

The Role of Perceived Supervisor Support on the Link between Knowledge Sharing and Creative Problem Solving Capacity

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Abstract: Organizations must be aware of the importance of knowledge sharing and problem solving capacity of employees so as to gain and sustain competitive advantages in today's constantly changing business world. Knowledge sharing is crucial to the organization, as it is the main way of adapting new knowledge and transforming this new knowledge to new ideas, which can lead to an increase in problem solving capacity of employees. As supervisors act as agents of the organization, who have responsibility for directing and evaluating subordinates' performance, employees would view their supervisor's favorable or unfavorable orientation toward them as indicative of the organization's support. Supportive behaviors in organizations are also a key for cultivating the capacity to solve problems creatively at work. Without knowledge sharing and additional information, new ideas will resemble old ideas, resulting in less creativity in problem solving. For employees to share their knowledge with others, they should have the ability, the opportunity and the motivation to do so. Therefore this study attempts to address the role of perceived supervisor support in examining the role of leadership in facilitating external and internal knowledge sharing and enhancing the creative problem solving capacity of employees in organizations. In the current study, we investigated the role of internal and external knowledge sharing to advance our understanding of how internal and external knowledge sharing influence creative problem solving capacity and the moderating effect of perceived supervisor support on internal/external knowledge sharing – creative problem solving capacity relationship.

Keywords: Knowledge sharing, perceived supervisor support, creative problem solving capacity.

1. Introduction

Organizations must be aware of the importance of knowledge sharing and problem solving capacity of employees so as to gain and sustain competitive advantages in today's constantly changing business world. Number of researches on knowledge sharing, which is defined as activities of transferring or disseminating knowledge from one person or group to another (Lee 2001), has increased in a range of branches of organizational studies (Chowdhury 2005) because

of its potential to increase the capacity of an organization to innovate (Daellenbach and Davenport 2004) and to compete more effectively (Carmali et al, 2011). The movement of knowledge across individual and organizational boundaries into and from repositories and into organizational routines and practices depend on employees' knowledge sharing behavior. When knowledge sharing is limited across an organization, knowledge gaps will arise and these gaps are likely to produce less than desirable work outcomes (Bock et.al, 2005). Research has shown that knowledge sharing can positively affect both problem solving quality and speed (Lander and Lesser 1997). Knowledge sharing is crucial to the organization, as it is the main way of adapting new knowledge and transforming this new knowledge to new ideas, which can lead to an increase in problem solving capacity of employees. Although the individual knowledge is a vital and strategic organizational resource, the collaborative knowledge determines the sustainable competitiveness in an organization (Hoopes and Postrel, 1999).

Knowledge sharing is more than a d simple communication of information and representation of tasks and procedural knowledge. Knowledge sharing involves changes in cognitions and actions of both parties such as master-apprentice relationships. Employees have diverse reasons that support or dampen their inclination to share knowledge with others in the workplace (Carmeli et al 2011). For employees to share their knowledge with others, they should have the ability, the opportunity and the motivation to do so (Argote et. al, 2003). The existing literature identifies a number of organizational and contextual factors facilitating or inhibiting knowledge sharing. There are researches which suggest that top management plays a critical role in knowledge sharing (Bryant, 2003; Carmeli & Waldman, 2010). Researches evaluating the role that leaders play in knowledge sharing suggest that specific leadership styles such as transformational and empowering leadership result in more knowledge sharing (Carmeli et al., 2011; Srivastava,

Bartol & Locke, 2006). Moreover, managers may have an indirect impact on knowledge sharing through their influence on the norms and climate of the workgroup. In developing knowledge sharing mindsets managers can directly influence the employees through the commitment of resources and personnel, as well as by shaping organizational structures, processes and climate (Zhang&Faerman, 2007). The results of the researches concerning climate created by leaders revealed that high care climate which emphasize the importance of a highly involved leader, reward system linked to knowledge sharing, training on working in a team, social events in the company favored a 'high care' climate, is related with knowledge sharing in an organization (Zárraga and Bonanche, J, 2003). In an organization with a positive social interaction culture, both management and employees socialize and interact frequently with each other with little regard of their organizational status. Benefits of the perceptions about social interaction culture in an organization, with respect to knowledge sharing include employees who are more knowledgeable about their colleagues' potential for being knowledge sources, as well as employees who trust more colleagues and who are willing to share knowledge with them as a result (Connelly& Kelloway, 2003). However, it may not be possible for a single leader or a manager to be capable of performing all these tasks in a fast moving and dynamic environment. Therefore, it is quite likely that different leaders and managers have different areas of influence. For example, the influence of a positional leader (manager) will be very different from that of a top manager, yet each of these influences may be necessary (Zhang&Faerman 2007). Moreover, each will carry different weight at different stages in the process of leading and participating in knowledge sharing. In this sense it is necessary to emphasize the importance of perceived supervisor support (PSS). PSS is defined as general views that are developed by employees concerning the degree to which supervisors value their contributions and care about their well-

being (Kottke & Sharafinski, 1988). As supervisors act as agents of the organization, who have responsibility for directing and evaluating subordinates' performance, employees would view their supervisor's favorable or unfavorable orientation toward them as indicative of the organization's support (Eisenberger et al, 2002). Supportive behaviors in organizations are also a key for cultivating the capacity to solve problems creatively at work. Without knowledge sharing and additional information, new ideas will resemble old ideas, resulting in less creativity in problem solving. Therefore this study attempts to address the role of perceived supervisor support in examining the role of leadership in facilitating external and internal knowledge sharing and enhancing the creative problem solving capacity of employees in organizations.

2. THEORETICAL BACKGROUND AND HYPOTHESIS

2.1. Organizational Support Theory and Perceived Supervisors' Support

Perceptions about management support for knowledge sharing are potentially necessary for the creation and maintenance of a positive knowledge sharing culture in an organization. Therefore organizational support theory has received a great deal of attention in the recent literature. According to *Organizational Support Theory*, perceived organizational support would be affected by diverse aspects of an employee's treatment and would, in turn, influence the employee's inferences concerning the reasons for that treatment (Eisenberger et al., 1986). Employees believe that the organization has a general positive or negative orientation toward them that encompasses both recognition contributions and concern for their welfare. (Eisenberger et al, 2002). As it emphasized employees' beliefs that the organization values their contributions and well-being, there is a great deal of empirical evidence that suggests perceived organizational support is associated with many desirable outcomes such as turnover intention, performance, leadership behavior, job satisfaction and organizational commitment (Dawley et.al, 2008; Allen

et.al, 2007; Eisenberger & Shanock, 2006; Yuann et al., 2010). Perceived supervisor support is based on organizational support theory and is defined as the degree to which employees form impressions that their supervisors care about their well-being, value their contributions, and are generally supportive (Eisenberger et.al, 2002). Additionally, employees understand that supervisors' evaluations of subordinates are often conveyed to upper management and influence upper management's views, further contributing to employees' association of supervisor support with perceived organizational support. On the basis of organizational support theory, findings of a positive relationship between PSS and POS have usually been interpreted to indicate that PSS leads to POS (Rhoades et al., 2001; Yoon et al., 1996; Yoon & Lim, 1999). In organizations supervisors can be viewed as first-line representatives of the organization to the subordinate. Therefore, any types of values or standards held by the organization are thought to be maintained in the organization through supervisors. When considering this with respect to support, any perceptions of support from the organization to the subordinate begins first with the support given by the supervisor. Supervisors have this direct relationship on a subordinate's viewpoint of the organization and they also have a major influence on an individual's workplace experience. The perception of being valued and cared about by the organization would encourage the incorporation of organizational membership and role status into the employee's self-identity and thereby increase prosocial acts carried out on behalf of the organization (Eisenberger et.al, 1990). As a result knowledge sharing in an organization can be positively influenced.

2.2. Knowledge Sharing and Management's Support

Shared organizational knowledge can be either internal, which means it is based on tacit knowledge and expertise the employee already possesses, or it can be acquired externally and is

based on explicit knowledge. We can define knowledge sharing as a social interaction culture, involving the exchange of employee knowledge, experiences, and skills through the whole department or organization. This definition broadly includes both tacit and explicit knowledge (Lin, 2007). As knowledge is a strategic intangible asset in any organization, managers constantly seek ways to facilitate knowledge sharing among employees within and between units (Carmeli et al, 2011). This issue is crucial, because if knowledge is not shared within an organization and is not effectively exploited, then it can impair the organization's effectiveness. Therefore knowledge as an intangible asset has become more of an issue for growth and success in a knowledge-based economy (Carmeli et.al, 2013). Due to its strategic importance, knowledge sharing has become a growing research interest and therefore organizational and social reasons as well as individual factors that foster or inhibit knowledge sharing are broadly examined (Bock et.al., 2005).

It is also necessary to state that managers in organizations are in positions to enforce a context of cooperation and structure the process of knowledge sharing. It has been referred that transformational leadership can be a potential predictor of knowledge use in organizations. Research results on leaders' behavior and knowledge sharing indicate that the dimensions of transformational leadership are designed to directly influence knowledge use (e.g., intellectual stimulation) or to provide an influence by creating the conditions (e.g., commitment, trust) that would lead to such use (Barling & Kelloway, 2000). Perceptions about management's support for knowledge sharing are necessary for creation and maintenance of a positive knowledge sharing in an organization (Connelly& Kelloway, 2003; Martiny, 1998). In brief knowledge sharing has no real value to employees and organizations, unless those people, who are in need of useful knowledge receive it, accept it and also re-apply it. Management support will help the

employees in an organization to be motivated, encouraged and stimulated in order to purposefully capture, disseminate, transfer and apply existing and newly generated knowledge (Riege, 2005). In today's challenging world organizations always face with problems that have to be creatively and quickly solved by means of knowledge sharing.

2.3. Creative Problem Solving Capacity and Knowledge Sharing

Today's business view of problem solving is clearly stated as the process of coming up with creative solutions. In order to cope with societal and organizational trends, it is important to have effective and efficient ways to solve problems. Creative problem solving is the use of creative approaches to come up with the most effective solution possible to the problems (Tomas, 1999).

Creative problem solving can help uncover unexplored opportunities. Creative problem solving can illuminate potential business development opportunities and open up new ways for better using human and material resources. By exploring new opportunities through efficient and effective problem solving and by generating more possible solutions, higher quality solutions can be generated resulting in an increased competitive advantage. Managers can enhance creativity by providing structure, resources, and psychological conditions that help motivate employees to be involved in the creative process and exhibit creativity. Creativity requires time and effort, and managers can help employees by procuring essential resources such as materials, funding, and access to information and knowledge (Palmon and Illies, 2004). At this point the necessity of knowledge sharing in the organization emerges one more time. The availability of diverse information is necessary for creative problem solving, however it is not sufficient. The advantage of diverse knowledge can only be capitalized upon if an individual is able to recognize the importance of the information and integrate it into current knowledge in a new way and share it

within the organization (Baer, 2010). As it has been mentioned so far there are various researches about leadership behaviors, knowledge sharing, and problem solving capacity of employees in which the interrelations and causal factors are discussed. However little is known about the role and the support of supervisors and how they are perceived by employees during knowledge sharing and creative problem solving processes. Therefore this study aims to focus on the mediating role of perceived supervisor support while examining the link between knowledge sharing and problem solving capacity. For this purpose the following research model and hypotheses are formed.

Hypothesis 1: Knowledge sharing has a positive effect on employees' creative problem solving capacity.

Hypothesis 1a: Internal knowledge sharing has a positive effect on employees' creative problem solving capacity.

Hypothesis 1b: External knowledge sharing has a positive effect on employees' creative problem solving capacity.

Hypothesis 2: Perceived supervisor support moderates the relationship between knowledge sharing and creative problem solving capacity of employees

Hypothesis 2a: Perceived supervisor support moderates the relationship between internal knowledge sharing and creative problem solving capacity of employees

Hypothesis 2b: Perceived supervisor support moderates the relationship between external knowledge sharing and creative problem solving capacity of employees

3. RESEARCH METHOD

3.1. Proposed Model

The hypothesized model is shown in Figure 1.

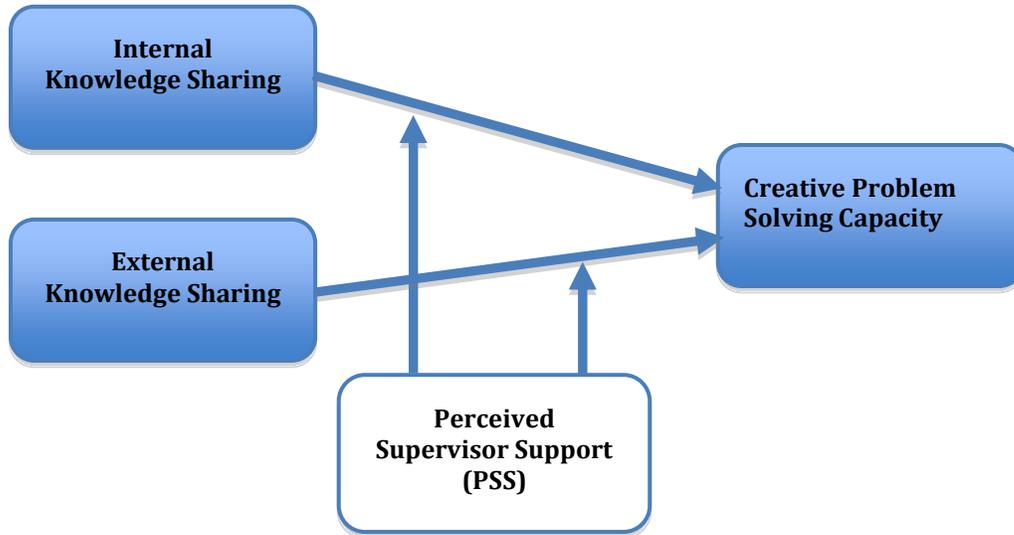


Figure 1. Research Model

3.2. Sampling Design

This study was carried out in the service sector in Istanbul. We have narrowed down the scope to four main industries, namely banking, insurance, tourism and logistics. Considering the number of employees in each industry of our study's scope, we have made quoted convenient sampling and distributed 200 questionnaires to each of them. A total of 800 questionnaires were provided for distribution, of which 421 (52.63 %) were returned. After deleting the semi-filled ones 376 (47.00 %) questionnaires were analyzed using SPSS statistical program.

Regarding socio-demographical aspects of the 376 employees of the service sector in Istanbul, sample consisted of 203 females (54.0 %) and 173 males (46.0 %). Respondents averaged 30.64 years of age (SD = 6.74) and 8.98 years of tenure (SD = 6.70). 45.2 percent of them had a university, 13.8 percent had a master and 0.8 percent a PhD degree.

3.3. Measures

In this study three measures were used in order to explore the link between knowledge sharing and creative problem solving capacity and the role of perceived supervisor support. An eight item scale that was developed by Jea Nam Lee was used to assess the extent to which employees exchange knowledge with colleagues both internally and externally (Lee, 2001). Respondents were asked to answer these eight items on a 5 point scale (ranging from 1 = not at all to 5 = to a large extent).

For assessing the creative problem solving capacity of employees, the measure including eight items, which is based on the Reiter-Palmon and Illies (2004) conceptualization and developed by Carmeli et al in 2013, was used in this study (Carmeli et al,2013). The measure for creative problem solving capacity is designed to assess four main dimensions, such as problem construction and identification, idea generation, idea evaluation, and idea implementation. For each dimension two items were used to measure the creative problem solving capacity of employees. Respondents were asked to answer eight items on a 5 point scale (ranging from 1 = not at all to 5 = to a large extent) so as to indicate the extent to which they possessed capabilities to solve problems creatively using the main dimensions of problem identification and construction, idea generation, idea evaluation, and implementation.

In this study the researchers used the 8-item short version of the Survey of Perceived Organizational Support (SPOS), which was developed by Eisenberger et al. (1986). The original version of SPOS is a 36-item questionnaire that measures employees' perceived support from their organizations. There is also a 16-item short form. In our study the shorter 8-item version of the scale is preferred for practical reasons. As Rhoades and Eisenberger (2002) suggested, although for practical reasons, many studies have used shortened versions of the original SPOS scale, this practice is not problematic. The validity of this scale has been substantiated by the research of Worley, Fuqua, Hellman (2009). To assess the employees' perception that their supervisor valued their contribution and cared about their well-being, we adapted the SPOS in the

same manner as Kottke and Sharafinski (1988), Rhoades et al. (2001), replacing the word organization with the term supervisor.

3.4. Control Variables

We controlled for respondent gender, age, tenure in the organization, and educational level to test whether they accounted for some of the variance in creative problem solving capacity.

3.5. Findings

χ^2 (the ratio between χ^2 and the degree of freedom = $\chi^2/\text{d.f.}$), GFI (goodness-of-fit index), AGFI (adjusted goodness-of-fit index), NFI (normalised fit index), CFI (an incremental fit index of improved NFI) and RMSEA (root-mean-square error of approximation) were used to test the goodness of fit of the proposed model. The literature suggests that $\chi^2/\text{d.f.}$ (**1.75**) should not exceed 3 ($\chi^2/\text{d.f.} = 1.75$) (Bentler & Bonett, 1980), that NFI (**0.90**) and CFI (**0.93**) should be greater than the recommended value of 0.9 or higher (Bentler & Bonett, 1980) and that RMSEA (**0.07**) should be less than 0.08 (Hair et al., 1992). Further, GFI (**0.86**) and AGFI (**0.83**) should be greater than the recommended value of 0.8 (Scott, 1994; Seyal, Rahman, & Rahim, 2002). All the fitness measures in the study fell into acceptable ranges and, consequently, the proposed model provided a suitable fit.

As can be seen from the Cronbach Alpha values reported in Table.1, variables of our study are found to be reliable. Bivariate correlations between the variables involved in this research are reported in Table.1, there exist a positive correlation between creative solving capacity and internal knowledge sharing / external knowledge sharing / perceived supervisor support ($r = 0.472 / 0.323 / 0.540$, $p < 0.001$)

Table 1. Means, standard deviations, Cronbach's alpha coefficients, and correlations among study variables

Variables	<i>M</i>	<i>SD</i>	1	2	3	4
1 Perceived Supervisor Support	3.93	.80	(.90)			
2 Internal Knowledge Sharing	3.97	.80	.445***	(.89)		
3 External Knowledge Sharing	3.27	1.04	.138**	.372***	(.91)	
4 Creative Problem Solving	3.83	.73	.540***	.472***	.323***	(.94)

Note: Values on the diagonal represent Cronbach's alpha coefficients.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed tests); $N = 376$.

To test our prediction that perceived supervisor support moderates the relationship between knowledge sharing (internal and external) and creative problem solving capacity, we conducted a hierarchical, moderated regression analysis on creative problem solving capacity, entering the predictor variables in the following order:

Internal Knowledge Sharing; (i) control variables – educational level and job tenure (Model 1); (ii) independent variable – internal knowledge sharing (Model 2) (iii) independent variable – perceived supervisor support (Model 4); and (iv) their two-way interaction term (Model 7). Prior to the analyses, all continuous measures were mean-centered (Aiken & West, 1991).

External Knowledge Sharing; (i) control variables – educational level and job tenure (Model 1); (ii) independent variable – external knowledge sharing (Model 3) (iii) independent variable – perceived supervisor support (Model 4); and (iv) their two-way interaction term (Model 9).

Internal Knowledge Sharing & External Knowledge Sharing; (i) control variables – educational level and job tenure (Model 1); (ii) independent variables – internal and external knowledge sharing (Model 5); and (ii) their two-way interaction terms (Model 11).

The results of the regression are provided in Table 2. As predicted,

(i) Internal knowledge sharing has a positive effect on employees' creative problem solving capacity ($\beta = .388$, $p < .01$) - Model 2. Hypothesis 1a is accepted.

(ii) External knowledge sharing has a positive effect on employees' creative problem solving capacity ($\beta = .262, p < .01$) – Model 3. Hypothesis 1b is accepted.

(iii) Knowledge sharing (internal/external) has a positive effect on employees' creative problem solving capacity ($\beta = .337 / .141, p < .01 / .05$) – Model 5. Hypothesis 1 is accepted.

Table 2. Summary of hierarchical regression analysis of variables predicting creative problem-solving capacity.

Variables	Model 1 β	Model 2 β	Model 3 B	Model 4 β	Model 5 B
Control variable					
Education	.317***	.270***	.264***	.240**	.248***
Job tenure	.372***	.311***	.368***	.301***	.317***
Main effect variables					
Int. Know. Sharing (IKS)		.388***			.327**
Ext. Know. Sharing (EKS)			.262***		.141**
Perc. Sup. Support (PSS)				.448***	
Interaction variables					
PSS*IKS					
PSS*EKS					
R ²	.248	.392	.314	0.438	0.409
ΔR^2	.248***	.144***	.066***	.190***	.017**

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2. Summary of hierarchical regression analysis of variables predicting creative problem-solving capacity (cont.)

Variables	Model 6 B	Model 7 β	Model 8 B	Model 9 β	Model 10 B	Model 11 β
Control variable						
Education	.229***	.236***	.201***	.202***	.202***	.208***
Job tenure	.279***	.277***	.301***	.300***	.285***	.282***
Main effect variables						
Int. Know. Sharing (IKS)	.245***	-.071			.184***	-.052
Ext. Know. Sharing (EKS)			.217***	-.088	.158***	-.093
Perc. Sup. Support (PSS)	.345***	.064	.425***	.295***	.354***	.039
Interaction variables						
PSS*IKS		.510***				.385***
PSS*EKS				.275***		.202***
R ²	.485	.492	.482	.486	.506	.516
ΔR^2	.047***	.007*	.044***	.004*	.024**	.010*

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

(iv) The 2-way interaction of perceived supervisor support and internal knowledge sharing on creative problem solving capacity was significant ($\beta = .510, p < .01$) - Model 7. Hypothesis 2a is accepted. To illustrate the nature of the 2-way interaction, we exhibit in Fig. 2 the predicted values of the dependent variable at one standard deviation above and one standard deviation below the means for the independent variables (Aiken & West, 1991).

(v) The 2-way interaction perceived supervisor support and external knowledge sharing on creative problem solving capacity was significant ($\beta = .275, p < .01$) – Model 9. Hypothesis 2b is accepted. The nature of the 2-way interaction is illustrated in Fig. 3.

(vi) The 2-way interaction perceived supervisor support and internal/external knowledge sharing on creative problem solving capacity was significant ($\beta = .385/.202, p < .01$) – Model 11. Hypothesis 2 is accepted.

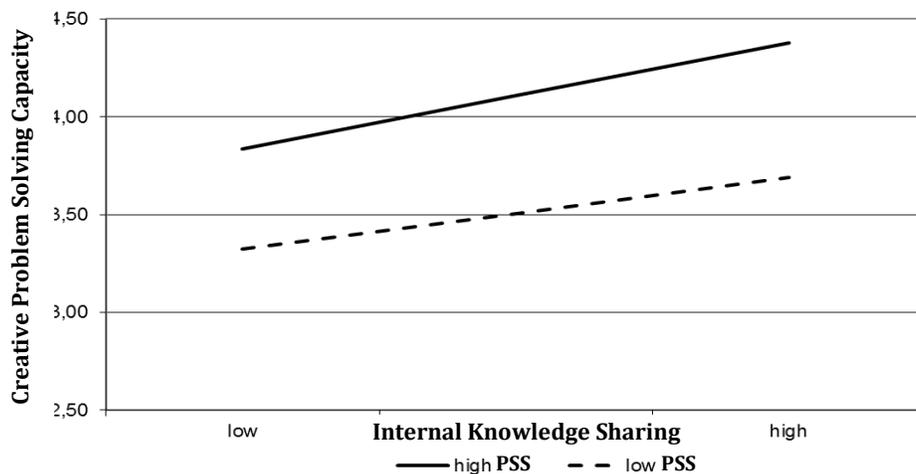


Figure.2. Moderating effect of perceived supervisor support (PSS) on internal knowledge sharing – creative problem solving capacity relation

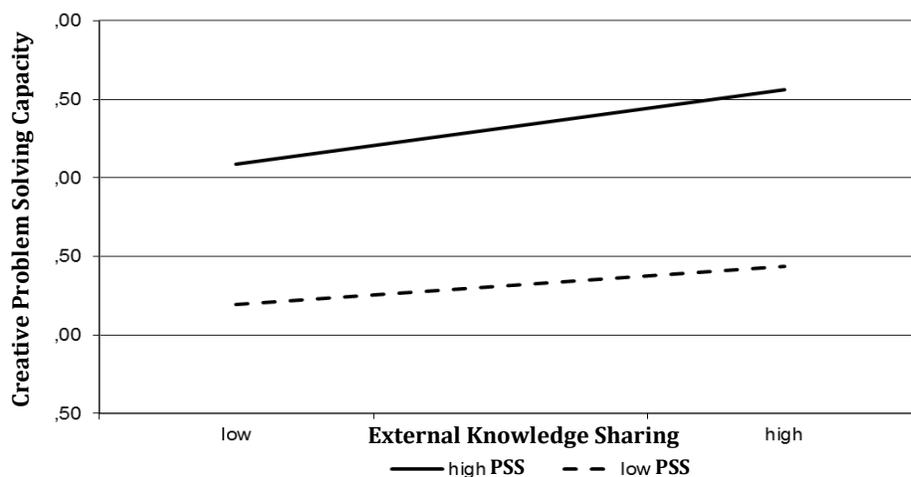


Figure.3. Moderating effect perceived supervisor support (PSS) on external knowledge sharing – creative problem solving capacity relation

This study showed that service sector employees’ internal and external knowledge sharing increase their creative problem solving capacity. Another finding is that perceived supervisor support has a positive impact on employees’ creative problem solving capacity and moderates the relationship between internal and external knowledge sharing and employees’ creative problem solving capacity.

4. Conclusion

This work contributes to researches on perceived supervisors’ support, knowledge sharing and creative problem solving in organizations. In this research we aimed to better understand the role of perceived supervisors’ support in promoting knowledge sharing within and outside the organization, and whether these processes help employees to increase their creative problem solving capacity. Our study showed us that perceived supervisors’ support plays directly an important role on the relationship between knowledge sharing and creative problem solving capacity. The results of this study provide support to existing literature that internal and external knowledge sharing is beneficial for increasing the creative problem solving capacity of employees. Our findings suggest that there is a positive relationship between knowledge sharing and creative problem solving capacity of employees. Knowledge should be shared both internally and externally so as to increase the creative problem solving capacity in an organization. When

internal and external knowledge sharing among employees are promoted, the cognitive capacities of employees and teams are expanded. In this way employees can come up with creative ideas to solve complex problems. More importantly, the results of this study indicate that supervisors' behaviors and support facilitate knowledge sharing and therefore increase creative problem solving capacity by providing a role model and shaping a culture that supports knowledge sharing. Employees, who are willingly and actively sharing internal and external knowledge, may perceive their supervisors' behavior as more supportive of knowledge sharing. Therefore, this study can provide some important implications for human resource management in the selection and development of supervisors especially in service industry. The limitation of this study is that the findings of this research are only generalizable to similar populations throughout Turkey i.e. the employees of enterprises operating in Turkish service sector. In order to generalize these findings to different populations similar research would need to be replicated in different organizational and industrial settings.

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