The effects of reward systems and organizational structure on tacit knowledge sharing

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ABSTRACT

Sharing of tacit knowledge is not without its own challenges. It proposed here that to encourage tacit knowledge sharing, Rewards Systems, and Organizational Structure must be present. This proposition tested among ICT employees in Amman, Jordan. The data collected were analyzed using Pearson correlations and multiple regression, and the results indicated that organizational structure significantly related to tacit knowledge sharing.

1. Introduction

Today, most economies depend mainly on knowledge, and for that reason, today’s economy known as the knowledge economy or “k-economy” (Alhawary & Al-Zegaier, 2009; Sunassee & Sewry 2003; Halawi, Aronson & McCarthy, 2005). The knowledge economy shared worldwide (Civi, 2000). It is characterized by rapid development and does not depend on traditional capital assets and is dynamic. (Halawi, 2005). As such, it is imperative for organizations to focus on investment in knowledge resources or intellectual capital (e.g. experience, skills, capabilities, patents). This is because of the importance of knowledge, which is an intangible asset for the organization and is more important than tangible assets such as land, equipment, and capital (Civi, 2000; Zaim et al., 2007; Alotaibi et al., 2014; Galletta et al., 2003).

2. Problem Statement

Previous studies have indicated there are many variables that could affect knowledge sharing (Mesmer-Magnus & DeChurch, 2009; King & Marks, 2008; Lin, 2007d; Hong et al., 2006; Willem & Scarbrough, 2006, 2007, 2009). However, most of these researches only studied knowledge sharing in general, and not focused on tacit knowledge sharing. In fact, as emphasized by Wang and Noe (2010) there is a need to study the individual and organizational factors that affect tacit knowledge sharing. Furthermore, several researchers have emphasized there are insufficient studies that employed a quantitative approach in investigating the success factors of tacit knowledge sharing (Wang & Noe, 2010; Jennex & Zakharova, 2005; De Long & Fahey, 2000; French, 1959) especially tacit knowledge sharing. In short, discussion on the importance of tacit knowledge sharing for organizational success has been plenty, but up to date, not many empirically evidence that shows factors that could contribute to tacit knowledge sharing.

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2.1 Research Questions

This study thus aims at answering the following questions:

1. Do the rewards systems relate to tacit knowledge sharing?
2. Does the organizational structure relate to tacit knowledge sharing?

2.2 Research Objectives

Generally, this research aims to investigate organizational factors that influence tacit knowledge sharing. Therefore, to answer the research questions posed above, the following research objectives were formulated:

1. To examine the relationship between rewards system, and tacit knowledge sharing.
2. To investigate the relationship between organizational structure, and tacit knowledge sharing.

2.3 Definition of Key Terms

In the following, we can show all the terms related to the context of research.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Definition of key terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct</td>
<td>Definition</td>
</tr>
<tr>
<td>Exchange of Tacit Knowledge</td>
<td>According to Bock and Kim (2001) “The culture of social interaction, it can interchange the experiences of the employee, skills, as well as the knowledge through the organization or even on the level of department”</td>
</tr>
<tr>
<td>Rewards System</td>
<td>“The extent to which employees believed that they will receive extrinsic incentives (such as salary, bonus, promotion, or job security) for sharing knowledge with colleagues” Davenport &amp; Prusak, 1998; Davenport et al., 1999.</td>
</tr>
<tr>
<td>Organizational Structure (Centralization)</td>
<td>“The locus of decision-making authority lying in the higher levels of a hierarchical relationship” (Yang &amp; Chen, 2007).</td>
</tr>
<tr>
<td>Organizational Structure (Formalization)</td>
<td>“The degree to which jobs within the organization are standardized and the extent to which employee behavior is guided by rules and procedures” (Yang &amp; Chen, 2007).</td>
</tr>
</tbody>
</table>

3. Literature review

3.1 Tacit knowledge sharing

Hansen and Haas (2002) also support the importance of tacit knowledge sharing. They revealed in their study that the quality of the employee work outcomes is improved with the sharing of tacit knowledge. It can also signal the clients about the competence of the company. The literature review of Hisyam Selamat and Choudrie (2004) described that without the augmentation from tacit knowledge, the presence of explicit knowledge is meaningless. Hence, the practical utilization of explicit knowledge is possible by sharing and utilizing tacit knowledge properly. Organizational factors are important in ensuring that tacit knowledge sharing can occur. Previous studies have emphasized that some of the organizational factors that affect knowledge sharing include management support (Seba et al., 2012; Han & Anantatmula; 2008; Connelly & Kelloway, 2003; Lin, 2007d), rewards system (Bock et al., 2005; Hansen, Nohria, & Tierney, 1999; Liebowitz, 2003; Nelson, Sabatier, & Nelson, 2006), and environment influence (Cabrera et al., 2006). Studies that focus on tacit knowledge sharing are not many; however, in this study the influence of four factors, specifically organizational climate, management support, rewards systems, and organizational structure (centralization and formalization) are examined.

3.2 Rewards system

Rewards system define as the degree to which one believes that one can have extrinsic incentives due to one’s knowledge sharing (Bock & Kim, 2001; Kuo & Young, 2008). Yao et al. (2007) suggested a lack of incentives. This lacking is considered a hindrance preventing cross-culture knowledge sharing. Certain incentives are recommended, namely company wide recognition and performance rewards to enable the facilitation of knowledge sharing by aiding the supportive culture (Hansen, Nohria, & Tierney, 1999; Liebowitz, 2003; Nelson, Sabatier, & Nelson, 2006). Although the incentives related to knowledge sharing provided positive contribution, however, a conclusion could not be drawn from its effects. Apart from this, rewards that relies on performance, namely increased salary, bonus and promotion seem empirically have positive influence on the knowledge contribution frequency made to KMSs (Kankanhalli et al., 2005). This result is supported by social exchange theory as well as social capital theories and proven true particularly when workers identify with the company, they work in. Similarly, employees with a likelihood of higher requirement of incentives to share and utilize knowledge are highly likely to consider KMS as advantageous (Cabrera et al., 2006; Kulkarni et al., 2006). In the context of Korea, Lee et al. (2006) it was revealed that employing performance-based systems in companies facilitated knowledge sharing.
Bock and Kim (2001), and Bock et al. (2005) revealed expected extrinsic rewards to negatively impact knowledge sharing attitudes. This result is inconsistent to the expected positive effect of rewards. Several studies even found no relationship between these two (Lin, 2007c, d). For instance, in Kuo et al. (2007), among product development team member, both outcome-based rewards and sufficient rewards for effort failed to support knowledge sharing. Research that depends on rewards for knowledge sharing highly likely to be considered for lack of internal validity. The reason is all measured variables in these studies gathered from a single survey, which makes it impossible to delete alternative causal directions for the observed relations. The results may be attributed to common method variables. In addition, the possibility of the presence of moderators at work, such as personal attitude or situational conditions suggested in the inconsistent findings. The ways that various rewards schemes, irrespective of having or not having a scheme, are influencing knowledge sharing, which is also of researchers’ area of investigation. Siemsen et al. (2007) found an interactive effect in incentives related to individual and group levels and a more significant positive relationship in individual based reward in comparison to group-based reward. The requirement of aligning incentives to knowledge sharing stressed by Weiss (1999). For majority of professional jobs like consultants/lawyers, the billable hour system, according to him, is works as a discouragement for knowledge sharing. Since clients are not willing to spend for services from which they do not receive advantages from, consultants/lawyers neglect the charges related to the time spent on knowledge sharing. Therefore, sharing knowledge not supported by the incentive, as compared to the service provided. As the field, studies cannot manipulate the reward systems, majority of studies carried out using student samples/experiments. The experiments more often use scenarios/narratives in an attempt to develop various incentive conditions.

3.3 Organizational Structure

According to Andrews and Kacmar (2001), the organizational structure often classified into two parts of centralization, and formalization. Formalization refers to the degree to which jobs within the organization are standardized and therefore the extent to which employee behavior guided by rules and procedures (Andrews & Kacmar, 2001; Robbins & Decenzo, 2001). In organizations with high formalization, there are explicit rules and procedures, which are likely to impede the spontaneity and adaptability needed for internal innovation (Constant et al., 1994). Standardization would eliminate the likelihood that members engage in alternative behaviors and take away the willingness for members to discussions on considering alternatives (Robbins & Decenzo, 2001). As tasks preprogramed by the organization, there is less need for organizational members to debate how work is completed. On the opposite side, according to Sivadas and Dwyer (2000), the low formalization inside the organizations can give to the members higher freedom in handling their tasks, moreover, to that we can notice the unstructured related to the job behaviors. Thus, the social interactions between the members of the organization can be more intensive and can be more frequent in accomplishing the duties. Therefore, the less formalized work process is probably going to stimulate the social interactions among organizational members. Centralization refers to the locus of decision-making authority lying within the higher levels of a hierarchical relationship (Robbins & Decenzo, 2001; Tsai, 2002). According to Sivadas and Dwyer (2000) the non-participatory environment is produced when all the tasks become in a centralization way, so in turn that will lead to reduce the involvement, communication, and commitment with project and duties between the participants. However, under the increasingly dynamic and competitive pressure, knowledge workers who have wider skills, expertise, and work responsibilities would wish greater autonomy and self-regulation. If individuals have freedom, independence, and discretion to work out what actions are required and the way best to execute them (Janz et al., 1997), they are going to accept the resulting decision because they need the chance to supply inputs and further communicate their ideas during the choice making process. The more autonomy organizational members possess, the more responsibility they are going to pity the work role and context.

3.4 Proposed research framework

It is widely mentioned that tacit knowledge sharing requires direct experience; the employees should interact frequently through discussion and brainstorming. For example, they can share and obtain tacit knowledge. In view of the fact that tacit knowledge embedded in the human brains, for example, when the employees work together in any organizational task, the tacit knowledge is shared. Fig. 1 shows the framework used in this study.
3.5 Hypothesis Development

3.5.1 Rewards System

The pattern of organization values shaping employee behaviors is indicated by the rewards system (Cabrera et al., 2006). Reward can be in the form of monetary or non-monetary incentives (Davenport, 1996; Davenport & Prusak, 1998). The introduction of reward systems to encourage employee knowledge sharing is not uncommon. One of the examples is Buckman Laboratories whereby its 100 top contributors to knowledge are widely recognized, followed by Lotus Development, a department within IBM, allocates 25% of customer support workers KPI for knowledge sharing exercises. Hence, this investigation will reveal that employee belief of receiving knowledge sharing rewards would develop greater positive willingness of tacit knowledge sharing. Thus, the following conclusion has drawn:

**H1**: There is a significant and positive relationship between rewards systems and tacit knowledge sharing.

3.5.2 Organizational Structure

Albeit a few researchers, for example, Kim and Lee (2006) broke down the effect of hierarchical structure and IT on workers’ view of knowledge imparting abilities in private industry organizations within South Korea. They dedicated their work to the importance of organizational structure concerning knowledge-sharing activities; there is still a notable lack of studies examining the impact from the structure of organization towards employee’s knowledge sharing. The stratified structure of most government associations gives a point of confinement to knowledge imparting exercises and communications among coworkers and their superiors. Additionally, centralization revealed to minimize the initiatives that a unit may take within organizational units (Tsai, 2002). Wagner (1994) recommends participatory management practices to balance the relationship between management and their subordinates and to facilitate information processing, decision-making, or problem solving. Two variables are used in the present study to consider the organizational structure dimension of tacit knowledge sharing: centralization, and formalization. Therefore, this study proposes the last two hypotheses as follows:

**H2**: There is a significant and positive relationship between organizational structure and tacit knowledge sharing.

4. Research Methodology

This study is conducted among technical staffs at ICT organization in Amman, Jordan. They are chosen for this research because, in the world of IT, those who are involved in the development of ICT need to share various knowledge in order to advance knowledge. There are about 170 ICT organizations located in this area (Information Technology Association, 2017) with approximately 5645 technical staffs, indicating a need for a sample size of 361 (Krejcie & Morgan, 1970). All of the ICT companies listed in the Information Technology Association website were contacted, but only 56 companies were willing to participate. However, these companies were not willing to disclose the number of their ICT staff. Hence, the distribution of the questionnaire was based on the number the company’s representatives were willing to distribute. As a result, 400 questionnaires were distributed to the selected respondents personally through each company’s representative. The questionnaires contain items measuring their tacit knowledge sharing behavior (Bock & Kim, 2001), rewards systems (Lin, 2007d) and organizational structure (Chen & Huang, 2007). The data collected were analyzed using Pearson correlation to determine the inter-correlations between variables. Hypotheses tested using multiple regression.

5. Research Findings

Out of 400 questionnaires distributed, 375 returned, yielding a return rate of 93.75%. However, only 365 were usable for further analysis. An analysis of the respondent profile showed that male participants made up of 70.7% of the total participants. Majority of the participants (54%) were married. Most of the participants (24.1%) had 6 to 10 years of working experience. Out of 365 participants, 34.2% have served their organization between 3 to 5 years and 32.9% have been in their present position between 3 to 5 years. Most of the respondents (36.2%) in this study were non-managerial personnel, and earned more than 600JD per month (33.2%). In terms of position, most of the respondents were Web designer (46.2%); Web developer (46.2%), database architect (33.3%), database designer (33.3%), project manager (30%) and quality engineer (30%). Table 2 presents the means, standard deviations, and Pearson correlations of variables for the 365 participants. The internal consistency reliabilities (Cronbach’s Alpha) of the research measures are report in parenthesis along the diagonal of the correlation table. In essence, the findings in Table 1 indicated that both independent variables are correlate to tacit knowledge sharing. Table 1 also indicated that rewards systems is correlate to organizational structure. However, the correlation is rather small; hence, the problem of multicollinearity may not exist.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Climate</td>
<td>365</td>
<td>3.78</td>
<td>.89</td>
<td>(.85)</td>
<td></td>
</tr>
<tr>
<td>Management Support</td>
<td>365</td>
<td>3.57</td>
<td>.68</td>
<td>.26**</td>
<td>.73</td>
</tr>
<tr>
<td>Tacit Knowledge Sharing</td>
<td>365</td>
<td>3.88</td>
<td>.857</td>
<td>365</td>
<td>3.88</td>
</tr>
</tbody>
</table>

Note: *Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed).
Table 3 shows the multiple regression results. Most importantly, the β-value of both variables, rewards systems and organizational structure, showed that H1 is not supported and H2 is supported.

Table 3
Regression Results of Independent Variables and Tacit Knowledge Sharing

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>t</th>
<th>Sig.</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Climate</td>
<td>.021</td>
<td>.455</td>
<td>.650</td>
<td>.81</td>
<td>1.24</td>
</tr>
<tr>
<td>Management Support</td>
<td>.224**</td>
<td>4.17</td>
<td>.000</td>
<td>.58</td>
<td>1.72</td>
</tr>
</tbody>
</table>

Note: *p < 0.05; **p < 0.01

6. Discussion and Conclusion

The research investigated the relationship between rewards systems and tacit knowledge sharing. As discussed in the literature review, the role of reward and reward system in relation to knowledge sharing is not consistent. Although, it was predicted that reward system is important for tacit knowledge sharing, the findings is consistent with the finding of Bock and Kim (2001) and Bock et al. (2005), where by the relationship between these two variables is not significant. This finding could be explained based on the sample of this study. The current study was conduct in Jordan, where most of the technical staff in ICT sector in this country received a relatively high salary. In such a condition, i.e. high salary, giving more money to reward tacit knowledge sharing, will not necessarily encourage more tacit knowledge sharing. About organizational structure, this study predicts that a more structured organization, especially in terms of being centralized and formalized (Chen & Yang, 2007; Lee & Choi, 2003), would encourage employees to share their tacit knowledge. Indeed, the findings showed that organizational structure do have an impact on knowledge sharing. These findings confirm previous discussion on the relationship between organizational structure and tacit knowledge sharing (Jennex & Zakharova, 2006; Seba et al., 2012). They are all deduced from their research that organizational structure is widely acknowledged to influence interpersonal and inter-departmental communication opportunities. They recognized that recently, both organizational culture and structure should not hinder knowledge sharing but instead the practices and applications of knowledge sharing should be modified to make them appropriate particular organizational situations. Furthermore, in an investigation performed by an independent sector, it was found that facility (e.g. office layout), and reporting are two aspects of organizational structure that were found to impact on the effectiveness of knowledge sharing. Researchers have shown that knowledge sharing may be facilitate by organizational structure (Lee et al., 2006, 2009; Lee & Choi, 2003). Creating a work environment that encourages interaction among employees is important for tacit knowledge sharing, and this can be achieved through the use of open workspace, use of fluid job descriptions and job rotation and inspiring communication across departments and informal meetings (Liebowitz, 2003; Liebowitz & Megbolugbe, 2003; Yang & Chen, 2007). Overall, the results of those studies suggest that organizations should create opportunities for employee interactions to occur and employees' rank, position within the organizational hierarchy, and seniority should be deemphasized to facilitate knowledge sharing.

In a bigger picture, the outcome of this study proposes that organizations ought to generate environments that motivate the interactions among employees. It is additionally suggested that workers' position within the organization ladder, and experience should utilize as an advantage to encourage tacit knowledge sharing.

References


**Appendix A: The Survey Instrument**

Please rate your personal knowledge or experience gained over time in a task: (1= strongly disagree; 5= strongly agree).

Knowing your interest consider key principles of your personal experience or even knowledge that you gained with the task over time.

Please read each descriptive statement carefully and indicate your agreement or disagreement with regard to **TACIT KNOWLEDGE SHARING**. Based on a 5-point scale given below, please circle the appropriate number.

<table>
<thead>
<tr>
<th>Rewards system</th>
<th>1=strongly disagree</th>
<th>2=disagree</th>
<th>3=neutral</th>
<th>4=agree</th>
<th>5=strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I share my job experience with my co-workers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usually I give what I knows when my co-workers request for anything.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Usually I give any ideas to my co-workers when they need it.</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>I tell co-workers about my tips on the jobs.</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>I often provide my personal working experience and Knowledge to our team members.</td>
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<td></td>
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</tr>
</tbody>
</table>
Listed below are a series of statements that represent possible PERCEPTIONS about ORGANIZATIONAL FACTORS THAT INFLUENCE ON TACIT KNOWLEDGE SHARING. With respect to your own perceptions about the organization you are currently working for, please indicate the degree of your agreement or disagreement with each statement. Based on a 5-point scale given below, please circle the appropriate number.

### Rewards system

<table>
<thead>
<tr>
<th>Statement</th>
<th>1=Strongly Disagree</th>
<th>2=Disagree</th>
<th>3=Neutral</th>
<th>4=Agree</th>
<th>5=Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My knowledge about the higher salary usually have to be shared with my colleagues.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My knowledge about the higher bonus usually have to be shared with my colleagues.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing my knowledge with colleagues should be rewarded with a promotion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharing my knowledge with colleagues should be rewarded with an increased job security.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Organizational structure

<table>
<thead>
<tr>
<th>Statement</th>
<th>1=Strongly Disagree</th>
<th>2=Disagree</th>
<th>3=Neutral</th>
<th>4=Agree</th>
<th>5=Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The firm has a large number of explicit work rules and policies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees follow the clearly defined task procedures made by the firm.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The firm relies on strict supervision in controlling day-to-day operation.</td>
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<td></td>
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</tr>
<tr>
<td>Employees have autonomy to do their work.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees participate in the decision-making process.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees search for problem solutions from many channels.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SECTION B Respondent profile

Please circle the number representing the most appropriate responses for you in respect of the following items:

#### A. DEMOGRAPHICS

1. Your age (years)
   - Under 20
   - 20-35
   - 36-50
   - 51-65
   - Over 65
   - Other (specify):

2. Your highest completed level of education
   - Certificate
   - College degree
   - Bachelor degree
   - Master degree
   - Doctorate
   - Other (specify):

3. Your gender
   - Male
   - Female

#### B. JOB INFORMATION

4. Your marital status
   - Married
   - Single
   - Widowed
   - Divorced or separated
   - Other (specify):

5. Number of years of working experience
   - Less than 1
   - 1-2
   - 3-5
   - 6-10
   - Over 10

6. Number of years worked in the company
   - Less than 1
   - 1-2
   - 3-5
   - 6-10
   - Over 10

- **Current job position:**

8. Number of years at current position
   - Less than 1
   - 1-2
   - 3-5
   - 6-10
   - Over 10

9. Job status
   - Top management
   - Middle management
   - First level supervisor
   - Nonmanagerial

10. Monthly income
    - 200JD-300JD
    - 301JD-400JD
    - 401JD-500JD
    - 501JD-600JD
    - Over 600JD

Thank you very much for your participation in this survey!

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