

THE ROLE OF KNOWLEDGE SHARING IN KNOWLEDGE MANAGEMENT: A
LITERATURE REVIEW

A Thesis

by

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ABSTRACT

With the continued advancement of technology, intangible assets have become a critical contributor to an organization's success. The knowledge that employees possess help organizations maintain their competitive edge in the ever-changing global market. To leverage their intellectual capital, organizations have implemented knowledge management and depend on knowledge sharing to maintain and grow their knowledge. This thesis provides a literature review of the role that knowledge sharing plays in knowledge management and how organizations encourage and facilitate knowledge sharing among their employees. It does this by examining knowledge sharing through three content areas of industrial-organizational psychology, namely, personnel psychology, organizational psychology, and methods and measurement. With the keywords knowledge sharing, knowledge transfer, and knowledge exchange, a careful search in PyscINFO, EBSCO, and ProQuest Dissertation and Theses, resulted in a number of journal articles, book chapters, dissertations, and conference papers, on knowledge sharing. The relevant ones were included in this review.

Within the personnel psychology domain, an overview of employee selection, individual characteristics, formal training, and performance management are discussed. The role of culture, organizational support, and leadership are reviewed from the organizational psychology domain. Furthermore, the measurement issues that have been reported by previous researchers are summarized for the benefit of future knowledge sharing researchers and practitioners. The thesis concludes with a discussion of the

intersection of three content domains, while proposing implications and recommendations for organizations and future research.

DEDICATION

This is for:

My husband, for your unconditional love, support, and encouragement. I couldn't have
done this without you!

My parents, for all the sacrifices you made in life to ensure that I had more than I ever
needed and to give me a better future.

My high school teacher and mentor, Mr. Severo Perez, for always believing in me and
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1. INTRODUCTION

The world of work is constantly changing and with the continued advancement in technology and the innovation of new products, organizations continue to search for ways to adapt and remain competitive in today's economy. With the current knowledge-based economy, intangible assets are critical to an organization's success (Canals, 2000). The knowledge that employees possess, an intangible asset, can help organizations maintain their competitive edge when employees perform successfully and continue to develop their skills (Caruso, 2017).

Simon (1991) posits that an organization learns either through its present employees or by hiring new employees who possess the knowledge it currently lacks. However, it is important to note that most of the knowledge that organizations need to succeed in the current knowledge-based economy is already within their current workforce (Davenport & Prusak, 1998) even though research indicates that organizational leaders place more value on external knowledge (Menon & Pfeffer, 2003). Over the last three decades, organizations have begun to leverage this internal intellectual capital through knowledge management systems (knowledge management) that capture the knowledge of employees and make it accessible to other employees or external stakeholders who do not already possess it (Austin, Ciaasen, Vu, & Mizrahi, 2008; Caruso, 2017).

Knowledge management (KM) has been defined as “the creation, archiving, and sharing of valued information, expertise, and insight within and across communities of

people and organizations with similar interests and needs, the goal of which is to build competitive advantage” (Rosenberg, 2005, p.73-74). An effectively designed knowledge management system can help an organization facilitate the flow of knowledge amongst its employees and ultimately maximize the organization’s competitiveness through innovation and increased performance (Muhammed, Doll, & Deng, 2011). Therefore, it is imperative that organizations harness and manage their intellectual capital.

Argote, McEvily, and Reagans (2003) distinguished between three components of knowledge management, namely knowledge creation, knowledge retention, and knowledge sharing. Although knowledge creation is the process of generating new knowledge and knowledge retention is the embedding of knowledge in the memory system (Argote et al., 2003), the present literature review focuses solely on knowledge sharing as a knowledge management process. This is not only because knowledge sharing is a primary driver in the success or failure of a knowledge management strategy (Muhammed et al., 2011) but also because knowledge that is *created* and not shared is of little to no value to organizations (Small & Sage, 2005), and knowledge that is not shared cannot be *retained*.

Furthermore, organizations experience enormous financial loss when knowledge sharing behaviors are not the norm. According to Babcock (2004), Fortune 500 companies lose approximately \$31.5 billion every year when employees do not engage in knowledge sharing. In addition, 42% of respondents in a survey measuring knowledge transfer mentioned that they retain knowledge by hiring back retirees as consultants (Leonard-Barton, Swap, & Barton, 2015) and it poses a great financial loss to the

organization as they must now pay more for the same services for failing to implement knowledge sharing strategies while the individuals were still employed. Furthermore, organizations that do not encourage knowledge sharing risk repeating the same mistakes.

Knowledge sharing is defined by Caruso (2017) as an exchange of knowledge and skills amongst employees, which ultimately creates intangible assets that hold much value to an organization. Knowledge sharing is not limited to merely sharing knowledge with others. Rather it is a two-way flow of knowledge in which an individual can also search, locate, and absorb knowledge (Davenport & Prusak, 1998). Knowledge sharing can involve explicit knowledge which is easy to explain and codify or tacit knowledge which is based on experiences (Small & Sage, 2005). Tacit knowledge is knowledge acquired as a result of an individual's experience or an ability and is hard to express; whereas explicit knowledge can be transcribed and transferred to another person (Lee, 2018). Whether tacit or explicit knowledge is needed will vary by circumstance.

Knowledge sharing not only improves transactive memory in an organization (Chen, Li, Clark, & Dietrich, 2013), it also promotes a culture of learning and growth and it can help prevent employees from making the same errors that others before them made (Babcock, 2004). Quinn, Anderson, and Finkelstein (1996) suggest that learning from others, through knowledge sharing, contributes to an exponential growth of employees and organizations and Mukherjee (2009) argues that it allows for employee creativity, higher performance, and more accurate decision-making processes.

There are many benefits of knowledge sharing and organizations should work towards implementing strategies that either institutionalizes knowledge sharing or simply promotes a culture of knowledge exchange and growth. When knowledge sharing is not institutionalized, then knowledge sharing can be viewed as an organizational citizenship behavior (Wang, 2005). Organizational citizenship behaviors (OCB) are behaviors that employees engage in that are not considered part of their formal job duties but benefits the organization (e.g., working late, helping others). There are also no formal rewards associated with OCBs (Bauer & Erdogan, 2018).

There are many factors that impact whether individuals participate in knowledge sharing and this literature review will focus on the factors that facilitate knowledge sharing in organizations through a personnel psychology, organizational psychology, and methods and measurement lens. Knowledge sharing plays a major role in an organization's knowledge management and it is anticipated that this review will contribute to the inclusion of knowledge sharing in their business strategy.

2. PERSONNEL PSYCHOLOGY PERSPECTIVE OF KNOWLEDGE MANAGEMENT THROUGH KNOWLEDGE SHARING

Personnel psychology is a subfield of industrial/organizational (I/O) psychology. Its concentration is on measuring individual differences and predicting how individual characteristics affect employee behavior and job performance (Cascio & Aguinis, 2018) and applying psychological theory and knowledge to human resource functions. Some areas that pertain to personnel psychology are recruitment, selection, employee placement, training, and performance management. This section discusses the areas of personnel psychology that contribute to an organization's knowledge management strategy by reviewing how employee selection, formal training, and performance management facilitate knowledge sharing.

2.1. Recruitment and Employee Selection

To begin, an individual starts their career relationship with an organization through the recruitment and selection process and this stage serves as a foundation for the future success of an organization's knowledge management. This is because an applicants' characteristics predict their future engagement in knowledge sharing and the success of an organization's knowledge management (Cabrera & Cabrera, 2005; Fong, Ooi, Tan, & Lee, 2011). It is through the recruitment process that recruiters work to locate applicants whose knowledge, skills, abilities, and other characteristics (KSAO) match those required for the job opening (Chatman, 1991), attract and maintain applicant interest, and seek to increase the likelihood that those selected accept the job offer

(Gatewood, Feild, & Barrick, 2015). This works hand in hand with the selection which is a systematic process of collecting information from the pool of applicants in order to decide on who qualifies for the job (Gatewood et al., 2015). An individual's future knowledge sharing can be predicted during the selection process. For example, certain selection methods, such as the structured interviews, can include behavioral questions that requests the applicant to describe previous situations in which they exhibited knowledge sharing and situations in which they encouraged others to do so. In addition, reference checks can further include questions to gauge the candidate's propensity to engage in knowledge sharing. Organizations can use a variety of selection methods to carefully examine applicants to ensure that the selected candidate has the necessary KSAOs to not only succeed on the job but to also increase the likelihood of engaging in knowledge sharing.

2.1.1. Individual Characteristics as Predictors of Knowledge Sharing

Differential psychology seeks to assess individual differences such as personality, abilities, and vocational interests (Anatasi & Foley, 1958; Lubinski, 2000). As a result, individual differences can be defined as the characteristics that influence behaviors and differentiate individuals. Given that individual characteristics are stable overtime, they should also influence the consistency in an individual's behavior. Therefore, organizations should consider an applicant's individual characteristics when selecting individuals because they affect the individual's engagement in knowledge sharing (Hicks & Tochtermann, 2001).

2.1.1.1. Personality

Personality has been defined as “a pattern of relatively consistent ways in which a person feels, thinks, and behaves” (Han, 2015, p. 43). Han (2015) suggests that an individual’s personality is a predictor of the behaviors that they will engage in and the attitudes that they have towards their organizations. This suggests that an employee’s participation in knowledge sharing can be affected by their personality. Therefore, organizations that value knowledge management and plan to integrate knowledge management into their culture need to pay close attention to the personality traits that predict knowledge sharing.

Although personality dispositions can affect an employee’s knowledge sharing, the knowledge management literature has generally disregarded it (Matzler, Renzl, Müller, Herting, & Mooradian, 2008). The taxonomy of personality traits that is most regularly cited in research studies is the Five Factor Model (FFM; Wang, 2005). It is also known as the “Big Five” and is composed of five personality traits: openness to new experiences, conscientiousness, extraversion, agreeableness, and emotional stability. Overall, research has indicated that personality plays a role in an individual’s behavior, whether it is a required behavior, such as task performance, or a discretionary behavior, such as organizational citizenship behaviors (Judge, Thoresen, & Bono, 2001; Wang, 2005). Specific personality traits that affect knowledge sharing are discussed in the sections that follow.

2.1.1.1.1. Agreeableness

Individuals who score high on agreeableness tend to be helpful, courteous, and generous (Barrick & Mount, 1991) and their behavior can often be predicted in social contexts (Mount, Barrick, & Stewart, 1998). Agreeable individuals get along with others and because knowledge sharing entails a behavior of collaboration and cooperation, agreeableness has been found to positively affect an individual's knowledge sharing (Borges, 2013; de Vries, Van den Hooff, & de Ridder, 2006; Gupta, 2008; Matzler et al., 2008, Pei-Lee, Chen, Chin, & Siew, 2017).

2.1.1.1.2. Conscientiousness

Reliable, organized, dependable, and achievement-oriented are characteristics that describe an individual who is high on conscientiousness (Barrick & Mount, 1991). Conscientious individuals work hard to meet and exceed their supervisor's expectations (Liao & Chuang, 2004). In fact, extant literature has shown that conscientiousness improves OCBs. Wang (2005) suggests that knowledge sharing can be categorized as an OCB in cases where knowledge sharing is not institutionalized by an organization. "Because knowledge sharing is a form of organizational citizenship which entails dutiful deference to organizational interests and group norms (especially over self-interest and personal goals), which are also core features of conscientiousness" (Matzler et al., 2008, p. 305) it is no surprise that conscientiousness is positively related with knowledge sharing (Gupta, 2008; Matzler et al., 2008).

2.1.1.1.3. Openness to Experience

Individuals who are high on openness to experience are known to have intellectual curiosity, an active imagination, an inclination for variation, and flexible thinking (Costa & McCrae, 1992). When it comes to new ideas, those who are high in openness to experience are more willing to ponder on them than those low in openness to experience (Costa & McCrae, 1992). Furthermore, they are more open to engaging in learning activities and learning new things (Barrick & Mount, 1991). Thus, several research studies have found that openness to experience predicts an individual's knowledge sharing (Borges, 2013; Cabrera, Collins, & Salgado, 2006; de Vries et al., 2006; Gupta, 2008; Matzler et al., 2008; Pei-Lee et al., 2017).

2.1.1.1.4. Extraversion

An extraverted individual is known to be talkative, sociable, assertive, and gregarious (Barrick & Mount, 1991). The communication styles of extraverted individuals are composed of two components: enthusiasm and talkativeness (de Vries et al., 2006). According to DeVries et al. (2006) talkativeness opens the door for topical conversations and enthusiasm enhances an individual's eagerness to share their knowledge with others. This in turn can engender talkativeness and enthusiasm among team members and promote knowledge sharing. However, extant literature has found conflicting results in the relationship between extraversion and knowledge sharing. For example, Gupta (2008) and Borges (2013) found that extraversion has no significant relationship with knowledge sharing while de Vries et al. (2006) and Pei-Lee et al.

(2017) reported otherwise. Further research is needed to ascertain the relationship between extraversion and knowledge sharing.

2.1.1.1.5. Emotional Stability

Neuroticism is another Big Five personality trait and is frequently referred to as emotional stability, which is the opposite end of the spectrum for neuroticism (McCrae & Costa, 1985). Traits such as being anxious, emotional, insecure, and worried are associated with someone who is highly neurotic while an individual high in emotional stability is found to be even tempered and calm (Barrick & Mount, 1991; Gupta, 2008). Gupta (2008) found that there was no significant difference between emotional stability and knowledge sharing and acquisition and Borges (2013) found no significant relationship between emotional stability and the sharing of tacit knowledge. The lack of a significant relationship may be because knowledge sharing is generally a routine activity and stressful situations do not typically influence this behavior (Gupta, 2008).

2.1.1.1.6. Proactive Personality

A proactive personality is defined as a stable disposition towards anticipatory behavior in which individuals can affect their environment (Bateman & Crant, 1993). Proactive individuals are not constrained by obstacles and look for ways to move forward (Bateman & Crant, 1993; Han, 2015). They “identify opportunities and take action, and persevere until meaningful changes occur (Crant, 2000, p. 439). Furthermore, those with proactive disposition pursue opportunities that will help them improve and they are more apt to engage in knowledge sharing in order to reach their goals. In fact,

previous literature has found that proactive personality is a significant predictor of knowledge sharing (e.g., Gong, Cheung, Wang, & Huang, 2012; Han, 2015).

2.1.1.2. Goal Orientation

Research has shown that knowledge sharing is affected by individual-level dispositions (Major, Turner, & Fletcher, 2006; Matzler et al., 2008) such as goal orientations (Swift, Balkin, & Matusik, 2010). Goal orientations are an individual's innate drive to seek learning or performance goals in achievement circumstances (Dweck, 1986). The most widely accepted view is that goal orientations are two-dimensional (i.e., learning goal orientation and performance goal orientation) motivational process that direct the way in which tasks are executed (Ames & Archer, 1988; Matzler & Mueller, 2011). Individuals high on learning goal-orientation are concerned with growth and the mastery of skills, while those high on performance goal-orientation seek to demonstrate their abilities and outperform others (Matzler & Mueller, 2011). Additionally, individuals high on performance goal orientation avoid situations in which their lack of competency in an area can be displayed, while those high on learning goal orientation are willing to invest in learning to reach their goals (Dweck, 1986).

Research has shown that goal orientation either promotes or discourages knowledge sharing. Matzler and Mueller (2011) found that goal orientation has a significant role in whether an individual will exhibit knowledge sharing or not. Their study also found that performance-oriented goals detract from knowledge sharing, while learning-oriented goals positively contribute to knowledge sharing. This is because individuals high on learning goal-orientation are often concerned in the expansion of

their knowledge, skills, and abilities (Matzler & Mueller, 2011) as in helping others (Lin, 2007).

2.1.1.3. Altruism

Altruism is another factor that plays a role in whether an individual intends to share knowledge and whether s/he engages in knowledge sharing (Chen, Fan, & Tsai, 2014). Altruistic individuals have a willingness to assist others without expecting something in return (Kankanhalli, Tan, & Wei, 2005). Research shows that individuals with high altruism are more likely to share their knowledge with others than those with low altruism (Chai & Kim, 2010). Likewise, in virtual communities, Chen et al. (2014) discovered that altruism moderated the relationship between virtual community trust and individual's knowledge sharing intentions. However, it is important to note that the relationship between community trust and knowledge sharing intentions was stronger among those with higher levels of altruism than those low in altruism. Thus, organizations should consider their applicants' levels of altruism during the selection process. Helping others is the very nature of altruistic individuals and if organizations are looking to promote knowledge sharing to facilitate knowledge management, then having employees who are high on altruism is critical.

2.1.1.4. Motivation

Motivation can be divided into two types: intrinsic and extrinsic motivation. Ryan and Deci (2000) define intrinsic motivation as “something that is inherently interesting or enjoyable” and extrinsic motivation as “doing something because it leads to a separable outcome” (p. 55). Individuals have many motivators, some of which may

be intrinsic (e.g., achievement and personal satisfaction) and others extrinsic (e.g., rewards and recognition), or a combination of both. An employee's perception of reciprocal benefits has a positive relationship with their attitude towards knowledge sharing, which is a predictor of the execution of knowledge sharing (Khalil et al., 2014). For example, with an extrinsic motivation, an employee may share knowledge voluntarily as a result of what will be received in return (Ma & Yuen, 2011).

2.2. Formal Training

Apart from selection, organizations should consider how to promote knowledge sharing among their current employees. Organizations can conduct formal training programs to teach employees about the importance of knowledge sharing, policies related to knowledge sharing, and the development of skills that can facilitate knowledge sharing. For example, extant literature has found that employees may be hesitant to share information with others for fear of divulging confidential information (Carmerli, Gelbard, & Reiter-Palmon, 2013). This concern is heightened when those with whom they consider sharing knowledge with are external sources. Alleviating employee concerns about divulging proprietary information can help promote knowledge sharing. Organizations can encourage and facilitate knowledge sharing by training their employees on what they can or cannot share (Carmerli et al., 2013).

In addition, organizations should design, implement, and revamp training programs which can help employees develop skills that increase the likelihood of their engagement in knowledge sharing. For example, training can be used by organizations as a method to increase their employee's self-efficacy and eventually feel more

confident in engaging in knowledge sharing (Cabrera & Cabrera, 2005). Developing high self-efficacy helps individuals learn how to handle challenges that arise while in pursuit of their goals. In fact, according to the social cognitive theory, an employee's behavior cannot be completely predicted without considering their self-efficacy (Bandura, 1986). Extant literature shows that role-play, behavior modeling, master experiences, and coaching can be used to enhance an individual's self-efficacy (Bandura, 1997). Training programs that include these practices can help increase trainee knowledge sharing self-efficacy levels.

Furthermore, organizations can also implement peer assist workshops, job rotations, sharing sessions, and job shadowing of employees who model knowledge sharing to train their employees to share their knowledge (Peariasamy & Mansor, 2008). Training programs that increase relational and social capital (e.g., team-based training, cross-training) can also be used because these types of training programs can assist employees in building relationships that are imperative for knowledge transfer (Cabrera & Cabrera, 2005). As employees build and develop their social ties, they become aware of the knowledge that they each possess and are more likely to share knowledge. Peariasamy and Mansor (2008) also suggest that organizations utilize cross-training and mentoring methods of training to help cultivate a knowledge sharing culture. Cross-training allows employees to remain in their present job while they work with others to learn from each other's knowledge and technical skills (Peariasamy & Mansor, 2008). In fact, Belilos (2000) finds that cross-training is a method that helps motivate employees to engage in knowledge sharing. When it comes to mentoring, Peariasamy and Mansor

(2008) posit that the interaction helps engage employees in knowledge sharing and, hence, the opportunity of knowledge hoarding is reduced.

When knowledge hoarding is the norm, organizations risk the loss of unique knowledge and skills. Dixon (2012) advises that the knowledge key employees possess is the greatest asset an organization has and when they exit the organization, such knowledge leaves with them, except when a mentoring program which encouraged knowledge sharing was in place. Regardless of the specific training method, ensuring that training facilitates knowledge sharing is critical for an organization's bottom-line.

Research findings have shown that altruism is a moderator of trust and knowledge sharing, and organizations should find ways to increase their employee's altruistic motivation (Chen et al., 2014). Etxebarria et al. (1994) and Grant and Berry (2011) suggest that empathy training can help improve altruistic behavior because learning to accept the point of view of others can encourage respect for others, which ultimately enhances altruistic behaviors (e.g., knowledge sharing). To see if employees transfer what they learned, it is important to conduct pre- and post-training evaluations. These evaluations will determine if the training was effective so that the training programs can continue to be implemented in the future. If after time, the behaviors are not enduring, then modifications can be made to increase the effectiveness of training.

Furthermore, training sessions can also be provided to individuals making selection decisions. These sessions can focus on reflecting and becoming aware of unconscious biases, how to conduct structured interviews and the benefits of them, and how to use a behaviorally-anchored rating scale. Training raters can help improve the

quality of applicants they select and ultimately the probability of the employee being successful and engaging in knowledge sharing.

2.3. Performance Appraisal and Management

When knowledge sharing is common practice, organizations need to communicate to their employees that they value it so that employees can continue to engage in it. One-way organizations can do this is to include knowledge sharing in their performance appraisal and management systems. Doing this can send positive signals to employees that their organization holds knowledge sharing in high regard (Cabrera & Cabrera, 2005). In addition to this, incorporating knowledge sharing in performance appraisals can also help employees re-evaluate their perceived cost of engaging in knowledge sharing (Cabrera & Cabrera, 2005). Extant literature has shown that employees evaluate their cost-benefit before engaging in knowledge sharing and that they believe that their time should be spent engaging in activities that they deem productive (Husted & Michailova, 2002). Given that the performance appraisal form provides an evaluation of an employee's development and performance (Bauer & Erdgogan, 2018), employees are more likely to conclude that the criteria included on the form are valued by the organization. This suggests that employees may reevaluate the cost-benefit of knowledge sharing when included as a criterion on the performance appraisal form and in turn view knowledge sharing as a worthwhile behavior.

Although it is important to acknowledge and reward knowledge sharing, organizations should be cautious of how they implement and reward knowledge sharing through their performance management systems. For example, Foss, Pedersen, Reinholt,

and Stea (2015) posit that rewards can be either informational or controlling. When a reward is informational, employees become aware of their competence level in a task and it enhances autonomy; whereas a controlling reward puts pressure on employees to deliver explicit behavioral results and decreases autonomy (Foss et al., 2015). To encourage knowledge sharing, performance appraisals need to be informational rather than controlling. Informational rewards are non-judgmental and Oldham (2003) suggests that employees are more apt to engage in knowledge sharing in non-judgmental environments. Furthermore, Foss et al. (2015) found that ambiguity in informational or controlling rewards can be reduced through the way “rewards are implemented, the narratives that accompany their implementation, the context in which they are implemented, and the extent to which they are based on subjective processes of managerial judgement” (p. 960).

Additionally, organizations should look to promote situations in which employees have obtained accomplishments because of knowledge sharing (Khalil, Mohammad, & Bagdadlian, 2014). Khalil et al. (2014) suggest that being aware of the success of other employees with knowledge sharing may help to put things into perspective and allows employees to see the benefits of knowledge sharing. Moreover, organizations should consider implementing processes to recognize and reward those who share their knowledge to encourage other employees. Doing this can help others see that knowledge sharing is effective and that those who engage in it are recognized. This can change an individual’s attitude towards knowledge sharing and increase his/her likelihood of engaging in knowledge sharing (Khalil et al., 2014; Ma & Yuen, 2011).

Overall, a well-crafted performance appraisal and management system can help organizations increase their employee's knowledge sharing.

3. KNOWLEDGE MANAGEMENT AND KNOWLEDGE SHARING: THROUGH AN ORGANIZATIONAL LENS

Organizational psychology is another I/O psychology subfield which focuses on “the scientific study of individual and group behavior in formal organizational settings” (Jex & Britt, 2014, p. 2) and how organizational characteristics and processes affect those behaviors (Bauer & Erdogan, 2018). Some organizational psychology topics that relate to knowledge sharing and will be addressed in this section are organizational culture, organizational support, leadership, and organizational barriers.

3.1. Organizational Culture

Organizational culture plays a critical role in an organization's knowledge management (Intezari, Taskin, & Pauleen, 2017). Organizational culture has been defined as “a) a pattern of basic assumptions, b) invented, discovered, or developed by a given group, c) as it learns to cope with its problems of external adaptation and internal integration, d) that has worked well enough to be considered valid and, therefore e) is to be taught to new members as the f) correct way to perceive, think, and feel in relation to those problems” (Schein, 1990, p. 111). Similarly, Sackmann (2003) defined culture as the beliefs that a group learns and possesses which influence their thoughts, feelings, and perceptions. Schein (2004) posits that there are three levels to organizational culture: artifacts, values, and underlying assumptions. “While artifacts (such as physical environment, stories, myths and behavior patterns) are visible manifestations of underlying cultural assumptions, basic underlying assumptions are the invisible but

identifiable reasons why group members perceive, think, and feel the way they do about certain issues” (Intezari et al., 2017. p. 493). Furthermore, espoused values are the philosophies and goals of an organization (Schein, 2004).

Extant literature has demonstrated that knowledge management practices can be fast-tracked if organizations can cultivate the following factors: a collaborative environment (Cameron, 2002; Goh, 2002; Sveiby & Simmons, 2002), a trusting environment (Goh, 2002; Sveiby & Simmons, 2002), and mentoring programs (Von Krogh, 1998). Similarly, Intezari et al. (2017) posit that an organizational culture of social interaction, trust, innovation, and collaboration can support organizational efforts to promote knowledge sharing amongst its employees (Intezari et al., 2017). Relatedly, Blanchard (2008) suggests that knowledge sharing can be promoted through social exchange relationships. The social exchange theory postulates that social exchange comprises of interactions with others that generate obligations (Cropanzano & Mitchell, 2005) and that the “interactions among individuals are also viewed as interdependent and are contingent on the actions of others” (Chen et al., 2014, p. 168). As a result, organizations need to remain cognizant of their culture as they strategize for knowledge sharing to ensure that their interventions are successful. Working towards creating a culture that promotes social interaction helps organizations develop their knowledge management. In fact, Connelly and Kelloway (2003) found that organizations that have a positive social interaction culture are likely to have employees who participate in knowledge exchange with others. The results are important because they reveal that small organizations, that may not have the budget to fit in a knowledge sharing software,

can instead provide more avenues through which employees interact and contributes to a positive social interaction culture.

Another factor that organizations should consider is the perception of loss of power. When employees perceive knowledge sharing as a loss of power, it negatively affects attitude and ultimately the likelihood of them sharing information (Khalil et al., 2014). For example, women are known to have traits that make them more prone to help others than men (Connelly & Kelloway, 2003). However, in many cases, women have less advantageous positions at work than men, and it may hinder their inclination to exhibit knowledge sharing. Promoting a culture of positive social interaction may help women to be more trusting of their peers and ultimately participate in knowledge sharing (Connelly & Kelloway, 2003).

Furthermore, socialization processes help organizations develop and sustain their culture (Cabrera & Cabrera, 2005). Through the fostering of relationship building, organizations can create a culture of trust. It is in these types of cultures that extant literature has found that employees are more likely to engage in knowledge sharing, because they consider their peers as friends and as trustworthy (Faraj & Wasko, 2001). In addition, when individuals consider the reciprocal benefits of a relationship, they consider trust. For example, a study conducted by Chen et al. (2014) found that individuals who participate in virtual communities for knowledge sharing purposes consider their trust in the virtual community prior to participating and sharing their knowledge. Levin and Cross (2004) found that trust is fundamental in virtual communities and in face-to-face situations and that employees are more willing to share

freely when there is established trust. Establishing organizational trust is important because it is related to knowledge sharing (Jameson, Davies, & De Freitas, 2006; Lewicki & Wiethoff, 2006).

3.2. Organizational Support and Perceived Organizational Support

Research has found that an employee's perceived organizational support influences their knowledge sharing (Cabrera & Cabrera, 2005; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Perceived organizational support is a belief that employees have of how much their organization values them by evaluating the resources that are provided to them to fulfill their job responsibilities (Eisenberger, Stinglhamber, & Vandenberghe, 2002). Employees can perceive organizational support through the policies of the organization and through the goals and actions of their leaders. By providing organizational support, a culture of cooperation and trust which fosters knowledge sharing can be developed. In fact, Albrecht and Travaglione (2003) postulate that organizational support is a precursor of interpersonal trust. Similarly, Blau (1964), based on the social exchange theory, posited that employees display positive attitudes and behaviors when they sense that their organization treats them well.

Wang and Noe (2010) found that organizational support augments an employee's knowledge sharing quality by influencing their commitment. Therefore, it is imperative that organizations consider the support and resources they provide to their employees to help to facilitate knowledge sharing. Table 1 provides knowledge sharing practices common in organizations and these practices communicate the organization's support for knowledge sharing.

Table 1

Knowledge Sharing Practices Common in Organizations

• Organization-wide knowledge sharing events	• Department meetings	• Team retreats
• Organization-wide retreats	• Department retreats	• Informal meetings (lunch or coffee meetings)
• Town hall meetings	• Department-wide knowledge sharing events	• Participation in communities of practice
• Knowledge sharing reward systems	• Brown-bag lunch events	• Exit interviews
• Knowledge fairs	• Extracurricular activities	• Mentoring meetings/exchanges
	• Best practices repositories	
	• Team meetings	

Organizational trust, an employee perception that is informed by organizational support reduces uncertainty (Lewis & Weigert, 1985) and it relates to knowledge management strategy implementation. This can be seen through the role of altruism and trust in the creation of virtual communities (i.e., communities of practice) for knowledge management. Though virtual communities may not be face-to-face environment, it is still a social interaction and both altruism and trust have been found to be types of social capital that are rooted into social networks and both need to be carefully considered when developing virtual communities for knowledge management (Granovetter, 1985; Levin & Cross, 2004). As a result, organizations should look for ways to build trust and emphasize altruistic values and visions for their employees so that knowledge management can be facilitated. Organizations can create surveys and implement focus groups to evaluate how their employees view their knowledge management practices

3.2.1. Removing Organizational-Level Barriers to Knowledge Sharing

Organizational factors can affect employees' attitude towards knowledge sharing and Khalil et al. (2014) found that employees' attitudes toward knowledge sharing not

only affected their intentions to share but their actual engagement in knowledge sharing as well. Thus, it is important for organizations to consider the factors that contribute to employees' development of negative attitudes toward knowledge sharing and work on mitigating them.

Some organizational factors or barriers that can either hinder knowledge sharing are the time constraints to share, lack of access to other employees, work space design, the difficulty level of navigating online communities, and lack of resources available to facilitate knowledge sharing (Chen et al., 2014). If these barriers are existent, then employees will take the path of least resistance and the likelihood of engaging in knowledge sharing will decrease. For example, Chen et al. (2014) showed how an employees' perception of a blog's usefulness and navigation difficulty level affected their intention to share knowledge. In addition, Hung and Cheng (2013) found that perceived usefulness and navigation difficulty level facilitated knowledge sharing intentions in virtual communities.

3.2.2. Technology as a Facilitator of Knowledge Sharing

Another strategy that organizations can use to promote knowledge sharing is technology. Knowledge sharing technology (e.g., social platforms and communities of practice) is used to gain easy access to the information one needs, especially when such information cannot be obtained through in-person communication. When organizations prioritize technology that enhances knowledge sharing, employees may perceive the knowledge sharing technology as an indicator of leadership support, which in turn fosters a knowledge sharing culture (Connelly & Kelloway, 2003). Previous research

also found that access to technological resources was an important predictor of knowledge sharing among teachers (Khalil et al., 2014).

Given that some may perceive knowledge sharing solely as a physical interaction between co-workers, it is possible that knowledge sharing through technology can be conceived as distant and impersonal. However, Connelly and Kelloway's (2003) findings show that technology was not an inhibitor of a positive knowledge sharing culture. Therefore, organizations should use technology to build knowledge sharing platforms such as virtual communities. Virtual learning communities are online platforms that provide the opportunity for its members to share and exchange their knowledge, experiences, and resources with others (Chen et al., 2014). They allow participants to move at their own speed and to think before having to participate in a discussion. It also allows those who dislike face-to-face conversations the opportunity to contribute in an environment that may be more comfortable for them (Yilmaz, 2017). A strategy that organizations can implement is the creation of social platforms through blogs, social networking services, instant messaging services, video sharing, and groupware (Gaal, Szabo, Obermayer-Kovacs, & Csepregi, 2015).

Having considered the merits of technology as a facilitator of knowledge sharing, organizations need to also attend to generational differences when deciding whether to implement knowledge sharing through technology. This is because Gaal et al. (2015) found that Generation Y employees were less likely to use social media for knowledge sharing. They also reported that Generation X and Baby Boomers learned many of the social media tools for work purposes while younger employees learned them for private

purposes. Overall, social platforms are just one of the many strategies that organizations can put in place to promote knowledge sharing.

3.3. The Role of Knowledge Leaders

An organization is an entity composed of individuals and it is led by a group of leaders who direct its day to day activities. Northouse (2016) defined leadership as the “process whereby an individual influences a group of individuals to achieve a common goal” (p. 6). Extant literature suggests that transformational leaders (i.e., those who empower their employees) facilitate increased knowledge sharing within the organization (Carmeli, Atwater, & Levi 2011; Srivastava, Bartol, & Locke, 2006). Research has also shown that empowering leadership is positively related to knowledge sharing (Srivastava et al., 2006). Empowering leaders treat their subordinates with fairness, they encourage them, and provide recognition (House & Dessler, 1974). Hence, when employees are recognized for sharing knowledge, they are likely to be motivated to continue doing so.

Leadership is critical because leaders have the potential to influence the direction that an organization takes (Hao & Yazdanifard, 2015) and they play a key role in creating and fostering positive work climates (Schneider, Ehrhart, Mayer, Saltz, & Miles- Jolly, 2005). However, having a positive work climate and an efficient incentive program is not enough for organizations to thrive (Stewart & Ruckdeschel, 1998). Organizations need devoted and responsible leaders to succeed (Stewart & Ruckdeschel, 1998) because it is their responsibility to provide their employees all that is needed (e.g.,

motivation, development opportunities, incentives) for effective knowledge management (Beckman, 1999).

Connelly and Kelloway (2003) suggests that an individual's positive perception of their leader's support for sharing knowledge can forecast a positive knowledge sharing culture in organizations. Leaders can indirectly promote knowledge sharing through their workgroup norms. Extant literature shows that an organizational leader who models knowledge sharing and promotes others to engage in it positively influences an employee's intentions and engagement in knowledge sharing (Carmeli, Gelbard, & Reiter-Palmon, 2013; Connelly & Kelloway, 2003). Furthermore, employees are more likely to exhibit knowledge sharing if their leaders expect them to (Carmeli & Waldman, 2010). For example, a study that examined the social and technical factors that influence knowledge sharing intentions in a teacher's virtual community revealed that teachers were more likely to exhibit knowledge sharing if their leaders expected them to do so (Khalil et al., 2014). Expectations of a leader and their knowledge sharing supportive behaviors help cultivate an environment of knowledge sharing within the organization (Carmeli & Waldman, 2010).

It is important to discuss the importance of leader-member exchange theory (LMX) at this juncture. "The LMX theory posits that dyadic role-making processes and reciprocal social exchanges shape the quality of leader-follower relationships. In return for loyalty and commitment to their leader, subordinates receive favorable treatment such as privileged information, support, and role-expanding assignments" (Sears & Hackett, 2011, p. 544). LMX relationships encourage employees to commit to both

leader and group goals (Hassanzadeh, 2014). This suggests that knowledge sharing norms can be created and developed through a leader's influence. Apart from this, the finding of Carmerli et al. (2013) suggest that an employee's capacity to engender creative resolutions to problems is largely influenced by an organization's leadership facilitation of knowledge sharing, both within and outside of the organization. Therefore, it is important that an organization's Knowledge Management Officer and Training and Development Officer, for example, promote knowledge sharing (Leung, 2014).

Overall, there are many organizational factors that influence an employee's knowledge sharing and organizations can use this literature review to examine their culture and their policies to determine knowledge management strengths and opportunities for improvement.

4. A METHODOLOGICAL AND MEASUREMENT PERSPECTIVE OF KNOWLEDGE MANAGEMENT THROUGH KNOWLEDGE SHARING

Although the methods and measurement perspective in behavioral sciences includes both research design and measurement, this thesis focuses on measurement perspective. Measurement is a critical component of what I/O psychologists do because it is a process that assigns values to the characteristic that are under observation (Price, 2012). In order to complete the measurement process, organizations need to have a clear understanding of what it is that they want to measure and the outcomes that they desire to obtain when they implement organizational interventions. Once organizations decide what to measure and what they are looking for, then they need to select or design a measurement instrument (i.e., method), implement it to gather data, and evaluate the results (Price, 2012). Ultimately, measurement quantifies characteristics and provides a means to statistically describe their relationship to the desired outcome(s).

When we consider knowledge sharing, extant literature reveals that there is a need for improvement in the methodological and measurement process. Empirical research on knowledge sharing is limited and the studies that do exist are “muddied by inconsistent operationalizations of constructs and a lack of an organizing framework” (Lee, 2018, p. vi). This can be seen where studies measure knowledge sharing only and do not measure when the individual receives knowledge, or when it measures the intent to share knowledge and not the actual sharing of knowledge (e.g., Kankanhalli et al., 2005; Wasko & Faraj, 2005), or other cases where only tacit knowledge is measured and

explicit knowledge is not (e.g., Bock & Kim, 2002; Lin, 2007). Therefore, this section will review the knowledge sharing method and measurement issues that exist in extant literature to inform researchers and practitioners with a comprehensive understanding of these issues, thereby contributing to an effective measurement of knowledge sharing.

4.1. Issues Related to Self-Report Measures of Knowledge Sharing

When researchers look to examine the factors that determine knowledge sharing, they primarily use self-report measures in which individuals rate themselves on the questionnaire items. This can lead to a social desirability problem as individuals typically want to be viewed in a favorable light and may in turn select answers that they believe are anticipated (Wang, 2005). As a result, knowledge sharing scores are inflated and this may lead organizations to conclude that their employees' value and engage in knowledge sharing, when they may not. Having an inaccurate view can have a detrimental effect on an organization's knowledge management strategies and its success. To reduce the effect of social desirability, surveys should include reverse response items to give a more accurate view of the respondent's behaviors (Van Sonderen, Sanderman, & Coyne, 2013). Furthermore, Constant, Kiesler, and Sproull (1994) asserted that self-report measures typically capture knowledge sharing intentions rather than behaviors. For example, "I enjoy sharing what I know with others" with responses provided on a 5-point Likert scale is not as informative as an item that requests the number of times an employee engaged in knowledge sharing in the past week. Thus, researchers and practitioners should include items that assess then

engagement in knowledge sharing to provide rich insights into an organization's standing on knowledge sharing.

Furthermore, common method variance is another issue related to self-report measure (i.e., single source measures) because they can enlarge correlations (Lee, 2018). Organizations can implement a multi-source method to measure their employees' knowledge sharing. One such method is a 360-degree feedback, which allows organizations to obtain input from an employee's supervisor, colleagues, and subordinates and customers (if any). Aguinis (2019) posits that 360-degree feedback encourages more candid responses when surveys are used for developmental purposes, which suggests that this approach can help minimize the effects of social desirability bias and provide organizations with a more realistic overview of the knowledge sharing levels in their organizations. Podsakoff, MacKenzie, Lee, and Podsakoff (2003) posit that common method variance can be minimized by taking the following precautions: making employees aware of the precautions taken to maintain the confidentiality of their individual responses, providing assurance that there is no wrong or right answer, and using two questionnaires to decrease the priming effects that the context of the questions can induce.

4.2. Construct Validity Issues: Deficiency and Contamination in Knowledge Sharing Measures

Extant literature in knowledge sharing shows a need for improvement in test and measures validity. Much of the knowledge sharing measures are either deficient or contaminated in representing the construct in question (Lee, 2018). For example, studies

conducted by Van den Hoof and Van Weenen (2004) and Liu and Fang (2010) used a knowledge sharing measure that was contaminated with a question that assessed culture instead of knowledge sharing (e.g., “knowledge sharing with my colleagues within my department is considered a normal thing”). Another study used a contaminated and deficient measure that included multiple items (e.g., “I like to be informed of what my colleagues know”) that assessed attitude towards knowledge sharing rather than the behavior itself (Kim & Lee, 2013), contrary to their conceptualization of knowledge sharing.

Furthermore, several research studies have also been criticized for only measuring the “giving” aspect of knowledge sharing and excluding the “seeking” component (e.g., Wasko & Faraj, 2005). As stated earlier, knowledge sharing involves both the willingness to partake in the exchange of knowledge and the search for knowledge acquisition (Davenport & Prusak, 1998). Another common measurement issue lies in the observation that most measures of knowledge sharing were developed to only capture a specific facet of knowledge (i.e., tacit or explicit; Bock & Kim, 2002; Lin, 2007). For example, a study by Bock and Kim (2002) only measures tacit knowledge and neither a justification for their narrow focus nor a distinction between both facets was made.

To effectively measure the knowledge sharing construct for construct relevance to be attained, measures should include items that capture behaviors of giving and acquiring both tacit and explicit knowledge. To minimize construct contamination and deficiency in knowledge sharing measurement, organizations should ensure that the

constructs being measured are clearly defined and quantified (Lee, 2018). In addition, practitioners can use the help of subject matter experts to assist with content validation and ensure that survey items are, in fact, measuring knowledge sharing (Lee, 2018).

4.3. Self-Monitoring as an Explanatory Mechanism

Research studies have used explanatory variables such as moderating effects to explain the association between constructs. When it comes to knowledge sharing, one variable that is often examined is self-monitoring. Self-monitoring is defined by Snyder (1974) as an individual's capability to manage their behaviors and their non-verbal displays of affect. Individuals low on self-monitoring have a difficult time regulating their expressive self-presentation and are known to express what they think, believe, and feel. On the other hand, those high on self-monitoring have no problem regulating their expressions to maintain a desirable public appearance.

A study conducted by Kamdar, Nosworthy, Chia, and Chay (2002) found that the association between knowledge sharing and rewards was moderated by self-monitoring. Those high on self-monitoring were more likely to share their knowledge when rewards resulted in recognition rather than monetary rewards. On the other hand, no significant difference was found for those who were low on self-monitoring. Monetary rewards are not usually publicly announced and recognized, hence, the results of a lack of moderation in knowledge sharing. However, recognition is frequently made public and those high on self-monitoring seek to look good in public appearances which may explain the results in the Kamdar et al.'s study (2002). In addition, helping others can help build one's reputation and make their knowledge and behaviors come to light,

which increases the likelihood of their contribution being recognized. Therefore, when incentives are part of a performance management system, knowledge sharing is more likely to be exhibited among those who are high on self-monitoring. As a result, organizations that want to increase knowledge sharing need to be aware of their employees self-monitoring abilities and adjust incentives accordingly.

5. INTERSECTION OF PERSONNEL PSYCHOLOGY, ORGANIZATIONAL PSYCHOLOGY, AND METHODS AND MEASUREMENT IN KNOWLEDGE SHARING

Personnel psychology, organizational psychology, and measurement all play a role in understanding knowledge sharing in organizations. Although a number of individual characteristics, discussed in the personnel psychology section, serve as antecedents of knowledge sharing, organizational or environmental factors detailed in the organizational psychology section and measurement of knowledge sharing all intersect to provide a comprehensive understanding of knowledge sharing in organizations. Thus, it is important for organizations to consider how these three areas of I-O psychology intersect to achieve their end goal, that is a knowledge sharing workforce.

5.1. Selecting for Knowledge Leaders

When we consider how to promote the exchange of knowledge between employees, research indicates that leaders are vital in facilitating knowledge sharing within their organizations (e.g., Carmeli et al., 2011; Carmeli et al., 2013; Connelly & Kelloway, 2003; Khalil et al., 2014; Srivastava et al., 2006). A leader is responsible for motivating others, acting as an agent of change, modeling desired behaviors, and providing strategic vision (DeBowski, 2006). When an organization is looking to implement knowledge management interventions, it needs to ensure that the leaders they

bring onboard, or internal candidates that are considered for promotion to leadership positions, have the necessary KSAOs to facilitate them.

Organizations can begin by first examining their selection process and the requisites for attaining leadership roles. The leadership selection committee should consider the candidate's previous engagement in knowledge sharing and his/her attitude toward knowledge sharing because research shows that attitudes towards knowledge sharing are predictive of knowledge sharing (Khalil et al., 2014). In addition, organizations should look to select leaders who can provide knowledge sharing support to their employees to facilitate knowledge sharing (Carmeli et al., 2013).

Selecting knowledge leaders who are likely to encourage and participate in knowledge sharing significantly influences the organization's knowledge sharing culture (Carmeli & Waldman, 2010; Connelly & Kelloway, 2003). Therefore, it is imperative that organizations carefully consider their selection process for new leaders, especially in industries that are knowledge-intensive (e.g., technology industry; Carmerli, Gelbard, & Reiter-Palmon, 2013).

5.2. P-O Fit: The Intersection between Individual and Organizational Factors

Person-organization (P-O) fit for improving knowledge sharing can be subsumed in three areas of I-O psychology. Kristof (1996) defined P-O fit as “the compatibility between people and organizations that occurs when: (a) at least one entity provides what the other needs, or (b) they share similar fundamental characteristics, or (c) both” (p. 45). Selecting applicants who score high on P-O fit can contribute to a knowledge sharing organizational culture in which individuals value learning, growth, and

collaboration. In fact, the attraction-selection-attrition (ASA) theory suggests that organizations attract and select applicants who share similar values and beliefs, and as the organization's makeup of P-O fit increases those who have a low P-O fit will exit the organization (Schneider, 1987). In addition, employees with high P-O fit blend into their new work environment quicker than those with less P-O fit and this helps to continue to foster and encourage knowledge sharing in organizations that already promote a culture of sharing knowledge (Fong et al., 2011). To increase the number of individuals who have a P-O fit in terms of knowledge sharing, organizations can consider employee referrals as a recruitment strategy (i.e., personnel psychology). Research has shown that individuals who are referred by current employees have similar values as those who referred them (Dorsey, 2003). This suggests that organizations that value knowledge sharing may use employee referrals to facilitate higher P-O fit in its workforce.

Individual characteristics serve as antecedents of knowledge sharing and should be considered when selecting applicants to ensure that there is a good P-O fit. To have a more effective knowledge management, organizations should look to select individuals who are open to new experiences, conscientious, agreeable, proactive, altruistic, and possess a learning goal orientation. These characteristics have been linked to knowledge sharing and can be assessed through personality tests, behavioral interviews, and situational judgement tests.

If organizations accurately select individuals who have a good P-O fit, then the individuals should be able to acclimate to the organization's knowledge sharing culture quickly. Regardless, organizations should always look to see what steps they can take to

encourage and facilitate knowledge sharing. For example, if organizations can obtain buy-in from employees with altruistic traits, then they can be a major asset in promoting the organizations initiatives through knowledge sharing behavior modeling. To obtain their buy-in, organizations need to demonstrate that their interventions are in the best interest of their employees. It is common for new policies and processes to cause employees to be wary but building organizational trust can help decrease feelings of uncertainty and anxiety as well as increase the likelihood of employee support (Lewis & Weigert, 1985).

6. CONCLUSIONS

This literature review examined knowledge sharing through a personnel psychology, organizational psychology, and measurement lens. It discussed multiple antecedents of knowledge sharing as a contributor to a holistic view of knowledge management. A number of individual characteristics were found to predict knowledge sharing, namely personality, goal orientation, altruism, and motivation. The role of formal training, and performance management were also discussed in the personnel psychology section. The role of culture, organizational support, and leadership was presented through the organizational psychology perspective. It has found that an organization's culture plays a key role in whether employees engage in knowledge sharing. When employees have organizational support and a leadership team that encourages and models knowledge sharing, they are more likely to do the same. Furthermore, the measurement issues that have been reported by previous researchers were summarized for the benefit of future knowledge sharing researchers and practitioners.

6.1. Implications

Willem and Buelens (2007) and Syed-Ikshan and Rowland (2004) have noted the deficiency of knowledge sharing research in the public sector. This literature review serves to address this gap, and, to the authors' knowledge, this is the first literature review on the role that knowledge sharing plays in enhancing an organization's knowledge management from an I/O psychology perspective. The literature review not

only incorporates the subfields of I/O psychology (i.e., personnel, organizational, and measurement), it also provides an interactional psychology perspective and can serve as a catalyst for future research on knowledge sharing in the public and private sectors.

The literature review also has practical implications for organizations. To promote knowledge sharing, organizations and practitioners need to take a holistic view of how personnel, organizational, and measurement factors can help improve their knowledge management. When considering the personnel psychology aspect, organizations need to select applicants who are high on conscientiousness, openness to experience, agreeableness, altruism, proactive personality, and learning goal orientation. Research has shown that these individual characteristics increase the likelihood of an employee engaging in knowledge sharing.

In addition, organizations need to strategically plan their training programs and performance management systems to ensure that the engagement in knowledge sharing is encouraged, developed, and rewarded. For example, organizations can develop training programs that can inform employees on the importance of knowledge sharing and the impact that it can have on their individual careers and professional development. This can motivate employees to engage in knowledge sharing with their colleagues. Furthermore, organizations should also consider incorporating knowledge sharing into their performance management systems. If knowledge sharing is included as a metric in the organization's performance appraisal, then employees know that it is a behavior that they are expected to engage in. Employees become aware of its importance to management and that it is something that is expected of them.

From the organizational psychology perspective, organizations should provide organizational-level support and have leaders who foster a knowledge sharing culture while removing the barriers that may prevent employees from engaging in knowledge sharing. Ensuring that knowledge sharing barriers are removed along with creating an environment where knowledge sharing is encouraged will help increase the success of an organization's knowledge management. Furthermore, organizations can also have their leaders either verbally state the normative behaviors that are expected from their subordinates or they can model those behaviors (Carmerli et al., 2013). Leaders who can model collaborative knowledge sharing are likely to encourage their subordinates to do the same because it creates an environment of openness and knowledge exchange. This ultimately leads to a collaborative environment in which employees can work towards problem-solving and producing novel ideas. Organizational leadership should work to foster a climate in which knowledge sharing is encouraged and accepted. As a result, organizations should look to develop training programs for their leaders and discuss the importance of behavior modeling and the need to build a culture of collaboration and knowledge sharing.

A discussion of the measurement issues often encountered when conducting knowledge sharing research also informs the measurement and assessment of knowledge sharing in organizations. It is critical that organizations carefully conceptualize or define what knowledge sharing means or how it looks like within their respective environments. By doing so, organizations can begin to plan how they will measure those behaviors and determine if their currently implemented strategies are optimal or if

adjustments are needed. In all, this literature review gives organizations a good start on where and how to analyze their knowledge management practices and what changes need to be made to improve their knowledge management systems by promoting knowledge sharing.

6.2. Limitations and Future Research Directions

Though this literature review contributes to extant literature on the importance of knowledge sharing to knowledge management systems, it is not without limitations. Time constraints did not allow a more comprehensive review of knowledge sharing from an I/O psychology perspective and a few key constructs in the I/O psychology were not included in this literature review (e.g., team learning, work design, work attitudes). In addition, much of the literature on knowledge sharing pertains to the education system and virtual communities and adjusting the search filters may have affected the knowledge sharing papers that were captured for review. Furthermore, the literature search only included indexed and English only articles and dissertations and expanding the publication types may have helped to complement or contradict the findings.

As this literature review is not exhaustive, partly due to a time constraint, future research is needed in a number of areas. In addition to other suggestions for research broached in earlier sections, future research is needed to further examine the relationship between extraversion and knowledge sharing especially because there are currently mixed findings in previous research limits conclusions and recommendations about the role of extraversion. In addition, Section 3 of the literature review discusses the deficiency and contamination that is found in extant measures of knowledge sharing.

Thus, more measurement-focused research studies are needed to help to refine our understanding of the differences that may exist between how knowledge is shared depending on the knowledge dimension (i.e., explicit and tacit knowledge) or the knowledge sharing focus (i.e., knowledge seeking and knowledge giving).

Understanding these relationships can help both researchers and practitioners alike.

In sum, it is rarely the case that an employee's knowledge sharing is impacted by only one factor and researchers and organizations should examine their processes from all three lenses to obtain a comprehensive picture of the interventions that best promote knowledge sharing. This information can later be used to implement strategies that promote knowledge sharing.

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