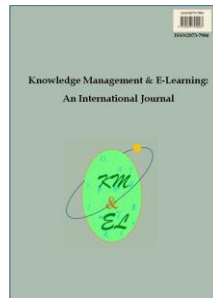


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**Knowledge sharing in organizations: Roles of beliefs,  
training, and perceived organizational support**

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## **Knowledge sharing in organizations: Roles of beliefs, training, and perceived organizational support**

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**Abstract:** The main objective of this study was to test the effects of two types of beliefs about knowledge sharing, i.e., individual and collective, on the intention and behavior of knowledge sharing. In addition, this study considered the moderating roles of organizational support and training among variables. Data were obtained from 1056 participants (55.7% women and 44.3% men), all of whom were knowledge workers. A model was constructed for the relationships between the variables. The results showed that collective beliefs about knowledge sharing were good predictors of knowledge sharing intention and behavior. By contrast, individual beliefs about knowledge sharing were not good predictors of knowledge sharing intention and behavior. The results also indicated moderating roles for training and organizational support. Finally, the knowledge sharing intention predicted knowledge sharing behavior. The results of this study improve our understanding of the human factors involved with knowledge sharing.

**Keywords:** Belief; Knowledge sharing behavior; Knowledge sharing intention; Organizational support; Training

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### **1. Introduction**

A major concern of researchers, consultants, and leaders is how to facilitate knowledge sharing in organizations. Knowledge sharing is the exchange of knowledge between individuals in order to learn, co-create or apply knowledge. The collective creation of

knowledge is a priority in organizations (Nonaka & Takeuchi, 1995). This type of behavior is crucial for making an organization competitive (Cavaliere, Lombardi, & Giustiniano, 2015; Liao, 2006) by enhancing the use of knowledge obtained from experts (Oyemomi, Liu, Neaga, & Alkhuraiji, 2016). The creation of new knowledge with organizational value requires the exchange of complex interdisciplinary information, which implies knowledge sharing among individuals.

Knowledge sharing is a complex process, which is connected with the creation and application of knowledge (Hendriks, 2004; Huysman & De Wit, 2002). Helmstadter (2003) defined it as voluntary interactions between human actors where the raw material is knowledge. This behavior is not automatic but instead it is highly dependent on the human will (Dougherty, 1999; Scarbrough & Carter, 2000). Thus, people can share their experiences, expertise, values, contextual understanding, and insights (Kim & Lee, 2005; Medina & Castaneda, 2010). Knowledge sharing is an action performed by people and not an automatic process by information systems.

The present study investigated the effects of individual and collective beliefs about knowledge sharing on the intention and behavior of knowledge sharing. In addition, this study considered the moderating roles of two organizational conditions, i.e., training and organizational support, among the two variables.

## **2. Theoretical background and hypotheses**

Beliefs refer to ideas that individuals accept as true without verification (Murphy & Mason, 2006). Behavioral beliefs are related to the perceived value of performing an action (Zhuang, King, & Carnes, 2015). In an organizational context, beliefs are defined as conceptions that people possess regarding work, organizations, and society (Heery & Noon, 2001). Beliefs change during interactions with others and the environment, and as a consequence of an individual's thoughts (Chainbi, Ben-Hamadou, & Jmaiel, 2001). Beliefs are crucial for people because they contribute to defining the world (Bueno, Rodriguez Anton, & Salmador, 2008), where they affect attitudes and intentions (Fishbein & Ajzen, 1975), and guide behavior (Ajzen, 2002). If workers believe that knowledge sharing will prevent them from standing out from their colleagues, then they will not make any effort to perform this behavior (Huber, 1991). In addition, Wasko and Faraj (2005) indicated that individuals will share knowledge if they believe that doing so will enhance their reputation.

Few studies have investigated the effects of beliefs on the knowledge sharing process (Weinberg, 2015). Indeed, Zhang and Ng (2012) recommended that future studies should consider the effects of beliefs on the intention and behavior of knowledge sharing, which was also suggested by Stenius, Hankonen, Haukkala, and Ravaja (2015).

In a study involving teachers, Bråten and Ferguson (2015) found different types of beliefs about formalized bodies of knowledge, some of which were personal and other were social. Thus, two types of beliefs were proposed: individual and collective. An individual belief about knowledge sharing is related to the personal impact of this action. An example of an individual belief is "knowledge sharing gives me status." A collective belief about knowledge sharing implies benefits to others or the interaction with others as a result of sharing. An example of a collective belief about knowledge sharing is "knowledge sharing contributes to the achievement of organizational objectives."

According to previous studies and the theory of reasoned action, which asserts that there are relationships between beliefs and behavioral intentions and behavior (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975), the following hypotheses were formulated.

**Hypothesis 1:** Individual beliefs (IB) predict the knowledge sharing intention (KSI) in a positive and significant manner.

**Hypothesis 2:** Individual beliefs predict knowledge sharing behaviour (KSB) in a positive and significant manner.

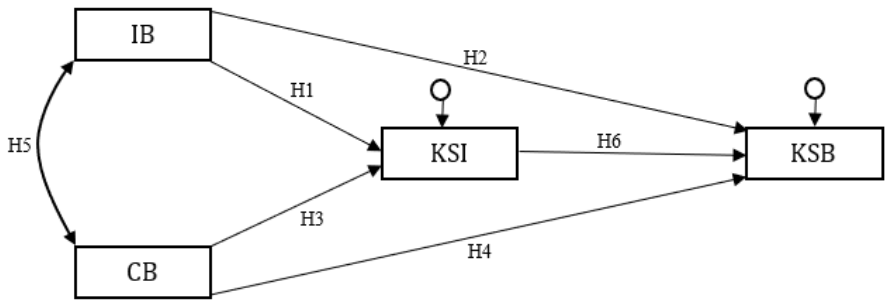
**Hypothesis 3:** Collective beliefs (CB) predict the knowledge sharing intention in a positive and significant manner.

**Hypothesis 4:** Collective beliefs predict knowledge sharing behavior in a positive and significant manner.

**Hypothesis 5:** There is a positive relationship between individual beliefs and collective beliefs about knowledge sharing.

According to the theory of reasoned action, intention is a very good predictor of behavior (Ajzen, 1991; Fishbein & Ajzen, 1975). Intention is a self-instruction to perform a particular action or behavior directed towards attaining an outcome (Triandis, 1980). Behavior is an external activity exhibited by a person (Millikan, 1993). Several studies have considered the relationship between the knowledge sharing intention and knowledge sharing behavior. For instance, Castaneda, Fernandez, and Durán (2016) found a positive relationship between knowledge sharing intention and knowledge sharing behavior in the context of knowledge workers in public organizations; Liu, Ma, Ho and Liu (2013), reported a positive relationship between the two variables with a sample of professionals in physical education.

**Hypothesis 6:** The knowledge sharing intention predicts knowledge sharing behavior in a positive and significant manner.



**Fig. 1.** Shows the research model tested in this study and the respective hypotheses

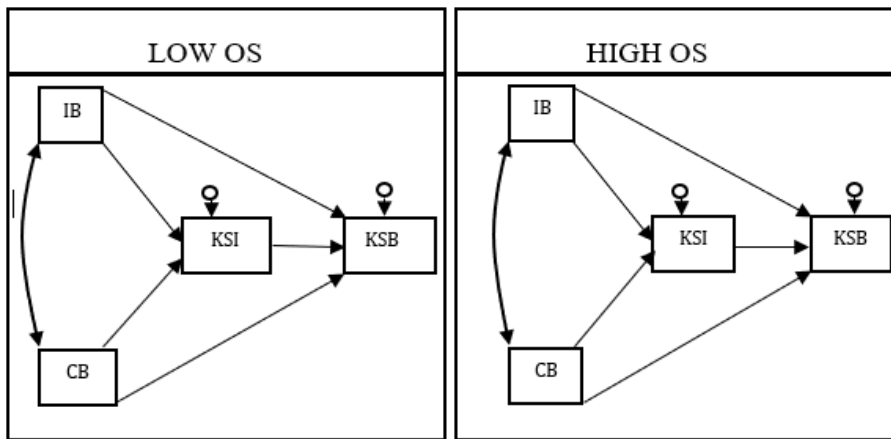
There is evidence that organizations are more productive when they are able to create suitable conditions for knowledge sharing (Quigley, Tesluk, Locke, & Bartol, 2007; Castaneda, 2010; Castaneda, 2015a). According to the social cognitive theory of Bandura (1986), behavioral, cognitive, and other personal factors and environmental events all operate as interacting determinants that influence each other. Human beliefs are developed and modified by contextual influences (Bandura, 1989). When an individual perceives that an organization is supportive and that it facilitates successful experiences, this can positively affect beliefs about self-efficacy (Bandura, 1988). In this study it is proposed that training and organizational support play moderating roles in the

relationship between individual and collective beliefs and the intention and behavior of knowledge sharing.

Organizational support is defined as the availability of information and communication technology, software, computers, infrastructure, and resources in a company to support individuals in the sharing of knowledge. Human support for knowledge sharing is not included in this category, such as backing from bosses.

The existence of tools such as an intranet supports the distribution of knowledge, thereby allowing workers to discuss and interpret information from multiple perspectives (Bhatt, 2002). Filieri and Willison (2016) found that the higher the quality of the knowledge stored in the repository, the more likely it would be reused. Yang and Chen (2007) concluded that the structural and technological capabilities of an organization contribute to knowledge sharing. Technology is an enabler of knowledge sharing by promoting the efficient capture and transfer of knowledge (Chong, 2006; Rathi & Given, 2017). In addition, applications based on information technology can positively affect the ability to share knowledge (Kim & Lee, 2005; Kwan & Cheung, 2006), such as communication technology (Alavi & Leidner, 2001; Van den Brink, 2001) and the availability of telephones (Kwok & Gao, 2005). In addition, the flexibility of the organizational structure encourages knowledge sharing and collaboration within a firm (Gold, Malhotra, & Segars, 2001). Based on this evidence, the following hypothesis was formulated (see Fig. 2).

**Hypothesis 7:** Organizational support (OS) moderates the relationship between beliefs and knowledge sharing intention and knowledge sharing behavior.

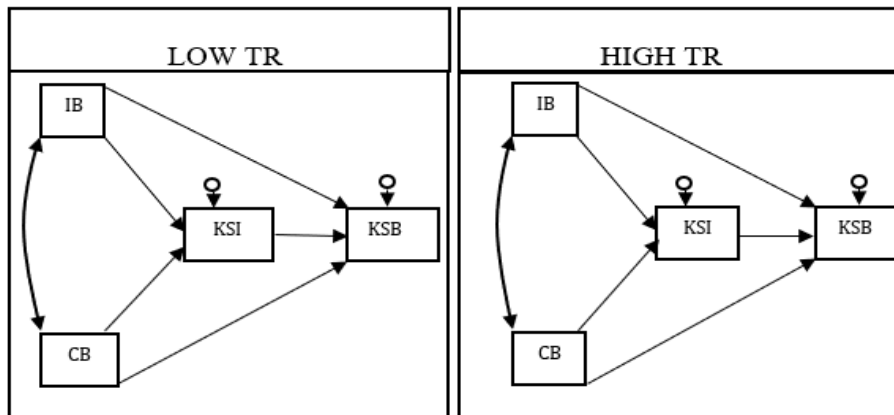


**Fig. 2.** Hypothesis of the moderating effects of organizational support

Training in an organizational context connects the skills of workers with the achievement of organizational goals (Castaneda, 2002). Many studies have considered the role of training in organizations, but few have investigated the connection between training and knowledge sharing, although the relationship between these two variables was noted in one previous study (Fong, Ooi, Tan, Lee, & Chong, 2011). It is assumed that developing the skills of workers in training programs can help them to share knowledge, thereby contributing to improved organizational performance. Indeed, knowledge may become obsolete if there is a lack of training (Argote, 1999). In a study involving teachers, one of the reasons that they reported a lack of knowledge sharing was the feeling that they did not have much to share (Collinson, 2004). Probst, Raub, and

Romhardt (2000) stated that the only way to maintain the dynamic development of knowledge-oriented companies is by constantly developing the skills of workers. Training allows individuals to share up-to-date knowledge with others in an organization (Van Gramberg & Baharim, 2005; Castaneda, 2015b) and this process contributes to enhanced organizational performance. Phusavat, Delahunty, Kess, and Kropsu-Vehkaperä (2017), in the context of educational institutions, found that teachers have the ability to train among themselves by sharing their experiences and ideas. In the same context, Hanell (2017) suggested that information sharing with social media is a powerful way for identity development in pre-school teacher training. Thus, a lack of training is a critical barrier to knowledge management in organizations (Sajeva, 2007). According to previous studies the following hypothesis was formulated (see Fig. 3).

**Hypothesis 8:** Training (TR) moderates the relationship between beliefs and knowledge sharing intention and knowledge sharing behavior.



**Fig. 3.** Hypothesis of the moderating effects of training

Organizational support and training have both been studied in different contexts. Thus, Giorgi, Dublin, and Perez (2016) found a positive relationship between training and organizational support in the context of the welfare of workers. Similarly, Hussain, Salowa, Tedla, Saleh, Rizvi, and Al Rammah (2016) found the same positive relationship in the context of student satisfaction. Zheng, Wu, Eisenberger, Shore, Tetrick, and Buffardi (2016) showed that organizational support and training contributed positively to adjustment by new workers. Based on previous research, this study investigated the effects of these two variables as moderators in the relationships between beliefs and the intention and behavior of knowledge sharing.

### 3. Methods

#### 3.1. Participants

The participants in this study comprised 1056 knowledge workers, 55.7% of whom were women. The average age of the participants was 34.5 years. A knowledge worker is an employee who uses his brain more than his hands. Davenport (2005) defined knowledge workers as people with high degrees of expertise, education or experience. A knowledge worker depends primarily on the acquisition, creation, transmission, and application of knowledge in order to perform their work (Kelloway & Barling, 2000). The sample was

obtained from knowledge workers in Colombian organizations in different sectors, particularly the educational, financial, and public sectors and from participants in a knowledge management conference where the first author was a presenter. In order to meet the definition of knowledge workers, all participants were working at the professional level and had an academic degree.

3.2. Instruments

The instrument employed in this study (Table 1) comprised the following 23 items: seven items to assess beliefs about knowledge sharing, four items related to training, four items related to organizational support, four items related to the intention to share knowledge, and four items for measuring knowledge sharing behavior. Each item had seven response options, which were presented on a Likert scale. All of the items were used as part of the same questionnaire in a random order.

**Table 1**

Measures in the instrument employed in this study and a statistical summary of the responses

Item	Mean	Standard deviation	Weight	Alpha	% Variance
TR				0.764	58.83%
The organization provides training to their workers.	5.450	1.562	0.784		
The organization informs workers about changes in an appropriate manner.	4.739	1.719	0.500		
The training that workers receive is applicable to their work.	5.608	1.463	0.773		
When a worker is hired by the organization, they receive information about the job.	5.408	1.548	0.621		
OS				0.678	51.42%
The provision of physical space in the organization facilitates knowledge sharing by people.	5.035	1.680	0.527		
The information required to achieve organizational objectives is available to workers.	5.149	1.537	0.697		
The organization provides information and communication technology to facilitate knowledge sharing.	5.259	2.700	0.398		
Institutional administrative procedures help people to share knowledge.	4.997	1.532	0.749		
IB				0.836	67.29%
Knowledge sharing gives me power.	4.729	1.596	0.831		
Knowledge sharing gives me status.	5.047	1.514	0.908		
Knowledge sharing gives me economic recognition.	4.079	1.822	0.545		
Knowledge sharing gives me social recognition.	5.261	1.407	0.697		

	CB			0.761	69.66%
Knowledge sharing helps to strengthen my relationships with coworkers.	5.922	1.195	0.789		
Knowledge sharing helps me to achieve organizational objectives.	6.084	1.134	0.661		
Knowledge sharing means that when I require knowledge, it will be shared by others.	5.803	1.237	0.705		
	KSI			0.871	72.03%
Given the chance, I would share my work experiences with coworkers.	6.377	0.979	0.776		
Given the chance, I would share my ideas with coworkers.	6.341	1.020	0.810		
Given the chance, I would share my documents with coworkers.	6.271	1.096	0.778		
Given the chance, I would share specific knowledge learned in training with my colleagues.	6.259	1.069	0.805		
	KSB			0.814	64.24%
Today, I shared my work experiences with colleagues to enrich their work.	5.939	1.220	0.635		
Today, I shared some ideas with my colleagues to improve their work.	5.930	1.189	0.754		
Today, I shared documents with my colleagues, which may be useful to them.	5.672	1.362	0.740		
Today, I shared specific knowledge that I learned in training activities with my colleagues.	5.723	1.333	0.765		

### 3.3. Procedure

A paper questionnaire was provided to the organizations that participated in this study and at the knowledge management conference. Participants were informed of the purpose of the research and their participation was voluntary. The average time required to complete the questionnaire was 15 minutes.

Descriptive statistical analyses were performed with SPSS 24 and path analysis was conducted using Amos 24. Multi-group analysis was performed by exploring the moderating effects of organizational support and training (Hair, Black, Babin, & Anderson, 2010), where the sample was divided into high and low levels for the moderating variables, and thus the same model was tested for each sub-sample. The analysis compared the higher 33% of scores and the lower 33% of scores for organizational support and training.

## 4. Data analysis and results

The main objective of this research was to test the effects of two types of beliefs about knowledge sharing, i.e., individual and collective, on the intention and behavior of knowledge sharing. In addition, the moderating roles of organizational support and



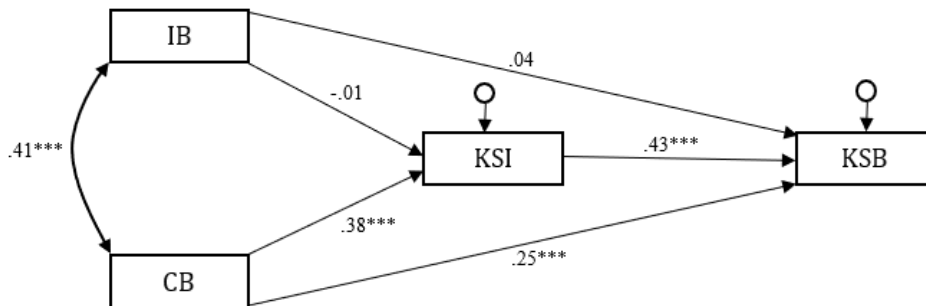
training among both variables were studied. The research model employed is presented in Fig. 1. Table 2 shows the relationships between the variables considered.

**Table 2**  
Correlations between the variables considered in this study

	Mean	S.D.	OS	TR	IB	CB	KSI	KSB
OS	20.374	4.771	1					
TR	21.205	4.801	0.703**	1				
IB	19.116	5.172	0.247**	0.234**	1			
CB	17.810	2.934	0.343**	0.335**	0.410**	1		
KSI	25.247	3.535	0.219**	0.273**	0.141**	0.375**	1	
KSB	23.265	4.091	0.505**	0.440**	0.203**	0.430**	0.529**	1

Note. \*\* $p < 0.01$

The path analysis results did not support hypotheses 1 and 2, i.e., individual beliefs about knowledge sharing did not predict the knowledge sharing intention and knowledge sharing behavior (see Fig. 4). However, hypotheses 3 and 4 were supported, and thus collective beliefs about knowledge sharing predicted the knowledge sharing intention and behavior. The types of beliefs about sharing behavior had different effects. Thus, when the participant’s beliefs were focused on personal benefits, they were less willing to share their knowledge. By contrast, beliefs about the benefits to others increased the knowledge sharing intention and behavior. Hypothesis 5 was supported regarding the relationship between individual and collective beliefs. Hypothesis 6 was supported regarding the relationship between the intention to share knowledge and knowledge sharing behavior.



**Fig. 4.** Results obtained for the research model

Note. \*\*\* $p < 0.001$

4.1. Analysis of moderating effects

The results of the analysis confirmed the moderating effect of organizational support (see Fig. 5). With low organizational support, the best predictor of knowledge sharing behavior was the knowledge sharing intention, whereas with high organizational support, the best predictor was collective beliefs about knowledge sharing. The correlation between collective beliefs and individual beliefs was important, where it was lower with high organizational support. The total variance explained by knowledge sharing behavior with low organizational support was 0.33, whereas it was 0.24 with high organizational support. Similar results were found for the total variance explained by the knowledge sharing intention, which was 0.14 with low organizational support and 0.05 with high organizational support.

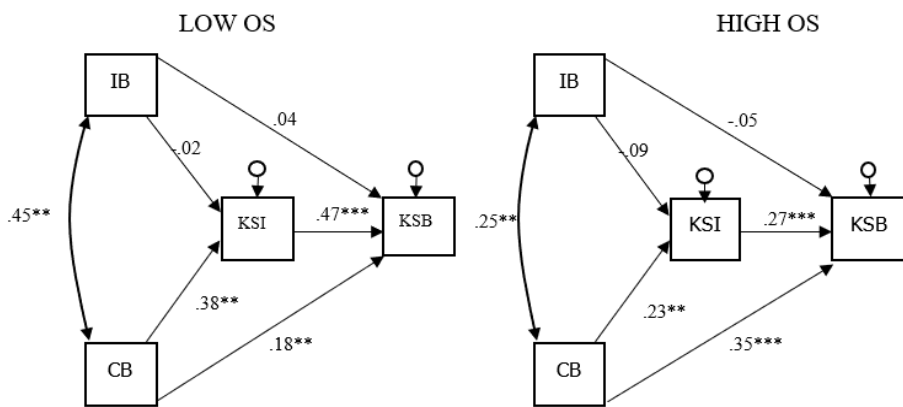


Fig. 5. Analysis of the moderating effects of organizational support

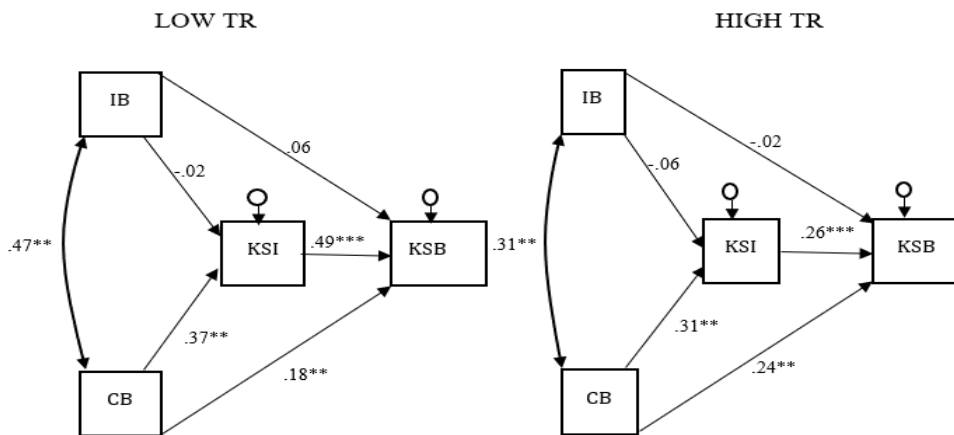


Fig. 6. Analysis of the moderating effects of training

In the case of training, the evidence for a moderating effect was similar to that for organizational support (see Fig. 6). Individual beliefs did not predict the knowledge sharing intention or behavior. With low training, the best predictor of knowledge sharing behavior was the knowledge sharing intention. The correlation between collective beliefs and individual beliefs was lower with high training. The total variance explained by

knowledge sharing behavior was 0.36 with low training and 0.16 with high training. The total variance explained by the knowledge sharing intention was 0.13 with high training and 0.9 with low training.

## **5. Discussion**

The main objective of this study was to analyze the effects of two types of beliefs about knowledge sharing, i.e., individual and collective, on the intention and behavior of knowledge sharing. This study also determined the moderating effects of organizational support and training among variables.

The results showed that there was no statistical support for the relationship between individual beliefs about knowledge sharing and the intention and behavior of knowledge sharing. By contrast, statistical support was obtained for the relationship between collective beliefs about knowledge sharing and the intention and behavior of knowledge sharing. For example, there was no link between the individual beliefs that “knowledge sharing gives me power,” “status,” or “recognition” and the intention and behavior of knowledge sharing. Frequently, power or status in organizations is associated with having knowledge rather than sharing it. Thus, in this context, these personal beliefs about knowledge sharing block the intention to share and effective behavior.

A possible explanation for the results regarding the relationships between collective beliefs and the intention and behavior of knowledge sharing was provided by Fishbein and Ajzen (1975), who stated that behavior is guided by beliefs about the normative expectations of people, which are significant to an individual. If there is a social pressure to achieve organizational goals, this may affect collective beliefs about knowledge sharing, the intention to act in this direction, and effective behavior. In this study, the responses to items regarding collective beliefs about knowledge sharing emphasized the contribution to achieving organizational objectives, strengthening the relationships with coworkers, and receiving knowledge from others when it is required. In organizations, the nature of work requires collective collaboration to complete a task in order to achieve goals. Thus, there is a social pressure to participate by sharing knowledge to complete tasks effectively. In addition, sharing knowledge with others in groups increases the probability of reciprocal actions; therefore, sharing knowledge is an investment. Thus, it is expected that somebody who gives knowledge to others will also obtain it when it is required.

As shown in other studies (Castaneda, Fernandez, & Durán, 2016; Liu, Ma, Ho & Liu, 2013), we found a direct and significant relationship between the intention and behavior of knowledge sharing. Intention is one of the best predictors of behavior when there are no environmental constraints. According to previous studies, contextual restrictions or facilitators affect both the intention and actual behavior (Armitage & Conner, 2001; Kwan & Cheung, 2006; Yang & Chen, 2007). Cognitive factors partly determine the external events that are observed and how they are perceived (Bandura, 1978).

According to the results of the present study, training and organizational support both had moderating effects between collective beliefs and the intention and behavior of knowledge sharing. In the low organizational support group, the best predictor of knowledge sharing behavior was the knowledge sharing intention. Intention is a motivational factor that affects behavior and it indicates how much effort a person may invest to perform a behavior (Ajzen, 1991). In addition, the relationship between

intention and behavior depends on the priorities of an individual within a hierarchy of goals (Locke & Latham, 2002). Thus, the intention depends on evaluations of the contextual conditions required to perform a behavior successfully. If the individual perceives low organizational support, then their behavior is led mainly by the intention to share knowledge. However, in the high organizational support group, the best predictor of knowledge sharing behavior was collective beliefs about knowledge sharing. If the role of variables in the environment is strong, then they are relevant to the orientation of behavior. As stated by Bandura (1986), behavior, cognitive factors, and environmental events all operate as interacting determinants that influence each other.

The results also supported a moderating effect of training in the relationship between collective beliefs and knowledge sharing. In the high and low training groups, the best predictor of knowledge sharing behavior was the knowledge sharing intention, but the load was very different, i.e., 0.49 in the low training group and 0.26 in the high training group. When the perception of training was low, the intention was a stronger predictor of knowledge sharing behavior. After receiving more training, a worker can improve their skills and acquire information that allows them to share qualified knowledge.

The results of this study provide insights into two moderators of knowledge sharing. However, it is possible that other variables might help to explain the results, such as the organizational culture. Lu and Leung (2004) indicated that employees tend to be reluctant to share knowledge. If a worker achieves a high status or enhanced reputation simply by having knowledge in an organization culture, then it is possible that they may be unwilling to share it. However, reputation is associated with sharing knowledge in some organizations where employees who do so are considered wise. Additional research into the determinants of knowledge sharing is recommended. In particular, given that people do not always act in a manner that is consistent with their behavioral beliefs (Kuo & Young, 2008), further research is required to evaluate the relationships between perceptions and beliefs about organizational support and the intention and behavior of knowledge sharing, particularly in the context of different national and organizational cultural conditions.

This study has implications for practitioners. The first lesson is that knowledge sharing can be facilitated. Workers are more willing to share knowledge when they are provided with appropriate conditions, such as organizational support and training. In addition, organizational interventions can affect the beliefs of employees. The second lesson is that collective beliefs about knowledge sharing can influence the intention and behavior of knowledge sharing. When there are strong norms and values regarding the relevance of knowledge sharing in an organization, they may contribute to the formation of collective beliefs associated with this behavior, thereby contributing toward achieving organizational objectives. Finally, this study had some limitations. In particular, the organizational conditions were measured using a questionnaire rather than objective sources. Although perceptions lead behavior, it is recommended that future research should use objective indicators to measure the organizational conditions.

In conclusion, this study helps to elucidate the effects of beliefs on the knowledge sharing process (Zhang & Ng, 2012; Weinberg, 2015). In particular, collective beliefs about knowledge sharing are important for explaining the intention and behavior of knowledge sharing. Furthermore, training and organizational support can moderate collective beliefs about knowledge sharing and the intention and behavior of knowledge sharing.

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