

**A QUANTITATIVE EXAMINATION OF AUTHENTIC LEADERSHIP, TENURE, AND
PROPENSITY FOR KNOWLEDGE SHARING BEHAVIOR IN ORGANIZATIONS**

by

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Abstract

Organizations must use limited resources to gain a competitive edge; knowledge sharing among employees, a component of knowledge management, has been linked to this desired outcome. Recently, knowledge management has become a topic of great interest among researchers; their work attempts to empirically identify methods and tools to improve this organizational asset. Knowledge sharing requires employee interactions and the involvement of elements that affect employees, such as leadership. However, there are many identified barriers to knowledge sharing and finding the tools to mitigate these barriers would prove valuable to organizations. This study evaluated the effect of authentic leadership on knowledge sharing behavior to determine if this leadership style could help mitigate knowledge sharing barriers. Given that the length of time a leader supervises followers affects leadership effectiveness, the effect of positional leader tenure on the relationship between authentic leadership and knowledge sharing was included in the study. Authentic leadership and knowledge sharing were found to be positively and significantly related. Positional leader tenure did not moderate this significant relationship. Knowledge sharing appears to be vital to organizational success, and an in-depth understanding of knowledge sharing could create invaluable techniques for removing barriers.

Dedication

This study is dedicated first and foremost to the honor and glory of God. It is also dedicated to the most supportive and amazing husband, Dr. Craig Seheult, who gave and loved unselfishly while I waded through this daunting task.

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Abbreviations

AL	Authentic Leadership
ALQ	Authentic Leadership Questionnaire
ALT	Authentic Leadership Theory
GLM	General Linear Model
KS	Knowledge Sharing
KSS	Knowledge Sharing Scale
LeadTen	Leader Tenure
OLS	Ordinary Least Squares
SET	Social Exchange Theory

CHAPTER 1. INTRODUCTION

Introduction to the Problem

Knowledge Sharing

Knowledge is a foundation for organizational growth. An emerging field in organizational management is knowledge management, which involves the study of knowledge transfer, sharing, and housing (Gupta, 2008; Reige, 2005). The growing interest is due to years of research studies that have linked knowledge management and successful business growth; as a result of this association the field of knowledge management continues to grow (Yuan, Wu, & Lee, 2012). This dissertation examines how leadership style may positively or negatively affect knowledge sharing. Specifically, authentic leadership is studied to see whether it supports knowledge sharing.

Organizations must remain competitive within the marketplace and knowledge management provides a competitive edge for an organization (Milne, 2007; Santos, Soares, & Carvalho, 2012). Successful knowledge management reduces knowledge gaps, increases project management efficiency, and reinforces trust within an organization (Santos et al., 2012). An end result of these positive outcomes includes increased market performance (Reige, 2005). The correlation found in the extant literature of knowledge management with organizational success shows the importance of understanding knowledge and how to manage it. The next section addresses challenges to managing knowledge sharing and review potential solutions.

Knowledge Sharing Barriers

As important as knowledge sharing is, it does not happen naturally. Extant literature identifies multiple barriers to knowledge sharing (Husted, Michailova, Minbacva, & Pedersen,

2012). This study breaks down the barriers to knowledge sharing into six general categories: (1) personal factors, (2) technological factors, (3) cultural norms and context, (4) lack of time, (5) personal vulnerability, and (6) task oriented leadership style (Hew & Hara, 2007; Husted et al., 2012; Luu, 2012; Santos et al., 2012; Wu, 2013). The first barrier of personal factors largely depends on the follower's personal beliefs and how they determine their willingness to share knowledge (Ardichvili, 2008). The second barrier of technological factors include system restrictions, the follower's understanding of technology, and capabilities of technology to correctly house and provide a cohesive, searchable platform to retrieve knowledge (Riege, 2005; Santos et al., 2012). The third barrier of cultural norms and context describes personal and group expectations, practices, and settings in which knowledge may exist within an organization (Ardichvili, 2008). The fourth barrier of lack of time takes into account all priorities that may prevent knowledge sharing behaviors (Gupta, 2008; Hew & Hara, 2007). The fifth barrier of personal vulnerability identifies the intentional withholding of knowledge when deemed necessary for survival within an organizational culture (Gupta, 2008). The sixth barrier involves a leadership style that focuses only on the task rather than the individual(s) performing the task and their needs (de Vries, Bakker-Pieper, & Oostenveld, 2010). Given that this study concentrates on behaviors, beliefs, and responses to an organizational environment, only the four knowledge sharing barriers that are affected by these concepts are addressed: personal factors, cultural norms and context, personal vulnerability, and task oriented leadership style. These barriers are thought to be more influenced by leadership style than technological factors and time.

Knowledge is shared and communicated orally (Truran, 1998) through observed behaviors (de Vries et al., 2010) and through externally stored representations (such as written

materials). As a result it is possible that communication can change how knowledge is exchanged without the communicators realizing their impact. The work of de Vries et al. (2010) found that leader communication, involving both words and behaviors, had a direct affect on follower outcomes, such as empowerment, commitment, and knowledge sharing. This finding suggests that leader communication and behavior impacts follower behavior and beliefs, which directly affects knowledge sharing. This also implies that leadership style can either support or restrict knowledge sharing without the leader implementing an explicitly stated knowledge sharing program. What de Vries et al. did not address was whether a particular leadership style could mitigate knowledge sharing barriers through the leader's intrinsic traits. This study examines this idea and investigates whether a specific type of leadership (that is, authentic leadership) may support communication that increases knowledge sharing.

Building a culture supportive of communication and knowledge sharing involves all organizational players. Some players, such as leaders, have more impact on organizational culture than others. Leaders participate in shaping the organizational culture (Ardichvili, 2008; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008), which means leaders play a vital role in knowledge sharing. Janson and McQueen's (2007) research supported this concept; they found that leadership is one of the most influential factors in learning and knowledge sharing. Janson and McQueen supported Matthew, Cianciolo, and Sternberg's (2005) research that found some leaders gain knowledge and experience and therefore learn how to shape culture. This is done through self-development and learning how to apply new knowledge. What was not identified in Janson and McQueen's study was how specific leadership styles may influence and break down knowledge sharing barriers; this topic is studied in this dissertation. The next step is

to ask how leadership style may influence communication and behavior involved in knowledge sharing.

Authentic Leadership

Information on authentic leadership has grown since the early 2000s. Studies have shown that the authentic leadership style consistently increases trust between leader and follower as a central characteristic (Walumbwa et al., 2008). Other leader behaviors found by Walumbwa et al. (2008) include acting in an ethical manner and supporting follower empowerment. The theory of authentic leadership includes four constructs: self-awareness, relational transparency, internalized moral perspective, and balanced processing. Self-awareness is the self-regulation of behaviors. Self-aware leaders understand emotions behind personal behavior and how their actions affect those in their sphere of influence. Relational transparency is working honestly with followers and promoting their self-development. The ability to be transparent in all relations with followers means leaders are genuinely interested and open in their conversations and care about others. Internalized moral perspective is self-regulation guided by personal morals and values. These morals dictate decisions regardless of outside pressures. Balanced processing is the objective review of data before making a decision. By being objective and requiring data whenever possible before making a decision, an authentic leader is able to be consistent and reduce the negative impact of personal biases when making decisions.

Walumbwa et al. (2008) found authentic leadership to be a unique and comprehensive leadership style that supports genuine communication. Seminal studies (Luthans & Avolio, 2003; Walumbwa et al., 2008) identify the distinctiveness of authentic leadership from prominent leadership theories such as transformational leadership; recent studies support the same findings (Leroy, Palansky, & Simons, 2012; Prottas, 2013; Tonkin, 2013). The research presented here

investigates how authentic leadership may create an atmosphere that can sustain an environment of effective knowledge sharing.

Specifically, this research examines whether authentic leadership results in observable changes in knowledge sharing of the followers. As discussed below, the authentic leader constructs suggest that knowledge sharing should increase. These traits should produce observable behaviors, which may change the followers' knowledge sharing behaviors. This study attempts to identify whether follower behavior is affected by the leader's attributes of authentic leadership.

It is proposed that a leader's behaviors encourage knowledge sharing behaviors through the mechanisms of trust, role modeling, and empowerment. The next sections briefly review these hypothesized mitigating mechanisms. They are evaluated in the light of potential impact on the four knowledge sharing barriers that may be influenced by authentic leader traits.

Mitigating Knowledge Sharing Barriers Through Mechanisms of Trust, Role Modeling, and Empowerment

This study seeks to investigate how authentic leadership may break down knowledge sharing barriers. A four-step sequence has been developed of how authentic leadership may mitigate the four knowledge sharing barriers relating to personal behaviors and beliefs. The first step presents how the three authentic leadership traits of self-awareness, internalized moral perspective, and relational transparency generate observable behaviors. The second step assumes that the follower observes the behaviors. The third step suggests the observed authentic leadership behaviors produce positive changes in follower behavior. These changes in behavior are due to three processes: trust, role modeling, and empowerment (Walumbwa et al., 2008). The fourth step posits that knowledge sharing behaviors will increase because of the changes in

behaviors stated in step three. The three processes identified as the change mechanisms are introduced in the next sections.

Trust

In order for a leader to increase knowledge sharing the followers must trust the leader. Specifically, Prottas (2013) discovered that when a leader is trusted the follower is more likely to engage in productive behaviors. Prottas found that trust increases when the leader is perceived to have integrity and consistently follows up words with supportive actions. Studies by de Vries et al. (2010) and Hannah et al. (2011) showed that if a trusted leader demonstrated positive knowledge sharing behaviors one outcome is that the followers increased their knowledge sharing. Wong and Cummings (2009) also found that the likelihood of a follower having positive work outcomes increased as a trusted leader's positive behaviors increased. These studies suggest that the followers' trust in their leader is a necessary condition for knowledge sharing behavior. For example, role modeling is thought to be a way to remove barriers to knowledge sharing, and modeling will not occur unless the observer trusts the model.

Role Modeling

One of the results of trust is that an observer is more likely to model an individual's behavior. Bandura (1997) established that much of human behavior is learned through observation; he also found that people are more likely to model the behavior of trusted individuals. Prottas (2013) built on this concept and found that positive behaviors demonstrated by trusted leaders are more likely to be repeated by followers. A connection can then be made that observed knowledge sharing behaviors by a trusted leader may provide a supportive environment to the observer to perform the same knowledge sharing behaviors. The role

modeling of knowledge sharing behaviors by an authentic leader should cause followers to also share knowledge.

Empowerment

Observed behaviors are best put into practice when a follower participates in decision-making actions (Huang et al., 2006). Empowering followers to participate in organizational activities is important to team performance and is a focus of authentic leadership (Srivastava, Bartol, & Locke, 2006; Walumbwa et al., 2008). Having the ability to contribute to an organization further empowers followers to participate (Srivastava et al., 2006). The result of empowerment leads to increased productivity (Ardichvili, 2008; Prottas, 2013), which is also a result of increased knowledge sharing due to the requirement to interact with colleagues to gain knowledge (Lahti, Darr, & Krebs, 2002). Empowerment should promote knowledge sharing by breaking down barriers and encouraging organizational growth.

In summary, it is hypothesized that barriers to knowledge sharing are mitigated by authentic leadership traits through the processes of trust, role modeling, and empowerment. This study addresses the current gap between the need for knowledge sharing for successful organizational management and known knowledge sharing barriers; the positive influence of authentic leadership traits is offered as a potential solution.

Background of the Study

In order to understand the background of the study it is important to understand the background of the main constructs in the study: knowledge sharing and authentic leadership. This section discusses the background of these two items in preparation for further in-depth review in chapter two.

Knowledge Sharing

Knowledge sharing is a process where individuals share personal knowledge freely (Gupta, 2008). Knowledge may be shared using a teaching exercise or a process where new knowledge is created within a group, whether through a formal program or informal conversation (de Vries et al., 2010; Gupta, 2008). Knowledge sharing is frequently impeded due to the six common barriers briefly discussed above. The understanding of knowledge sharing must include what processes sustain it. One of these sustaining processes is pro-social behavior.

Pro-social behavior is positive action that is intended to do good for others. Research identifies the importance of individual pro-social behaviors within an organization (Hannah, Avolio, & Walumbwa, 2011). Hannah, Avolio, and Walumbwa's (2011) findings identified pro-social behaviors as behaviors involving deliberate actions to sustain and protect individuals and the organization. Some of the deliberate actions found in this study included helping colleagues, treating others with respect, and cooperating with a team. It is important to note that Hannah et al. (2011) identified pro-social behaviors as stemming from individual motivation, which according to Gupta (2008) is part of an effective knowledge sharing environment.

Knowledge sharing depends on multiple facets, one of which is individual motivation. Lam & Lambermont-Fort (2010) found that individual motivation depends largely on the social environment, which either supports or prevents willingness to share knowledge. Social influences also affect pro-social behaviors as context is provided for acceptable behaviors (Hannah et al., 2011). Positive social influences help mitigate one of the knowledge sharing barriers of cultural norms and context. As a result, it is beneficial to understand the individual actions and motivations that produce pro-social behaviors, and also support knowledge sharing in an organizational environment.

A central idea in this dissertation is that authentic leadership promotes trust, which increases pro-social behaviors, which leads to role modeling. The authentic leader also promotes empowerment. Where trust exists pro-social behaviors increase (de Vries et al., 2010). Trust increases a perception of a safe and protected environment in which it is acceptable to share knowledge (Gupta, 2008). Trust must be increased in order for knowledge sharing barriers to be decreased. Once trust increases followers are more likely to engage in role modeling, which facilitates empowerment and encourages knowledge sharing. As a result, it is hypothesized that authentic leadership increases trust, leads to role modeling, promotes empowerment, and thus increases knowledge sharing.

Authentic leadership

It has been established that four constructs currently make up the unique theory of authentic leadership: (1) self-awareness, (2) internalized moral perspective, (3) balanced processing, and (4) relational transparency (Walumbwa et al., 2008). Walumbwa et al. (2008) performed a factor analysis that revealed four constructs that describe authentic leadership. Other studies support the distinctiveness of authentic leadership (Peus, Wesche, Streicher, Braun, & Frey, 2012; Walumbwa et al., 2008). It has been found to be notably different from well-established leadership theories, such as transformational leadership (Tonkin, 2013). The uniqueness of authentic leadership provides a background for this study and gives the foundation for the six-step progression from leadership behavior to knowledge sharing in an organization. This is discussed in detail in chapter two.

Positional Leader Tenure

The leaders' years of tenure affects their level of influence and therefore must be considered when attempting to understand the effectiveness of a leader's influence on follower behavior. Positional leader tenure is defined in this study as the amount of time measured in years that a leader has occupied his or her current leadership position within an organization. In terms of tenure, it has been found that leadership influence and effectiveness decreases after 12 to 13 years (Hambrick & Fukutomi, 1991; Williams & Hatch, 2012). The extent of the influence of tenure is studied as a moderating variable in this study.

Statement of the Problem

Barriers to knowledge sharing impede organizational success and leadership style may be a potential solution. The worst consequence of organizations not looking for ways to mitigate knowledge sharing barriers is the loss of a competitive edge (Alipour & Karimi, 2011). The ideas of how to overcome the common barriers and encourage knowledge sharing are varied, but researchers agree that the barriers must be overcome (Milne, 2007; Santos et al., 2012). Four barriers to knowledge sharing have been previously identified, each having different mitigating factors related to personal behaviors and organizational culture (Husted et al., 2012; Luu, 2012; Santos et al., 2012; Wu, 2013). Research suggests a potential solution through leadership styles and the resulting positive effects on behaviors; it has been hypothesized by other researchers that consistent positive leader behavior increases trust, which is one condition of pro-social behaviors (de Vries et al., 2010; Islam, Low, & Rahman, 2012; Wu, 2013).

If trust is a necessary condition for increasing pro-social behaviors organizations must determine how to increase trust. There is increasing evidence suggesting that there is a connection between leadership style, trust, and knowledge sharing behavior (de Vries et al.,

2010; Walumbwa et al., 2008). Lack of trust in leaders causes followers to hoard knowledge rather than share it (Islam et al., 2012). This connection is driven in part by how leadership style affects leader communication capabilities, which either builds up or tears down trust with followers (de Vries et al, 2010; Walumbwa et al., 2008). Based on the above cited research, if a leader is trusted followers do not feel the need to hoard knowledge and feel more free to communicate within the organizational setting. This example of trust being a necessary condition to mitigate the knowledge sharing barrier of personal vulnerability has similar outcomes when applied to the other barriers, as discussed further in chapter 2. Therefore, along with role modeling and empowerment, trust is a preliminary step toward decreasing knowledge sharing barriers.

Is there a leadership style that increases trust and shows promise in mitigating knowledge sharing barriers? The literature suggests that there is a leadership style that may increase knowledge sharing (de Vries et al., 2010). Walumbwa et al., (2008) identified that authentic leadership increases trust in followers, and this has been identified as a necessary condition for reducing barriers to knowledge sharing. A leader who exhibits the traits associated with authentic leadership builds trust in followers and promotes pro-social behaviors needed for knowledge sharing (Gupta, 2008; Wong & Cummings, 2009). Authentic leadership has a great impact on trust (Oronato & Zhu, 2014; Walumbwa et al., 2008), and for this reason it is believed it will begin the process of breaking down the barriers to knowledge sharing.

Trust is the first step in changing the behavior of followers. As shown in Table 1, each of the four barriers studied have change mechanisms that reduce the effectiveness of the barriers and increase knowledge sharing, and trust is listed in all areas. The following mechanisms are

proposed as change mechanisms for each of the four studied barriers: trust, role modeling, and empowerment (see Table 1). Further description of this table is given in chapter two.

Table 1. *How Trust, Role Modeling, and Empowerment Mitigate Knowledge Sharing Barriers*

Leader Trait	Leader Behaviors	Change Mechanisms	Barriers Mitigated
Self awareness	Act on personal values, understands how personal behaviors affect others and organization	- Trust - Role modeling	- Personal vulnerability - Task oriented leadership style
Relational transparency	Genuine presentation during all communication	- Trust - Role modeling - Empowerment	- Personal beliefs - Cultural norms and context - Personal vulnerability - Task oriented leadership style
Balanced processing	Consistent decisions based on data and not emotions	- Trust - Empowerment	- Cultural norms and context - Personal vulnerability
Internalized moral perspective	Demonstrate consistent and ethical behaviors regardless of external influences	- Trust - Empowerment	- Cultural norms and context - Personal vulnerability

Introduction to Six-Step Process

Trust is a necessary condition for solving the problem of knowledge sharing barriers; the mechanisms of role modeling and empowerment are processes that break down knowledge sharing barriers. This is illustrated in the six-step process that is briefly covered here and more in depth in chapter two. The reviewed literature seems to suggest that traits exhibited by an authentic leader support an end result of knowledge sharing behavior in a six-step process. This process is supported by research performed by Bandura (1977), de Vries et al. (2010), Hannah et al. (2011), Prottas (2013), Walumbwa et al. (2008) and others. First, a self-aware leader understands how to communicate with followers. Second, the communication is carried out with relational transparency, or genuineness, and driven by the leader's internalized moral perspective and balanced processing, or value-driven decisions. Third, followers observe the leader's consistent and genuine behaviors. Fourth, followers have an increased level of trust as a result of observing the positive behaviors. Fifth, the leader demonstrates pro-social behaviors. Sixth, the followers are empowered to share in the same pro-social behaviors that support knowledge sharing. With that being said, there are other factors outside of leadership style that affect trust in followers to consider, such as positional leader tenure.

The influence of positional leader tenure potentially impedes trust between leader and follower. Hambrick and Fukutomi (1991) and Williams and Hatch (2012) found that leader influence and the ability to build trust begins to decline for leader tenure greater than 12 or 13 years. Therefore, this study hypothesizes that authentic leaders with tenure of less than 13 or greater than or equal to thirteen years is a potential moderating variable.

Purpose of the Study

The purpose of this study is to assess the extent to which perceived authentic leadership explains knowledge sharing behavior and the extent to which positional leader tenure moderates the relationship between perceived authentic leadership and knowledge sharing behavior. Specifically, this study seeks to identify whether a specific leadership style, authentic leadership, may increase knowledge sharing behavior by breaking down the four identified knowledge sharing barriers within an organization. The specific relationship between the variables hypothesized in this study is analyzed using a regression analysis.

Many organizations seek ways to encourage knowledge sharing, to minimize knowledge gaps, and boost the organization's competitive edge (Gupta, 2008; Lam & Lambermont-Ford, 2010; Santos et al., 2012). Knowledge sharing requires an environment in which followers are encouraged to share information in ways that avoid common knowledge sharing barriers (Husted et al., 2012). Hannah et al. (2011) identified that an authentic leader who models behaviors such as setting social norms and expectations supports positive pro-social behaviors. Prottas (2013) identified the foundation of findings such as leadership styles can positively or negatively affect follower behavior. For example, the use of task-oriented leadership (one of the identified knowledge sharing barriers) negatively affects follower behavior by diminishing trust and disrupting potential interaction (de Vries et al., 2010; Gupta, 2008).

Studies on authentic leadership traits show promise in providing answers on how an organization can promote pro-social and knowledge sharing behaviors through trust building (Gupta, 2008; Oronato & Zhu, 2014). This study addresses the current gap in the leadership literature in tying together authentic leadership traits to pro-social behavior with the end result of knowledge sharing. This gap is studied while taking positional leader tenure into account.

Rationale

The rationale behind this study is to better understand the influence of follower-perceived authentic leadership on knowledge sharing. Santos et al. (2012) identified that within the field of organizational management knowledge management is one solution to the issue of creating and maintaining a competitive edge. However, barriers to knowledge sharing, an aspect of knowledge management, have been identified (de Vries et al., 2010; Hew & Hara, 2007; Husted et al., 2012; Luu, 2012; Santos et al., 2012; Wu, 2013). One of the identified barriers is leadership style; specifically, task-oriented leadership style is a barrier to knowledge sharing (de Vries et al., 2010).

Authentic leadership has been identified as a human resource focused leadership style (Walumbwa et al., 2008). This suggests mitigation of at least one of the identified knowledge sharing barriers of task-oriented leadership. Walumbwa et al. (2008) and Jensen and Luthans (2006) also define authentic leadership as creating an environment that builds trust and one in which followers report higher levels of positive self-perceptions. This could potentially address other identified barriers influenced by follower perceptions, such as personal factors, cultural norms and context, and personal vulnerability.

Understanding the effect of authentic leadership on knowledge sharing will aid organizations in addressing common knowledge sharing behaviors. A research-backed leadership style provides opportunity to identify and implement leadership behaviors that support reversal of barriers and encourages knowledge sharing behaviors in followers. This understanding could also identify leader behaviors that can be worked into leadership training programs and personal development opportunities. It is understood that regardless of the

findings of this study it is not possible to definitively determine that authentic leadership is more effective than any other leadership style.

As this study is introducing the topic of authentic leadership effect on knowledge sharing behavior the comparison between the constructs is an overall comparison. Individual subscale comparisons are identified as future research opportunities in chapter five. It is important to note that the development of theory and the use of hypothesis testing, quantitative measurement, and statistics shows that this study is an instance of objectivism (or positivism) (Brand, 2009).

Authentic Leadership Theory

Walumbwa et al. (2008) identified an authentic leader as one who “owns” personal experiences and uses these experiences to know the true self and act in harmony with this knowledge. Empirical studies have found that followers tend to trust authentic leaders, which results in follower behavior changes that mirror the trusted authentic leader’s behavior (Hannah et al., 2011). It is hypothesized that the authentic leader leads followers to share knowledge.

Mechanisms that lead to positive knowledge sharing behavior have been shown in Table 1. Hannah et al. (2011) found that consistent communication by authentic leaders increased trust, which created a desire to imitate the authentic leader’s authentic and teamwork behaviors. Authentic leaders, by definition, demonstrate a relational transparency in communication (Luthans & Avolio, 2004; Walumbwa et al., 2008). In this study it is hypothesized that authentic leaders will promote knowledge sharing among their followers. This is based on the idea that these leaders will increase trust, leading to knowledge sharing behavior among followers. Authentic leaders will also empower their followers to participate in decisions important to the organization. This hypothesis assumes the authentic leader has social powers that will lead

followers to increase knowledge sharing behaviors. This study is based on the application of this theory.

Research Question

The research questions evaluated in this study are:

ResQ 1. What is the extent to which authentic leadership behavior, as perceived by followers, explains knowledge sharing behavior?

ResQ 2. To what extent does positional leader tenure of an authentic leader moderate knowledge sharing behavior?

Significance of the Study

Barriers to knowledge sharing have been identified for more than a decade, yet there is no agreed upon solution available to organizations for reducing these barriers (Lam & Lambermont-Ford, 2012; Riege, 2005). This study seeks to add to the literature by empirically investigating how authentic leadership may affect common knowledge sharing barriers. This study also investigates whether positional leader tenure affects the interaction between perceived authentic leadership and knowledge sharing. If authentic leadership affects knowledge sharing this suggests additional research opportunities.

This study only looks at how authentic leadership affects an aggregated measure of knowledge sharing, therefore additional research opportunities could look into specific knowledge sharing barriers. If a relationship is found between the two aggregated constructs, specific knowledge barriers can be studied to better understand how they are mitigated. For example, authentic leadership could affect personal vulnerability and cultural norms and context but not affect the barrier of personal beliefs. The results found on authentic leadership suggest

that it could be explored to determine relationships to other aspects of knowledge sharing beyond mitigating barriers. If a relationship is found the effect of authentic leadership on specific barriers could be studied in relation to other leadership styles, such as transformational leadership. Specifically, in the example provided of research showing authentic leadership affecting some, but not all, of the knowledge sharing barriers then another leadership style, such as transformational leadership, could be studied to understand if it affects knowledge sharing barriers differently than authentic leadership.

Definition of Terms

In order to clarify terminology included in the proposed study the following are definitions of terms.

Authentic leadership. “A pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development” (Walumbwa et al., 2008, p. 94).

Balanced processing. A behavior in which leaders show that, “they objectively analyze all relevant data before coming to a decision” (Walumbwa et al., 2008, p. 95).

Internalized moral perspective: “An internalized and integrated form of self-regulation. This sort of self-regulation is guided by internal moral standards and values versus group, organizational, and societal pressures, and it results in expressed decision making and behavior that is consistent with these internalized values” (Walumbwa et al., 2008, p. 95-96).

Knowledge sharing: Involves two processes: (1) knowledge is created through experience or a process (Riege, 2005) and (2) knowledge must be communicated freely within a group or organization (Gupta, 2008).

Positional leader tenure: The amount of time measured in years that a leader has occupied his or her current leadership position at an organization.

Pro-social behavior: Behavior that describes how individuals help each other. This includes consistent positive interaction such as cooperation, sharing, and communication (Hannah et al., 2011).

Reciprocal relationship: A consenting relationship in any environment that is either formally or informally confirmed by all parties involved (Retzer, Yoong, & Hooper, 2012).

Relational transparency: “Presenting one’s authentic self (as opposed to a fake or distorted self) to others” (Walumbwa et al., 2008, p. 95).

Self-awareness: “Demonstrating an understanding of how one derives and makes meaning of the world and how that meaning making process impacts the way one views himself or herself over time” (Walumbwa et al., 2008, p. 95).

Social Exchange Theory: This theory explains influences on social environments and how individuals tend to interact in any social setting; it assumes individuals participate in sharing of information when it is perceived the resulting outcome is worth the effort (Liao, 2008).

Assumptions and Limitations

One of the main assumptions in this study is that the type of job held by the follower and the industry within which it operates does not effect the perception of an authentic leader. It is assumed that interactions between any immediate supervisor (regardless of leadership style) and follower in the healthcare and pharmaceuticals, finance and financial services, and

telecommunications, technology, Internet, and electronic fields industries are essentially the same. It is also assumed that if a leader is authentic that he or she has the same impact on followers regardless of the job type, organization, and the need within the industry to share knowledge.

A limitation involves using SurveyMonkey Audience as the sample. The sample may not appropriately represent all followers of authentic leaders as the distribution of SurveyMonkey Audience members tend to skew toward a higher level of education and income (SurveyMonkey, 2013). The inclusion of the three industries seeks to minimize this representation bias. Also, in a globally diverse job market the impact of authentic leaders may also vary by culture. Since the sample is only gleaned from the United States it is possible that cultural differences may affect the results in different countries. Due to these limitations the sample may not wholly reflect the general population, which limits the generalizability of the results.

The use of a cross-sectional study instead of a longitudinal study threatens internal validity. Causality cannot be determined without “before” and “after” measures (Risso, 2015). Although positional leader tenure is used as a self-reported moderating variable, and is a basic measure of time, the nature of the leader/follower interaction may vary with time. A cross-sectional study will not capture this phenomenon.

Another limitation is the use of self-reported measures. The use of self-reported measures is commonly called into question when social desirability may influence the respondents’ answers (Kline et al., 2000). However, the use of self-reported responses is typically used in studies of leadership, as demonstrated by the wide use of the Authentic Leadership Questionnaire (ALQ) created by Avolio et al. (2007). Direct observations of behavior would be far too costly. The limitations of self-reported measures in this study include

the participant's attitude at the time of the survey and personal feelings about the leader. It is assumed that the sample size is of sufficient size to cover this limitation through normal error variance. It is also assumed in this study that all participants provide honest responses.

Theoretical/Conceptual Framework

This quantitative study assesses the relationship between authentic leadership and knowledge sharing behavior, with a moderating variable of positional leader tenure. Using the theoretical framework of authentic leadership theory (ALT) this study surveys a random sample from the United States using SurveyMonkey. Specifically, the relationship between authentic leadership traits and knowledge sharing behaviors is to be evaluated. The literature suggests that the relationship between authentic leadership traits and any reduction of knowledge sharing barriers involves time. This is seen in the six-step process that links leader behavior to knowledge sharing and the moderating variable of positional leader tenure. The hypothesized relationship between authentic leadership traits, positional leader tenure, and knowledge sharing behaviors is shown in Figure 1.

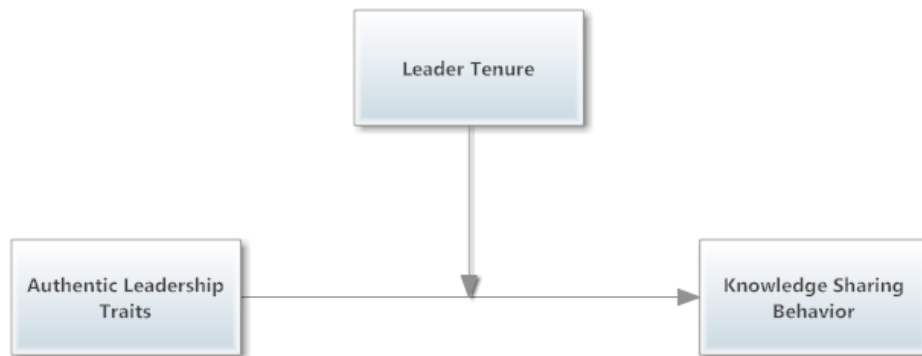


Figure 1. Conceptual framework. Authentic leadership is the independent variable. Knowledge sharing behavior is the dependent variable. Leader tenure is the intervening variable.

A quantitative approach is the methodology used to test the hypotheses. The research questions ask the extent to which the independent variable affects the dependent variable and the extent to which the interaction between the independent and moderating variable affects the dependent variable. The appropriate test to answer these questions is regression analysis (Jose, 2013). All statistical testing is performed using SPSS and Stata 14.

Two existing surveys, Authentic Leadership Questionnaire (ALQ) by Avolio, Gardner, and Walumbwa (2007) and Knowledge Sharing Scale (KSS) as adapted by Wu (2013) were combined into one online survey. By using the Internet to disburse the survey instruments and collect the data a larger sample size is able to be included at a lower cost and with less time. The larger sample size allows for greater power (Creswell, 2009). The existing instruments have acceptable reliabilities (Cronbach's alpha > 0.70).

Organization of the Remainder of the Study

The remainder of the study is organized in chapters 2 through 5. A review of extant literature on authentic leadership, knowledge sharing, positional leader tenure, and supporting theories and constructs is provided in chapter 2. The overview of methodology and research practices, including research questions, variables, hypotheses, and instruments, is specified in chapter 3. Data analysis results and application to hypotheses are discussed in chapter 4. Study results and discussion on limitations and recommendations for future research is presented in chapter 5.

CHAPTER 2. LITERATURE REVIEW

Literature Review Overview

Knowledge management can help create and maintain an organization's competitive edge (Alipour & Karimi, 2011; Alipour, Idris, & Karimi, 2011; Ewest, 2012; Khan, 2010). A key to knowledge management is knowledge sharing, including tacit, intentional, and unintentional knowledge (Antonelli & Scellato, 2013; Gupta, 2008). Leadership can create the environment to either encourage or restrain knowledge sharing within the organization (Lyle, 2012). As a result, leadership attributes can support an organization to become competitive in the marketplace by supporting behaviors that encourage donating and collecting information (van den Hooff & de Leeuw van Weenen, 2004). The intent of this study is to determine whether authentic leadership supports knowledge sharing. Positional leader tenure is also be studied to see whether time spent in a position moderates the influence of authentic leadership on knowledge sharing behaviors.

The following sections of the literature review cover the main constructs of this study: history of the study of leadership, leadership styles, authentic leadership, knowledge sharing, barriers to knowledge sharing, and positional leader tenure. In each of these sections articles are reviewed to uncover seminal and current research. The constructs are reviewed in relation to major knowledge sharing barriers found in organizations. The potential mitigation of knowledge sharing barriers is evaluated through the authentic leader's traits of trust, role modeling, and empowerment. The final section entitled literature review summary groups together the findings identified in the literature and how these shape this dissertation.

History of Leadership Studies

The beginnings of the study of leadership theory and recognition of leadership styles are based on many seminal authors. An influential seminal author is Henri Fayol (1841-1925). In 1916, at the age of 75, Henri put his life experiences into what is referred to by some as the theory of administration and by others as management science (Fells, 2000; Peaucelle & Guthrie, 2012). Fayol used his knowledge of management gained as a coal miner, engineer, inventor, and eventually a manager of a 10,000 employee metallurgy and mining group to identify the six most important underpinnings of a successful industry: technical, financial, commercial, accounting, security, and management (Fells, 2000). Fayol spent the last 10 years of his life honing and promoting the topic of management amidst the industrial boom that happened in the early 1900s (Peaucelle & Guthrie, 2012). During this time he developed the five elements of management: planning, coordinating, commanding, organizing, and controlling (Fells, 2000; Luthans, 1988). Although Fayol did not address leadership style in his original works, the basis of his research sparked many management and leadership principles still observed many years later that provide the foundation for the study of leadership styles, such as leader effectiveness and success in the social realm (Luthans, 1988).

In 1939 Kurt Lewin (1880-1947), a leading psychologist of his time influenced by gestalt psychology studied group dynamics and the atmosphere created within groups by leader behaviors (Burnes & Cooke, 2013). This concept addressed autocratic versus democratic leadership styles and the resulting influence on the individuals within the groups. Lewin's findings attempted to explain how leader style either reinforced or changed group behavior. This concept becomes paramount when reviewing the theory of authentic leadership. Walumbwa et al. (2008) identified that authentic leadership considers leader behavior on follower reactions, which supports Lewin's concept of leadership styles and the result on follower behavior.

In 1948 a key contribution was made in the field of leadership through the Ohio State University studies; this research represents one of the most comprehensive studies of organizational behavior, management, and leadership at that time (Schriesheim & Bird, 1979). The contribution of these studies includes many hours of observation of leader behavior (Shartle, 1979). This led to the development of what was referred to as a transactional approach to the leader-follower relationship that encouraged interaction between leader and follower (Hollander, 1979). This new approach to leadership uncovered the social exchange necessary for influential leadership styles (Hollander, 1979; Schriesheim & Bird, 1979). The leadership outcomes were assessed by two measurements: system progress, otherwise referred to as productivity, and perceived equity in interactions between leader and follower (Hollander, 1979). An important point of Hollander's research was that leadership style is based on a relationship that considers the follower's response in addition to leader behaviors. This becomes central when reviewing the concept of leadership style.

Douglas McGregor (1957), a very influential theorist, suggested the prominent management practice of the day, which he referred to as Theory X, needed to be replaced with a new theory of management behavior referred to as Theory Y. He identified that management by control (Theory X), or the carrot and the stick method, does not provide the needed motivation for employees once basic needs are met. The foundation of McGregor's work led to new thinking on leadership styles and the fundamentals of human behavior in organizations (Kopelman, Protts, & Davis, 2008) and influenced the creation and study of transactional and transformational leadership theories (Singer & Singer, 1990).

Since the 1950s the understanding of the importance of leadership within an organization has continued to grow. Current research supports the importance of leadership that focuses on

the individuals involved and the types social exchange required to support productive relationships (Antonelli and Scellato, 2013; de Vries et al., 2010). Today, the main focus of leadership includes participation in the organizational culture, balanced communication, quality relationships, the promotion of group cohesiveness, equality, and a leadership style that provides a structure to create efficacy to reach goals (Men & Stacks, 2012; Ruggieri & Abbate, 2013).

In summary, the importance of leadership is not questioned; however, key leadership behaviors and relationship styles do not have a solid answer despite a voluminous literature. Consequently, the following specific leadership styles are reviewed: transactional, transformational, and authentic.

Transactional and Transformational Leadership Styles

Definition of leadership style. Leadership style is defined in this study as the way a leader communicates and behaves in the attempt to influence followers consistently over time through emotional attachments or exchange processes (Men & Stacks, 2012; Ruggieri & Abbate, 2013). Leadership style is frequently defined by the way a leader communicates and convinces followers to change or maintain behavior within an organization (Men & Stacks, 2012). The origin of leadership styles is not clearly identifiable, but seminal authors, such as Lewin (1939) and McGregor (1957), laid the foundation for the study of leader behavior. Other studies eventually supplied research to support the hypothesis that leadership style must be considered in organizational success (Kopelman et al., 2008; Singer & Singer, 1990).

Leadership styles are typically a group of traits that can be discovered using statistical methods (Avolio, Burns, & Jung, 1999). Two important leadership styles frequently discussed in the literature are transactional and transformational leadership (Avolio, Burns, & Jung, 1999; Ruggieri & Abbate, 2013). This study focuses on the results of authentic leadership style, which

has been compared to components of transformational leadership (Cooper, Scandura, & Schriesheim, 2005), but has been identified as a distinct type of leadership style (Walumbwa et al., 2008). Each leadership style is discussed briefly, its origin and development, current level of use in organizational management, and how each contributes to productivity.

Transactional leadership. Transactional leadership style asserts that the exchanges between leaders and followers focusing solely on completing tasks and increasing productivity (McCleskey, 2014). Productivity, or focus on the process of achievements, is the centerpiece of this leadership style that originated in the mid-1900s (Hamstra, Van Yperen, Wisse, & Sassenberg, 2014). Interactions tend to focus on systems, data, and process rather than any human difficulties or thoughts that could aid or impede the process; the outcome of transactional interaction is either a reward for achieving goals or sanctions for not reaching goals (Rawung, Wuryaningrat, & Elvinita, 2015). The short-term effect of transactional leadership initially increases productivity, but the long-term effect of a competitive environment driven by achievements with finite resources is decreased productivity due to shallow relationships with the leader (Deutch, 1949; Rawung et al., 2015). Transactional leadership style focuses on the task rather than the followers performing the task. This style often leads to a lack of depth in relationships between leaders and followers. In contrast, transformational leadership style adds in the relationship component and focuses on individual and group interests with a very different long-term result.

Transformational leadership. The transformational leadership style has been an intensively studied and discussed topic in leadership over the past three decades (McCleskey, 2014). Unlike transactional leaders, transformational leaders seek to inspire followers to produce outstanding increases in achievement and productivity beyond the transactional agreement of

completing a task (Bass, 1985). The transformational leader presents a vision to followers on the importance of the achievements, and collaborates with followers to find the best way to achieve the desired results (McCleskey, 2014; Hamstra et al., 2014). The performance is often better than what the followers believed they could achieve before working with the transformational leader (Rawung, Wuryaningrat, & Elvinita, 2015). In short, a transformational leader creates and maintains a leader-follower relationship that supports long-term productivity, which is in contrast to the short period of increased productivity resulting from the transactional style.

A transformational leader has four characteristics, as defined by Bass (1985): intellectual stimulation, inspirational motivation, idealized influence, and individualized consideration. The constructs of idealized influence and inspirational motivation are frequently combined and called charisma (Bass & Riggio, 2006). Barbuto (1997) calls charisma a “magical gift,” that is, the leader probably has innate traits that draw followers; it is difficult to learn if it does not come naturally. A charismatic leader is frequently a role model to followers and encourages creativity and innovation (Rawung, Wuryaningrat, & Elvinita, 2015). Some of the parts of transformational leadership that inspire followers can also be found in authentic leadership, such as role modeling and empowering followers. Authentic leadership, however, differs from transformational leadership in important ways.

Authentic Leadership

History of Authentic Leadership

The concept of authenticity in leadership existed long before the theory of authentic leadership rose to modern literature in the early 2000s (Novicevic, Harvey, Buckley, Brown, & Evans, 2006). Some postulate it can find ties to the Greek philosophical concept of “know thyself” (Jensen & Luthans, 2006). According to Novicevic et al. (2006) the authentic capability

of a leader to understand and uphold both personal values and public responsibilities to act as a moral individual was first recognized by Chester Barnard as a marker of a successful executive. Barnard excitedly wrote letters to a colleague, Lawrence Henderson, in May of 1940 outlining what he thought was a new concept of leader decisions affecting social action; Henderson broke down the concept into 11 different notes outlining specific steps of how Barnard saw the process of decision making in leaders affecting culture (Barnard, 1995). Specifically, Barnard saw that leader decisions resulted in behaviors, which resulted in observable acts, which affected the psychological perception of those who observed the acts. At least three books published from 1938 until 1948 resulted of Barnard's research on the topic of the influence of leadership behavior on an organization. Modern analysis of Barnard's work suggests that his seminal ideas were the beginning of the modern concept of authentic leadership and the impact of leader behaviors on followers (Novicevic et al., 2006).

In agreement with Barnard, researchers such as Bandura (1997) identified that observation of behavior of others influences human behavior. The concept of leaders affecting behaviors led to the idea of trust; behavior tends to be more influential if it is observed from an individual who builds trust rather than depends on a position or title (Masarech, 2001). These concepts became a basis for the construct of authentic leadership.

It became apparent as more conversation arose around authentic leadership that there lacked an agreed upon definition for the construct. By 1998 Kevin Cashman in his book *Five Touchstones of Authentic Leadership* identified authenticity as the key to successful leadership. Cashman reduced Barnard's 11 notes of how authentic leadership works and suggested there are five touchstones of being an authentic leader: knowing oneself authentically, listening authentically, expressing authentically, appreciating authentically, and serving authentically.

Masarech (2001) identified three core principles of what she considered authentic leadership: discovering what matters, finding your voice, and connecting with listeners. Bill George, former chairman and CEO of Medtronic, Inc., identified authentic leadership as five dimensions: understanding personal purpose, determining and practicing personal values, leading with the heart, creating connected relationships, and self-discipline with results (Marshall & Heffes, 2004). Jensen and Luthans (2006) attempted to create a central construct based on a model proposed by Luthans and Avolio (2003) including: understanding self, owning personal experiences, and consistently acting in a manner matching the true self. The lack of clarity in the early 2000s did not allow for authentic leadership to take hold as a solid construct and a few seminal authors identified this issue and worked to create a unified construct.

Authentic Leadership as Theory

Even though the formal introduction of authenticity into organizational studies could be traced to the 1960s, there was a general recognition at that time that it was illusive due to the psychological and social impact being difficult to measure (Brumbaugh, 1971). Walumbwa, Avolio, Gardner, Wernsing, and Peterson (2008) addressed that issue by creating a foundation for a formalized theory and generated an instrument to measure authentic leadership (Authentic Leadership Questionnaire).

In their seminal work Walumbwa et al. (2008) researched extant authors on the subject of authentic leadership and provided three major foundations for the theory of authentic leadership: identified a single set of constructs for the theory, created an instrument to measure authentic leadership as identified by the constructs, and performed three studies to provide empirical evidence to support the theory as it was newly defined. Walumbwa et al. (2008) identified authentic leadership as consistent behaviors stemming from positive psychological and ethical

foundations. Walumbwa et al. found these behaviors could be identified by the four constructs of “greater self-awareness, internalized moral perspective, balanced processing of information, and relational transparency” (p.94). Self-awareness looks at personal influence, specifically this is the understanding gained by the leader of how personal behaviors and words affect the organization and individuals. Internalized moral perspective drives consistent and moral behaviors regardless of external influences. Balanced processing entails objectivity, or being able to remove emotion and deeply held beliefs from decision-making, when gathering, analyzing, and reviewing data. Relational transparency reflects a real, genuine presentation during all communication (Walumbwa et al., 2008).

To measure the constructs of authentic leadership Walumbwa et al. (2008) created the Authentic Leadership Questionnaire (ALQ) that was tested and cross-validated and found to be reliable for use in further research with a Cronbach’s alpha of .80 (Avolio et al., 2007). The questionnaire has four items that address each of the four constructs of the theory for a total of 16 questions. The questions are answered by selecting a response from a 5-point Likert scale (1 = *Strongly disagree* and 5 = *Strongly agree*). Because of how it is constructed, the ALQ can be used as an overall assessment of authentic leadership and it can be used for subscale comparison as all subscales have acceptable reliability ($\alpha > .70$).

The three studies conducted by Walumbwa et al. (2008) sought to address the validation of the ALQ instrument, determine validity for the newly developed measures when compared to other leadership theories, and identify the relationship to important organizational needs such as job satisfaction and performance. The first study was the creation of the ALQ instrument items. A confirmatory factor analysis (CFA) was performed using two samples independently selected from China and the United States. The results identified the four constructs of authentic

leadership were not independent with little variation between the two samples. The second study compared constructs of related leadership theories of ethical leadership and transformational leadership to determine construct validation for authentic leadership. There was overlap between all three leadership theories, which gave support to the hypothesis that there is a positive relationship between authentic leadership, transformational leadership, and ethical leadership; however, the study also found that although there was a positive relationship, authentic leadership was found to account for variance that ethical and transformational leadership could not, indicating that authentic leadership is distinct from the other two theories. The third study sought to validate the effect of authentic leadership on the important organizational management topics of job satisfaction and job performance. This study was given in Kenya to validate the broad application of the instrument. The results found a significant and positive association between authentic leadership and job satisfaction and job performance.

The empirical data provided by the three studies identified that not only was authentic leadership a distinct theory, but that it had strong implications for the field of organizational management. It is on this basis that the theory of authentic leadership was created and continues to expand in literature.

Comparison of Authentic Leadership to Other Leadership Theories

Despite the work already completed by Walumbwa et al. (2008), some have argued that authentic leadership is a duplication of existing leadership theories, specifically transformational leadership theory (Cooper, Scandura, & Schriesheim, 2005). Wood (2007) indicated this challenge did not have empirical support as she found that authentic leadership filled a unique role in leadership theory (Peus, Wesche, Streicher, Braun, & Frey, 2012; Walumbwa et al., 2008). Although authentic leadership and transformational leadership have some overlapping

constructs, studies also expose two fundamental constructs in authentic leadership theory not addressed by transformational leadership. These constructs are self-awareness and a variation on internalized moral perspective called positive ethical behavior (Walumbwa et al., 2008). A transformational leader may be self-aware in that she may have an understanding of who she is and how she behaves, but the authentic leader construct of self-awareness involves not only an understanding of personal identification, but also positive psychological capabilities (Luthans, 2002). Additionally, authentic self-awareness also involves “a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviors (Walumbwa et al., 2008, p.92).” As previously noted, for the authentic leader internalized moral perspective refers to a personal principled foundation against which all decisions are tested. Although the transformational definition of positive ethical behavior has a similar definition, the authentic leadership definition focuses on the positive thought processes associated with ethical decisions. Studies that examine the concepts of self-awareness and positive ethical behavior find a positive correlation (Cooper, Scandura, & Schriesheim, 2005; Dhiman, 2011; Karakas & Saribollu, 2013; Tonkin, 2013).

Although ethical behavior exists in transformational leadership, it differs from what is found in authentic leadership. Transformational leaders can choose to be manipulative for a perceived good, while a true authentic leader will not stray from his ethical foundation in any situation (Walumbwa et al., 2008). Leroy, Palansky, and Simons (2012) identified a link between the two constructs of self-awareness and positive ethical behavior with authentic leadership; the authentic leader’s actions are based on an ethical foundation, which stems from behavioral integrity and requires self-awareness.

It can also be noted that authentic leadership theory does not include any personality requirements, such as charisma, as transformational leadership theory does. The constructs of authentic leadership focus on behaviors a leader can adjust and learn without depending on personality characteristics that may be genetic rather than learned. This unique leadership style supports traits that may positively affect knowledge sharing behavior, which is reviewed in the next section.

Knowledge and Knowledge Sharing

Knowledge Within an Organization

For decades knowledge has been tied to productivity and organizational success (Antonelli & Scellato, 2013; Luthans, 1988). Nonaka (1994), a Japanese businessman who built on the research of seminal leadership authors such as Lewin (1951), Merton (1957), and Drucker (1968), identified knowledge as the main factor in the success of Japanese firms. The ability to be highly productive and efficient was a result of the intentional creating, organizing, and utilization of knowledge. Senge (1999) supported this cycle of creation, organization, and sharing of knowledge as a productive way for knowledge to accumulate and provide greater and wider organizational success. In addition, Senge and Fulmer (1993) identified that this cycle does not require additional resources at the beginning, such as documentation or training, as the process of gaining knowledge intrinsically creates new resources. This type of big picture work produced by observations of organizations becomes foundational to this study. This section defines knowledge sharing and identifies knowledge sharing barriers.

Knowledge sharing involves two processes: (1) knowledge is created through experience or a process (Riege, 2005) and (2) knowledge is communicated freely within a group or organization (Gupta, 2008). Knowledge sharing helps create a competitive organization whose

employees desire to learn and minimize knowledge gaps (Gupta, 2008; Lam & Lambermont-Ford, 2010; Santos et al., 2012). However, extant literature uncovers many barriers to knowledge sharing; it does not happen naturally and often requires managers to motivate and encourage followers (Husted et al., 2012; Lam & Lambermont-Ford, 2010). Research reveals barriers to knowledge sharing and suggests ways to improve knowledge sharing by weakening the mechanisms responsible for each barrier.

Knowledge Sharing Barriers

A review of the literature by the present author shows barriers to knowledge sharing can be separated into six general categories (Ardichvili, 2009; de Vries et al., 2010; Gupta, 2008; Hew & Hara, 2007; Husted et al., 2012; Luu, 2012; Riege, 2005; Santos et al., 2012; Wu, 2013):

1. Personal factors, such as how personal beliefs affect willingness to share knowledge, as well as consciously understanding when knowledge needs to be shared (Ardichvili, 2008).
2. Technological factors including inconsistent coding and organization of information within the system, along with a lack of basic understanding of technology, affects the ability to share knowledge (Riege, 2005; Santos et al., 2012).
3. Cultural norms and context, such as expectations, established practices, and environment, may inhibit knowledge sharing behaviors (Ardichvili, 2008).
4. Lack of time involves competing priorities that reduce time available for knowledge sharing activities (Gupta, 2008; Hew & Hara, 2007; Riege, 2005).
5. Personal vulnerability becomes a barrier when knowledge is viewed as power and power is rewarded. Therefore knowledge sharing is unlikely to take place as

perceived personal vulnerability increases due to a perception of power loss (Gupta, 2008).

6. Task oriented leadership style is demonstrated by leaders who focus only on the task and communication. They have little enthusiasm, lack warmth, use ambiguous language, and lack a positive, interactive tone. These attributes prevent the flow of knowledge between people (de Vries et al., 2010; Gupta, 2008).

By taking a more in-depth look at each of the barriers, through juxtaposition and comparison, common themes and differences can be identified. The first barrier of personal factors generally results due to incapability or lack of trust (Ardichvili, 2009). The inability to determine when knowledge sharing should occur identifies an interpersonal difficulty. Outside forces, such as leader behavior, may or may not be able to change the behavior. However, a lack of trust generally results in a decision to not share knowledge (Ardichvili, 2009; Riege, 2005). This barrier may be addressed through leader behavior (Walumbwa et al., 2008) that encourages knowledge sharing.

The second barrier of technological factors can be a result of either poorly designed systems or poorly trained users, or both (Riege, 2005). If a technological system has a confusing user-machine interface or complex operating procedures it becomes a barrier to knowledge sharing. Effective training on how to use a technological system and a well-designed interface likely mitigates this barrier. However, the literature does not identify whether leader behavior influences these problems.

The third barrier of cultural norms and context depends on how the follower perceives and identifies with the organization (Ardichvili, 2009). Organizational culture and expectations are shaped over time and leadership support has been identified as a key factor in appropriately

adjusting organizational culture (Vestal, 2006, as cited by Ardichvili, 2009). The trust that is either generated or removed by a leader's behavior influences the organizational culture and therefore enables or disables knowledge sharing behaviors. Organizations seeking a knowledge sharing culture must look to leadership to be a key influencer.

The fourth barrier of lack of time depends largely on process and tasks (Gupta, 2008). Lack of time can result from personal inefficiencies, which training may correct, or a workload that is greater than the time available to complete all assigned tasks. If a task cannot be completed in an acceptable amount of time the system must be changed, training ascertained, and processes reviewed to identify the items to change. The literature does not state that leader behavior affects this change.

The fifth barrier of personal vulnerability hinges on follower perception and trust (Gupta, 2008; Riege, 2005). If sharing knowledge is identified through organizational culture as giving a colleague a perceived benefit that could negatively affect personal rewards or job security, it is less likely to happen. This barrier of personal vulnerability introduces an intentional withholding of knowledge for a perceived personal benefit. The first barrier of personal factors also involves withholding of information, but it is more benign in its intent as the ability to perceive when knowledge needs to be shared is impaired. As already identified, leader behavior can influence both organizational culture and lack of trust (Ardichvili, 2009; Walumbwa et al., 2008) and therefore potentially address the barrier of personal vulnerability.

The sixth barrier of task oriented leadership style is all about leader behavior (de Vries et al., 2010; Gupta, 2008). Task oriented communication is a result of transactional leadership, which only focuses on the task rather than the individuals involved with the task. As previously identified, this type of communication does not produce long-term productivity results.

Therefore, it is simple to identify a potential mitigating factor to this barrier is leader communication and behavior.

The knowledge barriers described above indicate that some of the knowledge sharing barriers can be influenced by leader behavior. Leader behavior involves communicative actions that are observable and words that are understandable (de Vries et al., 2010). Except for knowledge barriers 2. technological factors and 4. lack of time, the remaining barriers involve behaviors, beliefs, and responses related to the organizational climate and leader behavior. Therefore, this discussion only considers four knowledge sharing barriers. The barriers considered in this study are personal factors, cultural norms and context, personal vulnerability, and task-oriented leadership style. The authentic leader traits are self-awareness, internalized moral perspective, balanced processing, and relational transparency.

The rest of this section presents why authentic leadership traits may mitigate the knowledge barriers. Note, however, that the study only examines the total scores of authentic leadership as measured by the Authentic Leadership Questionnaire (Avolio, Gardner, & Walumbwa, 2007) and knowledge sharing as measured by the Knowledge Sharing Scale (Wu, 2013). The detailed arguments below are presented to justify why one should expect to find a relationship between authentic leadership and knowledge sharing. These relationships could be explored in future research if a relationship is found between authentic leadership and knowledge sharing.

Mitigating knowledge sharing barriers through authentic leadership traits. A foundation of this study is Prottas' (2013) research that uncovered a positive relationship between leadership behaviors and follower responses that affect productivity. Consistency in positive leader behavior, also referred to as integrity, decreased uncooperative follower behavior,

such as unethical actions; that is, leader integrity increased constructive employee productivity. In light of this finding, it is possible that a majority of the identified barriers to knowledge sharing are influenced by the leader's behavior. This finding on leader behavior decreasing uncooperative behavior is an important foundation for this dissertation.

Some behaviors disruptive to knowledge sharing may be considered uncooperative behaviors. Santos et al., (2012) defined uncooperative behaviors as laziness, insisting on working separately from an assigned group resulting in effort duplication, inability or refusal to understand systems and technology, and inability to collaborate due to time restrictions imposed by the follower. These types of behaviors may prevent knowledge sharing because lack of trust in the leader or culture leads to a lessened or complete lack of social interaction (Prottas, 2013; Santos et al., 2012). This lack of social interaction leads to uncooperative behaviors, but these are often mitigated by increased trust in the leader (Ferrin, Bligh, & Kohles, 2007). Therefore, the introduction of trust by a leader potentially reduces uncooperative behavior in followers. Authentic leadership purports to not only increase trust, but also has other characteristics that may support knowledge sharing.

Authentic leader traits generate behaviors that may increase the propensity to share knowledge. It is hypothesized that changes in the follower's knowledge sharing behaviors can be supported by authentic leadership traits, specifically through three underlying mechanisms: (a) trust, (b) role modeling of the leader's behaviors, and (c) empowerment. All of these mechanisms are influenced by communication, which can be through words and behaviors (see Table 1).

Prottas (2013) notes the relationship between positive leader behaviors and follower responses can result in two favorable outcomes: (a) a positive relationship between leader

behaviors and follower behavior and (b) increased productivity and learning. Prottas presents the idea that as outcome (a) increases there is a higher probability that outcome (b) increases. This relationship may be built on the authentic leader's high moral standards (internalized moral perspective), behavioral integrity (relational transparency), and consistent behaviors (internalized moral perspective, balanced processing, and self-awareness) (Prottas, 2013; Walumbwa et al., 2008). Based on these findings, it is possible to conclude that the knowledge sharing barriers related to behaviors, beliefs, and responses to the organizational climate can be influenced by the leader's behavior. That is, knowledge sharing may increase without implementing a formal knowledge sharing program.

How authentic leaders promote knowledge sharing and affect the identified barriers involves four steps, as show in Figure 2. First, as already discussed, an authentic leader has four important traits that affect behaviors, beliefs, and the organizational climate: self-awareness, relational transparency, balanced processing, and internalized moral perspective. Second, these traits generate behaviors that followers can observe. Third, it is hypothesized there are three mechanisms that lead to behavior change in followers: trust, role modeling, and empowerment. Given that the followers can see consistent leader behaviors based on high moral standards there are psychological processes or mechanisms that can lead to changes in follower behavior. Observing the behavior of a trusted leader promotes both positive role modeling and empowerment to create changes in follower behavior. Fourth, the new follower behaviors lead to increased knowledge sharing by mitigating the four barriers of personal beliefs, cultural norms and context, personal vulnerability, and task-oriented leadership. The remainder of this section deals with trust, role modeling, and empowerment and how these mechanisms change behavior.

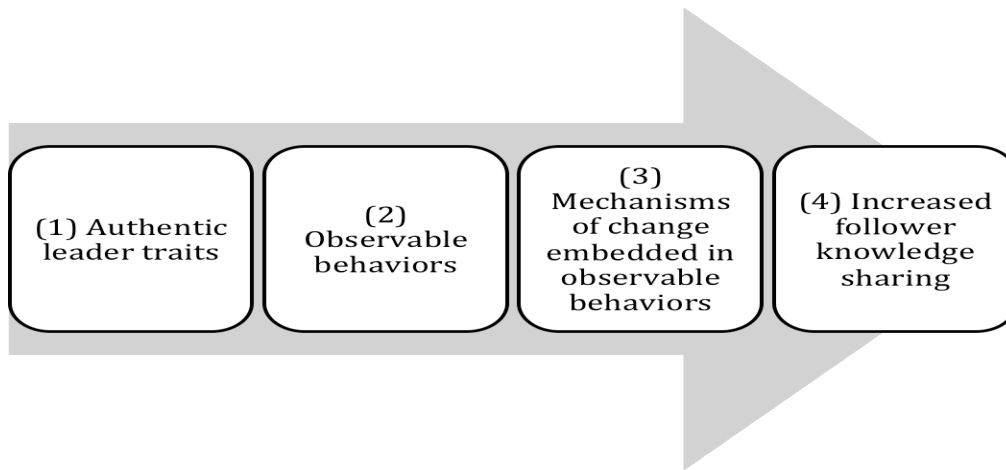


Figure 2. How authentic leaders address knowledge sharing barriers.

Trust and knowledge sharing. As argued in this dissertation, a requirement of knowledge sharing is increased pro-social interaction (Hannah, Avolio, & Walumbwa, 2011). Hannah et al. defined pro-social behaviors as helping colleagues, cooperating, sharing, and consistent communication and interaction. Increased trust leads to a perception of a safe environment, and this increases pro-social behaviors between the leader and followers as well as between followers (de Vries et al., 2010; Gupta, 2008; Wong & Cummings, 2009). These findings suggest that authentic leader behaviors generate a safe environment through an increase in trust that promotes pro-social behaviors. This increase in trust should increase knowledge sharing. The literature also shows how the authentic leader's self-awareness, relational transparency, balanced processing, and internalized moral perspective increase trust.

Self-awareness. Self-awareness is knowing oneself. Walumbwa et al. (2008) identified self-awareness as the process underlying all the core factors of authentic leadership theory. When combined with relational transparency, balanced processing, and internalized moral perspective it generates trust among followers. Without self-awareness, relational transparency, balanced processing and internalized moral perspective are not possible (Walumbwa et al., 2008)

and trust is compromised. According to Higgs and Rowland (2010) self-awareness is at the crux of successful leadership as leaders who are self-aware are more in tune with the organizational needs and can raise issues without personal needs and agendas impeding communication.

Taylor, Wang, and Zhan (2012) empirically studied the construct of self-awareness and concur that it is essential to produce positive performance outcomes. Therefore, a leader who takes the time to know her personal thoughts, emotions, and motivations both individually and within the organizational context is integral to organizational success.

Self-aware leaders understand how personal behavior affects others and the organization (Walumbwa et al., 2008). Hannah et al. (2011) agreed with this description and further defined a self-aware authentic leader as one who is cognizant of her world and how her behaviors will impact the environment and individuals. Peus, Wesche, Streicher, Braun, and Frey (2012) found self-awareness, or being aware of and controlling personal emotions, allows for more open and positive relationships. Self-awareness is an essential condition for trust to develop, but not the only condition.

Relational transparency. Relational transparency, the second leader behavior trait attributed to authentic leaders, involves genuine communication in an open and supportive environment and leads to trusting relationships (Painter-Morland, 2008). The resulting relationships continue based on thorough, consistent, and respectful communication (Walumbwa et al., 2008). According to Walumbwa et al., the leader expresses thoughts in a kind and selfless way while minimizing incongruous emotions. Relationally transparent leaders support and nurture their followers, which encourages feelings of trust. For example, positive and supportive actions for follower development opportunities increase trust (de Vries et al., 2010). Trust has already been identified as a precursor to pro-social behaviors (Wong & Cummings, 2009) and

relational transparency helps to increase pro-social actions that support knowledge sharing (Cumberland & Githens, 2012). Relational transparency is one of the components required to develop trust and begin this positive relationship. Balanced processing demonstrates yet another way that trust is built between leaders and followers.

Balanced processing. Balanced processing is the ability to analyze all data relevant in a situation and objectively make consistent decisions regardless of personal or external positions (Walumbwa et al., 2008). The ability to interpret information in light of personal integrity and other perspectives that are free of external distortions provides consistent outcomes on which leaders can build trust with followers (Harvey, Martinko, & Gardner, 2006). In order to make a balanced decision an authentic leader encourages viewpoints that differ from personally held beliefs, which builds trust and wins respect of followers (Walumbwa et al., 2008). This authentic leader construct builds trust by inviting the followers to participate in organizational decisions. The importance of this is addressed in a future section on empowerment. The fourth influence of internalized moral perspective completes the foundation of trust built by an authentic leader.

Internalized moral perspective. Internalized moral perspective, also referred to as positive ethical behavior and integrity, allows a leader to generate trust through making choices according to personal moral standards regardless of other pressures (Walumbwa et al., 2008). Walumbwa et al. discovered trust is positively related to an internalized moral perspective, as a lack of leader ethics generally leads to lack of follower trust. The findings of Tang and Liu (2012) showed that leader integrity and ethics moderated the relationship between leader action and follower behavior. A summary of these thoughts on trust and authentic leadership traits follows.

Summary of authentic leadership and trust. Based on these findings, authentic leadership traits support an expanded version of Figure 2 in a six-step sequence starting with authentic leadership traits and ending with increased behaviors supportive of knowledge sharing (see Figure 3). The first step is self-awareness. This is the ability to understand and focus on the personal impact of one's actions and words. Self-awareness is a necessary condition for the second step of the expression of the relational transparency, balanced processing, and internalized moral perspective traits. All four traits of self-awareness, relational transparency, balanced processing, and internalized moral perspective generate observable outcomes or behaviors. The third step shows followers observing these leader behaviors. Fourth, the observations of the followers lead them to trust their leader and become more likely to participate in positive behaviors. Fifth, as de Vries et al. (2010) and Wong & Cummings (2009) found positive leader behaviors are likely to increase pro-social behavior in followers. Ardichvili (2008) linked participation and support for pro-social behaviors with increased positive attitudes, such as willingness to share personal knowledge. These follower responses lead to the sixth step of increased knowledge sharing behaviors, as posited by de Vries et al. (2010). This six-step progression suggests that authentic leader behaviors increase trust, generates pro-social behavior, and supports knowledge sharing.

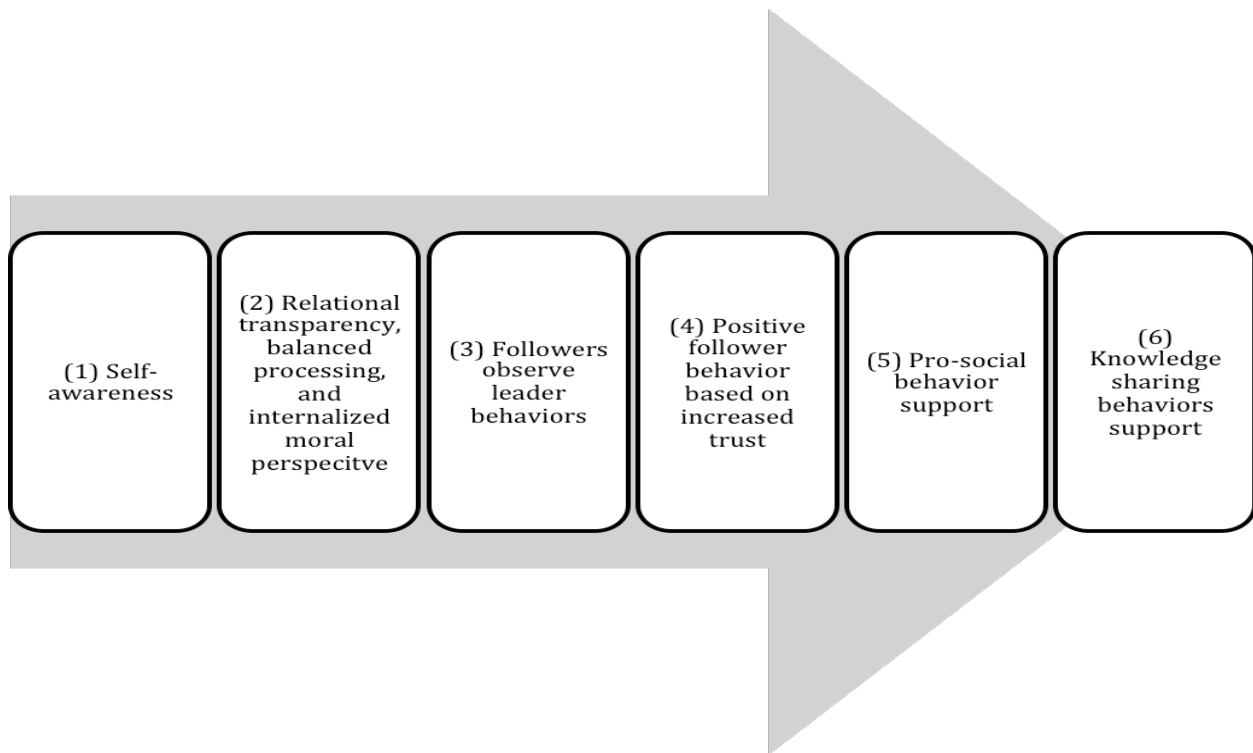


Figure 3. Expanded six-step sequence of how authentic leadership traits increase behaviors supportive of knowledge sharing.

Trust appears to be a key in mitigating knowledge sharing barriers. Trust promotes mitigation for all four of the knowledge-sharing barriers. Table 1 shows the link between traits and behaviors associated with trust. First, trust mitigates the barrier of perceived personal vulnerability by reducing a perception of knowledge as power, which reduces the perceived need to hoard knowledge. A trusted leader lessens the perceived personal vulnerability associated with sharing through increased pro-social behavior that results from a trusting environment. Second, the barrier of task oriented leadership style is incompatible with trust built through authentic leadership traits and behaviors. Task-oriented leadership by definition is notably less

open on all levels of communication, and the communication that does exist is often characterized as domineering and information heavy (de Vries et al., 2010). An authentic leader communicates openly and without undue emotion (relational transparency and self-awareness) and shares a consistent message (balanced processing and internal moral perspective), which builds trust and removes barriers found in task-oriented leadership. Therefore, by reducing the threat of personal vulnerability and offering consistent communication trust offers mitigation of these knowledge sharing barriers.

Thirdly, the barrier of cultural norms and context is another barrier that is mitigated by trust. Leader behavior, as already identified, has influence on follower's perceptions. The level of trust that exists between a leader and follower is generated through open, consistent, and ethical communication and interactions (relational transparency, balanced processing, and internalized moral perspective), which influence the perception of organizational culture. This influence either supports or restricts knowledge sharing behaviors with the cultural context. Fourth, the barrier of personal beliefs is also mitigated by trust in the leader. Peus et al. (2012) identified that a trusted leader impacts follower's behaviors and attitudes. As previously pointed out, personal beliefs are frequently influenced by personal inability or lack of trust. A trusted leader is capable of influencing personal attitudes and behavior through authentic communication and helping identify when knowledge needs to be shared (relational transparency). The assistance in knowing when to share knowledge is performed through role modeling, which also provides potential mitigation of barriers.

Role modeling and knowledge sharing. Followers are more likely to model the behavior of a leader they trust (Bandura, 1977); consequently, the traits of self-awareness and relational transparency are also the foundations of role modeling due to the trust built by

observation of behaviors demonstrating these constructs. Role modeling breaks down knowledge sharing barriers through the authentic leader's traits of self-awareness and relational transparency. Self-awareness allows an authentic leader to self-regulate and demonstrate desired behaviors with consistency, and relational transparency leads to a genuine presentation of the behaviors (Walumbwa et al., 2008). The consistency and genuine spirit with which the knowledge sharing behaviors are modeled by the leader breaks through any of the follower's personal beliefs, cultural norms, and personal vulnerability that may exist. A leader gives followers the opportunity to perform the newly learned behaviors by allowing them to share their knowledge in the organizational environment.

Research and theory of role modeling. Bandura (1997) found that much of human behavior is developed through observation of the behavior of others; this is called role modeling. The observation of behaviors of a trustworthy individual increases the propensity of the observer to do the same. The more the behavior is observed, the likelihood of performing the same behavior increases. When applying this concept to knowledge sharing Bandura's findings suggest that a positive, trusted leader who consistently models knowledge sharing behaviors will influence followers to also share knowledge.

Prottas (2013) supported these findings and found a positive relationship between leader behaviors and employee attitude and engagement. Prottas stated that when a consistent, positive example of desired leader behavior exists (for example, relational transparency) the same behavior is more likely to be demonstrated by the follower. The behaviors from a trusted source that are modeled by followers can lead to pro-social behavior (Wong & Cummings, 2009).

How role modeling supports knowledge sharing. The progression from trusted leader behaviors to pro-social behavior among followers is supportive of an emerging theme in the

research that shows increased role modeling of pro-social behavior leads to increased knowledge sharing behavior (de Vries et al., 2010; Hannah et al., 2011). The study performed by de Vries et al. (2010) found that a leader who demonstrates interest in a positive relationship with followers would engage in communication and behaviors that are transparent and focused on the individual. Hannah et al. (2011) built on this idea of linking communicative behavior to leadership style and looked at the effect of an authentic leader's example on social exchanges. Their findings identified that followers of authentic leaders who demonstrate authentic behaviors are more likely to emulate these behaviors and increase inter-team communication. These two studies identified an important finding that positive transparent communication from the leader promoted replication of the same behaviors in followers, which increased productivity.

An authentic leader consistently models desired behaviors through the four authentic leader traits. The self-aware leader understands the impact of behaviors (Walumbwa et al., 2008) and will select positive behaviors that prompt the desired behavior in followers; specifically, a self-aware leader is aware she is a role model. Relational transparency is a central construct for the authentic leader given the aspiration to be completely plain and open (Painter-Morland, 2008). This is also the core of positive role modeling. Plain and open communication by definition is knowledge sharing; this is what employees model. Balanced processing asks for all perspectives and seeks the best decision based on an objective review of the information (Peus et al., 2012). Internalized moral perspective looks to an ethical foundation and always uses it as the basis for decisions, causing consistent behavior (Tang and Liu, 2012). Role modeling breaks down four of the knowledge-sharing barriers affected by organizational climate.

The four knowledge-sharing barriers mitigated by authentic role modeling include 1. personal beliefs, 2. cultural norms and context, 3. personal vulnerability, and 4. task-oriented

leadership (see Table 1). Personal beliefs often prevent knowledge sharing due to individual attitudes and lack of knowledge; the authentic leader who role models knowledge sharing breaks down this barrier. Cultural norms and context are what has been set in place in an organization through reinforced action and word; the authentic leader sees where existing norms prevent productivity and consistently demonstrates any new behaviors to change the cultural norms and context. It is through this process that authentic leaders can break down the barrier of personal belief. Personal vulnerability relies on the perception set in place by previous experiences and observations that produced negative outcomes to sharing knowledge; the authentic leader role models new behaviors, which may decrease a follower's perceived advantage of knowledge hoarding and increase knowledge sharing behaviors. Task-oriented leadership depends on authoritarian demands and lack of interest in the human doing the task; however, the authentic leader mitigates this barrier by demonstrating a desire for a relationship (relational transparency) and models behaviors that are necessary for followers to engage in knowledge sharing (Bakker-Pieper, & Oostenveld, 2010). One more construct also addresses the knowledge sharing barriers: empowerment.

Empowerment and knowledge sharing. The leader who asks followers to join in participative decision-making is an example of the construct of empowerment. Huang, Shi, Zhang, and LeeCheung (2006) discovered that empowerment of followers leads to behaviors that are synonymous with knowledge sharing. Although the intent of their study was not to determine if empowerment led to knowledge sharing, they found that participative leadership, or the intention of the leader to include followers in the organization, produced optimism and productivity. This outcome can be tied to knowledge sharing behaviors as Bonner (2012) identified that the productivity produced through participation is a result of group outcomes that

increase the ability to pool knowledge and share more information than a single individual might possess. Therefore, following this logic it is possible to tie the act of encouraging followers to participate in organizational decisions to an increased propensity for knowledge sharing.

Empowerment breaks down knowledge barriers through the authentic leadership traits of relational transparency, balanced processing, and internalized moral perspective. Relational transparency provides an example of consistent communication, balanced processing asks for input, and internalized moral perspective provides the guidelines within which followers should focus their newly learned behaviors (Walumbwa et al., 2008). The consistency and genuine components of relational transparency may break down the barriers of personal beliefs, cultural norms and context, personal vulnerability, and negate the barrier of task oriented leadership style. The foundation of balanced processing in seeking outside opinions and information to make the best objective decision may break down the barriers of cultural norms and context and personal vulnerability. The consistency and standards of internalized moral perspective may also break down cultural norms and context along with personal vulnerability barriers.

According to Huang et al. (2006) acts of empowerment have been used to define observable behaviors such as delegation, participative decision-making, sharing of information, follower involvement, and self-managed teams. Empowerment, or perceived value of a shared work purpose or goal, gives followers the ability to voice thoughts and desires. Followers of authentic leaders report they feel they have an increased “voice” with which to participate in their sphere of influence (Srivastava et al., 2006). The ability to be empowered to contribute to a team produces positive attitudes in followers and increased interaction among team members, which tends to increase productivity. These outcomes support Ardichvili’s (2008) and Prottas’ (2013) findings.

A leader promotes follower empowerment through the four traits of authentic leadership that encourage knowledge sharing behavior. A self-aware leader understands how behavior impacts those around them (Walumbwa et al., 2008) and can encourage followers to work toward a goal. Relational transparency and balanced processing create opportunities for empowerment, such as participation in meaningful decision-making (Huang et al., 2006; Walumbwa et al., 2008). Internalized moral perspective consistently drives decisions, including when and how to empower followers to produce positive attitudes and productivity (Walumbwa et al., 2008). Through these traits empowerment can mitigate knowledge sharing barriers.

All four of the knowledge-sharing barriers can be mitigated by empowerment (see Table 1). Cultural norms and context do not find an impetus to change unless behaviors change (Ardichvili, 2008). Empowerment of followers encourages exchange of information within a group, which establishes a new culture and breaks this barrier of cultural norms and context. It is possible an individual may feel elevated levels of personal vulnerability when participating in a decision-making activity; however, the traits of authentic leadership should help reduce these feelings. Empowerment leads to the desired behavior of knowledge sharing and perceived vulnerability gives way to positive psychological empowerment (Huang et al., 2006).

In summary, trust, role modeling, and empowerment lead to knowledge sharing through the authentic leadership traits of self-awareness, relational transparency, balanced processing, and internalized moral perspective behaviors. All four traits support the development of new behaviors and an environment that increases pro-social interaction. These changes promote opportunities to share knowledge.

Positional Leader Tenure

Increased trust, role modeling, and empowerment can be affected by moderating variables, such as leader tenure. Research suggests that tenure of a leader affects the leader's influence. Glover (2013) found that frequent leader turnover resulted in negative outcomes, such as lack of organizational commitment and loss of interest in organizational initiatives. Williams and Hatch (2012) established support for a model of leader tenure that suggests leaders who stay no longer than twelve to thirteen years have the most influence over followers. Hambrick and Fukutomi (1991) support the trend of decreased impact after twelve to thirteen years in a leadership role. As a result, it is hypothesized that even with the positive outcomes of authentic traits and resulting leader behaviors, leader tenure moderates an authentic leader's impact.

Literature Review Summary

Research on leadership has shown that followers modeled the behavior of trusted leaders (Hannah et al., 2011). Trust is found to be a characteristic of authentic leaders (de Vries et al., 2010; Walumbwa et al., 2008). Authentic leaders demonstrate pro-social behavior that followers are likely to imitate based on increased trust in the leader, which increases knowledge sharing within the organization. Trust breaks down knowledge sharing barriers through pro-social behavior (Bakker-Pieper, & Oostenveld, 2010; Wong & Cummings, 2009). Pro-social behavior is encouraged through role modeling and empowerment from a trusted leader. A possible moderating factor to this process is the tenure of the authentic leader, which must be considered within an organization that desires to support knowledge sharing. While these constructs are supported in the literature it is important to understand the mechanisms of change in follower behavior. Research is needed to identify the interventions that support knowledge sharing.

CHAPTER 3. METHODOLOGY

The purpose of this quantitative study was to examine the effect of authentic leadership on knowledge sharing behaviors, moderating for positional leader tenure. The research design, sample, instruments, data collection and analysis, reliability measures, and ethical considerations are described in this chapter.

Research Design

Based on a quantitative survey research approach the study used a single randomly selected sample from SurveyMonkey Audience members. The sample was comprised of one group. A general linear model using an ordinary least squares (OLS) multiple regression was developed for hypothesis testing.

The survey was comprised of two instruments, the Authentic Leadership Questionnaire (ALQ) to measure authentic leadership constructs and the Knowledge Sharing Scale (KSS) to measure knowledge sharing behaviors. The respondents were able to respond using a five-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*). An additional question was asked to measure positional leader tenure with response options of less than one year, two years, three years, etc. until 13 or more years. The instruments were combined into one survey of 27 items. Respondents were asked to select answers by referring to their immediate supervisor. A sample of the survey instruments is included in Appendix A and Appendix B.

SurveyMonkey managed the survey. Invitations to complete the survey were sent to 519 SurveyMonkey Audience members based on random probability sampling. Of the 509 respondents, 465 answered all survey questions and were useable for analysis, which exceeded the sample size requirement of 327 for a small effect.

To determine the influence of the independent variable (IV) (authentic leadership) on the dependent variable (DV) (knowledge sharing behavior) and the influence of the moderating variable (MV) (leader tenure), all variables are treated as continuous variables. A general linear model was used to analyze the data.

The general linear model equation is:

$$Y = \alpha + \beta_1 X_i + \beta_2 Z_1 + \beta_3 X_i Z_1 + \varepsilon_i \quad (1)$$

There are three predictor terms (β_1 through β_3): the main effect of authentic leadership (X_i), the main effect of the moderating variable of positional leader tenure (Z_1), and the interaction of the two effects ($X_i Z_1$). The model is shown in Figure 4.

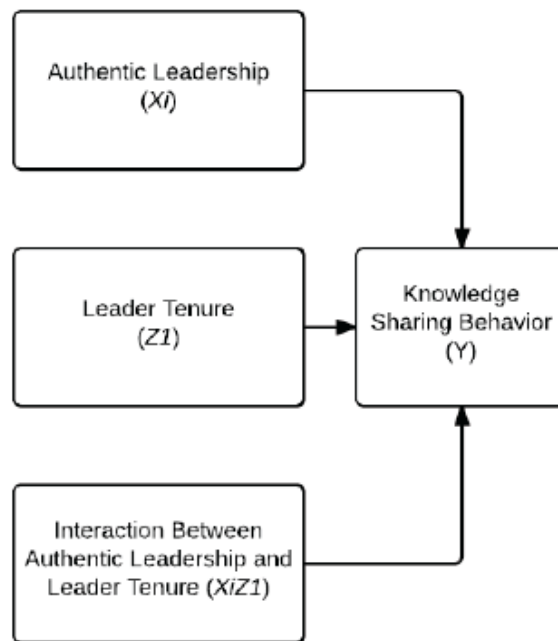


Figure 4. Model of the general linear analysis.

It was predicted that authentic leadership would have a positive significant relationship with knowledge sharing behavior. It was also predicted that positional leader tenure significantly affects the relationship between authentic leadership and knowledge sharing behaviors. That is, it was predicted that positional leader tenure moderates the relationship between authentic

leadership and knowledge sharing behaviors because tenure has been linked to leadership effectiveness.

The following hypotheses were assessed:

H1₀ There is no significant relationship between authentic leadership and knowledge sharing behaviors.

[H1_A Authentic leadership has a significant relationship to knowledge sharing behaviors.]

H2₀ Positional tenure of an authentic leader does not significantly affect the relationship between authentic leadership and knowledge sharing behaviors.

[H2_A The relationship between authentic leadership and knowledge sharing is moderated by positional leader tenure.]

Sample

Field (2009) provides a basic calculation to ensure a sample is large enough to demonstrate sufficient power to identify any effects that may exist in the population based on (a) sample size, (b) probability level (α -level), (c) statistical power, and (d) effect size. In order to determine the sample size, one must know the probability level, statistical power, and effect size. Tabachnik and Fidell (2013) provide a formula for calculating sample size: $N \geq (8/f^2) + (m-1)$ where f is the desired effect size and m is the number of independent variables. As this study is the first to analyze the effect of the selected variables this study assumes small effect. Therefore, using the standard power of .8 (Field, 2009; Jose, 2013), a small effect size (f^2) of 0.04 (Cohen, 1992) and three independent variables (m) (including the interaction between the predictors as shown in Figure 4) the recommended sample size (N) is greater than or equal to 202.

The free online tool of G*Power was also used to compute a required sample size to verify the result reached using Tabachnik and Fidell's formula. G*Power is frequently used in

the social and behavioral sciences and has been demonstrated to provide accurate a priori power analysis when determining sample size (Faul, Erdfelder, Lang, & Buchner, 2007). In the Test Family field t tests were selected and Linear multiple regression: Fixed model, single regression coefficient was selected from the Statistical Test field. The 'A Priori' selection from the Type of Power Analysis field was selected. Two tails were selected, Effect size was entered as $f^2 = 0.04$ (Cohen, 1992), and the software suggested an α error probability of 0.05, and Power (1- β error probability) of 0.95. The number of predictors was three. The G*Power calculation determined that the total sample size needs to be greater than or equal to 327. This is greater than the recommended sample size calculated using Tabachnik and Fidell's method. Faul et al. (2007) noted that the numbers used by G*Power are largely based on well-known social and behavioral science measurements as originally posited by Cohen (1988) and explains the variation from Tabachnik and Fidell's formula.

To increase power a sample size greater than or equal to 327 was used. SurveyMonkey Audience guarantees the number of respondents so the number requested was met and exceeded; there was no need to adjust the number of surveys in anticipation of non-respondents. Of the 519 survey invites 465 answered all questions and were useable for analysis. The resulting sample size (≥ 327) was consistent with effect sizes in authentic leadership studies (Hsiung, 2012) and knowledge sharing research (Wu, 2013).

Instruments/Measures

Authentic Leadership

Authentic leadership was measured using the Authentic Leader Questionnaire (ALQ) developed by Avolio, Gardner, and Walumbwa (2007). The total score of the ALQ was used as the independent variable (IV). The ALQ has 16 items; all use a 5-point Likert scale (1 =

Strongly disagree to 5 = *Strongly agree*). This instrument has a Cronbach's alpha of .80 (Avolio et al., 2007). The total ALQ score is the sum of four subscales of authentic leadership: self-awareness, internalized moral perspective, balanced processing, and relational transparency. This instrument has been utilized in many studies to measure authentic leadership; for example, see Walumbwa et al. (2008) and Caza, Bagozzi, Woolley, Levy, & Caza (2010).

Knowledge Sharing

Knowledge sharing behavior is the action of an individual to (1) create knowledge and (2) share it freely with an individual or organization (Gupta, 2008; Riege, 2005). This construct was measured using the Knowledge Sharing Scale (KSS) developed by Chen, Hsu, Wang, & Lin (2011). Chen et al. successfully used the KSS to measure knowledge sharing between colleagues and identified organizational influences on employee knowledge sharing behavior. Wu (2013) adapted the KSS to measure knowledge sharing behavior and employee satisfaction and his adaptation of the instrument was used in this study. The KSS has 10 questions all based on a 5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*). The total score of the KSS was used as the dependent variable (DV). The Cronbach alpha for this instrument is 0.93 (Chen et al., 2011).

Positional Leader Tenure

The positional leader tenure question read, "How long has your supervisor been in his/her current position at your organization?" Respondents were given the option to respond in years from less than one year, two, three, etc. until 13 or more years was reached. Although the literature suggests that leadership tenure should be treated dichotomously such that individuals are grouped by whether they have fewer than 13 years of leadership tenure or 13 or more years,

for this study this variable was treated both dichotomously and continuously to allow for variation at lower levels of leadership tenure.

Data Collection

SurveyMonkey sent out invitations to randomly selected SurveyMonkey Audience members who were over the age of 18, had an immediate supervisor (the respondent could not be a CEO/president or own their own business), and had a job in one of three knowledge-intensive fields: (a) healthcare and pharmaceuticals, (b) finance and financial services, and (c) telecommunications, technology, Internet, and electronic fields.

Data Analysis

Initial statistical testing was performed using SPSS and Stata 14 to test assumptions, develop descriptive statistics, classify outliers, and detect relationships between the variables. The model has a single dependent variable, a single independent variable, and a single moderating variable. Table 2 shows the variable and data types. (See Figure 1 in chapter 1 for the predicted relationships between the study variables.)

Table 2. *Study Variables*

Variable	Variable Type	Type of Measurement
Authentic Leadership	Independent Variable	Interval
Leader Tenure	Moderating Variable	Interval
Knowledge Sharing	Dependent Variable	Interval

Note. Social science assumptions are maintained in the study by treating the ordinal Likert scales of the IV and DV as interval data. The MV is treated as interval data.

Analytic Strategy

An ordinary least squares (OLS) multiple regression analysis was used to assess the association between authentic leadership, positional leader tenure, and knowledge sharing behavior. The model contained two blocks. The first block contained the simple effects of authentic leadership and leader tenure. The second block contained the simple effects of authentic leadership and leader tenure, along with the interaction between authentic leadership and leader tenure to test whether leader tenure moderated the relationship between authentic leadership and knowledge sharing.

Assumptions of the ordinary least squares (OLS) multiple regression analysis were assessed. The assumptions of an OLS regression analysis are: sufficient ratio of number of cases to independent variables (or power, which was discussed earlier), univariate normality, linearity, absence of outliers among the independent and dependent variables, absence of multicollinearity, and the residuals' normality, linearity, and homoscedasticity (Tabachnick & Fidell, 2013). These are further discussed in chapter 4.

Validity and Reliability

Satisfactory reliability measures for the ALQ and KSS are found in the research literature. Cronbach's alpha coefficient for the authentic leadership instrument ALQ total score is $\alpha = 0.80$ (Avolio et al., 2007). Cronbach's alpha coefficient for the knowledge sharing instrument KSS is $\alpha = 0.93$ (Chen et al., 2011). The authentic leadership variable has four constructs: self-awareness, relational transparency, internalized moral perspective, and balanced processing. The Cronbach's alphas for each construct is $\alpha = 0.92, 0.87, 0.76,$ and $0.81,$ respectively (Avolio et al., 2007).

Alphas were recalculated using the data from this study to verify that the reliability of the instruments fell within a satisfactory range. This data is presented in chapter four.

Ethical Considerations

The Belmont Report states that three basic ethical principles must be considered for all research studies: beneficence, respect for persons, and justice (Department of Health Education and Welfare, 1979). These ethical principles have been integrated into this study as explained below.

Beneficence

The concept of do no harm is included in beneficence. Doing no harm means being intentional about doing good and attempting to maximize benefits (HEW, 1979). However, simply avoiding intentional harm and focusing on the benefits cannot cover all cases. For example, harm can unknowingly fall to younger populations because they have not developed appropriate communication skills or experience to protect against harm (HEW, 1979). Even though SurveyMonkey Audience members can be as young as 15-years old (SurveyMonkey, 2013) any respondents younger than 18-years old were excluded from the study to protect this at-risk population. It is also true that 15 to 18-year olds are not likely to have enough work experience to complete the survey, which is another reason to exclude this age group.

Respect for persons

The Belmont Report (HEW, 1979) upholds autonomy as an ethical right of all people (1979). Autonomy is defined as the ability to make an individual choice and follow through on that choice without duress or undue pressure (HEW, 1979). If an individual has diminished capability to maintain autonomy they deserve protection. This means there must be voluntary

responses to the survey. SurveyMonkey Audience members make two separate decisions. First, the decision is made to become an Audience member. Second, the decision is made to participate in the survey. SurveyMonkey (2013) invites participants to join SurveyMonkey Audience through online advertisements and voluntary completion of a detailed personal survey.

Confidentiality is preserved in this study as a way to respect participants. SurveyMonkey provides aggregated data so that no personal identifiers can be identified in the study data. A second level of confidentiality is ensured by data being maintained on a password protected MacBook Air for the length of the study. Backup data is stored on an external drive and kept in a locked safe. Upon project completion the data will be maintained in a locked safe for seven years and then destroyed.

Justice

Justice is fairness of allocation of work based on what is deserved in the research process (HEW, 1979). An example of justice is that the sampling process is reviewed to ensure certain subsections of the population are selected for reasons related to the research question rather than ease of availability or an increased ability to be manipulated (HEW, 1979). One application of ethics through justice is ensuring that no one is coerced into taking the survey. SurveyMonkey recruits Audience members on a voluntary basis and the ability to opt out of any research survey is as simple as a click of a button (SurveyMonkey, 2013). The broad reach of Audience members across the United States allows for the possibility of contacting many different socioeconomic strata, even though the population tends to be skewed toward a higher socioeconomic status (SurveyMonkey, 2013).

According to HEW (1979) justice requires that research participants are to benefit from the study. The collection of the three fields of healthcare and pharmaceuticals, finance and

financial services, and telecommunications, technology, Internet, and electronics requires knowledge-intensive interactions (Shih, 2010; Wang, Huang, & Yang, 2012; Yong-Mi, Newby-Bennet, & Song, 2012) and therefore the participants are likely to benefit from the study.

Another aspect of justice is that respondents are not pressured to participate in a study using disproportionate reimbursement (HEW, 1979). SurveyMonkey Audience members did not receive any reimbursement for responding to the survey (SurveyMonkey, 2013). However, two options were available to each respondent, including having a contribution of \$.50 made to a charity of their choosing and electing to enter a \$100 drawing.

Summary

This quantitative survey research study tested hypotheses using data collected through SurveyMonkey using two instruments, the ALQ and KSS with an additional question on positional leader tenure. The data was analyzed with a general linear model equation using an ordinary least squares analysis in SPSS and Stata 14. A sample size of over 327 respondents gave this study a statistical power of small effect. The validity and reliability measures were checked to ensure satisfactory levels, given the results published in extant literature. Ethical considerations were followed based on the Belmont Report recommendations. This description in this chapter is an introduction to the discussion of the results in chapter four.

CHAPTER 4. RESULTS

Introduction

Chapter 4 presents the analysis of the survey data and the results of the research. The purpose of this study was to measure the relationship between authentic leadership and knowledge sharing behavior, including a moderating variable for the possible effect of positional leader tenure.

Two hypotheses were posited to assess the research questions:

H1₀ There is no significant relationship between authentic leadership and knowledge sharing behaviors.

[H1_A Authentic leadership has a significant relationship to knowledge sharing behaviors.]

H2₀ Positional tenure of an authentic leader does not significantly affect the relationship between authentic leadership and knowledge sharing behaviors.

[H2_A The relationship between authentic leadership and knowledge sharing is moderated by positional leader tenure.]

An initial data analysis was conducted using SPSS and Stata 14 to determine descriptive statistics and frequencies, to detect outliers, and to test assumptions. The relationship between the IV and DV was analyzed using an ordinary least squares (OLS) regression analysis. The first block contained the simple effects of authentic leadership and leader tenure. The second block contained the simple effects of authentic leadership and positional leader tenure, and these two variables were multiplied to each other to create an interaction term, which was also included in the second block. The regression analysis tested whether positional leader tenure moderated the relationships between authentic leadership and knowledge sharing behaviors. Using this strategy

allows for the examination of the additional variance in knowledge sharing explained by the interaction term.

Description of the Population and Sample

Study Population

The study population included employees who had an immediate supervisor at the time of the survey and held a job in one of three fields: (a) healthcare and pharmaceuticals, (b) finance and financial services, or (c) telecommunications, technology, Internet, and electronic fields. The population may include management, back office support, and front-line staff. The skills and experience of this population may represent varied functional and technological expertise.

Study Sample Frame

The sample frame was comprised of SurveyMonkey Audience members. Audience members include about 30 million United States citizens who are usually from a higher socioeconomic class and have signed up via the Internet to participate in surveys (SurveyMonkey, 2013).

Study Sample

The study sample was comprised of employed U.S. individuals who had an immediate supervisor. These individuals must work in one of three fields that require high levels of intense knowledge sharing (Shih, 2010; Wang, Huang, & Yang, 2012; Yong-Mi, Newby-Bennet, & Song, 2012): (a) healthcare and pharmaceuticals, (b) finance and financial services, or (c) telecommunications, technology, Internet, and electronic fields. The respondents were asked to answer the questions regarding “your leader” as it related to their current immediate supervisor. It was assumed that the selected fields vary widely in process and required resources; however,

the necessity of communication between supervisor and follower in knowledge-intensive fields was assumed to be similar.

A total of 519 SurveyMonkey Audience members received invitations and 509 responded representing a 98.07% response rate and a 4.8% margin of error. Of the 509 respondents, 478 (93.91%) responded to the first invitation and 27 (5.30%) responded to the second. The abandon rate was 25%, which is within the normal range for SurveyMonkey projects (SurveyMonkey, 2013). The participants were over the age of 18, employed full time, did not own a business, currently held an entry-level or intermediate level job, and worked in one of the three selected knowledge-intensive fields. The median time to complete the survey was four minutes and forty-three seconds.

Incomplete responses were not included in the analysis. Out of the 519 total responses 465 (89.59%) respondents answered all survey questions. No missing data was present in the dataset, thus all cases were used in the analysis. A sample size of 465 surpasses the identified minimum sample size of 327 for a small effect.

Demographics of the Sample

Demographic information of the study sample was provided based on the responses from four questions. These included age, gender, annual household income, and U.S. geographic region. Percentages, frequencies, and cumulative percentages and frequencies are discussed in this section.

A majority of the participants were female (66.59%; Table 3). Most of the respondents were over the age of 29 (78.66%; Table 4). Over half of the respondents (70.03%) reported an annual household income greater than \$50,000 with the highest frequency being greater than \$100,000 (29.02%; Table 5).

Table 3. *Frequency-Survey Participant Gender (N = 464)*

Gender	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Female	309	66.59	309	66.59
Male	155	33.41	464	100

Table 4. *Frequency-Survey Participant Age (N = 464)*

Age	Frequency	Percent	Cumulative Frequency	Cumulative Percent
18 - 29	99	21.34	99	21.34
30 - 44	143	30.82	242	52.16
45 - 59	169	36.42	411	88.58
60+	53	11.42	464	100

Table 5. *Frequency-Survey Participant Household Income (N = 417)*

Income	Frequency	Percent	Cumulative Frequency	Cumulative Percent
\$0 to \$9,999	3	0.72	3	0.72
\$10,000 to \$24,999	22	5.28	25	6
\$25,000 to \$49,999	100	23.98	125	29.98
\$50,000 to \$74,999	95	22.78	220	52.76
\$75,000 to \$99,999	76	18.23	296	70.98
\$100,000 to \$124,999	46	11.03	342	82.01
\$125,000 to \$149,999	27	6.47	369	88.49
\$150,000 to \$174,999	16	3.84	385	92.33
\$175,000 to \$199,999	10	2.4	395	94.72
\$200,000 and up	22	5.28	417	100

The respondents represented all nine geographic divisions of the United States (Table 6). The Pacific (20.39%), East North Central (19.96%), and South Atlantic (16.70%) regions accounted for over half of the participants (57.05%). Participants from the East South Central region represented the smallest response demographic (3.69%). This region includes Alabama, Kentucky, Mississippi, and Tennessee (U.S. Census Bureau, n.d.).

Table 6. *Frequency-Survey Participant Location by U.S. Region (N=461)*

US Region	States by Census Region	Frequency	Percent	Cumulative Frequency	Cumulative Percent
New England	CT, NH, MA, ME, RI, VT	27	5.86	27	5.86
Middle Atlantic	NJ, NY, PA	42	9.11	69	14.97
East North Central	IL, IN, MI, OH, WI	92	19.96	161	34.92
West North Central	IA, KS, ND, NE, MN, MO, SD	39	8.46	200	43.38
South Atlantic	DC, DE, FL, GA, MD, NC, SC, VA, WV	77	16.7	277	60.09
East South Central	AL, KY, MS, TN	17	3.69	294	63.77
West South Central	AR, LA, OK, TX	40	8.68	334	72.45
Mountain	AZ, CO, ID, MT, NM, NV, UT, WY	33	7.16	367	79.61
Pacific	AK, CA, HI, OR, WA	94	20.39	461	100

Note. States by census region from U.S. Census Bureau (n.d.)

Description of the Study Variables

Three variables were assessed to evaluate the hypotheses of this study: authentic leadership, positional leader tenure, and knowledge sharing. The independent variable of authentic leadership is comprised of four constructs of self-awareness, relational transparency, balanced processing, and internalized moral perspective (Walumbwa et al., 2008). The total score of the four constructs from the ALQ is used in the statistical analysis.

Positional leader tenure, as the moderating variable, is represented by the number of years the immediate supervisor has held his or her current position, as reported by the respondents. Consistent with prior literature on how to handle this variable, it was treated dichotomously to determine whether individuals with more than 13 years of positional leadership tenure exhibited more knowledge sharing behaviors than those with fewer than 13 years. In order to allow for any additional variance this variable was also treated continuously. An independent samples t test was conducted to determine if difference existed between the two groups if the variable was treated dichotomously. Those with more than 13 years of positional leadership tenure had an average of 41.42 (SD = 6.55) knowledge sharing behaviors and those with fewer than 13 years had an average of 42.55 (SD = 5.30), and the difference between them was non-significant ($t(463) = -1.63, p = .10$). Therefore the calculations included in this study treated this variable as continuous.

The dependent variable of knowledge sharing was measured by the using the total score of 10 items from the KSS. The study variables and abbreviations used in Chapter 4 are shown in Table 7.

Table 7. *Study Variables and Abbreviations*

Variable	Variable Type	Abbreviation
Authentic Leadership	Independent Variable	ALQ
Knowledge Sharing	Dependent Variable	KSS
Leader Tenure	Moderating Variable	LeadTen

Each scale item, with the exception of the moderating variable of LeadTen, is a five-point Likert scale. The highest value for each item is five (*Strongly agree*) and the lowest value for each item is one (*Strongly disagree*). By adding together all items a composite score was calculated for the independent and dependent variables. The ALQ had 16 items with a possible high score of 80 and low of 16. The KSS had 10 items with a possible high score of 50 and low of 10. The participant responses to each item for the variables LeadTen (Table 8) and KSS (Table 9) are shown below. Responses for ALQ are not listed to protect copyrighted material. Sample ALQ items are provided in Appendix B.

Table 8. *Frequency-Scale Items Related to LeadTen*

Leader Tenure	Frequency	Percent	Cumulative Frequency	Cumulative Percent
< 1 year	45	9.68	45	9.68
1 year	47	10.11	92	19.78
2 years	51	10.97	143	30.75
3 years	53	11.4	196	42.15
4 years	43	9.25	239	51.4
5 years	38	8.17	277	59.57
6 years	28	6.02	305	65.59
7 years	14	3.01	319	68.6
8 years	22	4.73	341	73.33
9 years	11	2.37	352	75.7
10 years	31	6.67	383	82.37

11 years	4	0.86	387	83.23
12 years	2	0.43	389	83.66
> 13 years	76	16.34	465	100

Table 9. *Frequency-Scale Items Related to KSS*

Usually, I do my best and offer suggestions when discussing work-related matters with my colleagues.					
q0018	Frequency	Percent	Cumulative Frequency	Cumulative Percent	
1 = strongly disagree	9	1.94	9	1.94	
2 = disagree	4	0.86	13	2.8	
3 = neither agree or disagree	37	7.96	50	10.75	
4 = agree	240	51.61	290	62.37	
5 = strongly agree	175	37.63	465	100	

I am willing to talk about my knowledge and experiences with others.					
q0019	Frequency	Percent	Cumulative Frequency	Cumulative Percent	
1 = strongly disagree	8	1.72	8	1.72	
2 = disagree	6	1.29	14	3.01	
3 = neither agree or disagree	23	4.95	37	7.96	
4 = agree	183	39.35	220	47.31	
5 = strongly agree	245	52.69	465	100	

When my colleagues consult me, I am willing to answer their questions with sincerity.					
q0020	Frequency	Percent	Cumulative Frequency	Cumulative Percent	
1 = strongly disagree	4	0.86	4	0.86	
2 = disagree	3	0.65	7	1.51	
3 = neither agree or disagree	19	4.09	26	5.59	
4 = agree	164	35.27	190	40.86	
5 = strongly agree	275	59.14	465	100	

I usually record as much as possible when I am writing a document or a report.				
q0021	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 = strongly disagree	10	2.15	10	2.15
2 = disagree	36	7.74	46	9.89
3 = neither agree or disagree	101	21.72	147	31.61
4 = agree	171	36.77	318	68.39
5 = strongly agree	147	31.61	465	100

If something is hard to explain, I will gladly give my colleagues a demonstration.				
q0022	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 = strongly disagree	5	1.08	5	1.08
2 = disagree	6	1.29	11	2.37
3 = neither agree or disagree	34	7.31	45	9.68
4 = agree	246	52.9	291	62.58
5 = strongly agree	174	37.42	465	100

I am willing to offer less-experienced colleagues the opportunity to perform.				
q0023	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 = strongly disagree	3	0.65	3	0.65
2 = disagree	8	1.72	11	2.37
3 = neither agree or disagree	66	14.19	77	16.56
4 = agree	239	51.4	316	67.96
5 = strongly agree	149	32.04	465	100

When my colleagues are in need, I do my best to offer them the necessary information and documents.				
q0024	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 = strongly disagree	4	0.86	4	0.86
2 = disagree	3	0.65	7	1.51
3 = neither agree or disagree	20	4.3	27	5.81

4 = agree	207	44.52	234	50.32
5 = strongly agree	231	49.68	465	100

When I can't help my colleagues solve their problems, I advise them of where to look for assistance.

q0025	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 = strongly disagree	4	0.86	4	0.86
2 = disagree	3	0.65	7	1.51
3 = neither agree or disagree	28	6.02	35	7.53
4 = agree	209	44.95	244	52.47
5 = strongly agree	221	47.53	465	100

I encourage my colleagues when they are facing difficulties at work.

q0026	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 = strongly disagree	4	0.86	4	0.86
2 = disagree	13	2.8	17	3.66
3 = neither agree or disagree	69	14.84	86	18.49
4 = agree	220	47.31	306	65.81
5 = strongly agree	159	34.19	465	100

When I teach my colleagues, I express my ideas in ways they can fully understand.

q0027	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1 = strongly disagree	4	0.86	4	0.86
2 = disagree	7	1.51	11	2.37
3 = neither agree or disagree	64	13.76	75	16.13
4 = agree	261	56.13	336	72.26
5 = strongly agree	129	27.74	465	100

Survey questions are from To share knowledge or not: Dependence on knowledge-sharing satisfaction, by Wu, 2013, *Social Behavior and Personality*, 41(1), 47-58. Copyright 2013 by Wu, W. Used with permission.

Cronbach's alpha scores were calculated from the study data. Acceptable reliability scores were achieved for each study variable ($\alpha > 0.70$; Field, 2009). Table 10 shows the

variable means, standard deviations, and Cronbach's alphas. The Cronbach's alpha coefficients for both ALQ and KSS were acceptable at $\alpha = 0.95$ and $\alpha = 0.89$, respectively.

Table 10. *Study Variables Descriptive Statistics and Cronbach's Alpha Coefficients (N=465)*

Variable	Mean	Standard Deviation	Cronbach's Alpha
ALQ	53.10	15.73	0.95
KSS	42.36	5.53	0.89
LeadTen	6.03	3.55	-

Testing Assumptions

As introduced in chapter 3, the assumptions of the ordinary least squares (OLS) multiple regression analysis were assessed. These include the evaluation of linearity between the independent and dependent variables and multicollinearity among independent variables. The regression analysis was run in order to assess the residuals. These are examined for normality, outliers, and homoscedasticity (Tabachnick & Fidell, 2013).

Linear Relationships Between the IVs and DV

Linear relationships between the predictors (authentic leadership and tenure) and the outcome (knowledge sharing) were examined using scatterplots, as shown in Figure 5 and Figure 6. There is no evidence of non-linear relationships between the independent variables and the dependent variable.

There was a moderate positive correlation between authentic leadership and knowledge sharing ($r = .30, p < .001$); however, leader tenure was not associated with knowledge sharing ($r = -.04, p = .34$).

The independent and dependent variables were examined for non-linearity using scatterplots and loess lines. The loess creates a "best fit" without some type of distribution being

assumed (Field, 2009). If the loess line is horizontal it can be ascertained that the variables have a linear relationship (Field, 2009). Figure 5 suggests that authentic leadership and knowledge sharing have a linear relationship; Figure 6 also suggests a linear relationship between leader tenure and knowledge sharing.

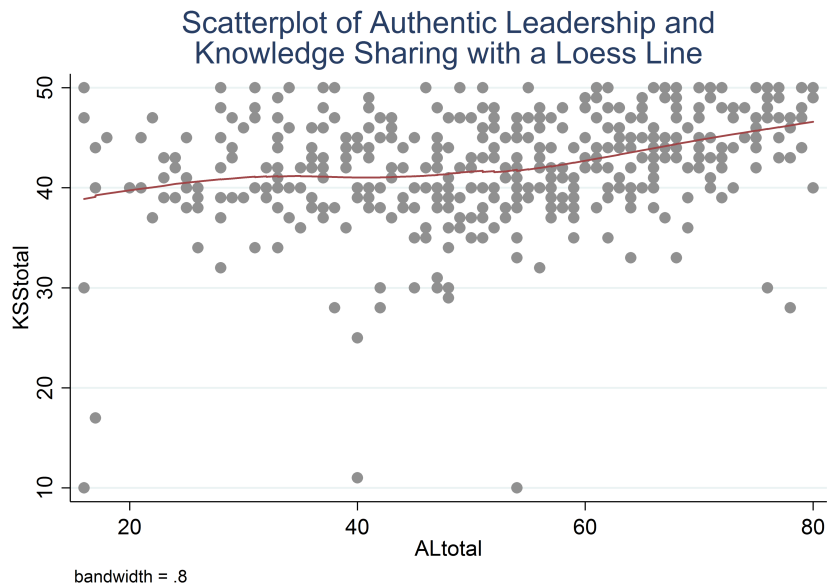


Figure 5. Scatterplot of Authentic Leadership and Knowledge Sharing with a Loess Line.

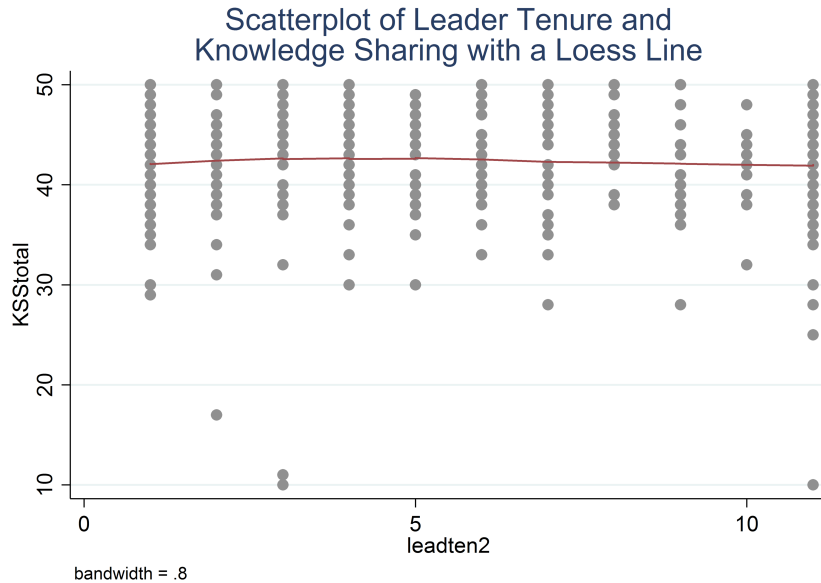


Figure 6. Scatterplot of Leader Tenure and Knowledge Sharing with a Loess Line.

Bivariate Relationships and Collinearity

A Pearson correlation was used to assess collinearity between authentic leadership and positional leader tenure. The bivariate association between them was non-significant ($r = -.08, p = .07$) suggesting that there is no threat from multicollinearity between the two predictors. To further assess for multicollinearity, the variance inflation factor (VIF) was examined. The VIF score was less than 2.5, indicating that multicollinearity is not a concern (Table 11; Field, 2009).

Residual Analysis

The assumptions of normally distributed residual variance, homoscedasticity, and the absence of outliers that influence regression outcomes were examined (Tabachnick & Fidell, 2013).

Normality of distributed residual variance. The residuals were not normally distributed, as shown in Figure 7 and Figure 8. It is important to keep this in mind with

inferential statistics, as the regression results become less robust as the distributions deviate from normality (Tabachnick & Fidell, 2002). Given that Figures 7 and 8 indicate some departure from normality, a sensitivity analysis was performed.

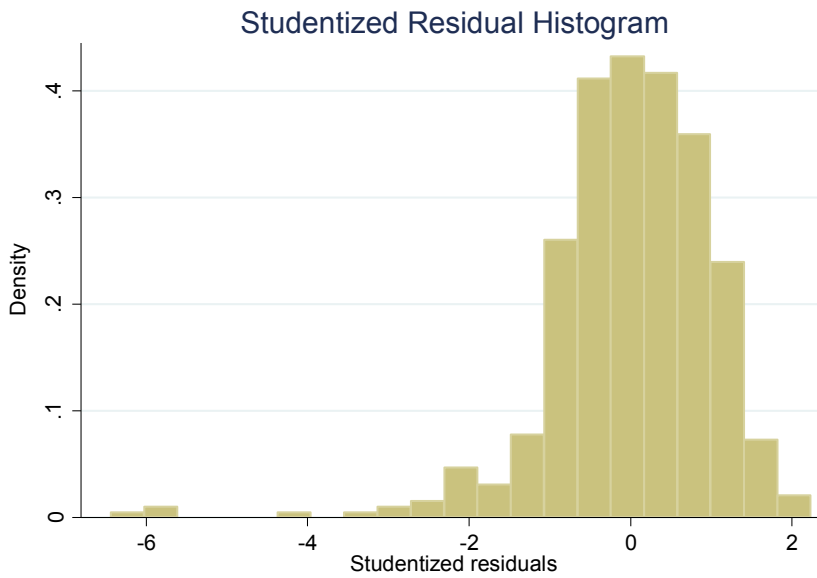


Figure 7. Histogram of the Residual Variance.

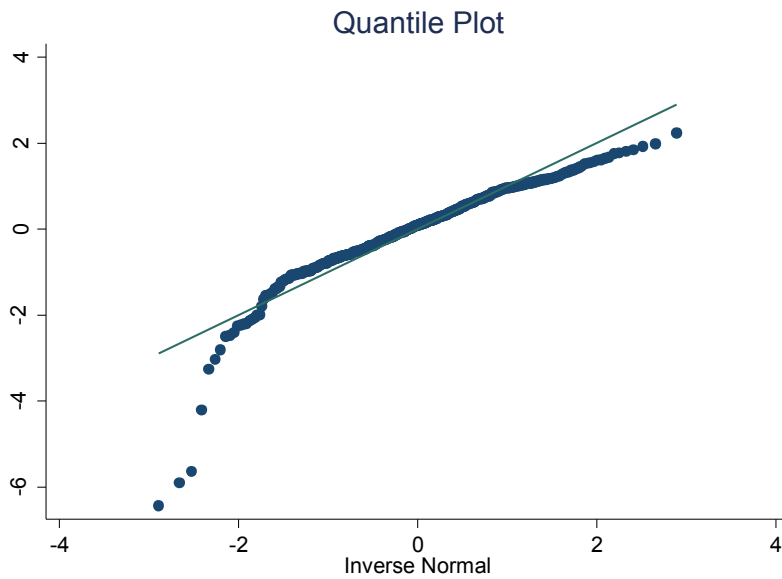


Figure 8. Q-Q Plot of Residual Variance.

Figure 9 shows what the Q-Q plot looks like after the removing the observations that make the distribution skewed (see Figure 8). The pattern in Figure 9 shows that after the removal of the 19 problematic cases the residuals are now more normally distributed. Below the OLS regression models are run with all of the cases in the sample, and then run again when the 19 observations that skew the data are removed (Tabachnick & Fidell, 2013).

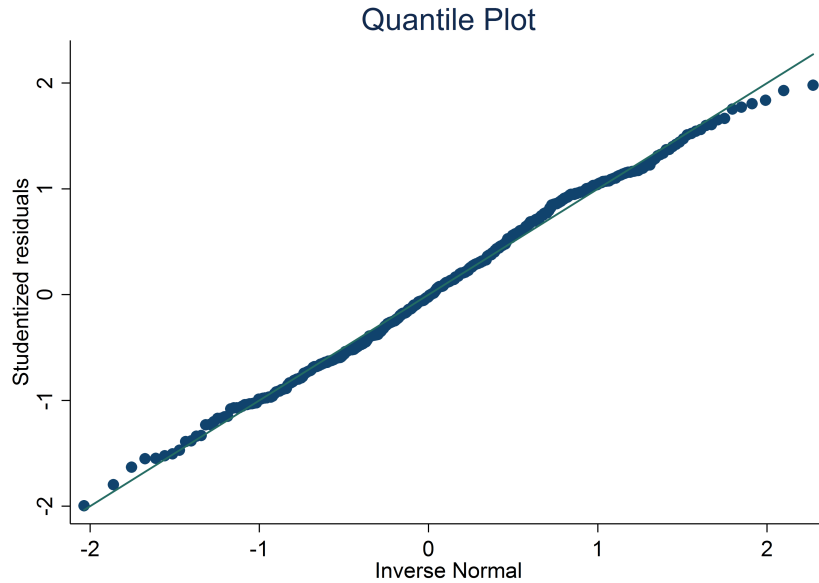


Figure 9. Q-Q Plot with 19 Problematic Cases Removed.

Table 11 compares the regression analyses with and without the 19 observations; note that there are no changes in the independent variables that are found to be significant. Model 2, with the removal of the problematic cases ($F(3, 461) = 15.96, p < .001$), continues to show a significant relationship between authentic leadership and knowledge ($b = .31, p = < .001$), while positional leader tenure remains insignificant ($b = -.009, p = .83$). The drop in the adjusted R^2 value in model 2 indicates that model 1 is a better fit. Therefore, given that no significant change was identified after removing problematic cases, all of the data were used in the analysis (Tabachnick & Fidell, 2013).

Table 11. Comparison of final model with model where problematic cases were removed

All cases ($n = 465$) ^a	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>	VIF
Intercept	42.36	.24	--	172.28	< .001	--
Authentic leadership	.10	.01	.30	6.85	< .001	1.01
Leader tenure	-.02	.06	-.02	-.42	.67	1.01
AL x LT	<.001	.004	-.01	-.15	.88	1.01
Bad cases removed ($n = 446$) ^b	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>	VIF
Intercept	42.99	.18	--	226.70	< .001	
Authentic leadership	.08	.01	.33	7.34	< .001	1.01
Leader tenure	-.01	.05	-.009	-.21	.83	1.01
AL x LT	-.001	.003	-.01	-.33	.74	1.00

^a $F(3, 462) = 23.98, p < .001; R^2 = .09, \text{Adjusted } R^2 = .09$

^b $F(3, 289) = 18.21, p < .001; R^2 = .11, \text{Adjusted } R^2 = .10$

Homoscedasticity. Homoscedasticity, or the extent to which variance of the residuals was constant across fitted values of the dependent variable, was examined (Figure 10).

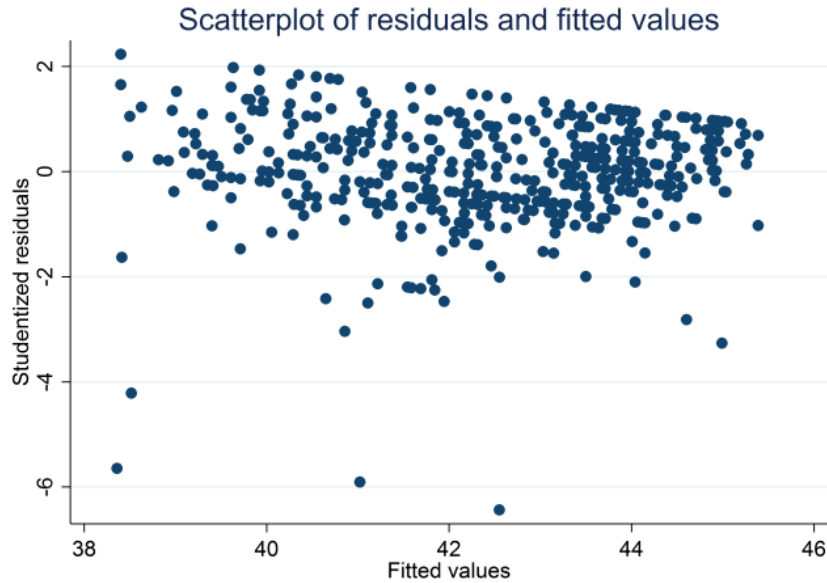


Figure 10. Scatter Plot of the Residuals and Fitted Values.

The variance appeared to be constant around the zero-line with a slightly declining band visible in the upper values. The resulting pattern is not something to expect out of pure randomness if homoscedasticity exists (Field, 2009). As there is no formal test to determine an answer to the visible top edge, the raw data was examined to attempt to determine an explanation for the pattern.

The raw data did not appear to display obvious indicators for the pattern. There is variance in the years of leadership tenure. The age of the responders is varied. All income brackets are represented without undue representation in any one group. There is also variance in the authentic leadership totals. Gender may have a role to play with a majority of the responders being female, but this is not an obvious reason for the top edge of the variance pattern, as the responses of the female responders did not have an obvious pattern.

The lack of association between the residuals and fitted values can be visually confirmed in Figure 10 by the band of values falling constantly along the zero-line (Tabachnick & Fidell, 2013). Due to outliers it is not symmetrical, however the pattern is consistent around the zero-line. For extra validation of this point a correlation between the residuals and the fitted values was not significantly different from zero ($r = .001, p = .97$). The outliers were then analyzed to determine if the removal of problematic cases would assist with the pattern of residuals.

Outliers

The residuals were analyzed to determine whether there were any outliers with undue influence on the analyses. Cook's distance (Cook's D) was used to search for outliers. For smaller sample sizes, a cutoff of ± 1.0 is appropriate for identifying outliers (Cohen, Cohen, West, & Aiken, 2003). All Cook's D values were within tolerance.

DFBETA statistics were also performed to see if single cases influenced the model. Cases having DFBETAs beyond ± 2.5 standard deviations are typically considered as having undue influence on the regression line. A number of DFBETAS beyond ± 2.5 were observed ($n = 137$) and are shown in Figure 11.

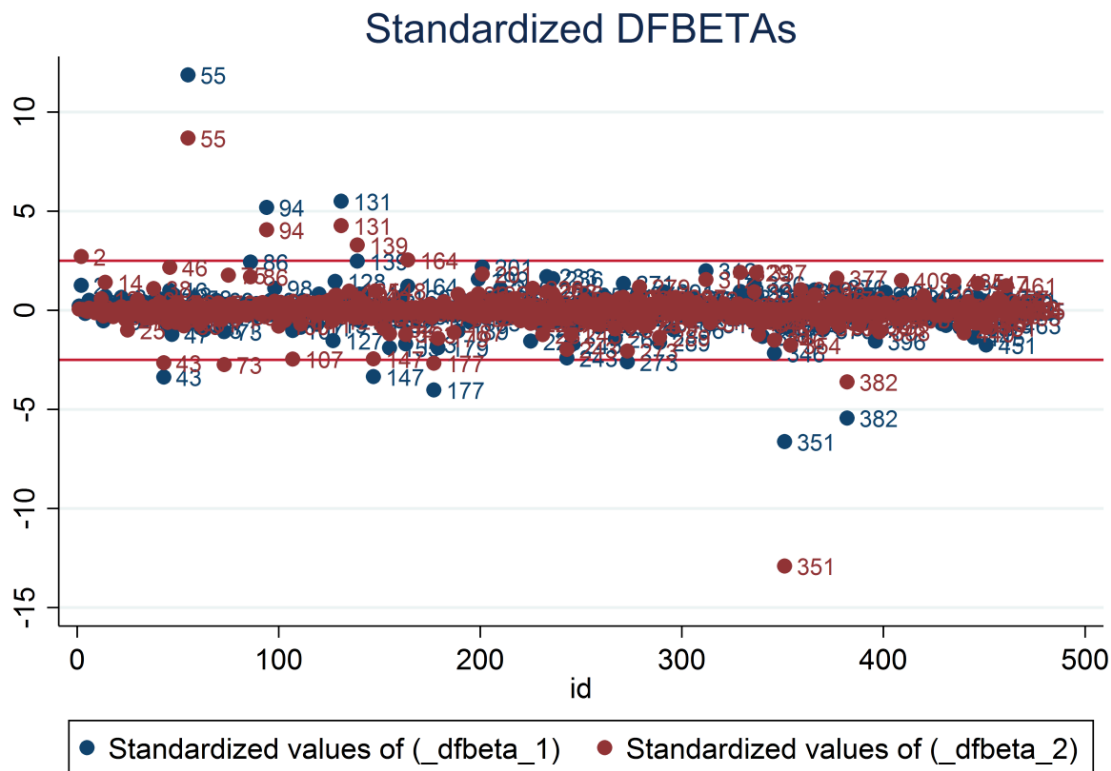


Figure 11. Plot of DFBETAs With Outliers.

Given the large number of identified influential cases, a sensitivity analysis was conducted to determine the effect of these cases on the final model. In such an analysis the OLS regression model is conducted with all cases in the sample, and then the analysis is conducted again after the 137 problematic cases are trimmed out. Thus, a comparison of the significance of the regression coefficients in each analysis may reveal whether the problematic cases are influencing the inference of the original model. In other words, if the pattern of inference across the full and trimmed model is identical, the findings are robust enough to not be affected by the problematic cases. Figure 12 demonstrates that the removal of the outliers did not change the pattern of the model. Therefore, as the overall pattern did not change when removing problematic cases, all data were used in the analysis.

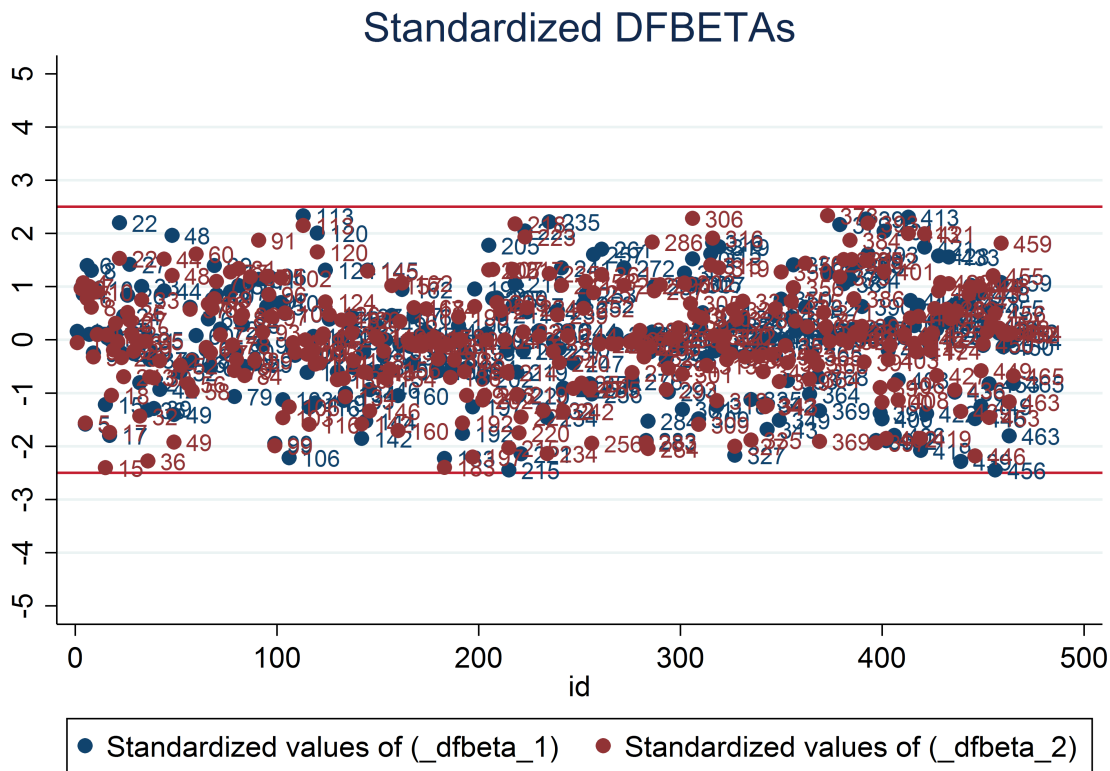


Figure 12. Plot of DFBETAs Without Outliers.

Summary of Testing Assumptions

The descriptive statistics and correlations between the study variables are shown in Table 12. The mean score for KSS is 42.36 ($SD = 5.53$); the mean score for ALQ items is 53.10 ($SD = 15.73$); and the mean score for Leader Tenure is 6.03 ($SD = 3.55$). The correlation between authentic leadership and knowledge sharing is significant and positive ($r = .30; p < .001$). The correlation between positional leader tenure and knowledge sharing is not significant ($r = -.04; p = .34$) whether processed as a continuous or dichotomous variable. Analysis of the residuals identified outliers, and upon further analysis it was determined that the existing outliers did not have an undue influence on the residuals and therefore all data were kept in the analysis.

Table 12. *Correlation matrix of predictors and knowledge sharing with variable descriptive statistics appended (N = 465)*

Variables	1	2	3
1 Knowledge sharing	1		
2 Authentic leadership	.30*	1	
3 Leader tenure ¹	-.04	-.08	1
<i>M</i>	42.36	53.10	6.03
<i>SD</i>	5.53	15.73	3.55
Min	10	16	1
Max	50	80	11

¹Leader tenure was coded such that 1 = < 1 and 11 = 10+ years; however, it is treated continuously in this analysis

* $p < .001$

Details of the Analysis and Results

OLS Regression

An ordinary least squares (OLS) multiple regression analysis containing two blocks was used to assess the relationship between authentic leadership, positional leader tenure, and knowledge sharing behaviors. Table 13 shows the models included in the analyses and the results.

The first model included the simple effects of authentic leadership and leader tenure. This model significantly predicted knowledge sharing behavior ($F(3,462) = 23.98, p < .001$).

Authentic leadership was positively associated with knowledge sharing behavior ($b = .10$, $t(461) = 6.85$, $p < .001$). Leader tenure was not significantly associated with knowledge sharing ($b = -.02$, $t(462) = -.41$, $p = .68$). The adjusted R^2 value is .09.

The second model contained the effects of both authentic leadership and positional leader tenure, as well as the interaction between these two variables (AL x LT) to test whether leader tenure moderated the relationship between authentic leadership and knowledge sharing behavior. The addition of this interaction did not account for significant additional variance, as the change in the adjusted R^2 value was miniscule. The p-value for AL x LT was not significant ($p = .88$) indicating that leadership tenure does not moderate the relationship between authentic leadership and knowledge sharing.

Table 13. Predictors of knowledge sharing behavior scores ($N = 465$)

Model 1 ^a	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>t</i>	<i>P</i>	VIF
Intercept	42.36	.24	--	173.07	< .001	--
Authentic leadership (AL)	.10	.01	.30	6.85	< .001	1.01
Leader tenure (LT)	-.02	.06	-.02	-.41	.68	1.01
Model 2 ^b	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>t</i>	<i>P</i>	VIF
Intercept	42.36	.24	--	172.28	< .001	--
Authentic leadership	.10	.01	.30	6.85	< .001	1.01
Leader tenure	-.02	.06	-.02	-.42	.67	1.01
AL x LT	<.001	.004	-.01	-.15	.88	1.01

^a $F(3, 462) = 23.98$, $p < .001$; $R^2 = .09$, Adj $R^2 = .09$

^b $F(3, 461) = 15.96$, $p < .001$; $R^2 = .09$, Adj $R^2 = .08$

The regression equation derived from this analysis is:

$$\hat{y} = \beta_0 + \beta_1 X_1 + \varepsilon_i \quad (2)$$

In this equation, there was only one significant parameter: Authentic leadership (β_1). The regression equation with the unstandardized regression coefficient inserted is as follows:

$$\hat{y} = 42.36 + (.11)X_1 + \varepsilon_i \quad (3)$$

Now that the residuals have been evaluated and it has been determined that all data are included in the results, the hypotheses can now be analyzed. The next section identifies how the predictions of the hypotheses are either accepted or rejected based on the outcome of the two statistical models.

Hypothesis H1_A Analysis

Hypothesis H1_A predicted that there would be a significant relationship between authentic leadership and knowledge sharing behaviors. A significant positive relationship was found between authentic leadership and knowledge sharing in Model 1. Therefore, this model supports Hypothesis H1_A and the null hypothesis is rejected.

Hypothesis H2_A Analysis

Hypothesis H2_A predicted that positional leader tenure moderates the relationship between authentic leadership and knowledge sharing behaviors. Model 2 introduces the interaction term representing this moderation and no effect was found. Therefore, Hypothesis H2_A is not supported and the null is accepted.

Note that the adjusted R^2 is .09, indicating that only 9% of the variance is explained.

Conclusion

This chapter described the results of data analysis conducted on the independent variable authentic leadership, the moderating variable positional leader tenure, and the dependent variable knowledge sharing. The qualitative data was collected using an instrument that combined existing instruments from the literature Authentic Leadership Questionnaire (ALQ) and Knowledge Sharing Scale (KSS) with a self-reported question added about positional leader tenure. Both instruments were reliable with acceptable Cronbach's alpha coefficients ($\alpha > 0.70$). SurveyMonkey administered the survey and collected the data from SurveyMonkey Audience members who were over the age of 18, employed full time, did not own a business, currently held an entry-level or intermediate level job, and worked in one of the three selected knowledge-intensive fields based on extant literature of healthcare and pharmaceuticals, finance and financial services, and telecommunications, technology, Internet, and electronic fields.

An ordinary least squares (OLS) multiple regression analysis was performed to evaluate the hypothesized relationships between variables. Hypothesis H1_A predicted a significant relationship between authentic leadership and knowledge sharing behaviors. The null hypothesis was rejected as the data supported a significant, positive relationship. Hypothesis H2_A predicted that positional leader tenure would moderate the relationship between authentic leadership and knowledge sharing behaviors. The null hypothesis was accepted, as positional leader tenure did not account for any significant additional variance. Chapter 5 presents discussion and implications of the results, study limitations, and recommendations for further research.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

Introduction

This chapter provides a comprehensive summary of the study, discussion of the results, assessment of implications, review of limitations, and recommendations for further research.

Summary of Results

The purpose of this quantitative non-experimental study was to identify whether authentic leadership affected knowledge sharing behavior. This study also tested a moderating variable of positional leader tenure to see if adding this variable to the model accounted for additional variation. The significance of this study is that it empirically demonstrates how authentic leadership affects knowledge sharing behaviors; one may assume that this affects organizational success (Yuan et al., 2012).

The chapter 2 literature review identified many studies that related leadership to communication, organizational learning, or some type of knowledge sharing (de Vries et al., 2010; Gupta, 2008; Husted et al., 2012; Lam & Lambermont-Ford, 2010; Santos et al., 2012) but the gap remains of how authentic leadership relates to knowledge sharing behaviors. The review did not reveal an existing study that provided quantitative data demonstrating a relationship between authentic leadership and knowledge sharing behaviors.

To determine if any new research had been published during the course of this study, a new search was completed of the business and psychology databases. No articles were found that studied the interaction between authentic leadership and knowledge sharing. However, there are recent articles that have identified authentic leadership as a catalyst to support components of organizational success. For example, Meng, Cheng, and Guo (2016) demonstrated that authentic leaders who modeled social interaction behaviors and encouraged organizational learning

promoted creativity in the work place. Other recent articles demonstrated that leadership styles affect organizational behavior. For example, one facet of authentic leadership (trust) affects knowledge sharing (Hakanen & Häkkinen, 2015; Jones & Shah, 2016). Other leadership styles, such as transformational leadership (Chrisentary & Barrett, 2015), ethical leadership (Bulatova, 2015), and servant leadership (Cekuls, 2015; Song, Park, & Kang, 2015), lead to increased knowledge sharing.

The surveys in this study were the Authentic Leadership Questionnaire (ALQ), the Knowledge Sharing Scale (KSS), and a question about positional leader tenure. ALQ and KSS Cronbach alphas calculated from the survey data were acceptable ($\alpha > 0.70$). There were 465 surveys usable for analysis, which is more than the 327 responses needed for a small effect.

The hypotheses were evaluated based on a general linear model using ordinary least squares (OLS) multiple regression analysis. Two models were tested in the OLS analysis. The first model sought to identify the simple effects of authentic leadership and positional leader tenure on knowledge sharing. The results showed that a significant and moderately positive relationship existed between authentic leadership and knowledge sharing. The second model inserted the interaction between authentic leadership and leader tenure to see whether the interaction accounted for any variation in the relationship between authentic leadership and knowledge sharing. This relationship was not moderated by positional leader tenure. These analyses were used to assess the hypotheses.

Two hypotheses were investigated. The first hypothesis ($H1_A$) predicted that a significant relationship would exist between authentic leadership and knowledge sharing behaviors. Hypothesis $H1_A$ was supported; the null hypothesis was rejected. The second hypothesis ($H2_A$) predicted that positional leader tenure would moderate the relationship between

authentic leadership and knowledge sharing behaviors. Hypothesis H2_A was not supported; the null hypothesis was accepted.

Discussion of the Results

Ordinary Least Squares Multiple Regression

An ordinary least squares (OLS) multiple regression analysis containing two blocks was performed to determine the relationship between authentic leadership, positional leader tenure, and knowledge sharing behaviors. Hypothesis H1_A predicted a significant relationship between authentic leadership and knowledge sharing behaviors, which was supported ($b = .30; p < .001$). Authentic leadership accounted for 9.1% of the variance in knowledge sharing behavior (adjusted $R^2 = .091; p < .001$). Hypothesis H2_A predicted that positional leader tenure would moderate the relationship between authentic leadership and knowledge sharing behaviors. No moderating effects were found when the interaction of positional leader tenure was introduced into the model ($b = -.02; R_{\text{change}}^2 < .001, p = .88$).

The study predicted that authentic leadership would have a statistically significant relationship to knowledge sharing behaviors and that relationship would be moderated by positional leader tenure. The relationship between authentic leadership and knowledge sharing was significant and moderately positive. Positional leader tenure did not moderate the relationship between authentic leadership and knowledge sharing. Possible reasons for this result are discussed later in this chapter.

Demographic Data

SurveyMonkey Audience members were invited to complete the survey if they were 18 years of age or older and indicated they were employed in one of three knowledge-intensive fields:

(a) healthcare and pharmaceuticals, (b) finance and financial services, and (c) telecommunications, technology, Internet, and electronic fields. Survey respondents answered four demographic questions on age, gender, annual household income, and U.S. geographic region. Most of the respondents were female (66.59%). A majority was over the age of 29 (78.66%). More than two-thirds of the respondents (70.03%) reported an annual household income greater than \$50,000. The respondents represented all nine geographic divisions of the United States.

Limitations

Major limitations, design flaws, and problems are briefly discussed here; they are presented in more detail later in this chapter. Issues include the research design, sample, and surveys. Research design limitations include using a cross-sectional study (Risso, 2015). Potential problems with the sample include skewed results, lack of cultural diversity outside of the United States population, and a large percentage of female respondents in largely male dominated fields. Survey limitations include self-reported measures; although this is common in social science research (Kline et al., 2000), the influence of social desirability could potentially affect results.

Although these issues should be investigated in future research studies, the results of the present study have implications for hiring managers and leaders interested in increasing knowledge sharing. The next section discusses these implications.

Implications of the Study Results

Knowledge sharing is a key component of knowledge management, which provides a competitive edge for an organization (Milne, 2007; Santos et al., 2012). However, knowledge sharing behaviors do not happen spontaneously due to barriers found in organizations (Husted et

al., 2012; Lam & Lambermont-Ford, 2010). Therefore, a deeper understanding of mitigating factors to knowledge sharing barriers is crucial to organizational success. This study provided insight on how authentic leadership mitigates barriers to knowledge sharing.

This study has shown that authentic leadership increases knowledge sharing behaviors. The significant positive effect of authentic leadership on knowledge sharing suggests that some, or perhaps all, of the barriers to knowledge sharing may be addressed through authentic leader behaviors. It was also demonstrated that positional leader tenure did not affect the relationship between authentic leadership and knowledge sharing behaviors. It is important to remember that the sample was skewed and had a high percentage of females in male dominated industries; this could affect all potential conclusions.

It is suggested in the literature that time is needed for a leader to settle into a position and build trust before a positive impact can be made on followers (Hambrick & Fukutomi, 1991; Williams & Hatch, 2012). However, authentic leadership style was not included as a consideration in these studies. The results of this study suggest a possibility that authentic leadership does not require a length of time to build trust in order to mitigate knowledge sharing barriers. This finding supports existing studies on authentic leadership and trust (Walumbwa et al., 2008). Another potential explanation of the lack of interaction of positional leader tenure is that it may not pertain to the three selected industries; perhaps other industries would require time for a leader, authentic or not, to build trust with followers.

This study suggests a solution to mitigating knowledge sharing barriers. By addressing knowledge sharing barriers through authentic leadership and the resulting outcomes of trust, role modeling, and empowerment, hiring managers and leaders may have a tool with which to

encourage knowledge sharing within an organization. However, limitations exist and these are discussed in the next section.

Limitations of the Research

Methodological Limitations

Cross-sectional study. One does not have “before” and “after” measures using a cross-sectional study, and this threatens internal validity (Risso, 2015). That is, does the introduction of an authentic leader in an organization result in greater knowledge sharing among the followers over time? Time is only addressed through the self-reported moderating variable of positional leader tenure, and this does not deal with the temporal relationship between authentic leadership and knowledge sharing. The nature of the leader/follower interaction with knowledge sharing requires a longitudinal study.

Survey sample. Using the SurveyMonkey Audience as the sample population may not appropriately represent the population of followers of authentic leaders. SurveyMonkey audience members frequently have more education and higher income than the typical citizen of the United States (SurveyMonkey, 2013). Also, as audience members opt in to the surveys and must complete them online everyone must have access to computers, or some electronic device, which a recent Gallup survey pointed out is not representative of the U.S. population (Saad, 2014).

However, these characteristics of the SurveyMonkey audience may not be of great concern given the knowledge-intensive nature of the industries that were studied. Employees in these industries would explain the preponderance of higher income respondents because industries that are more knowledge-intensive tend to have a higher average pay scale (Hill, 2014).

This can be seen in the sample population; there are a high percentage of individuals with

incomes greater than \$50,000 (70.03%) and almost a third (29.02%) with annual household income greater than \$100,000.

Gender may also have influenced the results. That is, 66.59% of the participants are female, and this is atypical for the industries included in the study. Lin (2008) identified that males and females have different motivations for sharing knowledge. This motivation difference could also affect the results of a disproportionate gender sample. For example, according to a recent CNET special report the field of information technology is comprised of 30% females (Cheng, 2015). According to the National Institute of Health (NIH) the healthcare industry tends to have more female dominated occupations, but not by a large amount (Grant, Robinson, & Muir, 2004). The United States Equal Employment Opportunity Commission (EEOC) reported in 2006 that the percentage of women in the finance industry is less than 50% across all subsectors (U.S. Equal Employment Opportunity Commission, 2006). With this understanding of the industries represented by the sample population, it is curious that the sample for this study has a 2:1 ratio in favor of females. This indicates a potential sampling problem.

Self-reported measures. Social desirability may influence the respondents' answers and can lead to what is referred to as common method bias (Kim & Ko, 2014; Kline et al., 2000). However, the use of self-reported responses is typically used in studies of leadership, as demonstrated by the wide use of the Authentic Leadership Questionnaire (ALQ) created by Avolio et al. (2007). The limitations of self-reported measures in this study include the participant's attitude at the time of the survey and personal feelings about the leader. It is assumed that the sample size is sufficiently large to cover this limitation. It is also assumed in this study that all participants provide honest responses.

Direct observations of behavior would be costly, but may be appropriate for some research questions. It has been demonstrated that direct observations provide deeper access to underlying thoughts, ideas, and motivations and require more resources (Russon & Reinelt, 2004). In Russon and Reinelt's review of 55 leadership development programs it was found that those programs in which leaders received feedback based on a more hands on approach, such as direct observation, in conjunction with other methods, such as surveys, produced the highest level of accuracy in assessing outcomes. This research describes evaluations of programs used to change organizations through leadership development; research like this may also be applied to research studies, such as this one. However, the requirement of increased resources frequently limits the ability to use direct observation methods.

Delimitations, Problems, and Design Flaws

A limitation common in leadership research is collecting measures outside of the contextual influence of common environmental factors within a specific organization (Walumbwa et al., 2008). Specifically, this refers to retrieving data in a cross-sectional design and not factoring in all of the cultural, environmental, and social influencers that vary over time within an organization. Although the ALQ has been tested in multiple cultures (Chinese, Kenyan, and American; Walumbwa et al., 2008) this consideration must be acknowledged, especially as the sample population for this study was taken from a single culture. The fact that SurveyMonkey audience members are citizens of the United States does not address the globally diverse job market and the potential impact of authentic leaders across cultures. Cultures outside of the United States may not produce the same results from authentic leaders. This is a potential topic for future research. Recommendations for further research are discussed in the next section.

Recommendations for Further Research

Lin (2008) recommends that knowledge sharing should be studied as a major focus of organizational research. Knowledge sharing has high rewards for organizations and is unforgiving when ignored (Santos et al., 2012). The current study shows how authentic leadership and knowledge sharing are related. This approach suggests that researchers should continue to incorporate the influence of leadership styles into the body of knowledge management. Authentic leadership may have unexpected effects, such as influencing knowledge sharing even though the constructs of authentic leadership do not present ideas on knowledge sharing. Incorporating leadership and knowledge sharing perspectives into organizational management research can build a richer and more inclusive body of knowledge.

Research on leadership styles and knowledge sharing should be viewed as a major contribution to the body of knowledge on organizational management. For example, a different design could have leaders answer the knowledge sharing questions about specific followers and the followers answer the authentic leadership questions about their leader. Then a correlation can be determined based on the leader's ratings and follower's responses. From a theoretical perspective this could be important to demonstrate the one-to-one impact of authentic leadership rather than on a collective group. Also, other leadership theories, such as transformational leadership, or subscales of leadership theories, such as self-awareness, could be analyzed with knowledge sharing to identify relationships.

Testing for gender difference in authentic leader behaviors is another research opportunity. The literature shows that knowledge sharing behaviors and tendencies vary by gender. Lin (2008) performed a study in which gender stereotyping moderated knowledge sharing. Lin found that feminine character traits of altruism, sharing for the greater good of the group, and masculine character traits of sportsmanship, being interested in the team benefiting as

a whole, lend more toward knowledge sharing and communal behaviors. This finding specified that when knowledge sharing does occur the motivations for these behaviors vary across gender. However, the literature does not identify solid support for one gender supporting knowledge sharing behaviors more than the other. For example, Kim and Ko (2014) identified that females are less likely to report sharing knowledge than males, but Ojedokun and Idemudia (2014) found that females have more positive attitudes toward knowledge sharing than males. These differences suggest that factors other than gender affect knowledge sharing behavior. A suggestion for further research is to study the effect of gender on knowledge sharing behaviors, specifically regarding the role modeling of authentic leaders. Another suggestion is to study the effect of gender on follower propensity to engage in knowledge sharing behaviors when authentic leadership behaviors are present.

This study looked at knowledge sharing and authentic leadership as total scores. That is, evidence has been found to associate authentic leadership with knowledge sharing. However, there are four constructs of authentic leadership and this study did not identify which dimensions of the authentic leadership theory are more or less associated with knowledge sharing. Further research could identify the relationship of each construct of authentic leadership to knowledge sharing and determine if a single construct affects knowledge sharing behavior more than the others. Since the Authentic Leadership Questionnaire has four questions for each of the four constructs of authentic leadership, the data could be analyzed to determine whether one or more constructs have a greater effect on knowledge sharing behavior than others.

Additionally, the six barriers to knowledge sharing could be studied separately to search for relationships. The barriers identified by the present author in this study were (1) personal factors, (2) technological factors, (3) cultural norms and context, (4) lack of time, (5) personal

vulnerability, and (6) task oriented leadership style (Hew & Hara, 2007; Husted et al., 2012; Luu, 2012; Santos et al., 2012; Wu, 2013). These barriers could be analyzed individually in relation to specific authentic leadership constructs. This may help to identify any existing relationships between authentic leadership behaviors and individual knowledge sharing barriers.

Two of the barriers to knowledge sharing were not included in this study due to lack of a behavioral aspect: technological factors and lack of time. The KSS addresses behaviors, but not technology or time availability. Therefore, a separate method of measurement of knowledge sharing in relation to these two items could be piloted and, if reliable, used to identify any relationships between authentic leadership and these two barriers.

Further research could also identify how many of the six knowledge sharing barriers are addressed by the Knowledge Sharing Scale. For example, one could take each question on KSS, such as “When my colleagues are in need, I do my best to offer them the necessary information and documents” and categorize it using the six knowledge sharing barriers. It might be the case that the KSS does not address all six of the barriers or the four that are related to behavior.

Given that this study found that authentic leadership explained only 9.1% of the variance in knowledge sharing behaviors it behooves researchers to look for other variables to further mitigate knowledge sharing barriers. Conducting an in-depth literature review could assist in determining other factors associated with knowledge sharing for further testing, such as determining how to measure non-behavioral knowledge sharing barriers.

Other research opportunities would be to compare organizations with different approaches to knowledge management. For example, the types of organizations could include those without a formal knowledge sharing program, those with a program, and those with a program specifically designed to take advantage of the unique characteristics of authentic

leaders. Comparisons of these organizations may identify whether one can create knowledge sharing programs that benefit from a specific leadership style. This may potentially increase the percentage of knowledge sharing variance explained by authentic leadership.

Reige (2005) states that an end result of successful knowledge management within an organization is increased market performance. It is impossible in one study to research all of the implications of a research question, and studies of market performance must remain the ultimate goal in the realm of business. Utilizing and promoting leadership interventions would allow organizations to better manage knowledge and promote increased performance in the market. Studies of these interventions would be costly, but must be considered as the ultimate benefit of this work.

Social Exchange Theory

The intersection of the two main constructs of this study, authentic leadership and knowledge sharing, is largely found in the idea of pro-social behavior (de Vries et al., 2010; Hannah et al., 2011; Wong & Cummings, 2009). These behaviors involve the concept of what Liao (2008) calls a social power base. A social power base means that leaders are capable of building trust, exercising adequate power, and changing social behavior. This is supported by the social exchange theory (SET) (Liao, 2008; Chao, Yu, Cheng, & Chuang, 2013). SET could be used in future research to potentially further explain the relationship between authentic leadership and knowledge sharing.

The basic premise of SET is that trust and social exchanges take place over time and lead to positive behaviors in participants (Chao et al., 2013; Cropanzano & Mitchell, 2005). SET is most often applied to organizational relationships (Karanges, Beatson, Johnston, & Lings, 2014), but can also be applied to individual relationships (Chao et al., 2013; van de Rijt & Macy, 2006).

Authentic leadership theory, as studied by Hannah et al. (2011), supports an environment in which an individual authentic leader is trusted and creates an atmosphere supportive of pro-social individual and organizational behaviors. Positive social behaviors found over time in followers of authentic leaders include increased awareness, openness, and improved clarity and organization (Hannah et al., 2011). In SET these pro-social exchanges are referred to as replicated behaviors as they emulate the authentic leader's behaviors; these lead to the most successful behaviors, whether personal or organizational (Cropanzano & Mitchell, 2005; de Vries et al., 2010; Walumbwa et al., 2008; Wong & Cummings, 2009).

Knowledge sharing behaviors within an organization may be viewed as pro-social behaviors as explained by social exchange theory. Organizations are environments where reciprocal interactions are expected (Cropanzano, Prehar, & Chen, 2002). Reciprocity is a consenting relationship confirmed by all parties involved (Retzer, Yoong, & Hooper, 2012). Retzer et al. (2012) further defined a reciprocal relationship as each individual in the relationship confirms they desire to be involved and participate in the relationship through interaction. A reciprocal action, as defined by Retzer et al., involves transferring information. Hannah, Walumbwa, and Fry (2011) identified positive reciprocal social interactions such as teamwork and authentic behaviors in followers as outcomes from an authentic relationship, which is undergirded by SET. However, the basis of social exchange does not guarantee reciprocity of behaviors because human choice is involved (Liao, 2008). The more frequent and positive the interaction the more likely the response of all parties involved results in a positive reciprocal relationship. If a colleague shares knowledge the social expectation is that this same act will be reciprocated (Cropanzano & Mitchell, 2005); a barrier to fulfillment of this expectation is if the colleague is not trusted.

The progression from building a relationship to creating an expectation of reciprocal interaction may provide an opportunity for positive change associated with authentic leadership traits. As a leader behaves authentically and the followers begin to pick up on the role-modeled behaviors, the leader empowers the followers to participate in the reciprocal relationship with similar behaviors and engage in authentically social interactions (Hannah et al., 2011). In summary, an authentic leader demonstrates desired pro-social/knowledge sharing behaviors and sets a standard of expectation through both the demonstrated role modeling and resulting empowerment steps regarding reciprocal behaviors from followers. By generating trust, demonstrating specific pro-social behaviors of role modeling, and promoting empowerment these become the foundation for the intersection of SET and authentic leadership theories and suggests future research opportunities.

Conclusion

Knowledge sharing, a component of knowledge management, allows organizations to gain a competitive edge in the market. A successful organization is able to implement strategies and techniques to encourage and support knowledge sharing behavior. This quantitative study sought to research the relationship between perceived authentic leadership and knowledge sharing behaviors to determine if authentic leadership could help an organization increase knowledge sharing. In addition, the study determined the effect of positional leader tenure on the relationship between authentic leadership and knowledge sharing.

The study predicted that authentic leadership would have a significant and positive relationship to knowledge sharing behavior. This hypothesis was supported. The study also predicted that positional leader tenure would moderate the relationship between authentic leadership and knowledge sharing behaviors. This hypothesis was not supported.

Limits of the research included using a cross-sectional study design, the skewed survey sample, and self-reported measures. Some of these limits can be addressed through future research studies that collect data at multiple points in time.

The results from this study demonstrate the need for further research. Knowledge sharing is vital to organizational success (Yuan, Wu, & Lee, 2012), and an in-depth understanding of knowledge sharing could create invaluable techniques for removing barriers.

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APPENDIX A. STATEMENT OF ORIGINAL WORK

Academic Honesty Policy

Capella University's Academic Honesty Policy ([3.01.01](#)) holds learners accountable for the integrity of work they submit, which includes but is not limited to discussion postings, assignments, comprehensive exams, and the dissertation or capstone project.

Established in the Policy are the expectations for original work, rationale for the policy, definition of terms that pertain to academic honesty and original work, and disciplinary consequences of academic dishonesty. Also stated in the Policy is the expectation that learners will follow APA rules for citing another person's ideas or works.

The following standards for original work and definition of *plagiarism* are discussed in the Policy:

Learners are expected to be the sole authors of their work and to acknowledge the authorship of others' work through proper citation and reference. Use of another person's ideas, including another learner's, without proper reference or citation constitutes plagiarism and academic dishonesty and is prohibited conduct. (p. 1)

Plagiarism is one example of academic dishonesty. Plagiarism is presenting someone else's ideas or work as your own. Plagiarism also includes copying verbatim or rephrasing ideas without properly acknowledging the source by author, date, and publication medium. (p. 2)

Capella University's Research Misconduct Policy ([3.03.06](#)) holds learners accountable for research integrity. What constitutes research misconduct is discussed in the Policy:

Research misconduct includes but is not limited to falsification, fabrication, plagiarism, misappropriation, or other practices that seriously deviate from those that are commonly accepted within the academic community for proposing, conducting, or reviewing research, or in reporting research results. (p. 1)

Learners failing to abide by these policies are subject to consequences, including but not limited to dismissal or revocation of the degree.

Statement of Original Work and Signature

I have read, understood, and abided by Capella University's Academic Honesty Policy ([3.01.01](#)) and Research Misconduct Policy ([3.03.06](#)), including the Policy Statements, Rationale, and Definitions.

I attest that this dissertation or capstone project is my own work. Where I have used the ideas or words of others, I have paraphrased, summarized, or used direct quotes following the guidelines set forth in the *APA Publication Manual*.

Learner name
and date Erin M. Seheult June 17, 2016

Mentor name
and school Dr. Michael Petkovich, School of Business and Technology

APPENDIX B. AUTHENTIC LEADERSHIP STUDY SURVEY SAMPLE ITEMS

Self-Awareness

1. Seeks feedback to improve interactions with others.

Relational Transparency

2. Says exactly what he or she means.

Internalized Moral Perspective

3. Demonstrates beliefs that are consistent with actions.