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Fostering knowledge sharing and knowledge utilization

The impact of organizational commitment and trust

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Abstract

Purpose – The purpose of this paper is to explore the influence of organizational commitment and trust on knowledge sharing and on knowledge utilization. Also, the study aims to examine the influence of knowledge sharing on knowledge utilization.

Design/methodology/approach – A quantitative study was conducted among 307 employees working at Canadian organizations.

Findings – The results reveal that both affective commitment and professional trust have positive influences on knowledge sharing and knowledge utilization, whereas personal trust and continuance commitment do not. The authors also found that business ethics moderates the relationship between knowledge sharing and knowledge utilization.

Practical implications – These findings extend the literature on knowledge management and demonstrate, from a practical perspective, that in order to build a knowledge-sharing culture, managers must create conditions that allow affective commitment, professional trust and business ethics to flourish.

Originality/value – The current study offers an initial investigation of the effects of both kinds of commitment and trust on knowledge sharing and knowledge utilization.

Keywords Ethics, Knowledge sharing

Paper type Research paper

1. Introduction

In the modern business environment, resources and competencies are key factors that enable organizations to survive, innovate and grow (Subramaniam and Youndt, 2005). According to the knowledge-based theory, knowledge is one such crucial resource that organizations must possess and develop (Nonaka, 1994). Various researchers argue that knowledge resources can become a primary source of sustainable competitive advantage (Zheng *et al.*, 2010; Kapoor and Adner, 2012; Swart *et al.*, 2014). Matusik and Hill (1998, p. 683) also assert that "firms increasingly rely on building and creating knowledge as a necessary condition to survive."

The intellectual capital–based view (Reed *et al.*, 2006) further posits that an organization's innovative capabilities depend on the competencies and knowledge its members possess (Subramaniam and Youndt, 2005), as well as that organization's ability to deploy and use them effectively (Martín-de Castro, 2015). By developing capabilities to create, share and utilize knowledge, organizations gain a better position from which to innovate, grow and build sustainable competitive advantages (Chen and Huang, 2009).

The core competence theory argues that another key condition for an organization to build a sustainable competitive advantage is to duplicate its core competence across a wide range of markets. However, such duplication is possible only if knowledge can be shared among employees, as well as across the organization's work units (Prahalad and Hamel, 1990). Defined as a process through which information, opinions, ideas, theories and

principles are exchanged or disseminated among people or groups in an organization (Appleyard, 1996; Argote and Ingram, 2000), knowledge sharing has become crucial for organizational survival, growth and prosperity (Desouza, 2003; Swart *et al.*, 2014). According to Nonaka and Takeuchi (1995), it also may be a prerequisite for converting general ideas and concepts into specific products. Furthermore, knowledge sharing contributes to the development of various organizational capabilities, such as creativity and innovation, which in turn are vital to organizational effectiveness (Kogut and Zander, 1996). Ryu *et al.* (2005) identify knowledge sharing as one of the most critical steps in the organizational leaning process that enables individual members to learn from others. King *et al.*'s (2002) survey of 2,073 knowledge management practitioners and executives reports that the challenge of "how to motivate individuals to contribute their knowledge to a knowledge management system" was considered one of the most critical issues in knowledge management research.

Despite its key role in building a competitive advantage (Rhodes *et al.*, 2008), knowledge sharing, thus, remains perhaps the most difficult aspect of knowledge management (Bakker *et al.*, 2006), confirming the importance of academic research into its dynamics in organizations. Understanding how knowledge is created, manifested and shared in the workplace remains important for the success of organizations (Jang *et al.*, 2002; Michailova and Husted, 2003; Galunic *et al.*, 2014). For researchers, such as Alavi and Leidner (2001), Argote and Ingram (2000) and Pentland (1995), organizational effectiveness is strongly associated with the extent to which knowledge is shared among organizational members. It is, therefore, relevant to investigate the dynamics leading to knowledge creation, development and sharing in the workplace.

Prior research has examined a few factors affecting employees' willingness to share knowledge, such as the role of extrinsic and intrinsic motivators, technology, commitment, procedural justice and fairness, benefits, management support, formal incentive systems, trust, training, openness and organizational culture (Koh and Kim, 2004; Bock *et al.*, 2005; Wasko and Faraj, 2005; Chiu *et al.*, 2006; Hsu *et al.*, 2007). A consensus among most knowledge management scholars suggests that employees' willingness to share knowledge depends on three kinds of factors: individual factors, such as an employee's commitment to the organization; group factors, such as trust among coworkers; and organizational factors, such as a general atmosphere of ethics that prevails in an organization (Bartol and Srivastava, 2002; Mueller, 2014). The current study empirically tests the effects of these factors on knowledge sharing and knowledge utilization. Although previous research indicates the positive effect of both employee commitment and trust on knowledge sharing, little is known about how each type of commitment and trust affect knowledge sharing and knowledge utilization. This study also examines the relationship between knowledge sharing and knowledge utilization, with the proposition that an ethical atmosphere moderates this relationship.

The purpose of this research, thus, is to explore, on the one hand, the effects of employee commitment and trust on knowledge sharing and knowledge utilization and, on the other hand, the relationship between knowledge sharing and knowledge utilization. In doing so, the current study contributes to theory in several ways. First, by shedding light on the effect of employee commitment on knowledge sharing, it suggests that employee commitment functions as a key driver of knowledge sharing among employees within organizations (Van Den Hooff and Van Weenen, 2004). In addition, though prior literature identifies two main types of commitment—affective and continuance (Boichuk and Menguc, 2013)—no study has empirically explored which types of employee commitment influence knowledge sharing. The current study fills this research gap by offering an initial investigation of the effects of both kinds of commitment on knowledge sharing and knowledge utilization.

Second, the study investigates the effect of organizational trust on knowledge sharing and knowledge utilization. A review of prior literature identifies two types of trust: personal

and professional (Robinson, 1996; Cai *et al.*, 2013). Although several extant studies test the effect of trust on knowledge sharing (Mooradian *et al.*, 2006; Usoro *et al.*, 2007), few have explored the separate effects of the distinct types of trust on knowledge sharing and knowledge utilization. The current study addresses this under researched topic.

Third, though literature emphasizes the importance of knowledge sharing for organizational effectiveness, more attention still should be given to whether and how the shared knowledge is actually used in organizations. Knowledge sharing is a critical element in the knowledge management process, but knowledge utilization—or the degree to which employees use such shared and transferred knowledge (Teo and Bhattacherjee, 2014)—is ultimately the most critical (Salojärvi *et al.*, 2010). This proposition is important, considering that a growing body of literature argues that knowledge sharing and acquisition do not necessarily result in its utilization (Khamseh *et al.*, 2017). Therefore, the current study proposes that the relationship between knowledge sharing and knowledge utilization may be affected by some moderating and mediating variables and investigates the potential moderating role of business ethics.

In general, this study extends knowledge-based theory by providing a better understanding of how both knowledge sharing and knowledge utilization are enhanced through employee commitment and organizational trust, and it shows how knowledge sharing affects knowledge utilization. These findings can enrich knowledge management literature with new and useful insights. To this end, the study proposes and tests a model using data collected among 307 employees working in Canadian organizations and demonstrates that the two types of commitment and trust have direct relationships with knowledge sharing and knowledge utilization. The model also contains business ethics as a moderator of the relationship between knowledge sharing and knowledge utilization.

This paper is organized as follows: it begins by reviewing the literature on commitment, trust, knowledge sharing and knowledge utilization. The next section proposes the theoretical model depicting the research hypotheses, followed by the research methodology and analyses of the research data. After presenting the research findings, this paper concludes with a discussion of the implications of the findings and some suggestions for further research.

2. Literature and hypotheses

Defined as a "business process which relates to creating new knowledge and ensuring usage of knowledge within organization whenever it is necessary" (Kör and Maden, 2013, p. 2), knowledge management has emerged as one of the most important topics in management research in the past two decades (Serenko and Bontis, 2004). For Von Krogh (2009), knowledge management also is a critical factor that every organization should take into serious consideration. Riege (2005) echoes this view by arguing that the competitiveness and performance of an organization largely rely on the effectiveness of its knowledge management process. Therefore, many companies have invested extensively in building different formal knowledge management systems to encourage and facilitate knowledge creation, transfer and utilization (Carter and Scarbrough, 2001). Following the resource-based view, an organization's capacity to develop an effective knowledge management system is a source of competitive advantage (Barney, 1991). Probst *et al.* (2002) propose that knowledge management encompasses eight processes: localizing, acquiring, developing (creating), sharing, disseminating, leveraging and storing knowledge. They further argue that these processes are all interlinked, and every organizational member should engage in them.

Several researchers and practitioners recognize the key role of knowledge sharing for building and sustaining organizational effectiveness (e.g. Spender and Grant, 1996; Tsai, 2001; Alavi and Leidner, 2001). The knowledge management literature identifies it as an essential step of the knowledge management process, devoting considerable attention to the

topic (Serenko and Bontis, 2004; Matzler *et al.*, 2005). Knowledge sharing refers to the provision of task information and know-how to help and collaborate with others to solve problems, develop new ideas or implement policies or procedures (Cummings, 2004). Other research describes it as a process of communication between two or more organizational members involving the transfer and acquisition of knowledge (Usoro *et al.*, 2007). It may involve sharing general overviews, specific requirements, data, techniques, reports or project results (Szulanski, 1996; Hansen, 1999; Cummings, 2004). Because it involves bidirectional exchanges of knowledge, knowledge sharing goes beyond mere knowledge transfer, which is a one-way flow of knowledge from a source to a recipient (Joshi *et al.*, 2007). Knowledge sharing is "the act of making knowledge available to others within the organization" (Ipe, 2003, p. 341). Effective knowledge sharing requires individual willingness (Alavi and Leidner, 2001), and then it provides a vital means for them to mutually exchange their knowledge (Wang and Noe, 2010) and contribute to their skill and competency development (Argote *et al.*, 2000). Finally, it is essential for achieving effectiveness and innovation at the individual (Kim and Lee, 2013), team (Gardner *et al.*, 2012) and even organization (Andreeva and Kianto, 2012) levels.

Prior literature distinguishes knowledge from related concepts (e.g. Blackler, 1995; Nonaka and Takeuchi, 1995). For example, according to Nonaka and Takeuchi (1995, p. 58), knowledge differs from information in the sense that "information is a flow of messages, while knowledge is created by that very flow of information, anchored in the beliefs and commitment of its holder[…]. Knowledge is essentially related to human action." Although knowledge can be viewed through different typologies (e.g. explicit and tacit knowledge, personal and organizational knowledge, technology and management knowledge, general and specific knowledge; Zack, 1999; Nonaka and Takeuchi, 2007), most scholars use the tacit and explicit classification of knowledge (Yan *et al.*, 2016). The difference between the tacit and explicit types of knowledge (Baumard, 1999) pertains to how knowledge is articulated. Explicit knowledge is codifiable and can be easily shared, in the form of facts, rules and policies that can be formally articulated and written down, then shared (Zander and Kogut, 1995). To support and encourage employees' willingness to share explicit knowledge, organizations need to implement management mechanisms, such as information technology systems, procedures and formal language (Coakes, 2006).

In contrast, tacit knowledge is embodied in practice and routines and more difficult to document and share; therefore, it requires learning by observation and imitation (Nonaka and Takeuchi, 1995). Face-to-face interaction (formal or informal) is the main means for sharing tacit knowledge (Wang and Wang, 2012). Tacit knowledge sharing likely affects explicit knowledge sharing, in the sense that people who are willing to share their tacit knowledge will be more likely to share their explicit knowledge too (e.g. Dhanaraj *et al.*, 2004). For Hislop (2003), the most critical driver of knowledge sharing is employee attitude, and various scholars (e.g. Hendriks, 1999; Kolekofski and Heminger, 2003; Bock *et al.*, 2005) examine employees' attitudes as they relate to knowledge sharing.

Most studies on knowledge sharing adopt a social capital theory perspective (Akhavan and Mahdi Hosseini, 2015). Social capital pertains to the set of cooperative relationships among social actors that facilitate their collective action (Requena, 2003). Hidalgo (2011, p. 2) explains that "the ability of a firm to be productive depends not only on the talents of its employees, but largely on the way in which they interact." Akhavan and Mahdi Hosseini (2015) concur, noting that knowledge sharing is stimulated not by the imposition of structures and tools but rather by rich social interactions and immersion in practice. Lee *et al.* (2015) note that a team's social capital seems to have a stronger influence on knowledge sharing than either business or technology expertise. By adopting a social capital perspective herein, this research contends that employees' commitment to an organization, trust in coworkers and ethical conduct all contribute to rich social interactions.

A lack of commitment to the organization, a lack of trust among employees, or a lack of ethical behavior instead may reduce the likelihood that employees spontaneously and fully engage in exchanging knowledge or utilizing that knowledge to perform their work.

2.1 Organizational commitment and knowledge sharing

Organizational commitment refers to an employee's attachment to his or her organization (Meyer and Allen, 1991). It can be argued that organizational commitment is important to the success of any business process. Therefore, organizations should continually seek ways to promote organizational commitment among employees. Commitment is a multifaceted construct with three components: affective, or the employee's emotional attachment to the organization (desire, want to); continuance, which relates to the costs of leaving the organization (need, have to); and normative, or a sense of obligation to continue employment with the organization (obligation, ought to) (Meyer and Allen, 1991).

Commitment influences employees' willingness to provide and receive knowledge (Van Den Hooff and Van Weenen, 2004) and is an important part of a knowledge-sharing culture (Smith and McKeen, 2002). Researchers generally presume a positive relationship between organizational commitment and knowledge sharing. For example, Jarvenpaa and Staples (2001, p. 156) argue that "greater commitment may engender beliefs that the organization has rights to the information and knowledge one has created or acquired." Tzu-Shian *et al.* (2010) agree that organizational commitment is conducive to employee knowledge-sharing behaviors, and Jan and Michael (2010) note that active employees encourage greater knowledge sharing. For Alrawi *et al.* (2013), knowledge sharing is more effective with increasing levels of employee involvement. Lin (2007) also reports that organizational commitment relates positively to tacit knowledge sharing.

Despite these findings of a positive relationship; however, most studies fail to distinguish the different components of commitment and how each type affects knowledge sharing. Thus, Swart *et al.* (2014) call for research to "de-layer" the commitment construct into its affective, normative and continuance forms when studying its influence on knowledge sharing. They predict that all three types of commitment positively influence knowledge sharing but find support only for the influence of normative commitment, in line with previous findings by Hislop (2003). Swart *et al.* (2014) predict that when employees are committed to the organization, they are more likely to share what they know with coworkers. However, they do not find support for the hypothesized positive influences of affective or continuance commitment. Matzler *et al.* (2011) instead find an effect of affective commitment on knowledge sharing, but only through knowledge documentation, and Hashim and Tan (2015) report that continuous knowledge-sharing intentions are mediated partially by an affective commitment.

Accordingly, this paper furthers the investigation of the direct influences of continuance and normative commitment on knowledge sharing. Knowledge sharing can take place through formal systems, processes and tools, as part of a deliberate knowledge management program. It may be part of a manager's job description, which would include mentoring, tutoring, training employees, reviewing their work, providing them with feedback, creating and maintaining a knowledge base, making it available and promoting it to employees. However, much of the knowledge shared in organizations may entail informal, spontaneous interactions among coworkers on the job. Informal, spontaneous knowledge sharing also could take place during social events, impromptu meetings and the many casual conversations or discussions that take place in organizations. These interactions likely lead employees to share tips and ideas, answer job-related questions and share experiences and work-related stories. Employees who share the organization's values and are glad to work for their organization naturally would tend to engage more in these activities. Because employees with high affective commitment also exhibit organizational citizenship behavior

(Allen and Meyer, 1990; Meyer and Allen, 1991, 1997; Riketta, 2002) and view their jobs as encompassing a broad range of behaviors, including extra-role activities (Morrison, 1994), they likely regard knowledge sharing among coworkers as a desired rather than a required activity. We, thus, formulate the following hypothesis:

> *H1.* Affective commitment relates positively to knowledge sharing.

In contrast, continuance commitment is based on need. Employees who exhibit continuance commitment may be less likely to share their knowledge, unless their employing organization explicitly rewards such behaviors. Many employers consider knowledge a source of power; hoarding knowledge helps employees enjoy rewards, job security, and other advantages. In their study of the influence of various types of commitment on knowledge sharing, Swart *et al.* (2014) consider different commitment foci (e.g. to the organization, to a profession, to a team, to a client) and find that continuance commitment to a client relates negatively to knowledge sharing. That is, an employee is less likely to share knowledge with organizational colleagues if he or she seeks to become an expert in relation to the client or industry and wants to continue to work with that client. The same argument should apply for continuance commitment: an employee who has acquired invaluable knowledge relevant to and needed by his or her employer may seek to be the lone subject matter expert. Employees high on continuance commitment then would be inclined to retain their knowledge, to increase the dependency of their employer on them. Therefore, we posit:

> *H2.* Continuance commitment relates negatively to knowledge sharing.

2.2 Personal trust, professional trust and knowledge sharing

Trust is "a psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behavior of another" (Rousseau *et al.*, 1998, p. 395). This willingness represents one of the few characteristics common to all trust situations (Johnson-George and Swap, 1982). Trust is important among individuals involved in any business process, particularly when knowledge sharing is involved or required. Indeed, knowledge transfers hinge critically on trusting social relations (Van Wijk *et al.*, 2008). To share knowledge and lose the privilege of being its sole holder, the knowledge provider must trust the recipient. Trust, thus, is an important precursor of knowledge sharing; research shows that trust in coworkers relates positively to tacit knowledge sharing (Lin, 2007). According to other scholars, trust can drive knowledge sharing among employees (Mooradian *et al.*, 2006; Usoro *et al.*, 2007). Trust is also a core component of relational social capital (Nahapiet and Ghoshal, 1998; Moran, 2005). Furthermore, it serves as a powerful coordination and mobilization mechanism for productive knowledge exchange relationships (Adler, 2001; McEvily *et al.*, 2003). It increases the perceived veracity and usefulness of knowledge received (Levin and Cross, 2004), which likely results in the actual use of the latter.

Alexopoulos and Buckley (2013) note that despite the essential role of trust in facilitating knowledge flows within the firm, relatively limited empirical research addresses what types of trust are associated with interpersonal knowledge transfer effectiveness and when these types of trust matter most. They, thus, study the effectiveness of personal and professional trust for encouraging knowledge transfers. Professional trust is the willingness to rely on another's professional skills, knowledge, judgments and actions, including delegating and giving autonomy, and personal trust is the willingness to disclose work-related or personal information, often of a sensitive nature, to another (Gillespie, 2003). Alexopoulos and Buckley (2013) find that professional and personal trust both relate positively and significantly to the receipt of useful knowledge. They further reveal that the positive effect of professional trust on knowledge transfer is significantly stronger than that of

personal trust. Although Alexopoulos and Buckley (2013) shed light on the distinctive influences of personal and professional trust on knowledge transfer, they do not address conditions in which shared knowledge gets put into practice. Other scholars (e.g. Hansen, 1999; Gupta, 2008) have argued that when people mutually trust each other, they are more willing to share their knowledge. In this regard, Renzl (2008, p. 209) states that "a trusting person is more willing to give useful knowledge to others" and concludes that trust facilitates effective knowledge sharing. Sharing knowledge with coworkers creates a risk of losing status as the sole expert though, so employees likely share knowledge only with coworkers they trust personally. Moreover, people tend to seek professional advice from those they personally trust, such that employees rely on those to whom they already make disclosures. We therefore, hypothesize that:

H3. Personal trust positively affects knowledge sharing.

H4. Personal trust positively affects professional trust.

Chowdhury (2005) reports that though both cognition- and affect-based trust exert positive influences on complex knowledge sharing, the former is stronger. Confidence in coworkers' task-related competence and skills is also conducive to interpersonal knowledge sharing (Politis, 2003). Similarly, trust based on perceptions of professional competence offers a strong, positive predictor of the receipt of useful knowledge (Levin and Cross, 2004). Professional trust also relates strongly to knowledge sharing among team members (Lee *et al.*, 2010). Therefore, we suggest:

H5. Professional trust positively affects knowledge sharing.

2.3 Knowledge sharing and knowledge utilization
Mere knowledge sharing is not sufficient to improve organizational competitiveness significantly. That is, even though knowledge sharing is an essential step in the knowledge management process, it does not guarantee utilization of the shared knowledge by organizational members (Teo and Bhattacherjee, 2014; Dahlander *et al.*, 2016). Shared knowledge becomes useful only if the recipient actually uses it. Furthermore, knowledge sharing takes time and effort. For employees to engage actively in this practice, some willingness to use what has been shared must be present. Still, Han *et al.* (2010) argue that employees' knowledge sharing behavior actually contributes to the utilization of knowledge. Adopting appropriate systems and mechanisms for encouraging knowledge sharing then may lead to more creation and utilization of knowledge. When people share knowledge, they are more likely willing to use it. Thus, we offer the following hypothesis:

H6. Knowledge sharing positively affects knowledge utilization.

2.4 Moderating role of business ethics
Ethics is the science of moral duty (Kidder, 1995). In organizations, ethics is not just a philosophical concept; an organization's ethical climate reflects "the prevailing perceptions of typical organizational practices and procedures that have ethical content" (Victor and Cullen, 1988, p. 101), such that it brings ethics to life through individual and collective decisions and actions. Knowledge sharing represents a form of business ethics (Chismar, 2001), so an employee's willingness to share knowledge with others is a proxy of certain moral standards or values (Wang, 2004). Conversely, an employee's unwillingness to share knowledge, which may threaten an organization's survival, is unethical (Lin, 2007). Similarly, if an employee is unwilling to use what he or she has learned to benefit an employer, this choice would be considered unethical. Schneider (1983) and Smircich (1983) explain that the organizational ethical climate reflects shared beliefs and values that can

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shape and guide organizational members' behavior in determining right and wrong at work. Such a climate would likely lead employees to apply knowledge being shared with them to benefit their organizations. Finally, an organization's ethical practices may mitigate the risk of a failure resulting from the application of newly acquired knowledge. Tseng and Fan (2011) find that individual perceptions of an organizational ethical climate significantly influence both engagement in and attitude toward knowledge management. A culture characterized by organizational justice—which is part of ethics—can offer support for sharing and using knowledge among employees (Ibragimova, 2006). Therefore, we posit the following hypothesis:

H7. Business ethics strengthens the relationship between knowledge sharing and knowledge utilization, such that the relationship is stronger when business ethics is high.

Figure 1 depicts our research model and hypotheses.

3. Methods

3.1 Data collection and sample characteristics

This study is based on a sample of 307 employees from Canadian organizations. A survey questionnaire was uploaded to www.surveymonkey.com, and links to this survey were sent to two prospective sources. The first included 4,440 alumni of a Canadian business school, invited by e-mail to take part in a voluntary, anonymous research survey. Of these invitations, 3,822 e-mails were successfully delivered. The remaining contacts did not receive the e-mail for different reasons, for example, the delivery expired (message too old), timeout occurred, the message was rejected by a server, there was an unknown address error, the account was disabled, or the recipient was on leave. This invitation resulted in 145 responses from these alumni, representing a response rate of 3.8 percent. The second source of prospective participants came from the professional contacts of the business school's associate dean. A message with the survey link sent to his 1,949 LinkedIn contacts, invited them to take part in the survey. With 58 undeliverable messages, a total of 1,891 prospective participants received the message, resulting in 197 responses, representing a response rate of 10.41 percent. These professional LinkedIn contacts were mostly senior managers (most of whom were older than 34 years), whereas
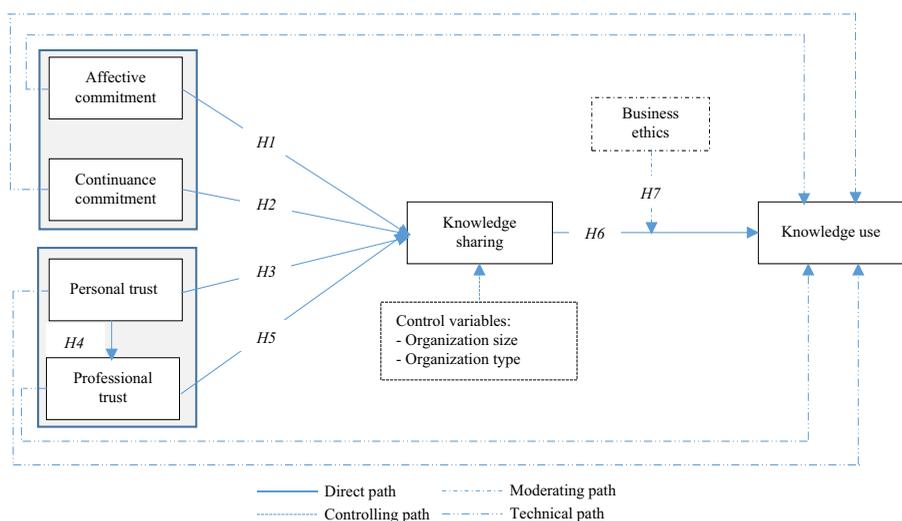

Figure 1.
Research model

the school alumni list were mostly non-managerial employees, supervisors and middle managers (mostly younger than 34 years). Combining these two sources, therefore, produced a complementary pool of potential participants.

In total, we collected 342 responses from both sources represented an overall response rate of 6 percent. After eliminating 35 incomplete responses, 307 complete responses remained, on which the data analysis is based. Table I provides the sample characteristics.

3.2 Measures of the theoretical constructs
The study uses both pretested constructs from previous empirical studies and newly developed measures. All constructs are measured on a five-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Table II details all the construct measures.

4. Data analysis and results
This study employed a two-stage methodology to analyze the data. The first stage consisted of assessing the reliability and validity of the multiple-item scales using SPSS 19.0 and SmartPLS. The second stage involved examining the structural relationships inspired from the theoretical model (Figure 1) using a structural equation modeling technique in AMOS 20.0.

4.1 Reliability of the scales
We used two indicators to assess the reliability of the scales. First, acceptable reliability is met when Cronbach's α is greater than 0.70 (Nunnally, 1978). As shown in Table III, all Cronbach's values were greater than this recommended minimum threshold, except for that of the continuance commitment construct. Second, we used the composite reliability (CR) to check the reliability of the scales. Similarly, CR should be greater than 0.70 for an acceptable reliability. Table III shows that this condition was met for the constructs, except for the continuance commitment construct. Thus, the latent constructs are sufficiently reliable.

4.2 Validity of the scales
All constructs were verified for both convergent and discriminant validity.
4.2.1 Convergent validity. The convergent validity was assessed through three statistical indexes. First, the average variance extracted (AVE) index, for which values greater than or

Characteristics	%
Function	
Top executives	21.8
Middle managers	24.7
Supervisors	10.4
Non-managerial employees	43.2
Gender	
Male	50.2
Female	49.8
Organizational size	
Small- and medium-sized organizations (less than 500 employees)	48
Large organizations (more than 500 employees)	52
Work country	
Canada	90.9
Various countries (USA, France, Japan, Kenya, UK, Ukraine)	9.1

Table I.
Sample characteristics

Construct	Measurement items	Source
Affective commitment	AC1—I have a strong desire to work with my organization AC2—I have a positive emotional attachment to my organization AC3—even if I had other better job opportunities, I would want to work with my organization	Developed for this study
Continuance commitment	CC1—working with my organization is a matter of necessity for me CC2—it would be hard for me to find another job if I leave my organization CC3—my life would be disrupted if I leave my organization	Boichuk and Menguc (2013)
Professional trust	PT1—I believe that my coworkers trust my ability to perform my job well PT2—I trust my coworkers' ability to perform their job well PT3—I believe that my coworkers approach their assigned jobs with professionalism and dedication	Longo and Mura (2011) and McAllister (1995)
Personal trust	PET1—my coworkers are honest and truthful PET2—I believe my coworkers' motives and intentions are good PET3—I believe that my coworkers would look out for my interests.	Clark and Payne (1997), McAllister (1995) and Robinson (1996)
Knowledge sharing	My coworkers and I: KS1—share a significant amount of knowledge and skills KS2—share advanced knowledge and skills KS3—share knowledge and skills of significant value KS4—share knowledge and skills that contribute to our work performance	Items 1–3 adapted from: Ho and Ganesan (2013) Item 4 developed for this study.
Knowledge utilization	KU1—I use the knowledge and skills that my coworkers have shared with me KU2—I believe that my coworkers use the knowledge and skills I share with them	Developed for this study
Business Ethics	BE1—my supervisor encourages employees to act in an ethical manner BE2—managers in my department have high ethical standards BE3—the people in my department demonstrate high standards of personal integrity BE4—my immediate supervisor sets a good example of ethical behavior	Adapted from Beeri *et al.* (2013)

Table II.
List of measurement items

Construct	Items	α	CR	AVE	KMO
Affective commitment	3	0.884	0.931	0.818	0.727
Continuance commitment	3	0.556	0.069	0.248	0.625
Personal trust	3	0.885	0.932	0.822	0.719
Professional trust	3	0.733	0.848	0.653	0.635
Knowledge sharing	4	0.921	0.945	0.810	0.818
Knowledge utilization	2	0.716	0.879	0.785	0.500

Table III.
Reliability and convergent validity of constructs

equal to 0.50 are satisfactory (Chin, 1998). Second, the Kaiser-Meyer-Olkin (KMO) index for which values greater than 0.50 are satisfactory (Lucian *et al.*, 2008). As Table III shows, the AVE and KMO values were all greater than or equal to the minimum threshold of 0.50, except for the AVE value of the continuance commitment construct. Third, we conducted a confirmatory factor analysis (CFA) in AMOS. The following indexes and standards assessed model fit: the ratio of the α^2 to the degrees of freedom (χ^2/df), which needed to be less than 3.0; the comparative fit index (CFI) and normed incremental fit index (NFI), both with minimal thresholds of 0.90; a goodness-of-fit index (GFI) greater than 0.80; and a root mean square of approximation (RMSEA) lower than 0.08 for a good fit and lower than 0.05 for an excellent fit

(e.g. Gefen *et al.*, 2000; Hair *et al.*, 2006). The estimation of the CFA model showed an acceptable fit with the data (χ^2/df = 2.190, CFI = 0.955, NFI = 0.921, GFI = 0.913 and RMSEA = 0.062). As Table IV shows, the CFA results revealed that all items load significantly on their respective constructs, with standardized loadings higher than 0.40 (as recommended by Anderson and Gerbing 1988). Therefore, convergent validity was confirmed.

4.2.2 Discriminant validity. To assess discriminant validity, we followed Bagozzi *et al.* (1991)'s approach whereby discriminant validity is established when the AVE of each construct is greater than the square terms of the correlation of all possible pairs of constructs. As Table V reveals, all constructs meet this criterion, except the knowledge utilization construct. Thus, discriminant validity was fulfilled.

Constructs/Indicators	Standardized factor loadings	*t*-value
Affective commitment		
AC1	0.892	16.308
AC2	0.905	16.434
AC3	0.766	16.308
Continuance commitment		
CC1	0.581	4.345
CC2	0.489	4.345
CC3	0.559	4.241
Professional trust		
PRT1	0.545	9.191
PRT2	0.765	13.251
PRT3	0.799	9.191
Personal trust		
PET1	0.916	17.158
PET2	0.902	23.153
PET3	0.765	17.146
Knowledge sharing		
KS1	0.839	17.846
KS2	0.860	18.857
KS3	0.929	21.256
KS4	0.834	17.956
Knowledge utilization		
KU1	0.735	12.079
KU2	0.777	12.079

Table IV.
Confirmatory factor analysis (CFA)

Construct	Affective commitment	Continuance commitment	Personal trust	Professional trust	Knowledge sharing	Knowledge utilization
Affective commitment	*0.818*					
Continuance commitment	0.031	*0.248*				
Personal trust	0.240	0.002	*0.822*			
Professional trust	0.156	0.002	0.427	*0.653*		
Knowledge sharing	0.127	0.001	0.181	0.246	*0.810*	
Knowledge utilization	0.145	0.001	0.413	0.441	0.224	*0.785*

Notes: $n =$ 307, Pearson correlations. Values in italic on the diagonal represent the AVE; the other values are the squares of the inter-construct correlations

Table V.
Discriminant validity of constructs

In summary, the reliability and validity tests of the scales show that all the measurements are sufficient and can be used for hypotheses testing. Although the continuance commitment construct in this study offers lower psychometric values than the conventional thresholds ($\alpha = 0.56$, CR $= 0.069$, AVE $= 0.248$), Boichuk and Mengue (2013) previously validated this construct (they find $\alpha = 0.83$, CR $= 0.84$ and AVE $= 0.57$). Therefore, the construct remained in the data set for hypothesis testing.

Table VI reports the means, standard deviations and correlations among the key research variables.

4.3 Test of hypotheses

Two structural equation models created using AMOS software tested the hypothetical relationships in the research model (Figure 1). The first model examined the direct effect of affective commitment, continuance commitment, personal trust and professional trust on knowledge sharing and on knowledge utilization, as well as the direct effect of knowledge sharing on knowledge utilization. This model estimation produced the following index values: χ^2/df $= 2.199$; CFI $= 0.940$; NFI $= 0.897$; GFI $= 0.901$; and RMSEA $= 0.063$. Therefore, the model is consistent with the data. Figure 2 presents the results of the structural relationships. The structural coefficients (β) are standardized; the values

n	Construct	Means	SD	1	2	3	4	5	6
1.	Affective commitment	3.762	0.980	1					
2.	Continuous commitment	2.814	0.847	0.031	1				
3.	Personal trust	3.907	0.775	0.490**	0.044	1			
4.	Professional trust	4.025	0.575	0.396**	−0.033	0.654**	1		
5.	Knowledge sharing	4.079	0.674	0.357**	−0.012	0.426**	0.496**	1	
6.	Knowledge use	4.128	0.577	0.381**	0.024	0.643**	0.664**	0.474**	1

Note: **Significant at 0.01 level (two-tailed)

Table VI.
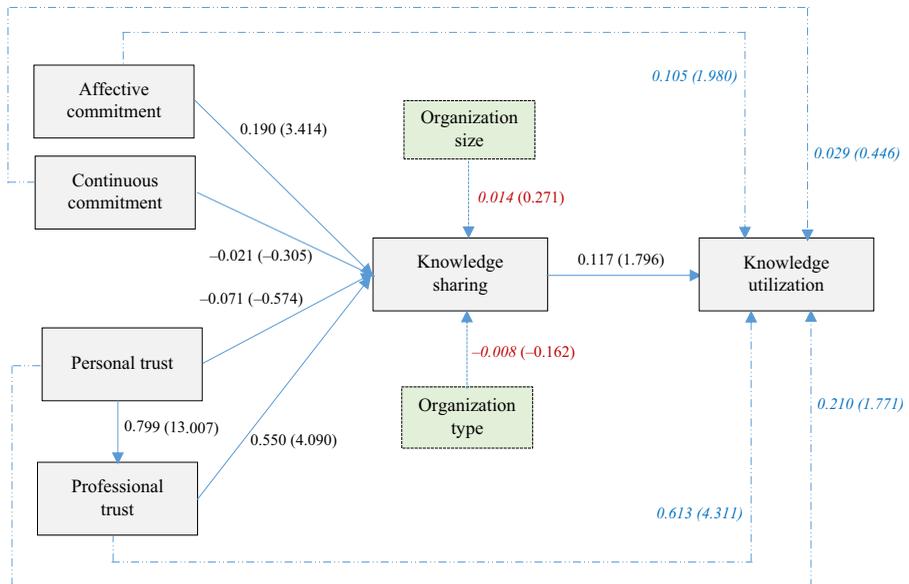Correlations and descriptive statistics of key constructs

Figure 2.
Research model with estimation results

in parentheses reflect the t-values. A relationship is significant if the t-value is greater than 1.96.

Specifically, Figure 2 reveals a positive, significant impact of affective commitment on knowledge sharing ($\beta = 0.190$, $T = 3.414$, $p = 0.000$)[1], in support of $H1$. However, the negative influence of continuance commitment on knowledge sharing predicted in $H2$ is not supported ($\beta = -0.021$, $T = -0.305$, $p = 0.761$), and neither is the positive influence of personal trust on knowledge sharing predicted in $H3$ ($\beta = -0.071$, $T = -0.574$, $p = 0.566$). In support of $H4$, the data indicate a positive influence of personal trust on professional trust ($\beta = 0.799$, $T = 13.007$, $p = 0.000$). Similarly, professional trust has a strong positive effect on knowledge sharing ($\beta = 0.550$, $T = 4.090$, $p = 0.000$). Thus, $H5$ is supported. $H6$ suggests a positive impact of knowledge sharing on knowledge utilization, but the data do not support this prediction ($\beta = 0.117$, $T = 1.796$, $p = 0.072$). Table VII summarizes the results of these direct hypothesis tests.

The technical tests also reveal a direct relationship between affective commitment and knowledge utilization ($\beta = 0.105$, $T = 1.980$, $p = 0.048$). However, continuance commitment does not have a significant impact on knowledge utilization ($\beta = 0.029$, $T = 0.446$, $p = 0.656$). As Figure 2 shows, personal trust does not exert a significant effect on knowledge utilization ($\beta = 0.210$, $T = 1.771$, $p = 0.077$). In contrast, professional trust has a positive, significant effect on knowledge utilization ($\beta = 0.613$, $T = 4.311$, $p = 0.000$). As Figure 2 shows, neither organization size nor organization type (for-profit vs non-profit) has a significant impact on knowledge sharing ($\beta = 0.014$, $T = 0.271$, $p = 0.787$; $\beta = -0.008$, $T = -0.162$, $p = 0.871$, respectively). We summarize the results of these technical and control relationships in Table VIII.

The second model examines the moderating effect of business ethics on the relationship between knowledge sharing and knowledge utilization. To this end, the sample is dichotomized, using the median (4.00) of the business ethics construct. The first group with low business ethics (172 companies) exhibits a degree of business ethics between 1 and 4, whereas the group with high business ethics (135 companies) achieves a degree of business ethics above 4. The model estimation produces the following statistical indexes: $\chi^2/\mathrm{df} = 1.605$, CFI $= 0.932$, NFI $= 0.840$, GFI $= 0.866$ and RMSEA $= 0.045$. All the fit indexes are satisfactory except the NFI, though it is close to the recommended threshold of

Hypotheses	Path Specified	Coefficient (B)	t-value	p-value	Supported?
$H1$	Affective commitment → Knowledge sharing	0.190	3.414	0.000	Yes
$H2$	Continuance commitment → Knowledge sharing	−0.021	−0.305	0.761	No
$H3$	Personal trust → Knowledge sharing	−0.071	−0.574	0.566	No
$H4$	Personal trust → Professional trust	0.799	13.007	0.000	Yes
$H5$	Professional trust → Knowledge sharing	0.550	4.090	0.000	Yes
$H6$	Knowledge sharing → knowledge utilization	0.117	1.796	0.072	No

Table VII.
Direct hypothesis
tests (Model 1)

Path Specified	Coefficient (B)	t-value	p-value
Affective commitment → Knowledge utilization	0.105	1.980	0.048
Continuance commitment → Knowledge utilization	0.029	0.446	0.656
Personal trust → Knowledge utilization	0.210	1.771	0.077
Professional trust → Knowledge utilization	0.613	4.311	0.000
Organization size → Knowledge sharing	0.014	0.271	0.787
Organization type → Knowledge sharing	−0.008	−0.162	0.871

Table VIII.
Technical and control
tests (Model 1)

0.90. Therefore, the model fits the data adequately. As shown in Table IX, the relationship between knowledge sharing and knowledge utilization is moderated by business ethics. Knowledge sharing has a positive, significant effect on knowledge utilization when business ethics is high ($\beta = 0.188$, $T = 2.046$, $p = 0.041$), whereas when business ethics is low, the relationship is no longer significant ($\beta = 0.173$, $T = 1.433$, $p = 0.152$), in support of H7.

Table X contains a summary of the models' fit.

5. Discussion

To clarify an important, interesting issue related to knowledge management processes, this study investigates the influence of trust and commitment on knowledge sharing, as well as the influence of knowledge sharing on knowledge utilization. Theoretically, this study extends knowledge management literature, as it pertains to knowledge sharing and utilization. As the results show, affective commitment relates positively to knowledge sharing (H1). Knowledge sharing among coworkers is an extra-role activity, and as noted by Morrison (1994), employees with high affective commitment view their jobs as encompassing a wider range of behaviors. This finding provides further evidence of the positive outcomes of affective commitment. Yet given that there are generally fewer job opportunities than there is demand, employers may mistakenly believe that they have little need to invest in the affective commitment of employees, who may seem easy to retain. The hypothesized negative relationship between continuance commitment and knowledge sharing is insignificant (H2), suggesting that continuance commitment may not be favorable to knowledge sharing, but it also is not detrimental to it.

Personal trust does not have a significant impact on knowledge sharing (H3), whereas professional trust does (H5). Zhikun et al. (2007) similarly find that interpersonal trust does not influence willingness to share knowledge. Although Alexopoulos and Buckley (2013) find that both personal and professional trusts have positive impacts on knowledge transfer, they report a significantly stronger effect of professional trust. These results provide further evidence of the important role of professional trust and corroborate previous findings that suggest personal trust has either no or just a limited effect on knowledge sharing. Still, personal trust significantly affects professional trust (H4), which significantly and positively affects knowledge sharing (H5). Therefore, professional trust is a full

Hypothesis	Business ethics	Path specified	Coefficient (B)	Student T	p-value	Supported?
H7	High	Knowledge sharing → Knowledge utilization	0.188	2.046	0.041	Yes
	Low		0.173	1.433	0.152	

Table IX. Moderating hypothesis test (Model 2)

Index name	Threshold[a]	Model 1	Model 2
χ^2/df	< 3.00	2.199	1.605
CFI	> 0.90	0.940	0.932
NFI	> 0.90	0.897	*0.840*
GFI	> 0.80	0.901	0.866
RMSEA	< 0.08	0.063	0.045

Notes: All standardized factor loadings are significant at $p < 0.01$. The italic value do not meet established thresholds. [a]Suggested values are based on Gefen et al. (2000), Etezadi-Amoli and Farhoomand (1996), Tsai and Cheng (2012), and Hair et al. (2006)

Table X. Summary of model fit

mediator of the relationship between personal trust and knowledge sharing. Building personal trust is important, in the sense that it contributes indirectly to knowledge sharing. It is likely that personal trust allows for the initiation of knowledge sharing, by putting parties at ease, whereas professional trust sustains it and leads to the actual sharing of professional knowledge.

Although the topic of knowledge sharing has received a great deal of interest, researchers rarely investigate what happens to knowledge after the transfer stage. They generally presume that, once shared, knowledge is used systematically. However, the current study provides evidence that the knowledge sharing has no automatic or significant influence on knowledge utilization (*H6*); it does so only when business ethics levels are high (*H7*). Perhaps employees feel more confident using their existing practices, which yield moderate but acceptable outcomes, rather than trying out newly shared knowledge that may result in better but uncertain outcomes. Even when the newly shared knowledge is valuable and practical, it still might not be used if employees do not perceive their organization as ethical.

6. Theoretical implications
The findings presented herein make several contributions. First, we provide a deeper understanding of how employee commitment influences knowledge sharing. Our study reveals that the two kinds of commitment (affective and continuous) do not have similar effects on knowledge sharing. Affectively committed employees are more willing to share their knowledge and utilize the knowledge shared with them by their peers; employees with a continuance commitment profile are not. Similarly, the two types of trust (professional and personal) do not have similar impacts on knowledge sharing. This study is one of a few that attempts to expand the knowledge sharing literature through the examination of the two kinds of commitment and trust and their effects on knowledge sharing and knowledge utilization.

Second, we enrich theoretical knowledge of the role of business ethics in the relationship between knowledge sharing and knowledge utilization. The data show that knowledge sharing does not systematically affect knowledge utilization, unless business ethics serves as a moderator. The current research, thus, enriches also prior literature by demonstrating the role of a moderating approach in understanding this relationship.

Third, we expand theoretical knowledge about the importance of affective commitment and professional trust for not only knowledge sharing but also knowledge utilization. Prior research has mainly examined the factors promoting knowledge sharing; limited research has empirically examined and acknowledged the factors leading to knowledge utilization in the workplace, a key indicator of the success of any knowledge management system.

Fourth, our findings contribute indirectly to the extant literature on business process management by emphasizing the important role of affective commitment, professional trust and business ethics in developing effective knowledge management system. Because knowledge management itself is a business process by which organizations create, share and utilize knowledge (Sarvary, 1999; Amarvadi, Lee, 2005), finding ways to enhance an organization's knowledge management ultimately contributes to the effectiveness of its business processes and adds value to its intangible resources.

7. Managerial implications
In unfavorable job markets, employees may commit to their employing organizations because they need to. Such continuance commitment does not influence knowledge sharing though, so managers must establish conditions that help employees bond affectively with their firms, such as by creating a fun workplace, building a strong culture based on shared values or providing meaningful work tasks. In addition, considering that continuance

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commitment exerts no significant impact on spontaneous knowledge sharing, managers dealing with high continuance commitment employees should consider rewarding them for knowledge sharing. Although this research did not study such rewards explicitly, because of their attachment to their organization, it is likely that high continuance commitment employees are more inclined to share knowledge if they would be rewarded for doing so.

The finding that knowledge sharing does not have a direct effect on knowledge utilization implies that organizations should identify and promote conditions that contribute to getting employees to use the knowledge they receive from their coworkers. Doing so is critical, because efforts and resources expended on knowledge-sharing initiatives will be wasted if the shared knowledge never gets used. One such condition is to promote business ethics, because knowledge sharing has a significant influence on knowledge utilization when business ethics levels are high. Finally, managers should develop initiatives to foster professional trust among coworkers, because it has a significant impact on knowledge sharing, whereas personal trust does not. They should promote and showcase employees' professional skills and expertise, which would help other employees locate internal subject matter experts and solicit their expertise when needed. Raising the profile of those who hold work-relevant knowledge would make them more professionally trustworthy.

Lastly, our findings that affective commitment, professional trust and business ethics influence knowledge sharing and knowledge utilization imply that managers should create a culture that promote and support those factors. Some organizations have massively invested in the improvement of their business processes to create and sustain their competitive advantage (Lacerda *et al.*, 2016; Oyemomi *et al.*, 2016), and knowledge management is certainly one of those critical business process that deserves attention from managers. It is even argued that the success of the various business processes in an organization is more likely to be affected by its knowledge management success (Hariharan, 2005). Improving an organization's knowledge management, therefore, comes down to improving its business processes.

8. Conclusion, limitations, and further research

This research investigates the roles of personal trust, professional trust, affective commitment and continuance commitment for knowledge sharing, as well as the influence of the latter on knowledge utilization, as well as the moderating effect of business ethics. A quantitative study conducted among 307 employees shows that both affective commitment and professional trust positively affect knowledge sharing, whereas neither personal trust nor continuance commitment has a significant influence on knowledge sharing. Business ethics moderates the relationship between knowledge sharing and knowledge utilization such that the relationship is significant only when business ethics is high. This research represents one of the first attempts to better understand how different types of organizational commitment and trust influence knowledge sharing, as well as how business ethics functions as an antecedent of the shared knowledge to get used by its recipients. Our research, thus, extends the knowledge management literature and leads to practical recommendations on how to enhance knowledge sharing and utilization.

Yet our research is subject to several limitations that suggest some research avenues. First, the data presented herein show that continuance commitment has no significant relationship with knowledge sharing. Ideally, organizations want affectively committed employees, but in reality, some employees exhibit continuance commitment profiles. Further, research, therefore, should study the conditions in which continuance commitment translates into knowledge sharing. Explicit rewards for sharing knowledge seemingly could provide such motivation, but further research is needed to confirm this assumption. Second, the study is limited to individual (commitment) and interpersonal (trust) antecedents of knowledge sharing, but knowledge sharing is a multilevel phenomenon that can be

influenced by individual, intra-organizational, and inter-organizational levels (Wilkesmann, 2009). Further, research, therefore, should extend the model by including the role of organizational antecedents, such as organizational culture, shared values, or leadership style on knowledge sharing. Third, though the study demonstrates that knowledge sharing positively influences knowledge utilization in organizations with high business ethics, the actual benefit of knowledge sharing resides in the actual use of the knowledge, which suggests the need for further research aimed at identifying additional conditions that might make this transition possible. Fourth, the data were collected in one country, namely, Canada. Therefore, the findings may have limited generalizability to other countries or cultures. Additional research should extend this study by collecting and comparatively analyzing data from other countries.

Note

1. Here, β is the regression coefficient, T indicates the t-value and P indicates the p-value.

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