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Factors Influence Information and Knowledge Sharing in Organization

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Abstract

In today's business environment, competitive advantage increasingly requires the open sharing of knowledge by organizational members [22]. Although the practitioners place emphasis on the importance of knowledge sharing, empirical researches on knowledge sharing are still limited, and little research has been done to understand the factors that influence knowledge sharing in organizations. This study investigates cultural and interpersonal factors that influence an individual's propensity to share information and knowledge that he or she has created. Three different situations of sharing (information product, self-developed knowledge and organization-developed knowledge) were considered. The study found that *organization culture* influenced individual's beliefs of organization *trust and psychological safety*, and those who perceived higher trust and psychological safety seemed more likely to share information and knowledge with others.

Keyword: knowledge management, knowledge sharing, organizational culture, trust, psychological safety

1. Introduction

In today's business environment, competitive advantage increasingly requires the open sharing of knowledge by organizational members [17]. Drucker et al. [10] have identified harnessing "the intelligence and spirit of people at all levels of an organization to continually build and share knowledge" as a top priority for firms wishing to succeed in today's competitive environment. However, the efforts of many companies to manage knowledge have not achieved their objectives.

David and Liam [9] revealed that organizational culture is widely held to be the major barrier to creating and leveraging knowledge assets. Organizational culture creates the context for social interaction and forms individuals' beliefs about interpersonal relationships. Organizational research has emphasized cognitive and interpersonal factors to explain effectiveness, showing that individuals' tacit beliefs about interpersonal interaction inhibit learning behavior and give rise to ineffectiveness in organizations [1]. However, the role of beliefs about the interpersonal context in individuals' willingness to share information and knowledge under threatening or trusting psychological state has been largely unexamined.

Although the practitioners place emphasis on the importance of knowledge sharing, empirical researches on knowledge sharing are still limited, and little research has been done to understand the factors that influence knowledge sharing in organizations. Many researches have relied on qualitative studies that provide rich detail about cognitive and interpersonal processes, but do not allow explicit hypotheses testing. This paper presents a model of knowledge sharing and tests it with a survey method. This objective of study was to investigate whether culture and beliefs about the interpersonal context influence the propensity of employee to share information and knowledge.

2. Theoretical Background

Constant et al. [5] advanced a theory of information sharing to understand the factors that support or constrain information sharing in technologically advanced organizations. The theory goes beyond communication and information exchanges among friends and personal contacts to include "organizationally-remote strangers they will never meet in person". Their theory consists both organizational contextual factors and psychological factors including feelings, values, and self-identities. They use this model to explain why people are or are not sharing their best information and knowledge, regardless of the financial incentive, organizational mandate, and amount of technology.

The Constant et al.[5] theory of information sharing roots in social exchange theory. Social exchange theory provides a complementary perspective to the economic exchange perspectives. Sharing Information and knowledge as social exchanges are similar to economic exchanges in the concept that there is an expectation of some future return. But there is no clear expectation of what will return exactly. Kim and Mauborgne [15] and Culnan and Armstrong [6] argue that rules of social exchange govern knowledge sharing. Individuals participate in social exchanges to maintain future relationships, the balance of power, and image.

Organizational culture creates the context for social interaction and forms individuals' beliefs about interpersonal relationships [9]. When people embedded in the same culture examine values and norms in that system, the result can affect individuals' beliefs of interpersonal relationships and psychological safety and may in turn influence information and knowledge sharing behavior.

3. Construct definition and Hypotheses

3.1 Propensity to share information and knowledge

Propensity to share information and knowledge is part of attitudes toward pro-social organizational behaviors (Jarvenpaa and Staples, 2001). The pro-social attitudes capture the general tendency of people wishing for good outcomes not only for themselves, but also for other employees or the organization [3]. Acts like helping, sharing, and volunteering are aimed at maintaining the well-being and integrity of others and the self, and are not directly or explicitly rewarded, but contribute positively to the organization's performance.

Barnes [2] notes "An individual possesses power by being a referent in a distribution of knowledge." When people share what they know with other people, they have lost ownership of knowledge they alone had previously controlled. So individual have good reasons not to share what they know. Knowledge is used at the individual level for both control and defense.

3.2 Organizational Culture

Organizational culture refers to the shared values and attitudes of the members of an organization. Organizational culture has long been argued to affect the consequences of knowledge sharing. Dialogue between individuals or groups are often the basis for the creation new ideas and can therefore be viewed as having the potential for creating knowledge. Culture may encourage/discourage knowledge sharing behavior in organization. For example, Orlikowski [18] found that "in competitive and individualistic organizational cultures- where there were few incentives or norms for cooperating or sharing expertise- groupware did not engender collaboration."

When people embedded in the same culture examine values and norms that shape behavior in that system, the result can increase (or decrease) trust. Good inter-personal relationships, and open communications are continually identified by case studies to be critical in maintaining trust, thus we hypothesize:

H1: Organizational culture is positively associated with an individual's trust

Psychological safety is defined as belief that an individual is safe for interpersonal risk taking. Mutual face saving thus makes normal social relations possible. But in that very process we operate by cultural rules that undermine valid communication and create what Argyris[1] calls "defensive routines." To be polite, to protect everyone's face, especially our own, we tend to say what we feel is most appropriate and least hurtful. It becomes cultural rule to "say something nice if you say anything at all, and if you can't say something nice, don't say anything." Thus we hypothesize:

H2: Organizational culture is positively associated with an individual's psychological safety.

3.3 Trust

Trust, defined as reciprocal faith in others' intentions and behavior, has been identified as integral not only to the performance of small teams, but also to many current organizational arrangement. Trust is an expectation that alleviates the fear that one's exchange partner will act opportunistically. The attainment of trust leads to knowledge sharing behavior. A study of the relationship between marketing research providers and users, shows that trust is a facilitating factor of other relationship processes such as quality of interactions and involvement levels. By alleviating the fear of the unexpected and facilitating interactions and involvement, trust encourages a climate conducive to the sharing of knowledge.

March and Olsen(1990) suggest that trust facilitates learning between partners and that decisions to exchange in knowledge under certain conditions are based on trust. Without trust people assume self-protective, defensive postures that inhibit learning [19]. An atmosphere lacking in trust leads to the withholding of information and can be harmful to the processes of knowledge articulation, internalization, and reflection.

We expect the individual's organizational trust to affect their propensity to share information and knowledge with other colleagues in organization. Thus we hypothesize:

H3: Trust is positively associated with an individual's propensity to share information and knowledge.

3.4 Psychological Safety

Psychological safety is defined as belief that an individual is safe for interpersonal risk taking. Lipshitz, Popper and Friedman (1999) defined psychological safety as "a state in which people feel safe in honestly discussing their mistakes and what they think, and how they feel." For the most part, the belief tends to be tacit- taken for granted and not given direct attention by the other individuals. The construct has roots in early research on organizational change, in which Schein and Bennis (1965) discussed the need to create psychological safety for individuals if they are to feel secure and capable of changing. Schein (1993) noted that learning new habits and skills sometimes involves unlearning, which is emotionally difficult, and making mistakes, which raises anxiety owing to feelings of incompetence. Thus, people are more likely to act transparently, and to investigate their own mistakes with integrity when they are psychologically safe than under threat. The term is meant to suggest neither a careless sense of permissiveness, nor an unrelentingly positive affect but, rather, a sense of confidence that the other members in the organization will not embarrass, reject, or punish someone for speaking up.

The importance of trust in organizations has long

been noted by researchers. Trust is defined as the expectation that others' future actions will be favorable to one's interest, such that one is willing to be vulnerable to those actions. Team psychological safety goes beyond interpersonal trust; it describes a climate that "people are comfortable being themselves." [11]

Employee tend not to share the unique knowledge they hold, such that discussion in organization consist primarily of jointly held information, posing a dilemma for sharing in organizations. Those who actively share what they have may place themselves at risk; for example, by admitting an error or asking for help, an individual may appear incompetent and damage his or her image. In addition, such individuals may incur more tangible costs if their actions create unfavorable impressions on people who influence decisions about promotions, raises [11]. Image costs have been explored in research on face saving, which has established that people value image and tacitly abide by expectations to save their own and others' face. Asking for help, admitting errors, and seeking feedback exemplify the kinds of behaviors hat pose a threat to face, and thus people in organizations are often reluctant to disclose their errors or are unwilling to ask for help. Even when doing so would provide benefits the organizations. Similarly, research has shown that the sense of threat evoked in organizations by discussing problems limits individuals willingness to engage in problem-solving activities. In sum, people tend to act in ways that inhibit sharing when they face the potential for threat for embarrassment [1].

Nonetheless, in some environments, people perceive the career and interpersonal threat as sufficiently low that they do ask for help, admit errors, and discuss problems. In hospital patient-care teams, Edmondson [11] observed that significant differences in members' beliefs about the social consequences of reporting medication errors; in some teams, members openly acknowledged them and discussed ways to avoid their recurrence; in others, members kept their knowledge of a drug error to themselves. Team members' belief about the interpersonal context in these teams could be characterized as tacit; they were automatic, taken-for-granted assessments of the "way things are around here." For example, a nurse in one team explained matter-of-factly, "Mistakes are serious, because of the toxicity of the drugs -so you're never afraid to tell the nurse manger"; in contrast, a nurse in another team in the same hospital reported, "You get put on trial! People get blamed for mistakes⋯ you don't want to have made one." These quotes illustrate markedly different beliefs about the interpersonal context; in the first team, members saw it as self-evident that speaking up is natural and necessary, and in the other, speaking up was viewed as a last resort. Thus, we hypothesize:

H4: Psychological safety is positively associated with an individual's propensity to share information and knowledge.

In sum we combine four hypotheses and construct the conceptual model as Figure 1.

4. Method

A questionnaire-based study was conducted to test the research model. This section describes the sampling method, construct measures, and analysis methods.

4.1 Sample

The college students who are on the job were selected. Every student serves in different organization with different culture and work climate. In our study, the unit of analysis was an employee in an organization.

Questionnaires were sent to 480 students in classroom. 208 students voluntarily complete the questionnaires. overall response rates of 43.3 percent were achieved. Table 1 summarizes the demographic characteristics of the respondents.

4.2 Construct Measurement

To test the hypotheses, we operationalized the conceptual model as Figure 2.

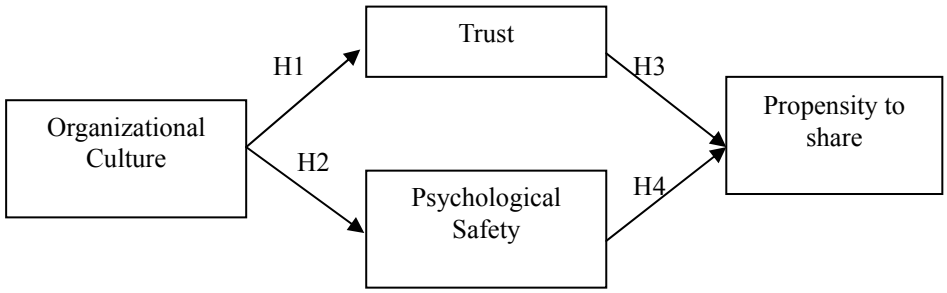

Figure 1. Conceptual Model

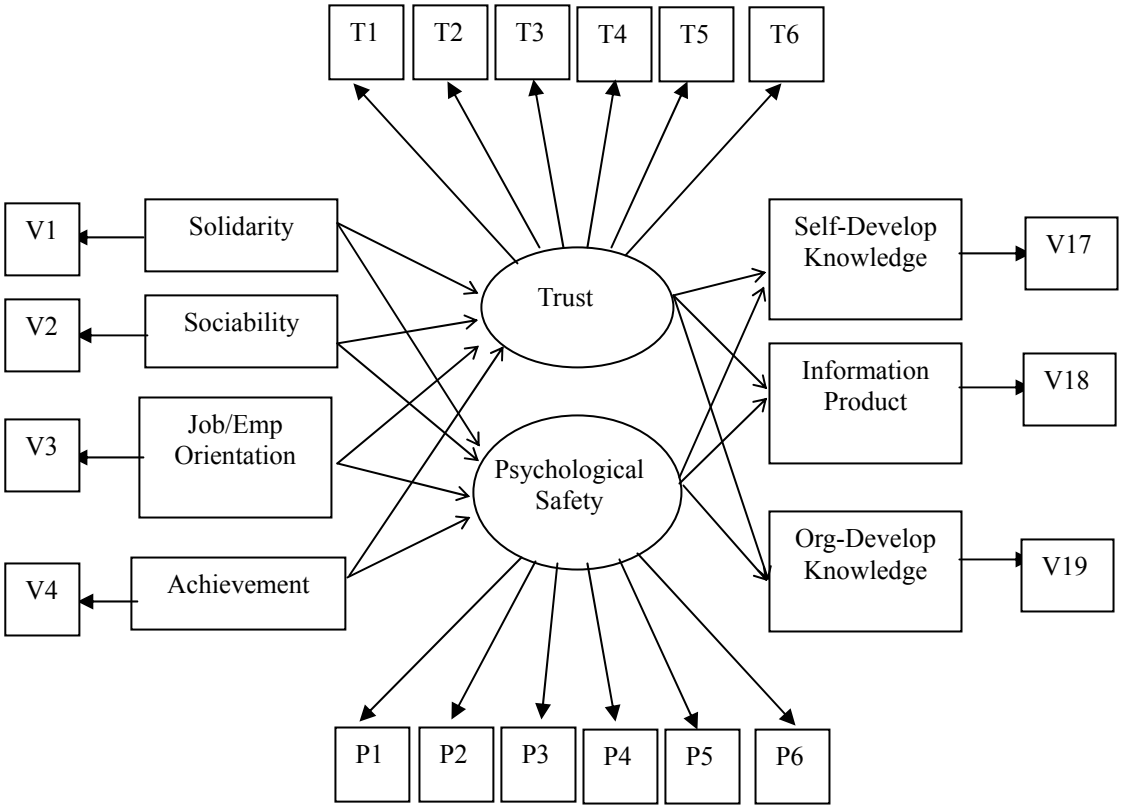

Figure 2. Research Model

The questionnaire contained multiple measurement items relating to each of the constructs in the research model. A pretest of 30 on-the-job students was carried out. Scales that had demonstrate good psychometric properties in previous studies were employed if it was possible.

Goffee and Jones [12] defined and developed measures for two dimensions of corporate culture that relate to producing and maintaining the well-being and the integrity of other coworkers as well as the organization at large- sociability and solidarity. ***Sociability*** is a measure of sincere friendliness among members of a community. ***Solidarity*** is a measure of a community's ability to pursue shared objectives quickly and effectively, regardless of social ties. Hofstede et al. [14] proposed a related dimension of ***employee-oriented*** (concern for people) ***versus job-oriented*** (concern for getting the job done). Scholz [20] identified a dimension of ***need for achievement***. Need for achievement focuses on the importance placed in the organization on advancement and prestige.

Solidarity is associated with unarticulated and unquestioned reciprocity [12]. Socialiability fosters teamwork and an environment in which individuals go beyond the requirements of their jobs to help their community succeed, Socialiability is also associated with openness, which should mean fewer tendencies for individuals to want to control information and use it to build their personal power bases.

The mediators, trust was measured use Robert et al. [19] organizational trust scale. Besides the scales developed by Edmondson [11] for psychological safety, We added additional items such as "It is embarrassing to provide immature thought or advice to fellow worker."

The dependent variable, views of the propensity to share information and knowledge, was measured in 3 scenarios: sharing information products, sharing self-developed knowledge, and sharing organization-developed knowledge. The three scenarios were modified from Jarvenpaa and Staples [21]. In each of the three scenarios, a contrastive vignette technique (CVT) was used to measure the propensity to share in each of these situations. CVT is an indirect-structured methodology developed by Burstin et al. [4] to measure social attitudes. Directly to assess attitude is difficult because of the confounding effect of social desirability perceptions. Specific context are presented to respondents in short vignettes or stories. Constant et al. [5] also used this technique in their study to assess the propensity to share.

Since propensity to share is an attitude about pro-social behavior (Constant et al. 1994), this research tries to assess a pro-social attitude and not simply reciprocity and self-interest. We use Jarvenpaa's [21] vignettes describing that the individual was asked for something from a person whom had previous refused to help. In this way, we were able to capture information about the pro-social attitude.

Table 1. Sample Demographics

		Count	Percentage %
Age	20 to 29	148	71.2
	30 to 39	59	28.4
	40 to 49	1	0.5
Gender	Male	124	59.6
	Female	84	40.4
Job Title	Employee	171	82.3
	Low level manager	32	15.4
	mid/high level manager	5	2.4
Industry	Manufacturing	121	58.2
	Service	41	19.7
	Finance	10	4.8
	Others	34	16.3
Number of employee in organization	Less than 100	68	32.69
	100-200	28	13.46
	200-300	23	11.06
	300-400	14	6.73
	400-500	2	0.96
	500-1000	20	9.62
	Over 1000	53	25.48
Time in present position	Less than 1 year	50	24.04
	1-2 years	49	23.56
	2-3	33	15.87
	3-4	19	9.13
	4-5	24	11.54
	Over 5 years	33	15.87

Table 2. The Correlation matrix, Reliability of the Constructs

	1	2	3	4	5	6	7	8	9
1. Org. Culture-Solidarity	1.00								
2. Org. Culture-Sociability	0.62	1.00							
3. Org. Culture-Employee v.s. Job orientation	0.10	-0.01	1.00						
4. Org. Culture- Need for achievement	0.16	0.18	-0.34	1.00					
5. Trust	0.57	0.44	0.07	0.17	1.00				
6. Psychological Safety	0.01	-0.05	-0.27	0.25	0.01	1.00			
7. Self Developed knowledge	0.26	0.19	-0.13	0.09	0.30	0.03	1.00		
8. Information product	0.20	0.06	-0.09	0.11	0.21	0.17	0.18	1.00	
9. Org. Developed knowledge	0.25	0.08	-0.03	0.03	0.25	0.02	0.27	0.50	1.00
No. Items	4	4	4	3	6	6	2	2	2
Mean	4.44	4.63	2.96	4.96	3.88	2.60	4.68	3.38	4.01
Std. Deviation	1.30	1.05	1.19	1.19	1.28	1.09	1.22	1.48	1.37
CronBach α	0.8340	0.7009	0.7050	0.7904	0.8905	0.7654	0.7569	0.7422	0.7050
N	208								

5. Analysis

The research depicted in Figure 2 was test using structural equation model. EQS statistical packages was used to simultaneously (a) create the theoretical latent variables from observed variables using confirmatory factor analysis and (b) generate estimates of the relationships among the constructs using path analysis. Testing a multivariate model using analysis of structural relationships offers a number of advantages. The researcher is able to estimate direct and indirect effects simultaneously. Also, each path coefficient is estimated after the effects of all other paths have been taken into account. Table 2 reports the number of items used to measurement each construct, the reliability of the items, and the correlation matrix among the constructs.

The test of the hypothesized model indicated an moderate fit of the model to the data: $\chi^2(141,N=208)= 230.965$, $p<0.001$. Non-significant chi-square indicates no significant difference between a hypothesized model and observed data. However, because the chi-square statistic is affected by sample size and some assumptions regarding the statistic may be invalid (Bentley, 1990), other indexes

5. Result

Goodness of fit were examined in this study. CFI=0.933; IFI=0.935; GFI=0.899; AGFI=0.864; Standardized RMSR=0.057; RMSEA=0.056. The standardized solution is depicted in Figure 3. Overall, the predictor variables accounted for 16.83%, 9.94%, and 11.08% of the variance in dependant variables respectively.

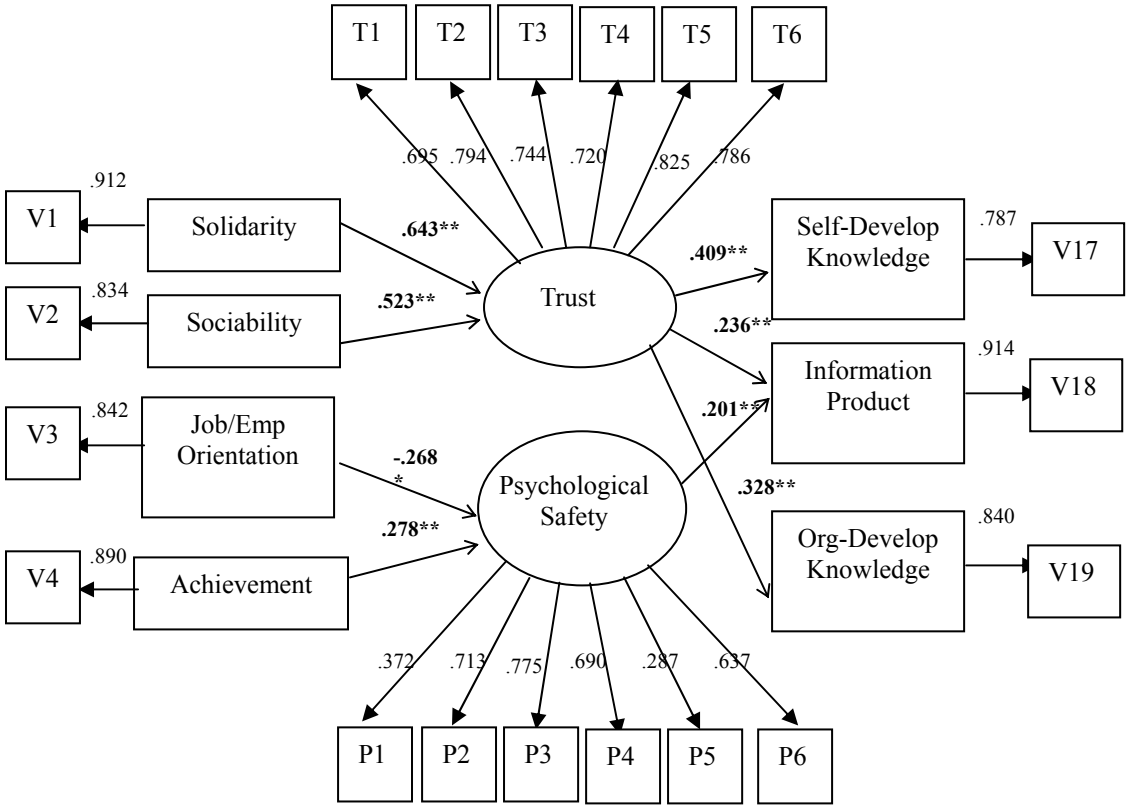

Figure 3. Standardized solution for propensity to knowledge sharing

Table 3. Variance explained in research model

Endogenous variable	Trust	Psychological Safety	Self-Develop Knowledge	Information Product	Org-Develop Knowledge
Variance explained (R^2)	69.20%	14.99%	16.83%	9.94%	11.08%

6. Discussion and Conclusion

Many scholars in knowledge management emphasize the employee control of information and knowledge and the importance of creating a situation that renders the employee willing to share voluntarily. Davenport [7] distinguished information sharing from involuntary information reporting. Information sharing is a "voluntary act of making information available to others…sharer could pass information on, but doesn't have to" [8]. Kim and Mauborgne [15] similarly argued that the firm is dependent on individuals' voluntary will to cooperate and share their expertise.

However, Greater sharing is not always reached. Even in work groups, individuals do not always volunteer information that would allow the group to work efficiently and effectively [13]. Concerns of psychological safety and trust lead people to hide or hoard information and knowledge. In the knowledge economy, knowledge is seen to be the source of power [8]. Information can be seen as an asset that is to be owned and controlled by individuals in order to elevate their own power and status relationships in organization [16]. An atmosphere lacking in trust leads to the withholding of information and can be harmful to knowledge sharing. Davenport [7] concluded " As people's jobs and roles become defined by the unique information they hold, they may be less likely to share that information- viewing it as a source of power and indispensability- rather than more so."

Organizational cultures have effect on individuals' beliefs of trust and psychological safety. Individuals that rated their organizations high on ***solidarity***- relationships based on common tasks, mutual interests, and shared goals, and ***sociability***- relationships based on friendliness, rated high on trust. A culture characterized by solidarity and sociability perhaps gives them a sense of confidence that their behavior would be fairly reciprocated with appropriate benefits or rewards by the organization.

On the other hand, psychological safety was significantly affected by ***employee-oriented*** (concern for people) ***versus job-oriented*** (concern for getting the job done) and ***need for achievement*** (importance placed in the organization on advancement and prestige)**.** Those that characterized their organizations with higher need for achievement and more employee-oriented felt psychological safer than those did not.

Propensity to share information and knowledge are positively associated with trust. Support was found for all three scenarios. As predicted, Employees who perceived higher trust in their organization were more likely to share information and knowledge with others.

Partial support was found for the psychological safety hypothesis. We had hypothesized that psychological safety would be positively associated with the propensity to share information and knowledge, but the result suggests only significant association in information sharing scenario.

This study tried to show how cultural and interpersonal factors-trust and psychological safety-influence information and knowledge sharing propensity. With the more uncertainty, more change, and less job security in future organizations, organization have to endeavor to build trust climate and provide more psychological safety for individual at work.

The samples of this study were gathered from college on-the-job students and the sampling method was convenient rather than randomized, the generalizability may be questioned. It is important to note that we used a cross-sectional design. Thus the result show in Figure 3 can only be considered suggestive of possible causal relationships until more appropriate longitudinal studies with random samples are conducted. Although we found several of the relationships in our study to be statistically significant, several were not. The lack of significance might be due to the methodological defects.

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