (tacit knowledge) between two or more employees to create new explicit knowledge (Wu et al., 2012).

Tacit knowledge. Tacit knowledge is information not easily transferred to other employees for future retrieval such as insights, ideas, or hunches (Lindenbolm & Tikkanen, 2010).

Assumptions, Limitations, and Delimitations

The following sections include definitions and descriptions related to the assumptions, limitations, and delimitations that guided the research study. Assumptions include suppositions believed to be true but not verified (Leedy & Ormrod, 2013). Limitations are an additional research concern comprising of restrictions outside of a researcher's control (Fowler, 2009; Kumar, 2011). Delimitations are boundaries or parameters of a research study (Kumar, 2011).

Assumptions

The first assumption was that organizational leaders value knowledge differently and use unique methods of capturing employees' knowledge. An additional assumption was participants may contrarily value KS and have contending perceptions of how KS may benefit the organization. An additional assumption was organizational leaders who implemented an ERP software system were representative of organization members with knowledge about project management. I also assumed that survey participants would answer questions honestly. The last assumption was the suggested data collection process and sample selections were appropriate for the study, ensuring the responses contribute meaningful results.

Limitations

For the research study, I included only participants from wholesale distribution organizations located in the Northeastern United States, where leaders have deployed or are currently implementing an ERP software system; thus, the results of the study may not represent the overall population of organizations. An additional limitation was by surveying only participants from the Northeastern United States, the results may not sufficiently represent complexities in global organizations. The study may also have limitations, as participants were restricted to organizational leaders granting permission to survey employees. An additional limitation was the survey research method prevented participants from asking clarifying questions for survey items not understood, and the method did not allow for additional questions based on the participants' survey responses (Fowler, 2009; Kumar, 2011; Leedy & Ormrod, 2013). During survey completion, any incomplete responses by participants were unusable and excluded from the analysis. The last limitation was that, although I sought to understand the relationship of KS intentions to multiple independent variables, the correlational design precludes causality inferences (Kumar, 2011; Leedy & Ormrod, 2013).

Delimitations

The scope of the study included an analysis to understand how different variables (self-worth, subjective norms, and attitudes) may influence employees' KS intentions. Participants included employees of wholesale distribution organizations located in the Northeastern United States involved in ERP system implementations. The participants did not include government employees or employees who were not part of the training for

the ERP software. Only distribution employees notified through electronic communication participated.

Significance of the Study

The significance of the study includes reasons for how the study results may benefit organizational leaders to make decisions for organizational and community improvements. I designed the study to offer significant value to organizational leaders who introduce KM strategies and to fill gaps in the existing literature related to KS. In a successful KM environment, leaders encourage the creation, sharing, learning, and organization of knowledge (Kale & Karaman, 2012). The study may be of value to business leaders as the results could provide insights to organizational leaders regarding employees' KS intentions; as shared knowledge could enhance processes and employee productivity (Bracci & Vagnoni, 2011; Daghfous et al., 2013; Kumaraswamy & Chitale, 2012; Vij & Farooq, 2014).

Contribution to Business Practice

The study results may contribute to improved business practice by increasing organizational competitiveness and employee productivity (Amayah, 2013; Bracci & Vagnoni, 2011). KS remains a struggle for organizational leaders because of low managerial or employee support, poor organizational fit, and inability to implement KS practices (Durst & Gueldenberg, 2013). Organizational leaders within wholesale distribution organizations may benefit from the study results by gaining information on how manager support and other organizational factors relate to employees' intentions to share knowledge (Bracci & Vagnoni, 2011). Leaders should include KS strategies within

organizations because knowledge and productivity losses may occur when employees resign or retire (Amayah, 2013; Bracci & Vagnoni, 2011; Lin & Joe, 2012). Leaders may promote KM principles to encourage a more successful, effective, and talented work environment, thereby enhancing economic and social value within the organizations sphere of operations and influence.

Implications for Social Change

From the study results, distribution leaders may influence positive social change by implementing new strategies to improve employees' intentions to share knowledge with other organizational members. If leaders promote KS, the effects may provide positive results yielding improved competitiveness, productivity, and the well-being of communities. KS success depends on employees' abilities and willingness to learn and share knowledge, which may lead to broad implications for how KS may benefit organizational success, sustainability, and competitiveness (Bracci & Vagnoni, 2011; Lin & Joe, 2012). By increasing awareness of how KS can affect organization performance, leaders may experience a sense of urgency to capitalize on knowledge and plan for retirements and turnover so that replacement employees may become increasingly efficient. By implementing KM strategies, existing and new employees may also become increasingly productive, thereby enhancing social value within the domain of the organizations influence (Lin & Joe, 2012).

A Review of the Professional and Academic Literature

The purpose of the quantitative, correlational design study was to examine the relationships between employees' sense of self-worth, subjective norms, attitudes, and

intentions to share knowledge. In the following literature review, I aligned concepts from professional and academic literature in respect to the research problem, research method, theoretical framework, and associated components around KS. The literature review includes a critical analysis and synthesis of the literature obtained from the Walden University Library, including a review of books, journals, and dissertations from the Business Source Complete, Emerald Management Journals, and ABI/INFORMS complete databases. Primary search terms included *KS, TPB, project management KS*, *project management KM, tacit knowledge*, *knowledge loss*, and *information knowledge.* Results were narrowed based on these criteria: peer reviewed, dated 2011 or newer, and relevant to TPB and the research question. The review includes literature from more than 100 resources; 86% were from within the previous 5 years (2011-2015), and 93% were peer reviewed. The literature review includes subsections where I have elaborated further on the TPB, other contrasting theories, tacit and explicit knowledge, KM and KS, and barriers to KS. The literature review also includes information on knowledge loss and the relationship between KS and project management. TPB, barriers, and factors influencing KS relate back to the study hypothesis.

Theories Related to Employees' Intentions

Researchers commonly used the TRA and TPB with the goal of understanding individuals' behaviors and intentions (Al Qeisi & Al Zagheer, 2015; Krok, 2013; Reychav & Weisberg, 2010; Tsai, Chen, Chien, 2012; Teh & Yong, 2011; Witherspoon, et al., 2013). Models and frameworks such as TRA and TPB have been used in studying KS behavior to determine intentions of employees to share knowledge (Ajzen, Joyce,

Sheikh, & Cote, 2011; Bock et al., 2005; Krok, 2013; Lin & Huang, 2013; Reychav & Weisberg, 2010). The TRA and TPB appear to be integral to understanding employees' intentions for sharing knowledge.

Theory of reasoned action. The TRA is predominant in social-psychological models with origins from expectancy theory, which describes how individual behavior relates to intentions and environmental factors, and how dissimilarities exist between employees (Reychav & Weisberg, 2010; Teh & Yong, 2011; Tsai et al., 2012). Lin and Huang (2013) and Bock et al. (2005) used TRA to understand KS including different motivations to explain KS intentions. Lin and Huang (2013) found that knowledge self-efficacy and enjoyment in helping other employees positively relate to KS attitudes and intentions. Bock et al. established that extrinsic motivators such as organizational climates could influence KS intentions. Zhang and Ng (2012) leveraged TRA to investigate factors affecting individuals' attitudes toward KS in Hong Kong construction teams, and found that self-efficacy and knowledge feedback positively affected attitudes toward KS. Zhang and Ng and Tsai et al. also found that attitude toward KS might determine intentions to share knowledge.

Theory of planned behavior. The TPB, which is an extension of TRA, describes how researchers can capture motivational factors, including attitude about behaviors, intentions, perceived behavioral control, and subjective norms, which may influence employees' behavior (Ajzen, 1991; Krok, 2013; Witherspoon et al., 2013). Attitude is the degree to which an employee may determine whether the behavior is favorable (Ajzen, 1991). Behavior controls includes having the required abilities, resources, and

opportunities to participate in the behavior (Gagné, 2009; Krok, 2013). Subjective norms include the perception of social pressure and acceptance received when choosing to perform the behavior (Gagné, 2009; Krok, 2013). The author of the TPB suggested that a deliberate intent to make something precedes every behavior and every action creates certain results (Krok, 2013). TPB has been referenced extensively in management literature as a theory to understand KS behavior (Ajzen et al., 2011; Huang & Huang, 2012; Jeon, Kim, & Koh, 2011; Reychav & Weisberg, 2010).

Tohindinia and Mosakhani (2010) used TPB to evaluate KS behavior and predictors of employees from 10 oil companies with results proving consistent with the TPB model depicting that higher levels of professed self-efficacy reinforced positive attitudes toward KS. Jeon et al. (2011) noted the relevance of TPB, but felt gaps existed in the theory. Jeon et al. stated that in addition to studying actual behaviors, research should also include the volitional control paradigms that predict such behaviors. I determined TPB to be a relevant match for the study because multiple researchers used TPB for understanding KS behavior, and TPB predictors about attitude and intentions align with the study research question and hypothesis.

Knowledge Foundations: Data, Information, and Knowledge

Knowledge is different from information and data, even though some people use the three terms interchangeably (Okyere-Kwakye & Nor, 2011; Wang & Noe, 2010). Data includes raw details and numbers that is captured and stored using different methods and has no independent meaning (Okyere-Kwakye & Nor, 2011). Information exists when employees assign meaning, relevance, and context to data, which can then be

manipulated to draw conclusions (Ajzen et al., 2011; Okyere-Kwakye & Nor, 2011). Knowledge, which can be tacit or explicit, is similar to information but includes experience, values, contexts, insights, and intuitions, and becomes a source of organizational competitive advantage (Cao & Xiang, 2012; Okyere-Kwakye & Nor, 2011; Subashini, 2010; Wang & Noe, 2010). Further, knowledge is the amount or accuracy of information that employees possess, thereby resulting in actionable and informed decision making (Ajzen et al., 2011). A relationship exists between knowledge and decisions as knowledge is required for decision making, and decisions made become components of new knowledge (Ajzen et al., 2011).

Employees may view knowledge as a source of power providing a sense of job security; therefore, participating in KS may be limited because sharing could lead to vulnerability or loss of ownership of knowledge (Lilleoere & Hansen 2011; Reychav & Weisberg, 2010; Wu & Lin, 2013). Knowledge ownership is just one barrier that challenges managers who try to foster a KS culture (Ahmadi, Daraei, & Kalam, 2012). Knowledge is either referred to as explicit or tacit (Borges, 2013; Okyere-Kwakye & Nor, 2011; Suppiah & Manjit, 2011). Explicit knowledge has provided a valuable repository for employees while tacit knowledge is in the minds of employees (Borges, 2013; Nonaka & Takeuchi, 1995).

Tacit and Explicit Knowledge

Polanyi (1966, as cited in Kothari et al., 2012) first coined the term *tacit knowledge* as knowing more than one can tell one knows. Because tacit knowledge is not recorded and exists in the minds of employees, organizational leaders have had difficulty

obtaining information relating to intuition, skills, best practices, beliefs, and routine knowledge (Mládková, 2012; Okyere-Kwakye & Nor, 2011; Suppiah & Manjit, 2011). Explicit knowledge is documented, communicated, transmitted, or stored and includes information that employees can easily express as codes or symbols (McAdam et al., 2007; Nonaka & Takeuchi, 1995; Subashini, 2010). Nonaka's research has been a main theoretical foundation for understanding tacit and explicit knowledge and formulating hypotheses regarding how individuals create, share, convert, and transfer knowledge within an organization (Nonaka & Takeuchi, 1995; Rai, 2011). Though employees may read or transmit explicit knowledge, without tacit insights, such knowledge loses meaning (Rai, 2011).

Polanyi (1966) recognized that explicit knowledge is just as important as tacit knowledge even though tacit knowledge is likely to be a source of competitive advantage (Cao & Xiang, 2012; Subashini, 2010). Further, tacit knowledge cannot be managed or taught in the same manner as explicit knowledge found in documents, textbooks, manuals, or newsletters (Mahroeian & Forozia, 2012). Tacit and explicit knowledge have importance in organizations, and accessing each can contribute to organizational success and knowledge creation (Mahroeian & Forozia, 2012; Subashini, 2010).

Nonaka and Takeuchi (1995) identified four approaches of knowledge conversion to demonstrate the interaction of explicit and tacit knowledge: (a) socialization—sharing experiences among employees; (b) externalization—expressing tacit knowledge in explicit concepts; (c) combination—organizing concepts into a system by exploiting different inferences of explicit knowledge; and (d) internalization—personifying explicit

knowledge into tacit knowledge. Organizational leaders when focused on finding methods to transfer tacit to explicit knowledge increased efficiencies and competitive advantages because of the results from accessing, capturing, and reusing knowledge (McAdam et al., 2007; Nonaka & Takeuchi, 1995; Okyere-Kwakye & Nor, 2011; Su, 2014; Subashini, 2010; von Krogh, Nonaka, & Rechsteiner, 2012). Tacit KS occurs between employees through sharing lived experiences, best practices, and information to other organizational members (Cao & Xiang, 2012; Franssila, 2013; Hoof et al., 2012).

Organizational leaders, however, continually face numerous challenges with transferring employees' tacit knowledge, including obstacles related to trust, culture, technology, lack of time, perceived benefit, job security, and management support (Jennings, 2011; Santos et al., 2012; Sharma et al., 2012). Personal relationships built through face-to-face interactions can also increase the likelihood for KS along with the confidence that organizational members will use the new knowledge appropriately (Holste & Fields, 2010). Many organizational leaders have believed that investments in information technology translate to improved transfers of tacit knowledge; however, such improvement may not always occur as employees choose to share knowledge; therefore, leaders may want to invest in methods for developing employees' trust (Holste & Fields, 2010).

Lindblom and Tikkanen (2010) emphasized the importance of transferring tacit knowledge. Lindblom and Tikkanen found that in a franchisor and franchisee relationship, the ability for franchisors' management to convert franchisees' tacit knowledge (ideas, experiences, opinions, and insights) to explicit knowledge is essential

to gain additional growth and competitive advantages. Capturing tacit knowledge enabled franchisees to share knowledge with other franchisees to assist with individual success along with ensuring knowledge retention within the company if a franchisee exits the franchise relationship (Lindblom & Tikkanen, 2010).

Knowledge Management

Knowledge management encompasses organizational leaders' efforts to create an environment that embraces creating, learning, organizing, and sharing knowledge for the benefit of the organization (Daghfous et al., 2013; Kale & Karaman, 2012; Taylor, 2013). Employees benefit from KM theories by using captured previous experiences and best practices resulting in reductions in defects and increases in organizational profits (Franssila, 2013; Morawski, 2013; Okyere-Kwakye & Nor, 2011). Managers continually misconstrue KM as a means of documenting and archiving information via technology systems, causing many KM initiatives to fail. KM should encompass additional tools and systems, culture, and shared collaboration aimed to exploit knowledge for future use in an organization (Chadha & Ritika, 2012, Cornelius & Johnson, 2011; Taylor, 2013).

Knowledge management has gained prevalence in recent years as organizational leaders across industries have shifted focus to exploiting intellectual assets (Franssila, 2013; Morawski, 2013). Organizational leaders have had contrasting viewpoints on what constitutes KM, though the inclusion of KM practices within organizations yields bottom-line efficiency, top-line growth, innovation, enhanced processes, improved problem-solving skills, and increased servicing to customers (Brown et al., 2013; Taylor, 2013). Andreeva and Kianto (2012) and Tsai et al. (2013) argued that there are no

specific methodologies to measure how KM adds value to an organization, which causes difficulties for organizational leaders to assign resources. When leaders did not link KM to organizational strategies or embraced supporting cultures, the use of KM processes provided only modest results (Andreeva & Kianto, 2012; Taylor, 2013).

Knowledge management consists of knowledge processes, supporting infrastructures, capabilities, and management influences (Andreeva & Kianto, 2012; Chadha & Ritika, 2012). Andreeva and Kianto (2012) distinguished between KM practices, which include management practices that support the efficient and effective management of organizational knowledge. Classifications of KM include knowledge acquisition, knowledge sharing, and knowledge utilization (Andreeva & Kianto; 2012; Cornelius & Johnson, 2011; Karkoulian & Mahseredjian, 2012). Knowledge acquisition includes the creation of insights, skills, and relationships that employees obtain over time (Karkoulian & Mahseredjian, 2012). KS involves disseminating and making known knowledge available to others (Lin & Joe, 2012; Reychav & Weisberg, 2010). Knowledge utilization involves employees taking the shared knowledge and integrating it into work processes and decisions (Karkoulian & Mahseredjian, 2012). Other processes within KM may include knowledge documentation, application, donation, and storage (Andreeva & Kianto; 2012; Sohail & Daud, 2009).

Knowledge Sharing

Many organizational leaders exploit core competencies, which exist in collective learning as marketing, production, and technological abilities, because such competencies unmatched by competitors can yield competitive advantages (Aktharsha, Ali, & Anisa,

2012; Boh & Wong, 2013; Su, 2014). Leaders who developed KS process and provided encouragement for employees to share knowledge about customers, markets, products, and so forth, yielded collective learning within the organization and expanded intellectual capital (Bock & Kim, 2002; Franssila, 2013).

KS is one aspect of KM in which employees transform tacit knowledge into explicit knowledge through exchanging ideas and experiences resulting in knowledge being created or reused (Ahmadi et al., 2012; Lavanya, 2012; Mládková, 2012; Okyere-Kwakye & Nor, 2011; Wu et al., 2012). Though many benefits exist with KS, many organizational leaders have struggled to implement KS initiatives because success results primarily from the inclusion of reciprocity, trust, vision, management support, and teamwork (Boh & Wong, 2013; Cheung, Lee, & Lee, 2013; Lin & Joe, 2012). Even if managers encourage employees to share knowledge, employees' willingness and ability to do so voluntarily drives KS success (Franssila, 2013). The goal of obtaining and sharing knowledge is transferring employees' experiences and information to organizational knowledge, thereby increasing transfer to organizational assets, which bolsters organizational performance (Daghfous et al., 2013; Lin & Joe, 2012; Vij & Farooq, 2014). KS is important to organizational leadership because sharing knowledge facilitates the generation of ideas, creation of opportunities, improvement of performance, and eventually improvement of financial outcomes (Lavanya, 2012; Lin and Joe, 2012; Vij & Farooq, 2014).

There are multiple methods for sharing knowledge including presentations, databases, wikis, lecturing, storytelling, Socratic questioning, and mentoring (Levy,

2011; Mládková, 2012; Naftanaila, 2011; Petter, Mathiassen, & Vaishnavi, 2007; Tanhua-Piiroinen & Sommers-Piiroinen, 2013). A passive reception mode of transfer, such as presentations and lectures, are typically the least efficient way to transfer knowledge (Levy, 2011). Engaging active learning, such as the Socratic Method, which stimulates critical thinking by asking numerous questions as to why something may occur, along with actually doing what should be learned are effective ways for KS to occur successfully (Levy, 2011; Naftanaila, 2011). Regardless of the means for transferring knowledge, organizational leadership should understand what factors may influence employees to share knowledge.

Factors Influencing KS (Independent Variables)

A certain level of motivation is required for employees to want to share knowledge (Amayah, 2013; Krok, 2013; Vuori & Okkonen, 2012). Amayah (2013) identified three categories to understand motivating factors toward KS: personal benefits, community-related considerations, and normative considerations. Employees will share knowledge when doing so will provide an advantage such as status, job advancement, reputation, or emotional benefits (Amayah, 2013; Lilleoere & Hansen 2011; Reychav & Weisberg, 2010). Community-related considerations represent moral responsibilities employees may have to benefit others, thus building a strong community (Amayah, 2013; Casimir, Lee, & Loon, 2012; Wang & Noe, 2010). Organizational leaders expect employees to adapt to normative considerations with respect for organizational and cultural norms; thus, employees with shared goals and visions are likely to share

knowledge (Amayah, 2013; Taylor, 2013). The study included a hypothesis questions relating to factors influencing KS behaviors.

For the hypothesis, I examined possible relationships, and the strengths of correlation, between the independent variables of employees' sense of self-worth, subjective norms, and attitude to the dependent variable of intentions to share knowledge. I analyzed the predictor variables by examining the model as a whole. By examining the model, a researcher can understand if each predictor variable together has influence, and to what degree each has, on the dependent variable. Section 3 includes a comprehensive explanation of the study, including hypothesis testing and the presentation of findings.

Many knowledge sharing barriers (KSBs) exist prohibiting or causing difficulties for employees to share knowledge, thus hindering KS efforts (Ahmadi et al., 2012; Lavanya, 2012; Sharma et al., 2012). Common KSBs include lack of manager commitment, attitude, confusions around KM, technology, organizational culture, time, job security, trust, training, and absence of rewards (Lavanya, 2012; Sharma et al., 2012). Organizational leaders may benefit from competitive advantages when identifying and overcoming barriers to KS (Cao & Xiang, 2012; Kale & Karaman, 2012).

Manager support and subjective norms. Managers' support for KS may positively influence employees' willingness to share knowledge within an organization (Aktharsha et al., 2012; Boh & Wong, 2013; Carmeli, Atwater, & Levi, 2011; Dhanabhakyam, Anitha, & Kavitha, 2012; Goh & Hooper, 2009; Javernick-Will, 2012; Lin & Huang, 2013; Sohail & Daud, 2009; Sharma et al., 2012; Vajjhala & Vucetic, 2013; von Krogh et al., 2012). Empowering organizational leadership also helps to shape

employees' attitudes, which in turn leads to the desired KS behavior (Boh & Wong, 2013). Sohail and Daud (2009) surveyed participants within a higher education organization, finding positive relationships between management's support for KS and a strong KS culture. Transformational leadership and building of trust have also provided a significant way for increased KS by encouraging positive leadership behaviors and promotion of conditions where employees found value in sharing knowledge (Carmeli et al., 2011). Wang and Noe (2010) identified support from managers as a critical aspect for KS, and organizational leaders should require and reward managers to provide appropriate support for encouraging KS. Dhanabhakyam et al. (2012) found employees cared more about leaders' ideas and recognitions about KS as compared to being peer pressured.

Managers have been encouraged to promote a KS culture by ensuring guidelines, policies, and procedures related to KS are articulated (Carmeli et al., 2011). Leaders who created reward systems to recognize KS found improved opportunities to foster an informal exchange of knowledge and information (Goh & Hooper, 2009; Vuori & Okkonen, 2012). When managers supported an activity, employees had greater enjoyment and engagement in the activity, thus attesting positive relationships between management support and KS cultures (Goh & Hooper, 2009). Javernick-Will (2012) recommended promoting employees who engage in sharing knowledge along with turning KS as an expectation for promotions, thus encouraging a cultural norm. Similarly, Saleem, Adnan, and Ambreen (2011) determined employees with increased manager

support and relationships would possess a higher organizational commitment, which yields a positive predictor to KS.

In contrast, Wang and Noe (2010) and Wickramasinghe and Widyaratne (2012), though anticipated management support would be a significant factor of KS, found that manager support did not influence employees' intentions to share knowledge. Significance for management support toward KS reduced based on organizational culture, team environment, and if employees were reliant on peers rather than a manager for job performance and satisfaction (Wang & Noe, 2010; Wickramasinghe & Widyaratne, 2012). Manager support is encouraged to assist in motivating employees to share knowledge; because the lack of support may cause employees to withhold knowledge, thus employees may feel more powerful and have increased job security by retaining information (Boh & Wong, 2013; Kim & Yun, 2015; Javernick-Will, 2012; Sohail & Daud, 2009; Teh & Yong, 2011).

Employee attitude. Employees' attitudes toward KS have been the topic of numerous research studies (Aktharsha et al., 2012; Bock & Kim, 2002; Hoof et al., 2012; Hussein & Nassuora, 2011; Liao, To, & Hsu, 2013; Teh & Sun, 2012; Tsai et al., 2013; Zhang & Ng, 2012). Key factors that influenced employees' attitudes toward KS included (a) utilitarian motivation—upholding a reputation and receiving reciprocity; (b) control believe—possessing self-efficacy or confidence; (c) hedonic motivation—enjoying helping others; and (d) contextual force—being part of a sharing culture (Liao et al., 2013; Zhang & Ng, 2012). Employees who possessed high self-efficacy were also able to overcome impediments to KS (Liao et al., 2013; Zhang & Ng, 2012). The degree of

organizational citizenship, absorptive capacity, and culture also factor in motivating employees to share knowledge, with positive relationships to KS intentions (Borges, 2013; Kuvaas, Buch, & Dysvik, 2012; Liao et al., 2013; Wendling, Oliveira, & Macada, 2013).

Employees' attitudes may be broken down into eagerness and willingness (Hoof et al., 2012). Willingness includes whether employees would grant others access to personalized intellectual capital (Hoof et al., 2012). Eagerness includes whether employees have an internal drive to communicate personalized intellectual capital to others (Hoof et al., 2012). Positive influences toward attitude (willingness and eagerness) will result in increased KS intentions (Borges, 2013; Hoof et al., 2012).

Sense of self-worth. Some employees feel that knowledge provides power and are hesitant to share knowledge because doing so may cause a sense of being replaceable (Javernick-Will, 2012; Sharma et al., 2012; Wu & Lin, 2013). Because employees gain knowledge through work experience, including from success and failures, the knowledge possessed may enable employees to exceed performance expectations and gain higher pay or more opportunities than others (Huang & Huang, 2012). The loss of knowledge power would result in negative KS attitudes because even if organizations would benefit from KS, employees may hold onto knowledge to benefit themselves (Sharma et al., 2012; Wu & Lin, 2013). If organizational leaders encourage high individual competition then KS between employees is less likely to occur (Amayah, 2013).

Employees are often hesitant to share knowledge because of not wanting to lose face, which refers to feeling embarrassed or ashamed if the knowledge shared is useless,

wrong, or inadequate (Casimir et al., 2013; Connelly, Zweig, Webster, & Trougakos, 2012; Zhang & Ng, 2012). Goh and Hooper (2009) argued that leaders should recognize knowledge shared based on merit rather than personal source and emphasizing accuracy while making allowances for errors. Casimir et al. (2013) concurred, stating integrity of shared knowledge is crucial as KS aggregates into organizational knowledge, which is what helps organizations improve competitiveness. Besides the fear of knowledge shared being unusable or erroneous, some employees choose not to share because of not trusting the recipient (Wang & Noe, 2010).

Extrinsic and reciprocal rewards. Some research studies included contradictory findings whether rewards influence KS behavior (Bock et al., 2005; Gupta, Joshi, & Agarwal, 2012; Reychav & Weisberg, 2010; Tsai et al., 2013; Vuori & Okkonen, 2012; Zhang & Ng, 2012). Some researchers have found KS as positively affected by the opportunity for rewards or coworker reciprocity (Amayah, 2013; Cheung et al., 2013; Kumaraswamy & Chitale, 2012; Tsai et al., 2013; Wickramasinghe & Widyaratne, 2012). Others have suggested rewards have no effect on KS (Bock & Kim, 2002; Bock et al., 2005; Gupta et al., 2012; Vajjhala & Vucetic, 2013; Vuori & Okkonen, 2012; Zhang & Ng, 2012). Motivators for KS include linking salary to performance, knowledge sharing incentives, reduce salary splits between management classes, increase the amounts of fringe benefits to retain employees, maintain productive atmospheres, and increased empowerment (Gupta et al., 2012). Motivators to share information may attribute to an employees' desire to help, strive for recognition, and enjoyment from interaction, which may create a sense of personal satisfaction (Gupta et al., 2012; Martins & Meyer, 2012).

Gupta et al., (2012) found that employees share knowledge when provided the opportunity for organizational growth. To maximize the likelihood for employees to share knowledge, organizational leaders that looked at opportunities to generate employee engagement activities built higher emotional commitments (Gupta et al., 2012). Though some researchers found rewards do not positively relate to KS intentions, the lack of rewards may cause employees to lose motivation or feel punished, thus negatively influencing KS attitudes (Vuori & Okkonen, 2012; Zhang & Ng, 2012). Providing rewards and recognition may enhance the degree that employees share knowledge, in consequence reducing the likelihood for knowledge to be lost (Gupta et al., 2012; Vajjhala & Vucetic, 2013; Zhang & Ng, 2012).

Sense of trust. When a sense of trust is present, employees have exhibited satisfaction, commitment, productivity, and KS (Ahmadi et al., 2012; Connelly et al., 2012; Tsai et al., 2013; Vajjhala & Vucetic, 2013; von Krogh et al., 2012; Wickramasinghe & Widyaratne, 2012; Yeo & Marquardt, 2015). Employees take personal responsibility for engaging in KS between project teams when there is a sense of trust (Mueller, 2012; Rhodes & Dawson, 2013). Trust is beneficial for KS to occur within organizations (Akhavan & Hosseini, 2015; Mueller, 2012; Rhodes & Dawson, 2013; Smith, Baxter, Boss, & Hunton, 2012; Wang & Noe, 2010; Wang, Tseng, & Yen, 2014). For employees to benefit from tacit knowledge, leaders may want to invest in methods for developing employees' trust and collaboration (Amayah, 2013; Holste & Fields, 2010; Tongo, 2013; Wang et al., 2014).

Even if employees want to share knowledge and experiences, the likelihood is reduced if the requester of the knowledge had previously been unhelpful or untrusting (Gupta et al., 2012). Formal KS policies or standards may be insufficient to encourage KS in the absence of trust between employees (Tongo, 2013; Wickramasinghe & Widyaratne, 2012). The level of trust facilitates KS, especially when KS is voluntary, because sharing knowledge is a social interaction, thus sharing will not occur if employees are not confident in the recipients objectives for use of the knowledge (Casimir et al., 2012). Along with trust between peers and leaders, for employees to share knowledge, employees may not use shared knowledge if deemed untrustworthy or unreliable based on the source or the technology that stores the knowledge (Amayah, 2013; Hamel, Benyoucef, & Kuziemsky, 2012).

Technology. Organizational leaders may use different information systems to facilitate KM and KS activities, which may include repositories for archiving and retrieval of knowledge (Ahmadi et al., 2012; Davison, Ou, & Martinsons, 2013). KS technology that should complement or enhance KS efforts may be antiquated, inconsistent, or not user friendly; causing reluctance for employees to use (Goh & Hooper, 2009; Santos et al., 2012; Sandhu, Jain, & Ahmad, 2011; Susser, 2012). Some creators of KS systems also focus on technology and processes rather than encompassing all knowledge aspects, such as how the knowledge came to be, best practices, and additional insights related to the knowledge (Aktharsha et al., 2012; Santos et al., 2012). If technology is not managed or stored appropriately, employees may become overwhelmed with unsorted information, or risk the chance for lost information resulting

in filtering and organizational inefficiencies (Dhanabhakyam et al., 2012; Hamel et al., 2012; Sandhu et al., 2011). If technology is not user friendly or deemed to provide trustful and organized information, employees will not spend time using the technology (Dhanabhakyam et al., 2012; Smith et al., 2012).

Lack of time. Another common KSB includes lack of time for employees to commit to KS activities (Hamel et al., 2012; Javernick-Will, 2012; Sandhu et al., 2011; Tanhua-Piiroinen & Sommers-Piiroinen, 2013). In a study on employees' usage in an online community of practice, Hamel et al. (2012) discovered that lack of time was the main reason employees did not share knowledge and by organizing technology differently, employees could share knowledge quicker, and participation likely would increase. Goh and Hooper (2009) recommended that leaders balance employees' workloads to provide adequate time to share knowledge along with encouraging an open and accepting culture so employees freely share knowledge. Santos et al. (2012) acknowledged that lack of time and resources as a common barrier for KS in project environments, finding that leaders should establish time to harmonize approaches to common language between employees along with ensuring a proper balance exists for knowledge codification.

Knowledge Loss

Organizational leaders face challenges of knowledge loss when (a) employees only transfer partial information, (b) employees quit a job without first training a replacement or documenting knowledge, (c) knowledge becomes obsolete, and (d) organizational knowledge becomes difficult to obtain (Connelly et al., 2012; Durst &

Wilhelm, 2013; Lopez & Sune, 2013; Kumaraswamy & Chitale, 2012; Martins & Meyer, 2012; Matzler, Renzl, Mooradian, Krogh, & Mueller, 2011). To avoid knowledge loss, organizational leaders who enticed sharing and regularly administered organizational knowledge avoided information loss from employee turnover (Daghfous et al., 2013; Holste & Fields, 2010; Levy, 2011; Martins & Meyer, 2012; Reychav & Weisberg, 2010). Even when employee turnover is low, leaders may not realize benefits to comprehensive KS unless the leaders provide employees an opportunity to share. Behaviors are an integral part toward KS because sharing knowledge may not happen automatically (Karkoulian & Mahseredjian, 2012). Leaders that integrated KS within employees' daily activities reduced the likelihood that knowledge loss would occur if an employee leaves (Karkoulian & Mahseredjian, 2012; Wickramasinghe & Widyaratne, 2012). Further, incorporating knowledge into business processes, systems, and daily procedures provided organizational leaders the capability to preserve and reuse knowledge (Levy, 2011; Matzler et al., 2011).

Some common areas that leaders fail to address are documenting and storing employees' knowledge such as best practices or work procedures (Matzler et al., 2011; Sharma et al., 2012). With 75 million Americans estimated as capable of retiring between 2008 and 2026, leaders should capitalize on documenting best practices and work procedures (Martin et al., 2012). Matzler et al. (2011) acknowledged that committed employees would be willing to engage extra effort to document knowledge if the documentation would provide a benefit to the attainment of organizational goals. However, other employees may resist documentation if the value of doing so does not

exceed the cost or effort to complete (Gupta et al., 2012; Krok, 2013; Matlzer et al., 2011). Explicit information, or text based and easily accessible, provides a valuable repository for employees and facilitates easy retrieval of information such as documents, best practices, experiences, and work procedures (Subashini, 2010; Suppiah & Manjit, 2011).

Karkoulian and Mahseredjian (2012) suggested that knowledge retention is a common problem faced by organizational leaders, and if KS is lacking, then difficulties exist in attaining ample knowledge after employees leave. Connelly et al. (2012) agreed, acknowledging the need for knowledge retention along with noting that employees may choose to hide or decide not to be forthcoming with knowledge to retain power, protect feelings, or safeguard the interest of others. To avoid such scenarios, leaders should foster a culture where KS is encouraged, trusted, socially accepted, and part of everyday life (Connelly et al., 2012; Levy, 2011; Matzler et al., 2011).

Organizational Culture

Organizational employees make up overarching and narrowed cultures that influence employees' motivation, productivity, perspectives, and problem-solving techniques (Alrawi, Hamdan, Al-Taie, & Ibrahim, 2013; Rhodes & Dawson, 2013; Suppiah & Manjit, 2011; Taylor, 2013; Trompenaars & Hampden-Turner, 2012). Organizational culture has been found to link to project management and KS success as cultures that adopted KS characteristics had increased employees' KS intentions (Amayah, 2013; Borges, 2013; Hamel et al., 2012; Taylor, 2013; Wang & Noe, 2010). Further, if employees did not adapt a KS culture, the expectations of an organizational

culture restrained the knowledge-transfer process thus leading to knowledge silos (Tsai et al., 2013). Such silos would provide challenges to organizational and project feasibility and the sharing of best practices for creativity, innovation, resource usage, and competitive advantages (Cao & Xiang, 2012; Cockrell et al., 2013).

Culture also has a direct effect on employees influence to share knowledge and an indirect effect through influencing managers' attitudes toward KS (Wang & Noe, 2010; Rhodes & Dawson, 2013). Wang and Noe (2010) elaborated that appropriate organizational and learning cultures are necessary antecedents to KM success but are not an outcome of KM success; nevertheless, successful KM may lead to the strengthening of organizational and learning cultures. Goh and Hooper (2009) encouraged managers to promote a KS culture by formulating guidelines, policies, procedures, and reward systems to support KS. When employees have positive encouraging attitudes toward KS, a culture of coordination and cooperation may result along with employees becoming motivated and satisfied to making efforts toward organizational success (Saleem et al., 2011).

Suppiah and Manjit (2011) discovered that KS behavior influenced positively or negatively based on different culture types, which included clan culture, adhocracy culture, market culture, hierarchy culture, and organizations without a dominant culture. Suppiah and Manjit indicated that clan cultures had a positive influence on KS while market and hierarchy cultures had a negative effect on KS behavior. Mixed cultures with evidence of a dominant clan culture type had a positive KS behavior influence and mixed cultures without indication of a dominant clan type had a negative impact on KS behavior

(Suppiah & Manjit, 2011). Regardless of the specific type, cultures that supported continuous improvement and learning yielded higher levels of KS among employees (Goh & Hooper, 2009; Kuvaas et al., 2012; Lauring & Selmer, 2012; Rubin, 2013; Suppiah & Manjit, 2011).

Project leaders face a variety of cultural challenges including national, organizational, and project cultures (Ghobadi & D'Ambra, 2012). Each dimension of culture can make or break organizational initiatives or projects because of bias around data, escalation of commitment, overconfidence, sunken costs, selective perceptions, and group think (Lauring & Selmer, 2012; Suppiah & Manjit, 2011). Project managers may receive training on how to lead projects if organizational culture is too bureaucratic, hierarchical, or internally focused; however, many still struggle to generate the results the project is hoping to achieve (Suppiah & Manjit, 2011). At times, culture is a driving factor for why KM tools and initiatives fall short of meeting leaders' goals as values and trust related to culture affects how leadership and teams view the creation of knowledge (Akhavan & Hosseini, 2015; Taylor, 2013).

Knowledge Management and Knowledge Sharing in Projects

Knowledge management interest has increased as project leaders recognize the need to engage, store, and disseminate knowledge of employees (Almeida & Soares, 2014; Gasik, 2011; Tukel, Kremic, Rom, & Miller, 2011). Gasik (2011) and Ghobadi and D'Ambra (2012) recognized that knowledge is a key resource needed by leaders for successful project management. The field of KM is extensive, with emphasis on concepts and methods for organizational leaders to increase competitive advantages,

innovativeness, continuous improvements, efficiencies, and knowledge warehousing (Kale & Karaman, 2012). Even with proof that KM principles may yield successful projects, the majority of organizational leadership does not give priority to linking KM into project management (Ghobadi & D'Ambra, 2012; Goffin, Koners, Baxter, & Hoven, 2010; Hanisch et al., 2009). Organizational leaders may find value when employees share knowledge gained from projects including (a) using common resources to reduce work duplication, (b) review of project objectives with prior projects, (c) document lessons learns at each milestone, (d) keeping transparent communication, and (e) including a debriefing session during project close to archive challenges and successes (Hanisch et al., 2009).

The Project Management Institute's (PMI, 2013) published Project Management Body of Knowledge (PMBOK) contained requirements for capturing lessons learned throughout a project and defines lessons learned as knowledge gained during a project that shows how members addressed or should address project events in the future with the purpose of improving future performance. PMBOK authors elaborated that throughout managing a project, project managers and team members should capture documentation around causes of issues, reasoning for actions, process recommendations, and experiences, which would prove useful for future projects (PMI, 2013). Tukel et al. (2011) emphasized that knowledge may be left over from projects that have been terminated or stalled, which may provide value to future projects. Organizational leaders reduced the likelihood of repeating similar mistakes and gained future efficiencies when

taking advantage of intellectual capital tied to projects, whether active or stalled (Hanisch et al., 2009; Petter et al., 2007; Ruvin; 2013; Tukel et al., 2011).

Petter et al. (2007) noted that schedule, budget, and functionality restraints challenge project leaders. A recipe for achieving consistent successful projects is learning from experience (Petter et al., 2007). To learn from experience, leaders should capitalize on employees' experiences, insights, and knowledge within projects; and encourage sharing with peers and throughout the organization (Petter et al., 2007; Tukel et al., 2011). Petter et al. suggested different strategies to extract project knowledge including the use of networking, strength, weakness, opportunity, and threat (SWOT) analysis, communities of practice, postmortem analyzes or lessons learned, and the use of templates and documents. Beyond completing a SWOT analysis, Goffin et al. (2010) emphasized the importance of holding post project reviews to document lessons learned, but additionally found entering such knowledge into databases is not sufficient because some written reports fail to convey key learnings. Leaders who focused on ways to stimulate individual learning along with methods, such as holding the meeting at an offsite location to avoid interruptions, held more productive post project reviews (Goffin et al., 2010).

Because projects are temporary in nature, an importance exists for leaders to capitalize on knowledge gained from within, about, and between different projects (Hanisch et al., 2009). Knowledge within a project may include information about methodology and communication practices while knowledge about a project includes the overall landscape of how project managers conduct the project (Hanisch et al., 2009). The

knowledge between projects, which employees should contribute to an organizational knowledge base, includes experiences, methodological, and procedural knowledge (Hanisch et al., 2009). The lack of shared knowledge increases risk when project teams come upon obstacles and do not know how to respond effectively because of inadequate or missing lessons learned (Goffin et al., 2010; Hanisch et al., 2009).

Including the ability to reduce project costs, employees can use KS concepts to reduce duplicate work, learn through repetition, deploy standardization, improve optimal resource allocation, and stimulate innovation (Hanisch et al., 2009). When Hanisch et al. (2009) surveyed project managers, some respondents acknowledged the need for KS; however, the respondents admitted to a limited application of KS. Mueller (2012) acknowledged the need for leaders to support formal KS in projects; however, Mueller found that even without leaders' support, if an organizational culture supported KS, employees often took personal responsibility for engaging in KS between project teams based on trust.

Measurement

For the study, I adapted a survey originally created by Bock et al. (2005) titled: *Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social Psychological Forces and Organizational Climate* (see Appendix A for the survey and Appendix B for permission to use the instrument). The changes made from the original instrument were to remove 17 questions pertaining to affiliation, innovativeness, extrinsic rewards, reciprocal relationships, and fairness because the questions do not relate to the guiding research question for the study. I also removed the

word *would* from within five questions under the sense of self-worth scale. The instrument consisted of 5-point Likert-type scale statements along with qualification and demographic questions (Bock et al., 2005). Participants first responded to qualification questions (see Appendix A), to determine eligibility prior to completing the survey. Upon answering yes to all qualification questions, participants next were asked to answer two demographic questions and 21 five-point Likert-type scale statements where participants selected appropriately from the options available in the survey.

The independent variables for the study included sense of self-worth, attitudes toward KS, and subjective norms. The dependent variable was employees' intention to share knowledge. Each variable or construct aligned to questions in the survey as shown in Table 1. The subsequent data analysis section contains discussions on interpreting study results and testing the hypothesis using multiple linear regression (Nimon & Oswald, 2013).

Bock et al. (2005) tested the validity of the original survey for (a) content validity, (b) convergent validity, and (c) discriminant validly. Bock et al. tested content validity by interviewing practitioners and pilot-testing the instrument. Bock et al. completed convergent validity through an analysis of composite reliability, receiving scores of 0.823 to 0.930, and average variance with results of 0.609 to 0.866. To tested discriminant validity, the authors calculated the square root of the average variance as greater than the levels of correlations.

Bock et al. (2005) developed the behavior intention survey to examine the relationship between multiple independent variables to the dependent variable of

intention to share knowledge. Bock et al. surveyed managers from Korean organizations confirming hypotheses that attitudes and subjective norms toward KS affect employees' intentions to share knowledge. Other research studies included the survey from Bock et al. for surveying employees' intentions to share knowledge, including Lio et al. (2013), who surveyed experienced virtual community members to understand KS intentions. Teh and Yong (2011) surveyed information systems personnel to understand KS intentions and found KS behavior positively predicted intentions to share knowledge. Zhang and Ng (2012) also adapted the survey to learn about attitudes toward KS within Hong Kong constructive teams.

Transition and Summary

Employee KS could influence organizational outcomes such as performance, innovativeness, turnover, and competitiveness; however, some organizational leaders struggle to find methods or run into barriers with transferring knowledge to other organizational employees (Bracci & Vagnoni, 2011; Lin & Joe, 2012; Reychav & Weisberg, 2010). KSBs include lack of manager commitment, confusions around KM, technology, organizational culture, time, job security, trust, training, and absence of rewards (Sharma et al., 2012). In project management, project leaders should encourage KS for retaining project information because KS facilitates methods for project team members to share information from current to future projects thus increasing efficiencies (Santos et al., 2012). In the quantitative correlational study, I assessed the relationship between employees' sense of self-worth, subjective norms, attitudes, and intentions to

share knowledge within distribution organizations located in the Northeastern United States where leaders deployed or are implementing an ERP system.

Section 1 contained the foundation of the study, background of the problem, research question, hypothesis, framework, study significance, and a comprehensive literature review. Section 2 includes details about the research project, the purpose of the study, role of the researcher, participants, research method and design, ethical research, instruments, reliability, and validity. The final section contains study results, applications to professional practice, implications for social change, and recommendations for future studies.

Section 2: The Project

For KS to be effective, organizational leaders should understand how to encourage KS among employees and how to remove KSBs (Bracci & Vagnoni, 2011; Lin & Joe, 2012; Sharma et al., 2012). Based on the research question for the study, I sought to understand the relationship between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge. This section includes the purpose statement, role of the researcher, participants, research method and design, population and sampling, data collection, data analysis technique, reliability, and validity.

Purpose Statement

The purpose of the quantitative correlational study was to examine the relationship between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge with other organizational members. The independent variables for the study were sense of self-worth, subjective norms, and attitudes. The dependent variable was employees' intention to share knowledge. The participants included employees of wholesale distribution organizations in the Northeastern United States involved in ERP implementations. I surveyed this population because employees involved in an ERP implementation would likely represent organizational members with knowledge about project management.

The study results may contribute to positive social change by increasing productivity and reducing gaps in knowledge left by departing employees, thereby enhancing social and economic value within the organizations sphere of operations and influence. Distribution leaders may effect change by implementing new strategies to

improve employees' intentions to share knowledge with other organizational members. KS is significant in providing value to organizations in which managers can apply knowledge to make business decisions, respond quickly to change, and remain competitive (Jennings, 2011). For project managers, KS support facilitates sharing knowledge across projects, thereby maintaining project knowledge such as best practices, which may improve project success (Santos et al., 2012).

Role of the Researcher

My role as a researcher in the study was to collect and analyze data and present the findings in an unbiased and ethical manner (Baker, 2012). Although I was employed in the wholesale distribution ERP industry, I had no direct personal relationships with the study participants. If the participants' organizations implemented an ERP system from my organization, I may have interacted with the participant but only at a professional level and unrelated to the topic of the study. I have considerable experience and education about KM, KS, and project management. When experience and education could influence the interpretation of findings, researchers should mitigate bias using a standardized instrument and statistical software. I used a standardized instrument and Statistical Package for the Social Sciences (SPSS®) software for data analysis.

I adhered to all ethical standards as mandated by the Walden University Institutional Review Board (IRB) and the American Psychological Association (APA) as noted in the subsequent ethical research section. I also adhered to the protocols for protecting human subjects (Belmont Report, 1979) as set forth by the U.S. Department of Health & Human Services. Such protections include providing informed consent,

ensuring voluntarily survey completion, and supporting the ability to withdrawal from the study at any time without negative consequences (Baker, 2012; Mikesell, Bromley, & Khodyakov, 2013).

Participants

I used a purposive, nonprobability sample to access a minimum of 77 employees involved in ERP implementations within wholesale distribution organizations in the Northeastern United States. A purposive sample is a nonprobability sampling technique based on the judgment and selection of the researcher (Kumar, 2011; Leedy & Ormrod, 2013; Uprichard, 2013). The lack of specific population data and the ability for a researcher to do an accurate random sample provides justification for purposive sampling (Kumar, 2011; Leedy & Ormrod, 2013; Uprichard, 2013).

After receiving Walden University IRB approval and authorization (07-17-15-0097403), I obtained permission to survey employees from organizational leaders (see Appendix D) of wholesale distribution organizations. My organization's legal counsel provided permission to reach out to organizational leaders, whom I had contacts with, to identify employees who met the study criteria. Upon receipt of the leaders' permissions, I provided an overview of the research study via email (see Appendix E) to the organization's employees along with a link to the SurveyMonkey® website, which hosted the survey. The email included my background in the wholesale distribution industry and encouraged participation because the study was expected to yield positive change. Prior to participating in the survey, participants acknowledged reading the informed consent form (see Appendix C).

Participants were asked to answer qualification questions (see Appendix A) to determine eligibility prior to completing the survey. The qualification questions confirmed employment for a wholesale distribution organization in the Northeastern United States and involvement in an ERP implementation. I designed the survey to prevent access to questions if respondents did not acknowledge the consent form or did not meet the qualification requirements. Participants who met the qualification requirements proceeded to answer the survey questions (see Appendix A).

I administered the survey through SurveyMonkey®, a third-party online data collection tool accessed via an Internet site. Survey consent and completion were voluntary, with no pressure on study participants to comply. Participants were able to withdraw at any time before submitting the completed survey without consequence. Participation was anonymous, as the survey did not include a component to collect the participant's name or organization. I was the only person with administrative access to the survey in order to review results. I will preserve all survey data and permissions in a secure manner for 5 years after publication of the research. I will also continue to protect the rights of participants in accordance with IRB requirements.

Research Method and Design

Determining the appropriate research method and design is essential for scholars, as each method provides different approaches to addressing proposed problems (Leedy & Ormrod, 2013). Commonly used research methods include qualitative, quantitative, and mixed-methods with different design options applying to each method (Arghode, 2012;

Leedy & Ormrod, 2013). In the following section, I present the justification for the choice of a quantitative correlational design.

Research Method

The quantitative research method was appropriate to examine the relationship between employees' sense of self-worth, subjective norms, attitudes, and personal intentions to share knowledge. Such purpose aligns with a positivist worldview in which researchers gather evidence to determine effects or outcomes to predict relationships among variables (Arghode, 2012; Leedy & Ormrod, 2013; Schweitzer, 2009). The survey for the study included 5-point Likert-type scale statements adapted from Bock et al.'s (2005) behavior intentions instrument (see Appendix A and Appendix B). Multiple linear regression was the technique invoked to analyze the survey data and address the research hypothesis to examine to what extent, if any, a relationship existed between variables (Arghode, 2012; Fowler, 2009; Leedy & Ormrod, 2013; Neuman, 2011). A quantitative method is appropriate when a researcher intends to analyze numerical data and generalize the results to a larger population (Arghode, 2012; Fowler, 2009; Leedy & Ormrod, 2013). I also considered, but ruled out, the qualitative method and mixed-methods approach.

Researchers using the qualitative method face limitations based on participants' personal experiences and perceptions of phenomena, as gathered through interviews (Arghode, 2012; Fowler, 2009; Kumar, 2011; Leedy & Ormrod, 2013; Neuman, 2011). Researchers use qualitative methods when seeking to gather data where small amounts of empirical knowledge might exist, and for the creation of new theories about the phenomena (Arghode, 2012; Kumar, 2011; Leedy & Ormrod, 2013). Researchers also

use qualitative methods to understand participants' emotions, data-to-day lives, reactions, or personal experiences regarding a phenomenon, where limited literature may exist about the phenomenon (Arghode, 2012; Leedy & Ormrod, 2013). I ruled out the qualitative method because the study included existing theory about KS along with a standardized instrument to survey a population of at least 77 participants to examine relationships between variables.

The mixed-methods approach, which continues to increase in popularity, and used by researchers who have combined qualitative and quantitative methods when investigating a phenomenon or addressing a research problem (Kumar, 2011; Leedy & Ormrod, 2013; Neuman, 2011; Venkatesh et al., 2013). Because researchers must decide on numerous mixed-methods permutations, such as partially or fully, and concurrent or sequential, mixed-methods approaches cause an increase in research complexity (Leedy & Ormrod, 2013; Venkatesh et al., 2013). Researchers use the mixed-methods approach to generate hypotheses, develop research tools, and triangulate quantitative and qualitative data (Leedy & Ormrod, 2013). I rejected the mixed-methods approach because I used existing theories and a standardized instrument to examine relationships between variables and did not generate new hypothesis, theories, or research tools; therefore, a quantitative correlational research design was appropriate.

Research Design

I used a correlational design to determine whether relationships existed between employees' sense of self-worth, subjective norms, attitudes, and personal intentions to share knowledge (Bock et al., 2005; Leedy & Ormrod, 2013). Researchers choose a

design to study a specific problem, and designs vary based on the research method (Arghode, 2012). Examples of quantitative designs are correlational, experimental or quasi-experimental (Arghode, 2012; Kumar, 2011; Leedy & Ormrod, 2013; Neuman, 2011). The correlational design was appropriate because I used multiple linear regression to examine to what extent, if any, a relationship existed between the independent variables (self-worth, subjective norms, and attitudes) and the dependent variable of intention to share knowledge (Gravetter & Wallnau, 2006; Marshall & Jonker, 2011; Nimon & Oswald, 2013).

I ruled out experimental and quasi-experimental designs because I did not intend to explore cause-and-effect relationships between variables or test an intervention on groups of participants (Arghode, 2012; Leedy & Ormrod, 2013; Neuman, 2011). A correlational design does not imply causation; instead, researchers use a correlational design to describe possible relationships among variables based on results from a survey instrument provided to a larger population of participants (Arghode, 2012; Leedy & Ormrod, 2013; Marshall & Jonker, 2011; Neuman, 2011). Researchers use a correlational design to gain insights into trends, opinions, or attitudes of larger populations through questionnaires designed to collect data from a sample population (Arghode, 2012; Lilleoere & Hansen, 2011).

Population and Sampling

I used a purposive nonprobability sample for the study because of an unknown and growing population of employees in the Northeastern United States wholesale distribution industry (Neuman, 2011). Researchers may choose from two sampling

techniques for research studies: (a) probability sampling, which is complex, costly, and time consuming because of the requirement for a true randomized sample; and (b) nonprobability sampling, which researchers use when unable to obtain a true random sample (Kumar, 2011; Neuman, 2011). Probability sampling techniques include cluster, simple random, systematic, and stratified (Neuman, 2011). Nonprobability sampling includes techniques such as adaptive, deviant case, quote, snowball, theoretical, purposive, or convenience (Neuman, 2011).

The study included a purposive nonprobability sampling technique, commonly described in literature when criteria drive selection of the sample (Kumar, 2011; Neuman, 2011). The purposive nonprobability sampling method was more appropriate than other sampling methods because the entire population was unknown; a true random sample, needed for a probability sampling technique, was unachievable (Kumar, 2011; Neuman, 2011). Though a nonprobability sample cannot be used to generalize findings beyond the sampled group, the results do provide information about the first steps in determining KS intentions in wholesale distribution organizations.

The population, from which I sampled 82 participants, included employees of wholesale distribution organizations in the Northeastern United States involved in ERP implementations. I chose the sample with the assumption that organizational leaders who implemented an ERP software system were representative of organizational members with knowledge about project management. By surveying employees involved in an ERP implementation project, I assumed the employees would have gone through multiple phases of a project and have experience with KS and the sharing of lessons learned. The

population aligned with my research question to understand the relationship between employees' sense of self-worth, subjective norms, attitudes, and personal inclinations to share knowledge.

The survey instrument included qualification questions (see Appendix A) that determined eligibility prior to participants completing the survey. The qualification questions included confirmation that employees worked for a wholesale distribution organization and were involved in an ERP implementation. I included demographic questions (see Appendix A) to narrow and compare participant responses to determine whether different job roles were related to different KS intentions. The independent variables I analyzed to test the hypothesis included sense of self-worth, subjective norms, and attitudes. The dependent variable was intentions to share knowledge.

To determine sample size, I conducted an *a priori* power analysis using G*Power 3.1.9.2, assuming a medium effect size ($f = 0.15$), power of 0.80, alpha level (α) of 0.05, and three predictors (Faul, Erdfelder, Buchner, & Lang, 2009). To achieve a power of 0.80, a sample size of 77 was required. Increasing the sample size to 161 would have increased the power to 0.99. I therefore sought between 77 and 161 participants for the study (see Figure 1).

My goal was to send out approximately 200 questionnaires to eligible participants in distribution organizations within the Northeastern United States. I expected a 45% return of surveys. Bock et al. (2005) surveyed 105 participants (51% response rate) using the same survey instrument finding adequate measurement criteria through content validity, convergent validity, and discriminant validity. Similarly, Teh

and Yong (2011) also adopted the same survey instrument and received a 48% response rate yielding 116 participants.

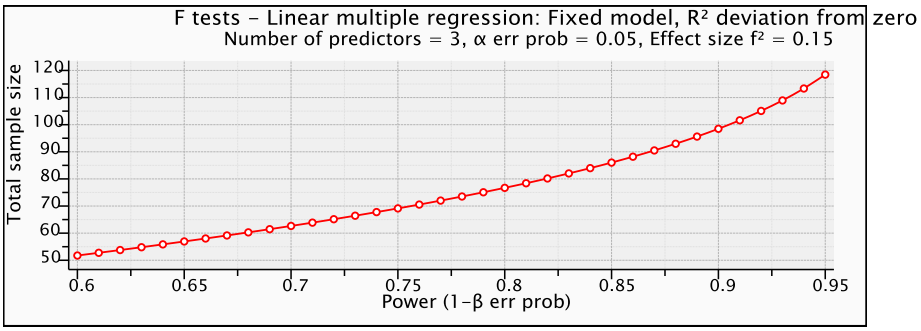

Figure 1. Power as a function of sample size as calculated in G*Power.

Ethical Research

Before collecting data, I obtained the approval of the Walden University IRB (07-17-15-0097403) to conduct the study (Baker, 2012; Tamariz, Palacio, Robert, & Marcus, 2013). The IRB staff reviews proposed studies to ensure researchers adhere to institutional regulations, applicable laws, standards, and professional conduct (Baker, 2012; Tamariz et al., 2013). I adhered to ethical principles provided by the American Psychological Association (2010). The introductory email to the participant included my background, purpose of the study, and disclosure that participation was voluntary (see Appendix E). The introductory email stated participants would receive no rewards or incentives for participating. Participants were asked to review and acknowledge a consent form (see Appendix C) prior to completing the survey.

The informed consent included information that the survey was voluntary, confidential, and participants could have withdrawn from the study at any time by closing the Internet browser or pressing the exit button on the survey without consequence. Participants' names or organizations do not appear on the survey, thus protecting anonymity. Participants could choose to withdraw at any time before submitting the online survey by not answering questions and closing the survey. Erasing of the electronic files and shredding of the hard-copy data will transpire 5 years after the publication of the research with the confidentiality of participants protected.

Data Collection Instruments

The study included an Internet-administered adapted survey, originally authored by Bock et al., (2005) titled: *Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social Psychological Forces and Organizational Climate* (see Appendix A for survey and Appendix B for permission to use instrument). The survey instrument consisted of 5-point Likert-type scale statements along with qualification and demographic questions (Bock et al., 2005). Bock et al. developed the survey to examine the relationship of multiple independent variables to the dependent variable of intention to share knowledge, thus aligning to the research question of the study. The changes made to the instrument included removing 17 questions pertaining to affiliation, innovativeness, extrinsic rewards, reciprocal relationships, and fairness because the questions did not relate to the guiding research question of the study. The word *would* was also removed from within five questions under the sense of self-

worth scale. Participants accessed the survey through SurveyMonkey®, a third-party data collection tool, and then I downloaded the results to a personal computer for analysis.

Participants accessed the survey through receipt of an introduction email (see Appendix E) after the Walden University IRB approved the study design and a leader at the participant's organization provided employees' email addresses. Participants first were asked to respond to qualification questions (see Appendix A), to determine eligibility prior to completing the survey. The qualification questions included confirmation that employees work for a wholesale distribution organization and involvement in an ERP implementation. Upon answering yes to all qualification questions, participants next were asked to answer two demographic questions and 21 five-point Likert-type scale statements. The Likert-type scale statements include a range from very rarely to very frequently, or extremely unlikely to extremely likely. Once all questions were answered, the participant submitted the survey through a submit button. Participants were not able to submit if a question was unanswered or skipped without first going back and responding to the missed question.

Once the survey period was closed, I downloaded survey data into a Microsoft Excel® spreadsheet and then loaded data into SPSS® version 21 and maintained a log of all steps, timestamps, and backups of data along with compared data from SurveyMonkey® to Excel® to SPSS®, ensuring data consistency. Data will be safely stored electronically on a password secured personal computer for 5 years after publication, which after I will permanently destroy the data using applicable data

shredding software. Raw data is not included as part of the study, although can be provided to a requester upon approval from the Walden University IRB.

The two qualifying nominal scale questions on the survey, (see questions A and B in Appendix A) asked the participant to respond either yes or no. If answered yes to both, the participants then answered two demographic questions. The demographic questions consisted of two (C and D) nominal scaled questions on organizational role and if the organization conducted a lesson learned activity. Participants were asked to next answer 21 five-point ordinal scaled Likert-type scale statement (see questions 1-21 in Appendix A) which included the scale of *very rarely* = 1, *rarely* = 2, *neutral* = 3, *frequently* = 4, and *very frequently* = 5. However, some questions may have been interpreted and responded to as *extremely unlikely* = 1, *unlikely* = 2, *neutral* = 3, *likely* = 4, and *extremely likely* = 5.

The independent variables for the study included sense of self-worth, subjective norms, and attitudes. The dependent variable was intention to share knowledge. The sense of self-worth score was the sum of the responses to Questions 1-5 on the instrument. The subjective norms score was the sum of the responses to Questions 11-16 on the instrument. The attitude toward KS score was the sum from Questions 6-10, with question 7 reversed, and intentions to share knowledge score was the sum from Questions 17-21 on the instrument (see Table 1). The subsequent data analysis section shows the calculation and interpretation of results using multiple linear regression and data findings furnished in tables as part of the doctoral study.

Table 1

Survey Constructs

Construct	Included survey question (Appendix A)
Sense of self-worth	1 – 5
Attitude toward KS	6 – 10
Subjective norm	11 – 16
Intention to share	17 – 21

Sense of self-worth includes employees' perception of how sharing knowledge will help others solve problems, create business opportunities, and yield productivity increases (Bock et al., 2005; Teh & Yong, 2011). Attitude toward KS includes employees' perceptions of whether KS is valuable, harmful, good, or enjoyable (Bock et al., 2005; Hussein & Nassuora, 2011). Subjective norm includes employees' perceived social pressures to perform or not perform a behavior (Ajzen, 1991; Bock et al., 2005), which includes manager and peer support toward KS. Lastly, intention to share knowledge consists of whether employees' anticipate sharing expertise, manuals, methodologies, etc. with other organizational members (Bock et al., 2005; Liao et al., 2013; Teh & Yong, 2011; Zhang & Ng, 2012).

Bock et al. (2005) tested the validity of the behavior intentions instrument using (a) content validity, (b) convergent validity, and (c) discriminant validly. Content validity is the extent to which an instrument is a representative sample of the domain being measured (Leedy & Ormrod, 2013). Convergent validity refers to the degree that two measures of constructs in theory should relate, do in fact relate (Marshall & Jonker, 2011). Discriminant validity refers to how two measures that should not relate are in

reality not related (Leedy & Ormrod, 2013; Marshall & Jonker, 2011). Bock et al. tested content validity by interviewing practitioners and pilot-testing the instrument. Bock et al. completed convergent validity through an analysis of composite reliability, receiving scores of 0.823 to 0.930, which are above a reliability threshold of 0.05 (Leedy & Ormrod, 2013). Bock et al. also completed average variance with results of 0.609 to 0.866, which are above an acceptability threshold of 0.05 (Kumar, 2011). Bock et al. tested discriminant validity by calculating the square root of the average variance, finding each had a greater square root than the levels of correlations involving the construct.

Bock et al. (2005) surveyed 154 managers from 27 Korean organizations confirming hypotheses that attitudes toward and subjective norms with regard to KS affect employees' intentions to share knowledge. Other researchers used the survey from Bock et al. for surveying employees' KS intentions. Lio et al. (2013) adapted the Bock et al. survey questioning 473 experienced virtual community members to understand KS intentions. Teh and Yong (2011) surveyed 116 information systems personnel to understand KS intentions and found KS behavior is predicted with more favorable intention to share knowledge. Zhang and Ng (2012) also adapted the survey to learn about attitudes toward KS within Hong Kong constructive teams. Zhang and Ng found attitude toward KS as positively influencing knowledge self-efficacy and knowledge feedback.

Data Collection Technique

In order to collect data, I used SurveyMonkey®, a third-party online data collection tool used to administer electronically the survey for the study

(SurveyMonkey®, 2014). Researchers use a survey or questionnaire to gather data from participants for correlational quantitative studies (Arghode, 2012; Leedy & Ormrod, 2013; Neuman, 2011). Using a survey, researchers can concurrently send out a survey link via email and participants may choose to respond conveniently with no observer subjectivity (Arghode, 2012; Fowler, 2009; Leedy & Ormrod, 2013). A quantitative research method limits participants from asking clarifying questions for any questions not understood, nor provides the ability to ask additional questions based on the participants' survey responses (Fowler, 2009; Leedy & Ormrod, 2013; Neuman, 2011).

Participants accessed the survey through receipt of an introduction email (see Appendix E) after the Walden University IRB approved the study design and a leader at the participant's organization provided employees' email addresses. Participants first were asked to respond to qualification questions (see Appendix A), to determine eligibility prior to completing the survey. The qualification questions included confirmation that employees work for a wholesale distribution organization and involvement in an ERP implementation. I automated the survey to thank participants for time spent and limited the completion of the survey if respondents did not acknowledge the consent or meet the eligibility requirements. Study participants who met the eligibility requirements proceeded to answer the two demographic and 21 survey questions (see Appendix A).

I downloaded the data gathered from SurveyMonkey® onto a personal password protected computer for analysis and will keep the data for 5 years before deleting permanently. Participants' names and organizations will remain anonymous, and only the

researcher has access to know if a certain participant completed the survey. Because the survey instrument was adapted with permission from Bock et al. (2005) and the original instrument used in other studies (Liao et al., 2013; Teh & Yong, 2011; Zhang & Ng, 2012), I did not complete a pilot-test for the instrument.

I created a new e-mail distribution survey (see Appendix A), which has features to send an introductory email to mass participants, using SurveyMonkey® based on the instrument adapted from Bock et al. (2005). Organizational leaders provided employees' e-mails for inclusion in the study upon returning the permission form to allow surveying members from the leader's organization. The survey software included the ability to customize an invitation message, schedule delivery, and track survey respondents (SurveyMonkey®, 2014). SurveyMonkey® includes functionality to track response rates along with sending reminder or follow-up e-mail messages to participants who either partially answered questions or did not complete the survey (SurveyMonkey®, 2014). Participants took between 4 and 8 minutes to complete the survey and had 2 weeks to access the questionnaire. After 2 weeks, the survey closed automatically with results available to download.

Data Analysis

The data analysis process involves presenting, interpreting research data, and testing hypotheses (Leedy & Ormrod, 2013). I conducted the study to gain an increased understanding of how sense of self-worth, attitudes, and subjective norms relate to employees' KS intentions. The research question that guided the study was: What is the relationship between employees' sense of self-worth, subjective norms, attitudes, and

intentions of employees' to share knowledge with other employees? In order to examine the research question, I tested the following hypothesis:

Null Hypothesis (H_0): There is no statistically significant correlation between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge.

Alternative Hypothesis (H_1): There is a statistically significant correlation between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge.

The instrument had minimal adaptions from the Bock et al. (2005) behavioral intentions instrument, and because Bock et al. conducted convergent validity, composite reliability, and discriminant validity, as noted below in the reliability and validity section, there was no need to repeat. Based on accepted criterion that the instrument was standardized and already deemed to meet validity requirements in other studies (Bock et al., 2005; Liao et al., 2013; Teh & Yong, 2011; Zhang & Ng, 2012), a pilot test was unwarranted (Leedy & Ormrod, 2013). Multiple linear regression was the technique used to measure the nonparametric correlation for ordinal-level data (Leedy & Ormrod, 2013; Marshall & Jonker, 2011).

Prior to conducting multiple linear regression, I prepared the data to fit within the constructs for the hypothesis. Such preparation included converting the responses from question seven by reversing the score for the reverse worded question. Next, I calculated descriptive statistics to assess measures of central tendency and tested for outliers and normality by analyzing a probability plot of the regression standardized residual. A

normal probability plot should result in data displayed on a reasonably straight line (Pallant, 2013). I combined the survey questions to fit into the proper constructs, according to Table 1, to determine a mean and standard deviation for sense of self-worth, attitude toward KS, subjective norms, and intentions to share knowledge.

Multiple linear regression (two-tailed) is used by researchers to understand how multiple independent variables (*x*-axis) relate to a dependent variable (*y*-axis), either together as a model or individually (Luigi, Oana, Mihai, & Simona, 2012; Marshall & Jonker, 2011; Nimon & Oswald, 2013). To determine whether to reject a null hypothesis, in favor of the alternative, or not reject the null, researchers use a level of significance (*p*) of 0.05 (Marshall & Jonker, 2011; Nimon & Oswald, 2013). If the obtained significance value calculated when conducting multiple linear regression is less than or equal to 0.05, the null hypothesis is rejected thus supporting a level of significance for the alternative hypothesis. If the obtained value is greater than 0.05, the null hypothesis is not rejected (Luigi et al., 2012; Marshall & Jonker, 2011; Nimon & Oswald, 2013). To assess what relative positive or negative weight each predictor has on the dependent variable, I analyzed the standardized coefficients (beta weights) and unstandardized (*B*) coefficients from interpreting the multiple linear regression coefficients table (Nimon & Oswald, 2013). I screened the data for outliers prior to analysis, using the participants' standardized residuals. Variance inflation factors and tolerance levels were used to evaluate the influence of multicollinearity along with a plot of standardized residuals to assess model homoscedasticity (Marshall & Jonker, 2011; Nimon & Oswald, 2013).

Section 3 of the study includes descriptive statistics and a table of regression coefficients computed from the study results.

Based on results of the hypothesis test, I evaluated whether to support the TPB relative to the study population and determined to what degree motivational factors may relate to KS intentions. Such motivation factors included sense of self-worth, subjective norms, and attitudes toward KS. After study completion, I intend sharing a summarized version of findings appropriate for the study participants.

Reliability and Validity

Researchers strive for perfect validity and reliability although likely impossible to achieve (Kumar, 2011; Neuman, 2011). For the study, I have adapted the standardized instrument, *Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social Psychological Forces and Organizational Climate* by Bock et al., (2005). Bock et al. tested reliability and validity of the instrument using content validity, convergent validity, and discriminant validity.

Reliability

Through gaining consistent results from repeated use of a survey instrument, researchers determine the instrument's reliability (Neuman, 2011). Bock et al. (2005) increased instrument reliability through interviewing senior practitioners and pilot-testing the instrument. Bock et al. assessed convergent validity, which is the degree to which two measures of constructs that in theory should relate do in fact relate, through examining composite reliability and average variance as extracted from the instrument measures. Common thresholds for reliability for studies using partial least squares regression, which

Bock et al. used, are to have a composite reliability of 0.5 (Kumar, 2011). Bock et al. had composite reliability values ranging from 0.823 to 0.930. Average variances extracted from measures ranged from 0.609 to 0.866, which was also above the acceptability of 0.05 (Bock et al., 2005; Kumar, 2011). Bock et al. also successfully conducted discriminant validity, which refers to how two measures that should not relate are in reality not related, by testing that the square root of the average variance for each construct was greater than the levels of correlations concerning the construct (Leedy & Ormrod, 2013). I checked the instrument against the study population to determine a reliability coefficient using SPSS® to calculate Cronbach's alpha (α) with an acceptable reliability coefficient of 0.7 or greater and present results in the next section of the study (Bonett & Wright, 2015; Cho & Kim, 2015).

I used an adapted standardized instrument along with a consistent method and survey protocol for approaching the study participants via electronic communication. I followed ethical standards and interpreted study results based on scholarly methods to determine if construct relationships existed to accept or reject the hypothesis. I followed requirements set by Walden IRB and the Walden University doctoral study rubric and process.

Validity

The validity of an instrument is important to understand because validity infers that the instrument measures what a researcher intends to measure without other influencing circumstances (Fowler, 2009; Neuman, 2011). Internal and external are the two types of validity present in a research study (Fowler, 2009; Leedy & Ormrod, 2013).

Through measuring internal validity, researchers seek to understand what extent the design and data yields conclusions about cause-and-effect relationships (Leedy & Ormrod, 2013). Because the purpose of the study was not to learn about cause-and-effects of a causal relationship, I focused on external validity. Researchers measure external validity to determine the extent of generalization feasibility to a larger population (Leedy & Ormrod, 2013; Neuman, 2011).

Though researchers are unable to generalize findings from a nonprobability sample beyond the sampled group, the study results may provide the first step in an analysis of KS intentions of employees at wholesale distribution organizations. Bock et al. (2005) tested the validity of the behavior intention survey using (a) content validity, (b) convergent validity, and (c) discriminant validly. Bock et al. tested content validity by interviewing practitioners and pilot-testing the instrument. Bock et al. completed convergent validity through an analysis of composite reliability, receiving scores of 0.823 to 0.930, which are above a reliability threshold of 0.05 (Leedy & Ormrod, 2013). Bock et al. also completed average variance with results of 0.609 to 0.866, which are above an acceptability threshold of 0.05 (Kumar, 2011). Bock et al. tested discriminant validity by calculating the square root of the average variance, finding each had a greater square root than the levels of correlations involving the construct. The instrument had minimal adaptions from Bock et al.'s (2005) behavior intentions survey and since Bock et al. conducted convergent validity, composite reliability, discriminant validity, and others (Liao et al., 2013; Teh & Yong, 2011; Zhang & Ng, 2012) had used the standardized

instrument, meeting accepted validity standards, a pilot test was unwarranted (Leedy & Ormrod, 2013).

Using a correlational research design, researchers do not conclude causality, but instead determine a degree of positive or negative relationship between variables (Kumar, 2011; Leedy & Ormrod, 2013; Neuman, 2011). Multiple linear regression was the technique invoked to analyze the survey output data to measure the correlation between independent and dependent variables (Leedy & Ormrod, 2013; Marshall & Jonker, 2011; Nimon & Oswald, 2013). A minimum sample size of 77 participants was required to achieve a power of 0.80 with three predictors for multiple linear regression testing (f = 0.15, $\alpha = 0.05$; Faul et al., 2009). I sought to obtain a sample size between 77 and 161 participants, as 161 participants' yields a power of 0.99. The sample size of 77 was ideal as smaller sample sizes may cause researchers to make Type I or Type II errors (Fowler, 2009; Leedy & Ormrod, 2013; Marshall & Jonker, 2011). A larger sample size would also increase power and decrease the probability of a Type II error (Fowler, 2009; Leedy & Ormrod, 2013; Marshall & Jonker, 2011).

Transition and Summary

Section 2 included details about the research project, the purpose of the study, role of the researcher, participants, research method and design, ethical research, instruments, reliability, and validity. The next section contains study results, applications to professional practice, implications for social change, and recommendations for future studies. The research paper includes a summary, and final thoughts and reflections.

Section 3: Application to Professional Practice and Implications for Change

In this quantitative correlational study, I examined the relationship between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge with other organizational members. The study participants included employees of wholesale distribution organizations in the Northeastern United States involved in ERP implementations. I used correlational hypothesis testing to examine the independent variables of sense of self-worth, subjective norms, and attitudes to the dependent variable of intentions to share knowledge. Section 3 includes a comprehensive explanation of the presentation of findings, the applicability of findings to the professional practice of business, and implications for social change. This section also contains recommendations for action by business leaders, recommendations for further research studies, and personal reflections.

Overview of Study

KS has become a significant factor in influencing organizational outcomes such as performance, turnover, innovativeness, and competitiveness (Bracci & Bagnoni, 2011; Lin & Joe, 2012; Reychav & Weisberg, 2010; Vij & Farooq, 2014). Employees may feel resistant to share knowledge because of organizational culture norms, lack of trust, poor management support, absence of reciprocity, or fear of losing power (Gagné, 2009; Jennings, 2011; Mayfield, 2010; Suppiah & Manjit, 2011). The purpose of the study was to examine the relationships the independent variables of sense of self-worth, subjective norms, and attitudes have to the dependent variable of intentions to share knowledge. The research question addressed the relationship between employees' sense of self-worth,

subjective norms, attitudes, and personal inclinations to share knowledge with other employees.

The model as a whole was adequate to predict employees' KS intentions, $F(3,78) = 24.20$, $p < 0.01$, $R^2 = 0.48$. The R^2 value indicated that the linear combination of the predictor variables (sense of self-worth, subjective norms, and attitudes) explained approximately 48% of the variation in KS. Two independent variables (subjective norms and attitudes) significantly related to the intentions of employees to share knowledge with other organizational members. In the final model, attitude toward KS (beta = 0.45, $p = 0.001$) accounted for a higher contribution to the model than subjective norms (beta = 0.32, $p = 0.004$). Sense of self-worth did not provide any significant variation in KS intentions.

Presentation of the Findings

The following section includes descriptive statistics generated from the analysis of study data, testing of assumptions, inferential statistics results, a theoretical analysis, and a brief summary of findings. I analyzed data from 82 completed surveys and, prior to interpreting results, completed a reliability measure of the instrument. The reliability measure indicated an acceptable Cronbach's alpha coefficient ($\alpha = 0.921$) as 0.70 or greater is acceptable (Bonett & Wright, 2015; Cho & Kim, 2015). I also used bootstrapping of 2,000 samples to account for the possible influence of assumption violations. Researchers commonly use bootstrapping to assign measures of accuracy around bias and confidence intervals (Koopman, Howe, Hollenbeck, & Sin, 2015).

Descriptive Statistics

I sent 211 surveys to eligible participants of wholesale distribution organizations and received 100 responses. I eliminated 18 records because of incomplete data, resulting in 82 records used in the analysis. Participants answered demographic questions regarding job role and indicating whether organizational members documented lessons learned at the end of an ERP implementation, which is a form of KS. From the responses for complete implementations, 47% responded yes, 38% said no, and 15% were unsure. Table 2 depicts descriptive statistics of the study variables.

Table 2

Means (M) and Standard Deviation (SD) for Quantitative Study Variables (N = 82)

Variable	*M*	*SD*	Bootstrap 95% CI (*M*)
Sense of self-worth	4.20	0.48	[4.09, 4.30]
Attitude toward KS	4.28	0.46	[4.18, 4.38]
Subjective norm	4.37	0.54	[4.25, 4.48]
Intention to share	4.20	0.55	[4.08, 4.32]

Tests of Assumptions

I evaluated the assumptions of multicollinearity, outliers, normality, homoscedasticity, and independence of residuals. Bootstrapping of 2,000 samples offset the possible influence of assumption violations.

Multicollinearity. I evaluated multicollinearity by analyzing the variance inflation factor (VIF) and tolerance (Table 3) and reviewed the correlation coefficients matrix among predictor variables (Table 4). The tolerance for all variables was greater

than 0.2, the VIF was less than 10, and the bivariate correlation was small to medium. The assumption of multicollinearity, therefore, was not violated (Kroll & Song, 2013; Sinan & Alkan, 2015).

Table 3

Multicollinearity and Collinearity Coefficients for Independent Variables (N = 82)

Variable	Collinearity statistics	
	Tolerance	VIF
Sense of self-worth	0.57	1.74
Attitude toward KS	0.58	1.72
Subjective norm	0.60	1.65

Table 4

Correlational Coefficients for Independent Variables (N = 82)

Variable	Sense of self-worth	Attitude toward KS	Subjective norm
Sense of self-worth	1.00	0.59	0.56
Attitude toward KS	0.59	1.00	0.56
Subjective norm	0.56	0.56	1.00

Outliers, normality, linearity, homoscedasticity, and independence of residuals. I analyzed outliers, normality, linearity, homoscedasticity, and independence of residuals by examining the normal probability plot (P-P) of the regression standardized residual (see Figure 2) and the scatterplot of the standardized residuals (see Figure 3). The examination of the figures indicated no major violation of assumptions and minimal outliers in the data. The points on the normal probability plot (Figure 2) lay in a reasonably straight line, diagonal from bottom left to top right, providing evidence of no

major unacceptable violations of the assumption of normality (Pallant, 2013). I assessed the scatterplot for any orderly pattern and computed 2,000 bootstrapping samples, at 95% confidence intervals, to combat any possible influence of assumptions. A lack of a rectangular pattern indicated there could be some, though not major, violations of assumptions (Nimon & Oswald, 2013).

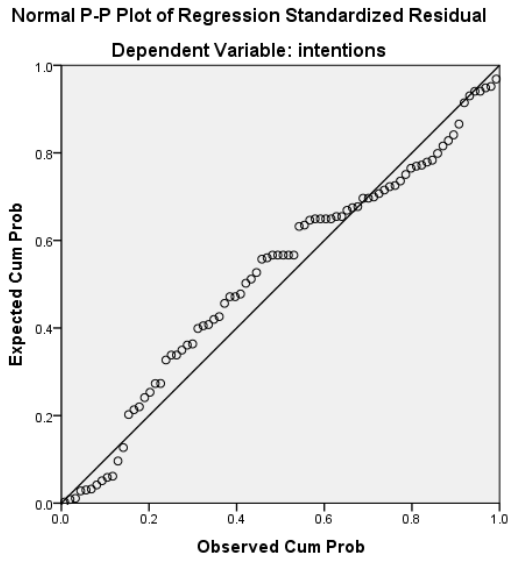

Figure 2. Normal probability plot (P-P) of the regression standardized residual.

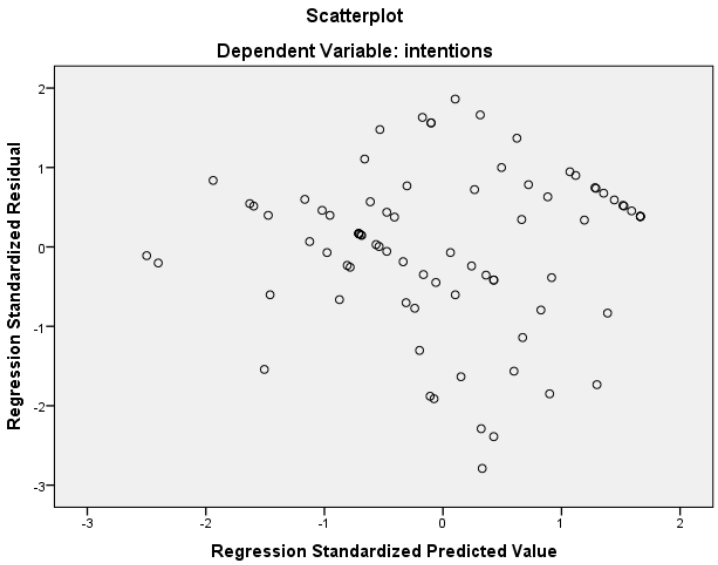

Figure 3. Scatterplot of the standardized residuals.

Inferential Results

The purpose of the study was to examine the relationships the independent variables of sense of self-worth, subjective norms, and attitudes have to the dependent variable of intentions to share knowledge. Standard multiple linear regression, $\alpha = 0.05$ (two-tailed), was used to examine to what extent, if any, sense of self-worth, subjective norms, and attitudes combined as a model to predict KS intentions. The null hypothesis was there is no statistically significant correlation between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge. The alternative hypothesis was there is a statistically significant correlation between employees' sense of self-worth, subjective norms, attitudes, and intentions to share knowledge. I found no apparent violations to assumptions of multicollinearity, outliers, linearity, normality, homoscedasticity, and independence of residuals.

The model as a whole was able to significantly predict employees' intentions to share knowledge, $F(3,78) = 24.20$, $p < 0.01$, $R^2 = 0.48$. Because the significance (p) of the model was less than 0.05, I rejected the null hypothesis. The R^2 (0.48) indicated that the linear combination of the predictor variables (sense of self-worth, subjective norms, and attitudes) explained approximately 48% of the variation in KS. The findings indicated that two independent variables (subjective norms and attitudes) significantly related to employee KS intentions. In the final model, attitude toward KS (beta = 0.38, p = 0.001) accounted for a higher contribution to the model than subjective norms (beta = 0.32, p = 0.004). Sense of self-worth did not provide any significant variation in KS intentions (p = 0.26). The predictive equation is as follows: KS Intentions = 0.28 + 0.14 (self-worth) + 0.45 (attitudes) + 0.32 (subjective norms). Table 5 depicts the regression summary table.

Table 5

Regression Analysis Summary for Predictor Variables (N = 82)

Variable	*B*	*SE B*	β	*t*	*p*	*Bootstrap 95% CI*
Constant	0.28	0.47		0.60	0.55	[-0.40, 0.91]
Sense of self-worth	0.14	0.12	0.12	1.13	0.26	[-0.16, 0.40]
Attitude toward KS	0.45	0.13	0.38	3.53	< 0.01	[0.23, 0.84]
Subjective norm	0.32	0.11	0.31	2.99	< 0.01	[0.08, 0.53]

Subjective norms. Subjective norms was significant to the model ($p < 0.01$) with KS intentions increasing as subjective norms increased ($B = 0.32$). The positive slope for subjective norms (0.32) as a predictor of KS intentions indicates there was approximately

a 0.32 increase in intentions to share knowledge for each one-point increase in subjective norms. The squared semi-partial coefficient (sr^2) that estimated how much variance in KS intentions was uniquely predictable from subjective norms was 0.06, indicating that subjective norms accounted for 6% of the variance in KS intentions when attitude and sense of self-worth were controlled.

Attitude toward KS. Attitude toward KS was significant to the model ($p < 0.01$) with KS intentions increasing as attitudes increased ($B = 0.45$). The positive slope for attitudes (0.45) as a predictor of KS intentions indicated there was approximately a 0.45 increase in intentions to share knowledge for each one-point increase in attitudes toward KS. The squared semi-partial coefficient (sr^2) was 0.08, indicating that attitude accounted for 8% of the variance in KS intentions when subjective norms and sense of self-worth were controlled.

Sense of self-worth. Sense of self-worth was not significant to the model ($p = 0.26$). The positive slope for sense of self-worth (0.14) as a predictor of KS intentions indicates there was approximately a 0.14 increase in intentions to share knowledge for each one-point increase in sense of self-worth. The squared semipartial coefficient (sr^2) was 0.008, indicating that sense of self-worth accounted for less than 1% of the variance in KS intentions when subjective norms and attitude were controlled.

Application to Theoretical Framework

Based on the results of multiple linear regression analysis, I rejected the null hypothesis for the model as a whole, with subjective norms and attitudes having a significant positive relationship to employees' intentions to share knowledge. Sense of

self-worth had no significant relationship. In general, results of the study were consistent with the existing literature to support subjective norms and attitudes having a significant positive relationship with KS intentions (Boh & Wong, 2013; Hoof et al., 2012; Liao et al., 2013; Zhang & Ng, 2012).

The findings were consistent with the TPB framework. Ajzen (1991) suggested that actions and behaviors reliably follow employees' intentions; therefore, KS actions would reliability follow KS intentions (Krok, 2013; Lin & Joe, 2012; Radaelli, Lettieri, & Masella, 2015; Witherspoon et al., 2013). The study results indicate the model has significance to predicting KS intentions with subjective norms and attitudes positively relating to KS intentions. Tohindinia and Mosakhani (2010) used TPB to evaluate KS behavior of employees from 10 oil companies with results proving consistent with the TPB, which reinforced that subjective norms and attitudes would predict KS intentions.

Al Qeisi and Al Zagheer (2015) used TPB to evaluate KS intentions among Jordanian commercial bank employees. Al-Quisi and Al-Zagheer found attitudes and perceived behavior controls affected intentions positively, but subjective norms were not supported. Wickramasinghe and Widyaratne (2012) and Wang and Noe (2010) found subjective norms, such as manager support, did not significantly influence KS intentions. Significance for management support toward KS was reduced based on culture, team environment, and whether employees relied on peers rather than managers for job satisfaction (Wickramasinghe & Widyaratne, 2012).

The findings aligned with numerous studies indicating subjective norms positively influenced employees' willingness to share knowledge (Aktharsha et al., 2012;

Boh & Wong, 2013; Carmeli et al., 2011; Chuang, Chen, & Tsai, 2015; Dhanabhakyam et al., 2012; Lin & Huang, 2013; Radaelli et al., 2015; Sharma et al., 2012; Vajjhala & Vucetic, 2013). Dhanabhakyam et al. (2012) found from surveying personnel at life insurance organizations that employees cared more about leaders' ideas and recognitions about KS as compared to being peer pressured. Similarly, Aktharsha et al. (2012) surveyed nurses from hospitals in India and found subjective norms to relate to KS intentions.

The findings of the study were similar to other researchers finding that attitude influenced positively employees' intentions to share knowledge (Aktharsha et al., 2012; Al Qeisi & Al Zagheer, 2015; Bock et al., 2005; Borges, 2013; Dhanabhakyam et al., 2012; Gang & Ravichandran, 2015; Hoof et al., 2012; Zhang & Ng, 2012). Dhanabhakyam et al. (2012) found that 92% of respondents expressed that KM as a good idea and 70% responded that KM is fun. Similarly, Gang and Ravichandran (2015) found that attitudes toward knowledge acquisition affected assertiveness toward KS, and attitudes toward KS positively influenced intentions. In surveying managers from Korean organizations, Bock et al. (2005) found attitudes toward KS positively relate to employees KS intentions. Zhang and Ng (2012) surveyed construction teams in Hong Kong finding attitudes toward KS significantly determine intentions to share knowledge.

The findings of the study contradicted prior researchers who found sense of self-worth to relate to KS intentions (Bock et al., 2005; Lavanya, 2012; Liao et al., 2013; Sharma et al., 2012; Teh & Yong, 2011; Witherspoon et al., 2013). Teh and Yong (2011) found that developing individuals' sense of self-worth encouraged more favorable

attitudes toward KS. Liao et al. (2013) found that even though attitude had the most significant effect, self-efficacy also influenced continuance intention to share knowledge. Lavanya (2012) surveyed IT employees in India finding self-worth as statistically significant and positively associated with KS. Bock et al. (2005) found that employees' sense of self-worth increases the prominence of the subjective norm regarding KS intentions. Witherspoon et al. (2013) noted that higher levels of self-efficacy should result in more KS, finding a positive association between self-efficacy and KS.

Applications to Professional Practice

For the correlational study, I examined the relationship between predictor variables (employees' sense of self-worth, subjective norms, and attitudes) and employees' intentions to share knowledge with other organizational members. Eighty-two employees of wholesale distribution organizations in the Northeastern United States involved in ERP implementations participated. The study was intended to advance understanding on which factors contribute to employees intentions to share knowledge, as KS may influence organizational outcomes such as performance, turnover, innovativeness, and competitiveness (Bracci & Bagnoni, 2011; Lin & Joe, 2012; Reychav & Weisberg, 2010; Vij & Farooq, 2014).

The model as a whole was adequate to predict employees' KS intentions with subjective norms and attitudes significantly relating to intentions for employees to share knowledge with other organizational members. Organizational leaders may improve business practice by understanding how to improve employees' desire to share knowledge. Based on the study results, organizational leaders should focus on subjective

norms and attitudes as ways to improve KS intentions. The characteristic of attitude includes the degree to which an employee may determine if the behavior is favorable (Ajzen, 1991). Subjective norms include the perception of social pressure, and the acceptance received when choosing to perform the behavior (Gagné, 2009; Krok, 2013).

Key factors that influence employees' attitudes toward KS include (a) utilitarian motivation—upholding a reputation and receiving reciprocity; (b) control believe—possessing self-efficacy or confidence; (c) hedonic motivation—enjoying helping others; and (d) contextual force—being part of a sharing culture (Liao et al., 2013; Zhang & Ng, 2012). To improve subjective norms, organizational leaders should encourage a culture that supports KS, by both employees (peers) and management (Boh & Wong, 2013). Leaders should promote a knowledge rich culture by articulating guidelines, policies, and procedures related to KS (Carmeli et al., 2011). When managers support an activity, employees have greater enjoyment and engagement in the activity, thus attesting positive relationships between management support and KS cultures (Goh & Hooper, 2009).

The sharing of lessons learned at the end of projects is one method of sharing knowledge and may contribute to the success of future projects. In the current study 47% of respondents said organization leaders documented lessons learned at the end of an ERP implementation. Fifteen percent were unsure and 38% responded that leaders likely did not document lessons learned. By capturing lessons learned, organizational members archive knowledge gained during a project that shows how members addressed or should have addressed project events with the purpose of improving future performance (PMI, 2013). Including the ability to reduce project costs, employees can use KS concepts to

reduce duplicate work, learn through repetition, deploy standardization, and stimulate innovation (Hanisch et al., 2009).

Implications for Social Change

Social change occurs when leaders take information learned and encourage a reasonable transformation for individuals and communities. Employees may benefit from positive social change when new knowledge creates improvements in individual behaviors leading to the betterment of society within the sphere the organization operates. Beyond just wholesale distribution organizations, if organizational leaders promote KS, the effects may provide positive results yielding improved employee productivity, organizational competitiveness, and value to the well-being of communities (Bracci & Bagnoni, 2011; Lin & Joe, 2012; Huang et al., 2010).

Knowledge sharing success is dependent on employees' ability and willingness to share knowledge, thus by increasing awareness of how KS may influence organizational performance, a sense of urgency may encourage leaders to capitalize on employees' knowledge. The results of the study indicated subjective norms and attitudes significantly related to intentions for employees to share knowledge with other organizational members. The findings are consistent with the TPB, as researchers can apply the TPB when considering psychological elements such as willingness and ability for employees to share information (Krok, 2013).

Organizational leaders should use the findings from the study to explore and develop strategies to increase employees' KS intentions, focusing on attitude and subjective norms, thus contributing to positive social change. With millions of American

employees eligible to retire through 2026 (Martin et al., 2012), leaders should consider ways to account for this potential void in knowledge. If leaders do not take action, then there could be a risk to decreased employee productivity, company performance, and competitiveness. Leaders may promote KM principles to encourage a more successful, effective, and proficient work environment, thus enhancing economic and social value within the organizations domain of operations and influence.

Recommendations for Action

The purpose of the correlational study was to determine to what extent, if any, motivational factors related to KS intentions. The study predictor variables included employee self-worth, subjective norms, and attitudes toward KS. The dependent variable was employees' intentions to share knowledge with other organizational members. I designed the study to offer significant value to organizational leaders who introduce KM strategies and to fill gaps related to KS.

The results of the study may contribute to improved business practice, as there is importance for distribution organization leaders to understand how predictor variables influence employees' intentions to share knowledge. Specifically, the study results indicated that two variables positively related to KS intentions, which supports prior literature (subjective norms and attitude). Distribution leaders should first understand the TPB, which describes how researchers can capture motivational factors, including attitude about behaviors, intentions, perceived behavioral control, and subjective norms, which may influence employees' behavior. Leaders further should consider including

strategies to improve subjective norms and attitudes within distribution organizations to increase the likelihood of KS to occur.

Leaders should also include KS improvement strategies within organizations as knowledge and productivity losses may occur when employees resign or retire (Amayah, 2013; Bracci & Vagnoni, 2011; Lin & Joe, 2012). KS success is dependent on employees' abilities and willingness to learn and share knowledge, which may lead to broad implications for how KS may benefit organizational success, sustainability, and competitiveness (Bracci & Vagnoni, 2011; Lin & Joe, 2012). Leaders should also consider documenting lessons learned at the end of projects to ensure knowledge is saved about the project, thus offering information to employees for the inclusion of future projects.

I plan to publish a summary of findings for participants involved in the survey and disseminate parts of the study in scholarly articles. Researchers and scholars may access the study results in the ProQuest/UMI dissertation database. I also intend to present the study findings at user symposiums for distribution organizations if invited by the conference coordinators. I will also offer to train any organizational leader who wants to learn more about how KM and KS may improve organizational performance.

Recommendations for Further Study

The purpose of this study was to determine to what extent, if any, a relationship existed between independent variables (self-worth, subjective norms, and attitudes) and a dependent variable of intention to share knowledge. Based on the results of the study, I suggest future researchers should examine how leaders could influence the independent

variables, which could result in improvements to KS intentions. Researchers may also want to examine additional variables, which may predict KS intentions such as rewards, technology, time, or culture. Surveying organizational members of different industries and locations may also offer additional insights to KS intentions as wholesale distribution organizations in the Northeastern United States involved in ERP implementations limits the generalizations of the study. Researchers may also want to consider surveying the same population using a different survey instrument or using a qualitative approach to see if the results are consistent. Also by surveying different age groups, genders, or other demographics may offer additional insights into employees' KS intentions.

Reflections

The research performed in the study was rewarding and satisfying for multiple reasons. The study involved surveying 82 participants from wholesale distribution organizations to examine how different variables relate to employees' intentions to share knowledge. The research provided insight into a problem that affects how wholesale distribution leaders prepare for employee attrition and manage productivity. The findings were significant because the overall data fit the multiple correlation model, and because of the strong and statistically significant correlations that subjective norms and attitude had toward KS intentions.

When starting the study, and from reviewing literature, I had the preconception that all the study predictor variables may have related to KS intentions. I was surprised when I found that though the model was significant, or all three predictor variables together, yet only two provided positive significance (subjective norms and attitudes).

The study process revealed the importance of social responsibility to distribution leaders and the need to understand how different variables influence employees' KS intentions with other organizational members. The research experience allowed me to broaden my knowledge concerning the procedures for conducting research of this scale. I look forward to continuing research on this topic and publishing additional studies or articles around the importance of KS.

Summary and Study Conclusions

The objective of the correlational study was to determine to what extent, if any, a relationship existed between self-worth, subjective norms, attitudes, and intention to share knowledge. The research question that guided the study was: What is the relationship between employees' sense of self-worth, subjective norms, attitudes, and intentions of employees' to share knowledge with other employees? The hypothesis examined relationships and the strengths of correlation between the independent variables of employees' sense of self-worth, subjective norms, and attitude to the dependent variable of intentions to share knowledge. I analyzed the predictor variables by examining the model as a whole. By examining the model, a researcher can understand if each predictor variable together has influence, and to what degree each has, on the dependent variable.

I used the quantitative correlational design and multiple linear regression to analyze data from 82 survey respondents who represented a sample of employees of wholesale distribution organizations in the Northeastern United States involved in ERP implementations. I concluded from the study results that although the model as a whole

was significant to predict employees' KS intentions, rejecting the null hypothesis, only the predictor variables subjective norms and attitudes were significant. In the final model, attitude toward KS (beta = 0.45, $p = 0.001$) accounted for a higher contribution to the model then subjective norms (beta = 0.32, $p = 0.004$). Sense of self-worth did not provide any significant variation in KS intentions. The findings linked to prior literature concerning the KS variables and the TPB.

Even though KS may influence organizational outcomes such as innovativeness, turnover, performance, and competitiveness, some organizational leaders struggle to find methods or run into barriers with transferring knowledge to other organizational employees (Bracci & Vagnoni, 2011; Lin & Joe, 2012; Reychav & Weisberg, 2010). In project management, project leaders should encourage KS for retaining project information because KS facilitates methods for project team members to share information from current to future projects thus increasing efficiencies (Santos et al., 2012). Organizational leaders should plan for the millions of American employees eligible to retire through 2026, causing a void of knowledge. Organizational leaders could use the current findings to explore and develop strategies to increase employees' KS intentions, focusing on attitude and subjective norms, to bridge the knowledge gap that occurs from employee attrition.

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Appendix A: Survey Questionnaire

Qualification Questions:

A. Do you work for a wholesale distribution organization in the Northeastern United States?

Northeastern US consists of states: CT, DC, DE, MA, MD, ME, NH, NJ, NY, OH, PA, RI, VT, WV
Wholesale distribution organization is an organization that does at least some activities of distributing goods to other organizations.

- ☐ Yes
- ☐ No

B. Were you (are you) involved at your current organization in an ERP implementation?

You can consider yourself involved if you took or will be taking part of any type of training for the ERP implementation

- ☐ Yes
- ☐ No

If all questions above were answered as "Yes" then proceed to the next set of questions. If any question were answered with a "No" then the participant does not meet the study demographic and not eligible to complete the survey.

C. Which represents your current role?
   - ☐ Business Owner
   - ☐ Director/Executive
   - ☐ Manager/Supervisor
   - ☐ Employee

D. At the end of your ERP implementation, did your organization document lessons learned from the project?
   - ☐ Yes
   - ☐ No
   - ☐ Unsure
   - ☐ Implementation is on-going or not complete

		Extremely Unlikely (or) Very Rarely				Extremely Likely (or) Very Frequently
1	My knowledge sharing helps other members in the organization solve problems.	1	2	3	4	5
2	My knowledge sharing creates new business opportunities for the organization.	1	2	3	4	5
3	My knowledge sharing improves work processes in the organization.	1	2	3	4	5
4	My knowledge sharing increases productivity in the organization.	1	2	3	4	5
5	My knowledge sharing helps the organization achieve its performance objectives.	1	2	3	4	5
6	My knowledge sharing with other organizational members is good.	1	2	3	4	5
7	My knowledge sharing with other organizational members is harmful.	1	2	3	4	5
8	My knowledge sharing with other organizational members is an enjoyable experience.	1	2	3	4	5
9	My knowledge sharing with other organizational members is valuable to me.	1	2	3	4	5
10	My knowledge sharing with other organizational members is a wise move.	1	2	3	4	5
11	My CEO thinks that I should share my knowledge with other members in the organization.	1	2	3	4	5
12	My boss thinks that I should share my knowledge with other members in the organization.	1	2	3	4	5
13	My colleagues think that I should share my knowledge with other members in the organization.	1	2	3	4	5
14	Generally speaking, I try to follow the CEO's policy and intention.	1	2	3	4	5

15	Generally speaking, I accept and carry out my boss's decision even though it is different from mine.	1	2	3	4	5
16	Generally speaking, I respect and put in practice my organization's decision.	1	2	3	4	5
17	I will share my work reports and official documents with members of my organization more frequently in the future.	1	2	3	4	5
18	I will always provide my manuals, methodologies, and models for members of my organization.	1	2	3	4	5
19	I intend to share my experience of know-how from work with other organizational members more frequently in the future.	1	2	3	4	5
20	I will always provide my know-how or know-whom at the request of other organizational members.	1	2	3	4	5
21	I will try to share my expertise from my education or training with other organizational members in a more effective way.	1	2	3	4	5

Survey adapted from Bock, G.W., Zmud, R.W., Kim, Y.G. and Lee, J.N. (2005). Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social psychological forces and organizational climate. *MIS Quarterly, 29*(1), pp. 87-111. Retrieved from http://www.misq.org.

Appendix B: Survey Adaption Permission

Permission to use material from

MIS Quarterly in doctoral dissertation

Permission is hereby granted for Andrew Roth to use material from "Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social-Psychological Forces, and Organizational Climate," Gee-Woo Bock, Robert W. Zmud, Yung-Gul Kim, and Je-Nam Lee, MIS Quarterly (29:1), March 2005, pp. 87-111, specifically an adaptation of the survey instrument, as well as other material as needed, in his doctoral dissertation being completed for Walden University.

In addition to the citation information for the work, the legend should include Copyright © 2005, Regents of the University of Minnesota. Used with permission.

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Janice I. DeGross

Manager

Appendix C: Participant Consent Form

Dear Prospective Survey Participant,

I invite you to participate in a research study to examine knowledge sharing within distribution organizations, where leaders implemented an enterprise resource planning (ERP) software system. Employees who work for wholesale distribution organizations in the northeastern United States who have experience with ERP implementations are invited to participate in the survey. This consent form is part of a process called informed consent and provides you information to understand more about the study before deciding whether to take part.

The study is being conducted by Andrew Roth, who is a doctoral student at Walden University. Andrew Roth is a Project Manager Professional and currently employed as a Program Manager with Epicor Software. However, the study is separate from this role.

Background of the Study:
The purpose of the study is to understand more about relationships between variables that may influence knowledge sharing and employees' intention to share knowledge.

Procedures:
If you agree to be a participant for the study, you will be asked to answer an electronic questionnaire, with a total expected duration of 4-8 minutes.

Voluntary Nature of the Study:
Your participation in the study is strictly voluntary. This means that any involved parties will respect your decision of whether or not you want to be in the study. No one at your current workplace will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind during the study. If you feel stressed during the study, you may stop at any time. You may skip any questions that you feel are too personal.

Risks and Benefits of Participating in the Study:
A primary benefit for being included in the study is to provide insights and personal experiences that will be summed with other's feedback with the goal of understanding knowledge sharing perceptions and improving knowledge sharing that occurs within organizations, more specifically those that implemented an ERP software system. There is no risk involved with being in the study because the study is only asking the research

participants to answer questions based on past experiences within the current workplace. Anonymity of the participants and information provided will be enforced.

Compensation:
No financial compensation will be offered for participating in the study.

Confidentiality:
Any information you provide will be kept anonymous at all times. The researcher will not use your information for any purposes outside of this research project. After the survey is closed, I will download data for analysis. I will store the survey data electronically on a password secured personal computer, keeping data safe for 5 years after publication date in accordance to IRB requirements. After 5 years, I will permanently destroy the data using applicable data shredding software.

Contacts and Questions:
You may ask any questions you have now, or, if you have questions later, you may contact the researcher via phone at 570-578-1528 or e-mail at andrew.roth@waldenu.edu. If you want to talk privately about your rights as a participant, you can contact a Walden University research participant advocate who can discuss this with you at 1-800-925-3368, extension 3121210, or email irb@waldenu.edu. Walden University's approval number for the study is 07-17-15-0097403, and it expires on July 16, 2016.

Implied Consent:
In order to protect your privacy, a signature is not being collected. You may choose to print and retain a copy of the consent form for your records. If you decide to participate, please complete the enclosed survey. Your completed electronic submission of this survey is implied consent.

Appendix D: Letter of Permission

Organization Name
Contact Information

Date

Dear Andrew Roth,

Based on my review of your research proposal, I give permission for you to conduct the study entitled Knowledge Sharing Intentions in Wholesale Distribution Organizations within Organization Name. As part of the study, I authorize you to email members of Organization Name to request participation of the study. Individuals' participation will be voluntary and at their own discretion.

I understand that our organization's identity will remain private and the survey does not ask any identifiable information of the participants thus data collected will remain entirely confidential and may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,
Authorization Official
Contact Information

Appendix E: Email to Participate in Survey

Email Subject: Request to Complete Doctoral Study Survey

Dear *Employee Name* of *Organization Name*,

My name is Andrew Roth. I am a student at the School of Management at Walden University and have a wealth of experience working with wholesale distribution organizations. I anticipate conducting a research study as part of the requirements of my Doctor of Business Administration degree, and received permission from your organization to invite you to participate.

I am studying knowledge sharing intentions of employees in wholesale distribution organizations, which includes researching about how different variables relate to intentions to share knowledge. If you decide to participate, you will be asked to acknowledge a consent form, answer two qualifying questions, two demographic questions, and then rank a response via a 5-point Likert scale to 21 survey questions. Participation is confidential and no personally identifiable information will be asked on the survey.

Taking part in the study is your discretion. You may choose to quit at any time prior to submission if you prefer not to complete. There are no ramifications for not completing the survey. If you have any questions regarding the survey, you may contact me at andrew.roth@waldenu.edu. Your participation may help leaders realize the benefit to knowledge sharing and help bring change to the industry.

Thank you for your consideration. If you would like to participate, please begin by navigating to the following link: [Link inserted]. Please complete prior to [Due date inserted]

Thank You,
Andrew Roth
andrew.roth@waldenu.edu

Appendix F: SPSS Output

Descriptive Statistics

			Bootstrap[a]			
					95% Confidence Interval	
		Statistic	Bias	Std. Error	Lower	Upper
intentions	Mean	4.2049	-.0002	.0617	4.0780	4.3171
	Std. Deviation	.55331	-.00466	.03128	.48491	.61036
	N	82	0	0	82	82
selfworth	Mean	4.1951	.0016	.0522	4.0927	4.3000
	Std. Deviation	.47969	-.00472	.03091	.41390	.53494
	N	82	0	0	82	82
attitude	Mean	4.2829	-.0004	.0499	4.1829	4.3756
	Std. Deviation	.45968	-.00297	.03320	.39347	.52054
	N	82	0	0	82	82
subnorm	Mean	4.3679	-.0007	.0599	4.2480	4.4837
	Std. Deviation	.54354	-.00407	.03015	.47729	.59920
	N	82	0	0	82	82

a. Unless otherwise noted, bootstrap results are based on 2000 bootstrap samples

Figure F1. Descriptive Statistics.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.694[a]	.482	.462	.40577

a. Predictors: (Constant), subnorm, attitude, selfworth

b. Dependent Variable: intentions

Figure F2.Model Summary.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.955	3	3.985	24.203	.000[b]
	Residual	12.843	78	.165		
	Total	24.798	81			

a. Dependent Variable: intentions

b. Predictors: (Constant), subnorm, attitude, selfworth

Figure F3.ANOVA.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.283	.470		.601	.549		
	selfworth	.141	.124	.122	1.134	.260	.574	1.743
	attitude	.453	.129	.377	3.526	.001	.582	1.717
	subnorm	.318	.107	.313	2.986	.004	.605	1.652

a. Dependent Variable: intentions

Figure F4.Coefficients.

Bootstrap for Coefficients

Model		B	Bootstrap[a]				
			Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
						Lower	Upper
1	(Constant)	.283	-.035	.326	.375	-.403	.911
	selfworth	.141	-.004	.141	.322	-.157	.398
	attitude	.453	.026	.156	.006	.225	.836
	subnorm	.318	-.014	.116	.010	.076	.527

a. Unless otherwise noted, bootstrap results are based on 2000 bootstrap samples

Figure F5.Bootstrap for Coefficients.