Theoretical and Empirical Study on Knowledge Sharing Behaviors, knowledge learning Orientation and Social Exchange of Knowledge

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Abstract: This paper develops and tests a model explaining the effects of an organization's context and the nature of relationship between coworkers on knowledge sharing behaviors from the perspective of knowledge source, supervisor, and knowledge recipient. Results show that knowledge source's perception that organization fosters its knowledge learning orientation is positively related to source's assessment of knowledge sharing behavior. Furthermore, as source-recipient relationship becomes stronger the negative effect of source's knowledge performance-prove orientation on its assessment of knowledge sharing behavior strengthens and the positive effect of source's knowledge performance-avoid orientation on recipient's perception of source's knowledge sharing behaviors weakens.

Keywords: knowledge sharing behaviors; knowledge learning orientation; Social Exchange Theory; Knowledge Managemen

1. Introduction

To survive in increasingly competitive environment and improve technology depends on organizations' ability to be innovative and continually developing new knowledge. However, knowledge is ultimately held at the individual level with the movement of knowledge into organizational routines and practices being dependent on employees' knowledge sharing behaviors (Bock, Zmud, Kim & Lee, 2005). The more widely distributed know- ledge is within an organization the easier it is for organizational members to access that knowledge which increases individuals' ability to create new knowledge (Nahapiet & Ghoshal, 1998). Knowledge cannot flow unless knowledge sources share their knowledge (Gray & Meister, 2004). Research has begun to recognize that knowledge sources are not motivated to share their knowledge (McCafferty, 2005). Van Alstyne (2005) found that the extent to which individuals share knowledge reflects their self-interest suggesting knowledge sharing occurs to the extent individuals believe their knowledge is valuable and it is in their best interest to share.

Social exchange theory provides a framework for examining the motives behind the exchange of resources that occur under conditions of uncertainty. In a social exchange, one individual provides a benefit for another creating an expectation of some future return, although exactly when it will occur or what it will be is often unknown. This creates an uncertainty in that there is the risk that the benefit provided may not be reciprocated. Exchange processes are affected by the nature of the resource being exchanged, the social context the exchange takes place in, and the nature of the relationship between the exchange participants (Cropanzano & Mitchell, 2005). This paper attempts to explain knowledge sharing behaviors by examining how the social context influences motivation to provide knowledge to others in the organization.

2. Knowledge Sharing as an extra-role behavior

Acquiring knowledge from others, or knowledge transfer, is the process by which one unit (e.g., individual, group, and organization) is affected by the experience of another (Argote & Ingram, 2000) and involves both the sharing and the receipt of knowledge. Knowledge sharing is a required activity for both knowledge creation and knowledge transfer to take place. In the knowledge management literature, knowledge held at the individual level has a variety of properties, including tacit versus explicit, public versus private (Argote, 2003; Uzzi & Lancaster, 2003). The sharing of knowledge cannot be forced (Bock, 2005). Strong ties between sources and participants facilitate the transfer of complex knowledge as a result of the level of trust in the relationship and the decreased level of effort required to communicate the knowledge (Reagans & McEvily, 2003).

knowledge sharing can be considered an in-role or an extra-role behavior and can also be targeted at either individuals, groups, or the organization (Bowler & Brass, 2003). Knowledge sharing within the context of the supervisor helping their subordinate or coworkers who depend on each other for the performance of their work are examples of in-role knowledge sharing behaviors. In contrast, sharing knowledge with someone who is not a subordinate would be extra-role knowledge sharing. This paper is interested in extra-role sharing of knowledge sharing behaviors which occur between coworkers and involve the providing of tacit or privately held knowledge outside their formally defined role, making the sharing of

this knowledge a voluntary behavior.

3. Social Exchange Theory and Knowledge Sharing

In a social exchange, one individual voluntarily provides a benefit to another, creating expectations of trust and a reciprocal obligation on the other party to provide some benefit in return. First, social exchange may involve either extrinsic benefits with economic value (e.g., knowledge, financial resources) or intrinsic benefits (e.g., gratitude, pleasure). Second, social exchange are rarely specified in advance or explicitly negotiated. The providing of benefits is therefore a voluntary action even though they are implicitly expected to be reciprocated. Finally, there is no guarantee of reciprocation or that the reciprocation will be equivalent (Blau, 1964). Social exchange processes are influenced by the nature of the resources being exchanged and the costs associated with transferring those resources, the social context in which the exchange occurs , and the relationship between the exchange participants (Cropanzano & Mitchell, 2005).

When coworkers are performing activities for each other such as knowledge exchange, information asymmetries develop (Eisenhardt, 1989). Knowledge sharing represents a cost to knowledge sources in that they have expended effort in communicating their knowledge (Reagans & McEvily, 2003). Additionally, the value of the knowledge has depreciated in its personal value to the knowledge sources (Heino, Flanagin, Monge, & Bar, 2004). When knowledge recipients fail to reciprocate, knowledge sources are unable to recover their investment in the knowledge exchange process. As a result, sharing knowledge represents a risk that requires knowledge sources trust recipients will reciprocate (Cropanzano & Mitchell, 2005). Collins and Clark (2005) found that the organizational climate affected an organization's knowledge creating capabilities by affecting the level of teamwork and risk-taking within the organization. Through the norm of reciprocity that exists within the organization, knowledge sources can evaluate the extent to which they can expect knowledge recipients to reciprocate.

4. Theoretical Framework & Hypotheses Development

Cropanzano & Mitchell (2005) suggested that knowledge sharing between coworkers was identified as a specific type of social exchange that is influenced by the norms and rules defined by the organizational context, the knowledge orientation, and the nature of the relationship between knowledge source and knowledge recipient. Based on social exchange theory, hypotheses are proposed identifying how the conditions that influence social exchange influence knowledge sharing behavior.

H1: Employees' perceptions regarding their organization's use of high performance work practices are positively related to knowledge sharing behaviors.

H2: Employees' perception that their organization's climate encourages teamwork (cooperation) and risk-taking is positively associated with knowledge sharing behaviors.

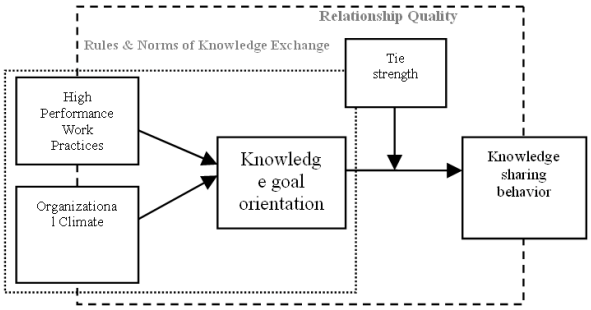

Figure 1 : Motivation to Share Knowledge

H3: Employees' perceptions regarding their organization's use of high performance work practices are positively related to a knowledge learning orientation whereas they are negatively related to a knowledge performance orientation.

H4: Employees' perception that their organization's climate encourages teamwork (cooperation) and risk-taking is positively associated with a knowledge learning orientation whereas it is negatively associated with a knowledge performance orientation.

H5: A knowledge learning orientation and a knowledge performance-prove orientation are positively related to knowledge sharing behaviors whereas a knowledge performance-avoid orientation is negatively related to knowledge sharing. A knowledge learning orientation is associated with more knowledge sharing than a knowledge performance-prove orientation.

H6: Strong ties are associated with more knowledge sharing than weak ties. Tie strength moderates the relationship between a knowledge performance-avoid orientation and knowledge sharing behavior such that knowledge sharing increases as tie strength increases.

H7: Knowledge orientation partially mediates the relationship between employees' perceptions of their organization's high performance work practices and organizational climate and employees' knowledge sharing behavior.

5. Research method, Data analysis and results

The research samples are knowledge workers in two organizations: 146 from a consulting firm and 60 from a lawyer office in Changsha, Hunan. Both organizations recognize knowledge sharing between their employees as critical to the performance and success of the organization.

The first survey included variables on the organization's human resource practices and climate, knowledge goal orientations, the source's perception of their own overall knowledge sharing behavior, and coworkers the source regularly interacts with during the

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course of their jobs. The second survey included items about their knowledge sharing behavior with specific coworkers and their coworkers' knowledge sharing behavior. This survey was also distributed to supervisors asking about their direct reports' knowledge sharing behavior. Reliability tests (coefficient alpha) ensure internal reliability for the items in the same scale and were determined for all constructs. The primary dependent variable is knowledge sharing behavior. The moderating variable is knowledge goal orientation including 5 knowledge learning orientation items, 4 knowledge performance-prove orientation items, and 4 knowledge performance-avoid orientation items. The independent variables are high performance work system measures, organizational climate measures, and tie strength measures. Control variables are knowledge codifiability and social identity, knowledge goal orientations, risk aversion and self worth. Data analysis consists of two parts: exploration of the data and hypotheses testing.

As Table 1 shows Descriptive Statistics and ANOVA for Dependent and Independent Variables, the ANOVA results show that the mean differences on the variables of interest for the respondents from the consulting firm and the lawyer office are not significant ($p < 0.05$). Relative to the consulting firm, the employees of the lawyer office tend to share less knowledge with each other on average, they perceive their organization environment to be less team-oriented, and they demonstrate lower levels of all three knowledge orientations. They also maintain closer relationships with their coworkers and interact more frequently but have known each other for a shorter period of time.

Table 2 displays the Pearson correlation coefficients for the General Knowledge Sharing dependent variables and the associated independent variables. As expected, the correlation between the climate for teamwork and knowledge sharing behavior was significant and positive for both the source perspective and the supervisor perspective. The correlations between the climate for teamwork, the climate for risk, and high performance work practices were positive and significant. The correlation between a knowledge learning orientation and knowledge sharing behavior was positive for both the source and the supervisor perspectives. The correlation between a knowledge learning orientation and a knowledge performance-avoid orientation was significant and negative.

Table 3 displays the Pearson correlation coefficients for the Dyadic Knowledge Sharing dependent variables and the associated independent variables. The correlations between knowledge sharing from the source perspective and both tie closeness and the climate for risk was significant in a positive direction. The correlations between the three knowledge orientations were all significant with the correlation between a knowledge learning orientation and a knowledge performance-prove orientation being positive, the correlation between a knowledge learning orientation and a knowledge performance-avoid orientation being negative. Both tie duration and tie frequency were significantly correlated with a knowledge learning orientation and a knowledge performance-avoid orientation, but their correlations with a knowledge learning orientation were negative where their correlations with a knowledge performance-avoid orientation were positive.

6 . Hypothesis Testing and implication

Based on data exploration, it is to test the hypotheses and determine whether a hypothesis is supported or not with a high degree of statistical conclusion validity. Table 4 shows the overall model where the survey items for all the independent variables and the general knowledge sharing measures.

1. Hypotheses 1-2: Organizational Environment – Knowledge Sharing

In sum, high performance work practices were not significantly related to a source's general knowledge sharing or their knowledge sharing with specific coworkers. Only a climate for risk was significantly related to the supervisors' assessment of sources' general knowledge sharing. Neither high performance work practices nor a climate for risk or teamwork were significantly related to sources' knowledge sharing with individual coworkers. Hypothesis 1 was not supported and hypothesis 2 was partially supported.

2.Hypotheses 3-4: Organizational Environment – Knowledge Orientation

While the regression coefficients for the high performance work practices are in the predicted direction, none of the relationships were significant. In contrast, the climate for risk is significantly related to a knowledge learning orientation and a knowledge performance-avoid orientation but the direction of the regression coefficients are opposite from predicted. These results indicate neither hypothesis 3 nor hypothesis 4 was supported.

3. Hypotheses 5: Knowledge Orientation – Knowledge Sharing

Hypothesis 5 states that a knowledge learning orientation and a knowledge performance-prove orientation are positively associated with knowledge sharing where as a knowledge performance-avoid orientation is negatively associated with knowledge sharing. Contrary to prediction, the regression coefficient for the knowledge performance-prove was negative and the regression coefficient for the knowledge performance-avoid was positive. Based on this, as predicted a knowledge learning orientation is associated with more knowledge sharing than a knowledge performance-prove orientation.

4. Hypothesis 6: Moderating Effect of Tie Strength on Knowledge Learning Orientation

Results show that as the source and recipient become closer and as they interact more frequently sources perceive themselves as engaging in more knowledge sharing with the recipient and that these relationships are significant. The degree of closeness between the source and the recipient and the frequency of their interaction

TABLE 1: DESCRIPTIVE STATISTICS AND ANOVAFOR DEPENDENT AND INDEPENDENT VARIABLES

Dependent and Independent Variables	Consulting (N = 55)		Lawyer office(N = 153)		ANOVA Df = (1)	
	Mean	s.d.	Mean	s.d.	F	Sig.
General KSB (Supervisor)	5.48	1.22	5.35	1.1	.390	.533
General KSB (Source)	5.9	.75	5.47	1.05	7.293	.000
High Performance Work Practices	3.75	.84	3.76	1.05	.029	.865
Climate for Risk	4.14	1.4	3.83	1.39	.439	.152
Climate for Teamwork	4.64	1.13	3.84	1.41	14.558	.000
Knowledge Learning Orientation	5.91	.86	5.76	.87	1.233	.268
Knowledge Performance-Prove Orientation	4.58	.98	4.3	1.11	2.749	.099
Knowledge Performance-Avoid Orientation	3.20	1.13	3.19	1.18	.001	.978
Dyadic KSB (Recipient)	5.61	.91	5.33	1.29	1.248	.266
Dyadic KSB (Source)	5.14	1.33	5.43	1.21	4.361	.037
Tie Closeness	2.43	.80	2.78	.74	20.933	.000
Tie Duration	4.16	3.43	3.69	3.74	1.558	.213
Tie Frequency	2.25	.75	2.62	.72	23.097	.000

Note: Dyadic KSB was measured on a scale from 1 (Strongly Disagree) to 7 (Strongly Agree).

TABLE 2: PEARSON CORRELATION COEFFICIENTS OF GENERAL KNOWLEDGE SHARING

	1	2	3	4	5	6		
1.General KSB (Source)	1.00							
2.General KSB (Supervisor)	.126	1.00						
3.High Performance Work Practices	.133	.046	1.00					
4.Climate for Risk	.041	.150	.601**	1.00				
5. Climate for Teamwork	.201**	.177**	.209**	.242**	1.00			
6. Knowledge Learning Orientation	.404**	.078	-.001	-.105	.136	1.00		
7. Knowledge Performance-Prove Orientation	.075	-.012	-.022	.044	.116	.130	1.00	
8. Knowledge Performance-Avoid Orientation	-.087	.072	.009	.128	-.003	-.469**	.313**	1.00

Note: * p <0.05; ** p < 0.01, *** p < .001

TABLE 3 :PEARSON CORRELATION COEFFICIENTS OF DYADIC KNOWLEDGE SHARING

	1	2	3	4	5	6	7	8	9	10	11
1.Dyadic KSB (Source)	1.00										
2.Dyadic KSB (Recipient)	.13	1.00									
3.Knowledge Learning Orientation	.089	-.042	1.00								
4. Knowledge Performance-Prove Orientation	-.075	.-.164	.103**	1.00							
5. Knowledge Performance-Avoid Orientation	-.062	-.154	-.472**	.278**	1.00						
6. Tie Closeness	.243**	.008	-.013	-.055	-.035	1.00					
7. Tie Duration	-.018	-.055	-.147**	-.049	.152**	.134**	1.00				
8. Tie Frequency	.089	-.042	-.118*	-.050	.130**	.441**	.941**	1.00			
9. High Performance Work Practices	.140	-.005	-.035	-.142	-.026	.040	-.048	-.008	1.00		
10. Climate for Risk	.167*	.024	-.211*	-.161	.189*	-.034	.017	.008	.571**	1.00	
11. Climate for Teamwork	.048	-.041	.019	-.022	.025	-.204**	.085	.028	.126	.267**	1.00

Note: * p <0.05; ** p < 0.01, *** p < .001

TABLE 4: RESULTS OF CONFIRMATORY FACTOR ANALYSIS (CFA)

Measurement Model	Chi-square	CFI	RMSEA
All IVs and General KSB	314.2, df=.735, p=.062	.820	.062
HPWS and Climate			
- HPWS, Risk, Teamwork	350.874, df=116, p=.000	.802	.099
- HPWS	226.291, df=44, p=.000	.706	.141
- Climate (Risk, Teamwork)	6.104, df=8, p=.636	1.0	.000
Knowledge Orientations			
- KLO, KPPO, and KPAO	153.776, df=51, p=.000	.849	.099
- KLO and KPPO/KPAO	208.369, df=53, p=.000	.772	.119
- KLO/KPAO and KPPO	291.308, df=53, p=.000	.650	.147
Genl Source KSB – Source	27.733, df=5. p=.000	.952	.148
Genl Source KSB - Supr	84.06, df=9, p=.000	.899	.239
Dyadic Source KSB – Source	40.115, df=5, p=.000	.965	.139
Dyadic Source KSB – Recipient	56.698, df=5, p=.000	.821	.285
Implicit Knowledge Theories			
- Object view and Process view	91.166, df=34, p=.000	.884	.090
- Single Object/Process view	158.902, df=35, p=.000	.748	.131

Note: All models based on maximum likelihood except Dyadic KSB models which are based on generalized least squares. CFI > .90 represents a good model; RMSEA < .05 represents a good model, RMSEA > .05 and < .08 represents a reasonable model.

were significantly and positively related to the source assessment of their knowledge sharing. However, none of the interactions between the tie strength measures and knowledge performance-avoid were significant. The negative relationship between a knowledge performance-prove orientation and the source's assessment of their knowledge sharing with a given recipient decreases as the source and the recipient become closer. Based on the above, hypothesis 6 is partially supported.

5. Hypothesis 7: Mediation Effects of Knowledge Orientations on Knowledge Sharing

In sum, neither a knowledge learning orientation, a knowledge performance-prove orientation, nor a knowledge performance-avoid orientation partially mediate the relationship between an organization's high performance work practices, a climate for risk, or a climate for teamwork and sources' knowledge sharing behaviors. As a result, hypothesis 7 is not supported.

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The results provide insights into the motivational mechanisms associated with knowledge sharing by the knowledge source. Hopefully this will stimulate further research that focuses on the model tested here contributes to our understanding of what motivates knowledge sources to engage in knowledge sharing behaviors and transfer their knowledge to others.

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