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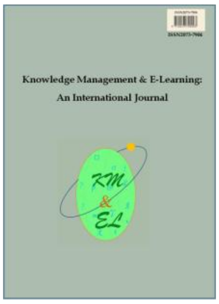

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Determinants of knowledge-sharing intention and knowledge-sharing behavior in a public organization

Delio Ignacio Castaneda
Pontificia Universidad Javeriana, Bogotá, Colombia
Manuel Fernández Ríos
Universidad Autonoma de Madrid, Spain
William Fernando Durán
Pontificia Universidad Javeriana, Bogotá, Colombia

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Determinants of knowledge-sharing intention and knowledge-sharing behavior in a public organization

Delio Ignacio Castaneda*

Faculty of Business Administration
Pontificia Universidad Javeriana, Bogotá, Colombia
E-mail: delio.castaneda@javeriana.edu.co

Manuel Fernández Ríos

Faculty of Psychology
Universidad Autonoma de Madrid, Spain
E-mail: mf.rios@uam.es

William Fernando Durán

Faculty of Business Administration
Pontificia Universidad Javeriana, Bogotá, Colombia
E-mail: duran.w@javeriana.edu.co

*Corresponding author

Abstract: The purpose of this paper is to examine the factors that affect the knowledge-sharing intention and knowledge-sharing behavior in a public sector organization. A survey was conducted with 188 knowledge workers of a public-sector organization at the national level in Colombia. In this public organization significant relationships between self-efficacy and knowledge-sharing intention, subjective norms, and knowledge-sharing behavior, and between knowledge-sharing intention and knowledge-sharing behavior were found. There was a direct effect of perceived organizational support on knowledge-sharing behavior and a moderator role of perceived organizational support between the studied variables. The findings clarify how some personal variables and perceived organizational support interact in the explanation of knowledge sharing.

Keywords: Knowledge sharing; knowledge-sharing intention; knowledge-sharing behaviour; Knowledge management; Intention; Behavior; Public organization

Biographical notes: Dr. Delio Ignacio Castaneda is an Associate Professor in the Faculty of Business Administration, Pontificia Universidad Javeriana. His research interest include: Knowledge Sharing, Organizational Learning, Knowledge Management and Strategic Human Talent Managemen.

Dr. Manuel Fernández Ríos is Professor in the Faculty of Psychology, Universidad Autonoma de Madrid. His research interest include: Organizational Learning, Work Design and Strategic Human Talent Management.

William Durán is Instructor Professor in the Faculty of Business

Administration, Pontificia Universidad Javeriana. His research interest include: Research Methods, Psychometric Tools and Multivariate Analysis.

1. Introduction

Knowledge management is one of the youngest management disciplines (Serenko & Bontis, 2013) which is committed to the study of creation, organization, distribution, and use of knowledge in organizations (Castaneda, 2015; Ju, Lin, Lin, & Kuo, 2006; Lin, 2014). A fundamental behavior in the facilitation of these processes is knowledge-sharing behavior (KSB). Sharing knowledge is not an automatic action, but highly dependent on human factors (Castaneda, Pardo, & Toulson, 2015; Castaneda & Toulson, 2013; Storey & Barnett, 2002). In this direction, the paper presents results of research in which the role of self-efficacy, subjective norms, and perceived organizational support was evaluated in explaining knowledge-sharing intention (KSI) and knowledge-sharing behavior in a public organization in Colombia.

There is a growing interest in studying KSB in organizations; however, the number of studies that contribute to the explanation is still limited (Steward, 2008; Wang & Noe, 2010), especially in organizations of the public sector. Knowledge sharing (KS) consists of voluntary interactions between human actors, in which the raw material is knowledge (Helmstadter, 2003). This behavior requires will and motivation (Dougherty, 1999; Scarbrough & Carter, 2000; Wah, Loh, Menkhoff, & Evers, 2005; Villamizar Reyes & Castañeda Zapata, 2014). What an individual shares in the organization is not only knowing what, but knowing how, knowing why, knowing what for, experiences, contextual information, values, ideas, beliefs, and insights.

2. Theoretical background and hypotheses

There are different frameworks for the explanation of human behavior, which may be applied to KSI and KSB. One of these is the work of Davis (1985) named the technology acceptance model, focus on explaining the effect of system characteristics on user acceptance of computer-based information systems. This model has had empirical support (Erasmus, Rothmann, & Eeden, 2015; Venkatesh & Davis, 2000). One of the most powerful frameworks is the social cognitive theory, which was formulated by Bandura (1986). Indeed, Bandura (1989) stated that people are not autonomous agents acting without influence of context, or entities who respond mechanically to environmental conditions. According to this theory, personal factors, environment, and behavior operate as determinants of reciprocal influence. Therefore, human behavior is partly self-generated and partly determined by environmental conditions. For social cognitive theory, people are self-evaluators of their motivations and actions, and are in constant interaction with the environment (Bandura, 2001). A central concept in Bandura's (1977) social cognitive theory is self-efficacy (SE), which states that individual beliefs about the capacity to achieve a particular behavior influence performance. Self-efficacy is not associated with the number of skills that a person has, but to beliefs that the individual has about his or her capacity to act in a variety of circumstances (Cisneros & Munduate, 2000). Self-efficacy contributes to predict whether or not a person faces a task. In this sense, a person with high SE to share knowledge is expected to share knowledge.

An antecedent of a behavior is intention, which is defined as a representation of a future course of action to be performed (Fishbein & Ajzen, 1975). Intention and behavior are different aspects of a functional relationship separated in time (Bandura, 2001). If an individual believes that he or she is able to share knowledge, then he or she may have the intention to share knowledge. There are some studies on the relationship between SE to share knowledge and the intention to share knowledge (KSI). This link has been found in the field of management information systems (Chen, Chuang, & Chen, 2012; He & Freeman, 2010; Tsai, Chang, Cheng, & Lien, 2013; Yi & Hwang, 2003), in the use of e-learning systems (Alenzi, Karim, & Veloo, 2010), in social networking programs (Papadopoulos, Stamati, & Nopparuch, 2013; John, 2013), and in virtual communities of practice (Cheung, Lee, & Lee, 2013); however, Tamjidyamcholo, Baba, Tamjid, and Gholipour (2012) did not find a relationship between SE and KSI in the context of information security. From the cited studies, the following hypothesis was formulated:

H1. *Knowledge-sharing self-efficacy influences the knowledge-sharing intention*

There is also a link between SE and KSB (Endres, Endres, Chowdhury, & Alam, 2007; Lu, Leung, & Koch, 2006). Cabrera, Collins, and Salgado (2006), in an exploratory study in a multinational company, found an association between breadth role SE and KS. There are some studies in virtual communities in which an association between SE and KSB has been found (Hsu, Ju, Yen, & Chang, 2007; Tseng, 2007). From above, the following hypothesis was formulated:

H2. *Knowledge-sharing self-efficacy influences the knowledge-sharing behavior*

Another variable associated with the explanation of behavior is subjective norms (SN), understood as a person's perception that someone who is considered his or her referent thinks that a behavior should or should not be performed (Fishbein & Ajzen, 1975). SN are the perceived social pressure to do or not perform an action. In other words, a normative belief is the perception of approving or not approving a behavior by those who are considered referents to the individual (Ajzen, 1991). SN are not a perception of support, but an individual's belief about what is expected to do in a context, and the motivation to act. Within organizational contexts, if an employee believes that his or her boss considers that it is part of the role of a worker to share knowledge and if the employee is motivated to do what his or her boss wants, then there is a SN to share knowledge. In the absence of strong SN, people tend to act based on personal benefits and costs (Constant, Kiesler, & Sproull, 1994).

There are several studies regarding the influence of SN on KSI (Bock & Kim, 2002; Bock, Zmud, Kim, & Lee, 2005; Castaneda, 2010; Lin & Lee, 2004; Ryu, Ho, & Han, 2003), and several studies regarding the influence of SN on KSB (Bock & Kim, 2002; Castaneda, 2010; Lin & Lee, 2004; Müller, Spiliopoulou, & Lenz, 2005). There is also evidence of the importance of perceived social pressure from bosses on KSB (Chatzoglou & Vraimaki, 2009). Based on these studies the following two hypotheses were proposed:

H3. *Subjective norms influence the intention to share knowledge*

H4. *Subjective norms influence the knowledge-sharing behavior*

According to reasoned action theory (Fishbein & Ajzen, 1975), the closest determinant of behavior is intention, which is the cognitive representation of the disposition of an individual to perform a behavior (Ajzen, 1991). Intention is the degree to which a person has a conscious plan to engage in a behavior (Warshaw & Davis, 1985). According to a prospective study, intention has explained between 19% and 38% of the variance of behavior (Sheeran, Trafimow, & Armitage, 2003). Some recent studies have reported a link between KSI and KSB (Liu, Ma, Ho, & Liu, 2013; Thakadu, Irani, & Telg, 2013); therefore, the following hypothesis is stated:

***H5**. Knowledge-sharing intention influences knowledge-sharing behavior*

Another variable of interest in explaining behavior in an organizational context is perceived organizational support (POS), which is defined as the global interpretation of a worker about how much the organization values his or her contributions and takes care of his or her welfare (Eisenberger, Huntington, Hutchinson, & Sowa, 1986). POS generates a feeling of reciprocity in the person to contribute to organizational objectives (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001). This concept correlates with organizational commitment, better performance, and less rotation (Allen & Shanock, 2013; Rhoades & Eisenberger, 2002; Uchenna & Tolupe, 2013). If POS produces a feeling of reciprocity, then it is expected that a worker shares his knowledge.

There are few studies which have focused on the relationship between POS and KSB, and the results are contradictory. King and Marks (2008) found a positive correlation between POS and the effort individuals expend to share knowledge. It was also shown that the correlation between POS and knowledge sharing is only amongst workers with a high perception of work security (Bartol, Liu, Zeng, & Wu, 2009). Lu, Leung, and Koch (2006) did not find a relationship between POS and KS. Chiang, Han, and Chuang (2011) found that POS mediates the relationship between high commitment to human resource management and KSB. In the present investigation, unlike King and Marks (2008), the effort to share knowledge was not measured. Additionally, unlike the study of Lu, Leung, and Koch (2006), the POS instrument designed by the authors of the construct was used (Eisenberger, Huntington, Hutchinson, & Sowa, 1986). According to Rhoades and Eisenberger (2002), organizational conditions and benefits contribute more to POS if an employee perceives that it is a voluntary organizational action, rather than a result of a norm or a right. When the POS is strong, a sense of reciprocity in the employee to take care of the organization is produced. Fairness has been reported to be the best antecedent of POS (Rhoades & Eisenberger, 2002). In a review of the literature by Rhoades and Eisenberger (2002), the relationship between favorable job conditions and POS was weak when those conditions were beyond an employer’s control, as happens frequently in the public sector. POS plays an active role when employees perceive that organizational benefits are planned by organization thinking in the welfare of workers, not as an obligation. From the previous results, it was stated that POS plays a moderator role in KSB. The following hypothesis is formulated:

***H6**. Perceived organizational support moderates the relationships between self-efficacy, subjective norms and knowledge-sharing intention and knowledge-sharing behavior*

Fig. 1 shows the research model that will be tested in this research and the respective hypotheses.

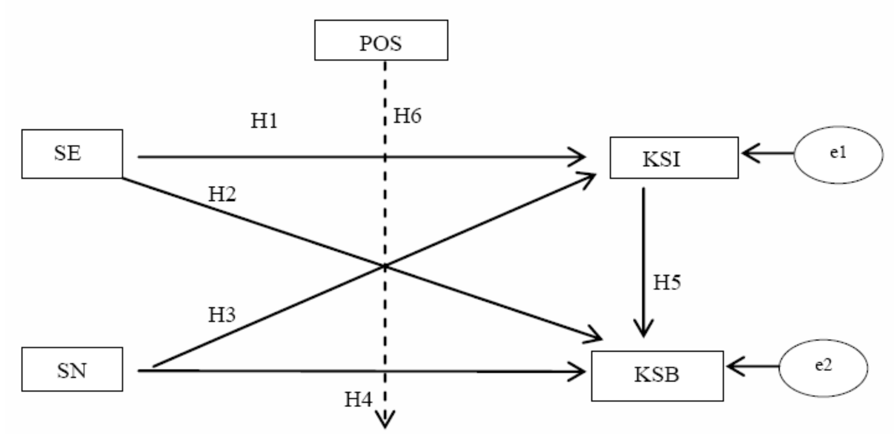

Fig. 1. Research model
(e1: error 1; e2: error 2)

3. Research method

3.1. Participants and procedure

A survey was conducted with 188 knowledge workers of a public sector organization at the national level in Colombia. Of the respondents, 60.6% were women and 39.4% were men. With support from the Human Resources and Organizational Development offices of the public organization, 392 workers who held jobs at the professional, advisory, and management levels were invited to answer the online questionnaire; 48% (188) of the workers answered the request. An email was sent to the workers who fulfilled the research requirements. The email provided a link that directed the participants to a web page containing a short description of the survey, as well as a confidentially statement and the questionnaire.

To validate the hypotheses a path analysis was used. This technique facilitates an exploration of causal relations among the represented variables of the model and direct and indirect effects. To evaluate the fitness of the model, χ^2, GFI, CFI, and RMSEA were used (Batista & Coeders, 2000; Hair, Black, Babin, & Anderson, 2010). SPSS Amos 22 was used to analyze the data.

3.2. Instruments

POS: The 8-item version of the POS instrument developed by Eisenberger, Huntington, Hutchinson, and Sowa (1986) was used. The tool was translated into Spanish by means of the translation back translation procedure. The instrument utilizes a 7-point Likert scale. Exploratory factor analysis with the maximum likelihood method and Omega as a reliability indicator was used because the data are ordinal (McDonald, 1999).

Variables: SN, SE, KSI, and KSB were used as variables in the instrument validated by Castaneda (2010). Each variable included 4 items with the exception of SN, which utilized 8 items (Table 1). The instrument uses a 7-point Likert scale. Exploratory factor analysis was used.

Table 1
Construct validity scales

Scale	Factor weight	Omega	% Var explained
PERCEIVED ORGANIZATIONAL SUPPORT (POS)		0.796	44.13%
The organization values my contribution to its well-being.	0.510		
The organization fails to appreciate any extra effort from me.	0.394		
The organization would ignore any complaint from me.	0.345		
The organization really cares about my well-being.	0.814		
Even if I did the best job possible, the organization would fail to notice.	0.857		
The organization cares about my general satisfaction at work.	0.659		
The organization shows very little concern for me.	0.641		
The organization takes pride in my accomplishments at work.	0.403		
SUBJECTIVE NORMS (SN)		0.816	46.56%
In the organization I work for, leaders expect that collaborators share knowledge with each other.	0.595		
With respect to knowledge sharing, I want to do what leaders expect.	0.605		
I am motivated to share my knowledge.	0.458		
People who are important to me believe that I should share my knowledge with others.	0.607		
With respect to knowledge sharing, I want to do what is expected of me by important people.	0.605		
In the organization I work for, my colleagues expect that I share my knowledge with them.	0.745		
With respect to knowledge sharing, I want to do what my colleagues expect.	0.755		
SELF-EFFICACY (SE)		0.925	78.52%
I feel that I am able to share my knowledge with colleagues who are very critical.	0.946		
I feel able to share my knowledge with people who have a higher level in the hierarchy within the organization.	0.913		
I feel able to share my knowledge with people who are more expert than I am.	0.783		
I feel able to share my knowledge in large groups.	0.738		
KNOWLEDGE-SHARING INTENTION (KSI)		0.944	86.82%
If I had the chance, I would share work experiences with my colleagues that could enrich their work.	0.922		
If I had the chance, I would share ideas with my colleagues so that they could do better work.	0.916		
If I had the chance, I would share documents with my colleagues that may be useful to them.	0.911		
If I had the chance, I would share specific knowledge with my colleagues that I have learned in academic activities.	0.893		
KNOWLEDGE-SHARING BEHAVIOR (KSB)		0.933	87.30%
Nowadays, I share work experiences with my colleagues that could enrich their work.	0.938		
Nowadays, I share ideas with my colleagues so that they can do better work.	0.928		
Nowadays, I share documents with my colleagues that may be useful for them.	0.905		
Nowadays, I share specific knowledge with my colleagues that I have learned in academic activities.	0.878		

Each scale maintained a uni-dimensional structure and appropriate reliability values, with the exception of one SN item, which showed a factorial load of 0.3, thus affecting the reliability of the scale and serving as the basis for elimination (Abad, Olea, Ponsoda, & García, 2011).

4. Data analysis and results

4.1. Path analysis

Path analysis facilitated the identification of a set of meaningful relationships with medium- and high-effect sizes. The highest effect existed between SE on KSI (β=0.80), followed by SN on KSB (β=0.44) and KSI on KSB (β=0.32). The other relationships were not significant, as shown in Table 2.

Table 2
Effect size and significance

	Beta (B)	Standardized beta (β)	Standard error (S.E.)	Critical ratio (C.R.)
SE --- KSI	0.69	0.80	0.04	17.99***
SN --- KSI	0.02	0.05	0.02	1.18
KSI --- KSB	0.49	0.32	0.15	3.18***
SN --- KSB	0.30	0.44	0.04	7.17***
SE --- KSB	0.01	0.01	0.13	0.05

Note: *p<0.05; ***p<0.001

According to the analysis, there are direct and indirect effects between the variables of the study, which are shown in Table 3. The strongest direct effect on KSB was from SN, followed by KSI. In evaluating the indirect effects, it was observed that SE affects the KSB passing through KSI (0.255), even though the direct effect between SE and KSB was nearly null (0.005). This result may be evaluated as an indicator of mediation; the relationship between SE and KSB passes through KSI.

Table 3
Direct and indirect effects between the variables of the study

	Total effects			Direct effects			Indirect effects		
	SN	SE	KSI	SN	SE	KSI	SN	SE	KSI
KSI	0.052	0.795***	0	0.052	0.795***	0	0	0	0
KSB	0.454***	0.260	0.320***	0.437***	0.005	0.320***	0.017	0.255	0

Note: *p<0.05, ***p<0.01

SE predicts KSI, and SN and KSI predict in a positive and significant way KSB, providing support for hypotheses 1, 4, and 5. In contrast, there was not a direct effect from SE on KSB or from SN on KSI, therefore hypotheses 2 and 3 were not supported.

Reviewing the indicators of adjustment of the model (Fig. 2) it was observed that $\chi^2(3,188) = 64.83$ ($p<0.05$), GFI was 0.93, CFI was 0.90, and RMSEA was 0.23. Two of the indicators were acceptable; however, the residuals of the model were high, which may be interpreted as an effect of the non-significant relationships between some variables of the model or as an indicator of the possible relationship between SN and SE; because this relationship was not stated from the beginning of the study, it was not included in the analysis (Hair, Black, Babin, & Anderson, 2010).

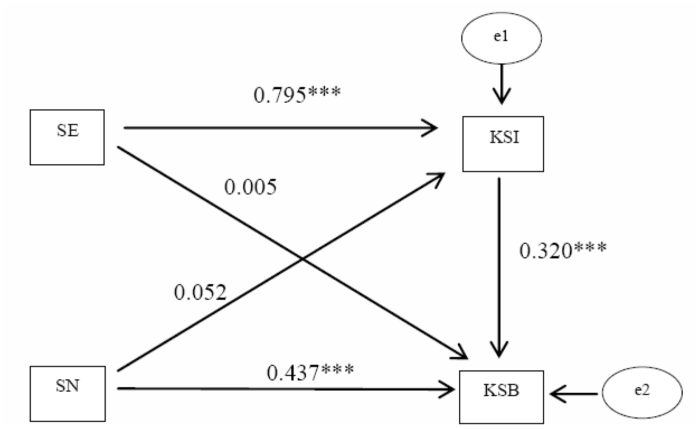

Fig. 2. Path diagram

4.2. Moderation analysis

Before starting the moderation analysis, the direct effect of POS on KSB was studied (β =0.224, $p<0.01$). A positive and significant relationship between the two variables was noted, then, there was a direct effect of POS on KSB. There was not a direct effect of POS on KSI (β=0.075, $p>0.05$).

To divide the sample into two levels (high and low), the average of scores in the scale was used. High and low POS was created by 90 and 98 participants, respectively. Multi-group analysis was used to test the model in each sample. The results are presented in Table 4.

Table 4
Moderation analysis

	Low POS				High POS			
	B	β	S.E.	C.R.	B	β	S.E.	C.R.
SE --- KSI	0.649	0.789	0.05	12.66***	0.757	0.811	0.056	13.429***
SN --- KSI	0.013	0.029	0.03	0.467	0.063	0.128	0.03	2.127*
KSI --- KSB	0.554	0.342	0.22	2.503*	0.375	0.267	0.213	1.762*
SN --- KSB	0.353	0.484	0.06	5.772***	0.199	0.289	0.061	3.261***
SE --- KSB	-0.130	-0.099	0.18	-0.728	0.313	0.239	0.197	1.59

Note: *p<0.05, ***p<0.01

There is a moderator effect in the relationship between SN and KSB. In the low POS group the size of the effect was 0.48, while in the high POS group the effect was 0.29 (both statistically significant). The relationship between SN and KSI was the opposite; the higher effect was found in the high POS group (0.13; a significant value), while in the low POS the value was almost null (0.029). The relationship between SN and KSB was stronger when the POS was low, while the relationship between SN and KSI was stronger when the POS was high.

Another moderator effect was observed in the relationship between SE and KSB; in the low POS group the effect was low and in the high POS group the effect was higher (0.24), but not significant. The relationship between SE and KSI in the low and high POS groups was significant (0.79 and 0.81; Fig. 3).

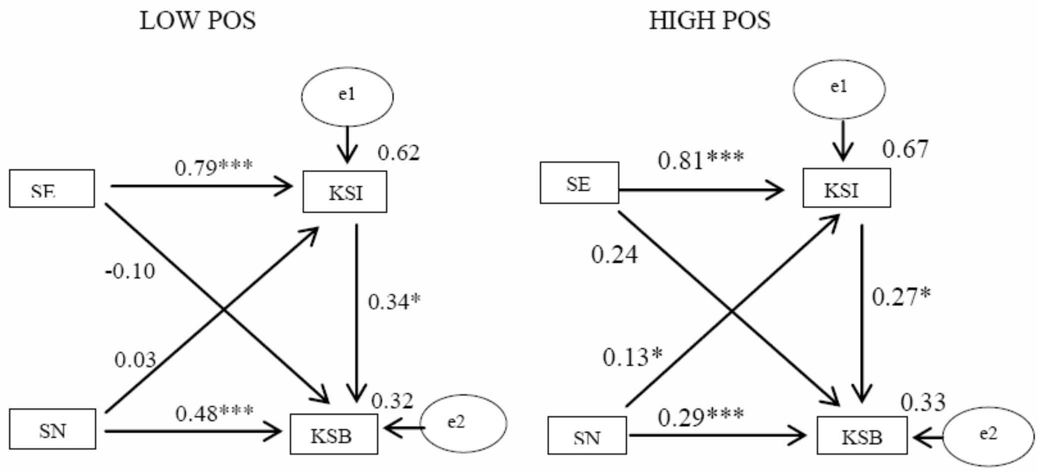

Fig. 3. Moderation analysis

Table 5
Effects in low POS and high POS groups

	Low POS								
	Total effects			Direct effects			Indirect effects		
	SN	SE	KSI	SN	SE	KSI	SN	SE	KSI
KSI	0.029	0.789***	0	0.029	0.789***	0	0	0	0
KSB	0.494***	0.170	0.342*	0.484***	-0.099	0.342*	0.01	0.269	0
	High POS								
	Total effects			Direct effects			Indirect effects		
	SN	SE	KSI	SN	SE	KSI	SN	SE	KSI
KSI	0.128	0.811***	0	0.128	0.811***	0	0	0	0
KSB	0.323***	0.455***	0.267*	0.289	0.239	0.267*	0.034	0.216	0

Note: *p<0.05, ***p<0.01

The direct and indirect effects showed other changes by the moderation. The total effect in the relationship between SE and KSB in the high POS group increased; this was the variable that most affected KSB in the high POS group. In the low POS group the higher total effect was from SN on KSB (Table 5).

Even though there were changes in some weights in the variables of the model, the proportion of variance explained on KSB did not change by the moderation of POS (low POS=0.32 and high POS=0.33). SN was the most relevant variable in the low POS group, but SE was the most important variable in the high POS group.

5. Discussions

In the current study, a model involving the influence of some variables on KSI and KSB in a public organization was tested. There are a limited number of publications on variables impacting KSI and KSB in this type of entity, therefore this study contributes to a deeper understanding of KS in this context.

The strongest significant relationship in this public organization was between SE and KSI. When individuals believe that they are capable of sharing knowledge, they have the intention to share it. In contrast, there was also a significant relationship between SN and KSB. Thus, a solid determinant of KSB in this public organization is what people believe that their bosses consider they should do. In summary, the best determinant of KSI was SE, while SN was the best determinant for KSB. There was also a significant association between KSI and KSB. With respect to POS, there was a significant association between this variable with KSB and a moderator role. There was not a significant direct link between SE and KSB, but an indirect relationship through KSI. There was no relationship between SN and KSI.

The study reaffirms in a public organization the link between SE and KSI, which has been found in other types of organizations (Chen, Chuang, & Chen, 2012; Cheung, Lee, & Lee, 2013; Papadopoulos, Stamati, & Nopparuch, 2013; John, 2013; Tsai, Chang, Cheng, & Lien, 2013). When an individual believes that he or she has the capacity to share knowledge, then he or she has the intention to share it; however, as Bandura (2001) stated, human behavior is partly self-generated and partly determined by environmental conditions. People have an influence on their intentions, but only partially on their environment. This may be an explanation why there was not a direct effect between SE and KSB, even though an indirect influence was demonstrated through KSI. Liebowitz and Chen (2003) suggested that sharing knowledge in a public organization is more difficult because this type of organization is frequently oriented by power and hierarchical directions. Amayah (2013) reported that normative considerations are associated to KSB.

In agreement with Amayah (2013), there was a significant link between SN and KSB in the current study. In a strong normative context, as in a public organization, individuals act based on what they think their leaders expect. KSB is then addressed by SN; however, SN were not a good predictor of KSI. In this sense, what leaders think should be done by collaborators is a good predictor of what people do in practice, but it is not the intention to act in that way. If the SN are high, an individual may behave in an expected manner, even though he or she does not intend to do so; this is a consequence of social influence.

There was also a significant relationship between KSI and KSB. This finding was supported by the reasoned action theory (Fishbein & Ajzen, 1975), which stated that the closest determinant of behavior is intention, understood as a cognitive representation of the disposition of an individual to perform a behavior (Ajzen, 1991). Intention is a good predictor of behavior (Sheeran, Trafimow, & Armitage, 2003). Therefore, if a person has the KSI, it is probable that he or she will share knowledge in practice, as reported in some studies (Liu, Ma, Ho, & Liu, 2013; Thakadu, Irani, & Telg, 2013). As stated before, however, intention is a personal variable that interacts with other perceived variables of the context in a practical situation.

An interesting finding of this research was the moderator role of POS between the variables of the model. There was a moderator effect of POS in the relationship between SN and KSB. In the low and high POS groups, the size of the total effect was 0.49 and 0.32, respectively. If the POS increases, the strength of the connection between SN and KSB decreases. According to Rhoades and Eisenberger (2002), organizational conditions and benefits contribute more to POS if an employee perceives that it is a voluntary organizational action, and not the result of a norm or a right. If SN are high, people tend to share knowledge pushed by a requirement, not by the perception of support from the organization.

In the relationship between SN and KSI, the moderator total effect of POS was the opposite; a strong effect was found in the high POS group (0.13), while in the low POS group the value was almost null (0.029). If POS is high, the effect of SN on KSI increases. In summary, the relationship between SN and KSB is stronger when the POS is low, while the relationship between SN and KSI is stronger when the POS is high.

Another moderator effect was observed in the direct relationship between SE and KSB. Maurer (2001) stated that if the employee feels supported by the organization, he or she should feel more confident about successfully doing an action. In the low POS group the direct effect was low-negative, while in the high POS group the effect was higher (0.24), but not significant. This may mean that if the POS is low, an individual with high SE may not share knowledge, even having the perceived capacity to do it. Additionally, in a low POS, employees do not have the environment to strengthen SE. The relationship between SE and KSI in the low and high POS groups was significant (0.79 and 0.81).

6. Conclusions and implications

Based on empirical evidence, the influence of SE on KSI, SN on KSB, and KSI on KSB were demonstrated. Additionally, a direct effect of POS on KSB and a moderator role of POS between some variables of the study were shown. In particular, in the low POS group the influence of SN on KSB was higher than the high POS group. In the context of a public sector organization with a culture strongly oriented by rules, SN had a significant influence on KSB, even though this behavior was also influenced by KSI. SE was shown to be a significant predictor of KSI. In the high POS group, the influence of SE on KSB was higher than the low POS group, adding evidence of the relevance of perceived support in the strengthening of SE.

What was expressed above has implications in the facilitation of KSB in a public organization. First, there is a strong influence of internalized norms on behavior. A normative belief that stated that KS is an expected action in the organization leads the behavior in this direction. Knowledge sharing is a core behavior to achieve organizational objectives. Leaders have a crucial role promoting KSB based on subjective norms. Second, it is possible to influence individuals' behaviors through a rich environment in incentives and conditions that facilitate KSB. If a person perceives that the organization supports him or her, this perception facilitates KSB. This is a challenge for human resources leaders in public organizations. Finally, the belief that a person has about his or her capacity to share knowledge, what is called self-efficacy, can be improved. Sometimes knowledge is not shared because a worker thinks that she or he lacks the ability to do it. Public organizations have the challenge to design training programs to strengthening knowledge-sharing self-efficacy.

A limitation of this study was the use of the same source of information for all variables. According to Podsakoff, MacKenzie, and Lee (2003), the possible consequence is bias in data due to common variance. Another limitation is related to the generalizability of the findings. Data came from one public sector organization and similar studies are necessary to validate what was found herein.

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