Organizational culture and knowledge sharing: critical success factors

Adel Ismail Al-Alawi, Nayla Yousif Al-Marzooqi and Yasmeen Fraidoon Mohammed

Abstract
Purpose – This research aims at investigating the role of certain factors in organizational culture in the success of knowledge sharing. Such factors as interpersonal trust, communication between staff, information systems, rewards and organization structure play an important role in defining the relationships between staff and in turn, providing possibilities to break obstacles to knowledge sharing. This research is intended to contribute in helping businesses understand the essential role of organizational culture in nourishing knowledge and spreading it in order to become leaders in utilizing their know-how and enjoying prosperity thereafter.

Design/methodology/approach – The conclusions of this study are based on interpreting the results of a survey and a number of interviews with staff from various organizations in Bahrain from the public and private sectors.

Findings – The research findings indicate that trust, communication, information systems, rewards and organization structure are positively related to knowledge sharing in organizations.

Research limitations/implications – The authors believe that further research is required to address governmental sector institutions, where organizational politics dominate a role in hoarding knowledge, through such methods as case studies and observation.

Originality/value – Previous research indicated that the Bahraini society is influenced by traditions of household, tribe, and especially religion of the Arab and Islamic world. These factors define people’s beliefs and behaviours, and thus exercise strong influence in the performance of business organizations. This study is motivated by the desire to explore the role of the national organizational culture on knowledge sharing, which may be different from previous studies conducted abroad.

Keywords Knowledge sharing, Trust, Communications, Organizational structures, Organizational culture

Paper type Research paper

Introduction

Background

Knowledge can be defined as a combination of experience, values, contextual information and expert insight that help evaluate and incorporate new experience and information (Gammelgaard and Ritter, 2000). Knowledge not only exists in documents and repositories, but it becomes embedded in people’s minds overtime and it is demonstrated through their actions and behaviours.

The growing use of knowledge in businesses contributed to the emergence of the theory of knowledge management (Aranda and Fernandez, 2002), which is currently one of the hottest topics in information technology and management literature.

The process of knowledge management involves several activities. The most commonly discussed activity in the process of knowledge management nowadays is knowledge transfer (knowledge sharing) (Ford, 2001).
Knowledge sharing is critical to a firm’s success (Davenport and Prusak, 1998) as it leads to faster knowledge deployment to portions of the organization that can greatly benefit from it (Syed-Ikhsan and Rowland, 2004).

**Scope of the study**

According to Gupta and Govindarajan (2000), organizational culture involves six major categories: information systems, people, process, leadership, reward system and organization structure. Each of these categories includes factors that descend from it. The work of Gupta and Govindarajan (2000) can better be understood through Figure 1.

As depicted in Figure 1, the researchers chose the factors that received strong emphasis from the literature in influencing the success of knowledge sharing. These factors are: trust, communication between staff, information systems, reward system and organization structure.

A study of the impact of all cultural categories and descending factors on the success of knowledge sharing is beyond the scope of this study due to time and resource constraints.

**Research hypothesis**

The following hypotheses will be tested:

- **H1.** There is a positive relationship between trust among coworkers and knowledge sharing in organizations.
- **H2.** There is a positive relationship between communication (interaction between staff) and knowledge sharing in organizations.

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**Figure 1** Organizational culture framework based on the work of Gupta and Govindarajan (2000)

![Organizational culture framework](image-url)

**Source:** Gupta and Govindarajan (2000)
H3. There is a positive relationship between the existence of knowledge sharing information systems/technology and knowledge sharing in organizations.

H4. There is a positive relationship between the existence of a reward system aligned with sharing knowledge and knowledge sharing in organizations.

H5. There is a positive relationship between certain aspects of organization structure (participative decision making, ease of information flow, teams and communities of practice) and knowledge sharing in organizations.

Review of the literature

Knowledge

According to Gammelgaard and Ritter (2000), knowledge can be defined as:

A fluid mix of framed experience, values, contextual information, and expert insight that provide a framework for evaluating and incorporating new experiences and information. Knowledge originates and prospers in the minds of experts. In organizations, it often becomes embedded not only in documents of repositories but also in organizational routine, process, practices, and norms.

Iske and Boersma (2005) articulated that knowledge results from the interaction of someone's insights (past experience, intuition and attitude), information and imagination (generating ideas and visualizing futures).

Knowledge must not be confused with data; data are raw facts, measurements and statistics. Moreover, knowledge is more complicated than information, information results from organizing data into meaningful forms. Knowledge is the result of interpreting information based on one's understanding, it is influenced by the personality of its holder since it is based on judgment and intuition; knowledge incorporates beliefs, attitude and behavior (Lee and Yang, 2000).

Knowledge as an organizational asset

While traditional economies used to rely on tangible assets such as land and capital, today's economy has evolved to treat knowledge as the primary production factor on which competitive advantage rests (Beijerse, 1999).

The most important characteristics of knowledge are uniqueness and originality. Once created, knowledge cannot be imitated or substituted, which makes it a key strategic asset resource to all businesses (Cabrera and Cabrera, 2002).

The importance of knowledge sharing for the success of knowledge management

While traditional knowledge management emphasis was placed on technology or the ability to build systems that efficiently process and leverage knowledge, the new model of knowledge management involves people and actions. It aims at creating an environment where power equals sharing knowledge rather than keeping it.

Knowledge transfer requires that an individual or a group cooperate with others to share knowledge and achieve mutual benefits (Syed-Ikhsan and Rowland, 2004). Al-Alawi (2005) further emphasized:

Knowledge management initiatives are weak in Bahraini organizations because they deployed technology and ignored cultural and organizational development issues that are seminal to any successful knowledge management project or system.

Organizational culture

Organizational culture can be defined as the shared, basic assumptions that an organization learnt while coping with the environment and solving problems of external adaptation and internal integration that are taught to new members as the correct way to solve those problems (Park et al., 2004).
Each organization has its unique culture, which develops overtime to reflect the organization’s identity in two dimensions: visible and invisible. The visible dimension of culture is reflected in the espoused values, philosophy and mission of the firm while the invisible dimension lies in the unspoken set of values that guide employees’ actions and perceptions in the organization (McDermott and O’Dell, 2001).

**Organizational culture and knowledge sharing: critical success factors**

**Trust.** Interpersonal trust or trust between co-workers is an extremely essential attribute in organizational culture, which is believed to have a strong influence over knowledge sharing. Interpersonal trust is known as an individual or a group’s expectancy in the reliability of the promise or actions of other individuals or groups (Politis, 2003). Team members require the existence of trust in order to respond openly and share their knowledge (Gruenfeld et al., 1996).

**Communication between staff.** Communication here refers to human interaction through oral conversations and the use of body language while communicating. Human interaction is greatly enhanced by the existence of social networking in the workplace. This form of communication is fundamental in encouraging knowledge transfer (Smith and Rupp, 2002).

**Information systems.** The term information systems is used to refer to an arrangement of people, data and processes that interact to support daily operations, problem solving and decision making in organizations (Whitten et al., 2001).

Organizations use different information systems to facilitate knowledge sharing through creating or acquiring knowledge repositories, where employees share expertise electronically and access to shared experience becomes possible to other staff (Connelly and Kelloway, 2003).

**Reward system.** According to Syed-Ikhsan and Rowland (2004), employees need a strong motivator in order to share knowledge. It is unrealistic to assume that all employees are willing to easily offer knowledge without considering what may be gained or lost as a result of this action.

Managers must consider the importance of collaboration and sharing best practices when designing reward systems. The idea is to introduce processes in which sharing information and horizontal communication are encouraged and indeed rewarded. Such rewards must be based on group rather than individual performance (Goh, 2002).

**Organization structure.** Traditional organization structures are usually characterized by complicated layers and lines of responsibility with certain details of information reporting procedures. Nowadays, most managers realize the disadvantages of bureaucratic structures in slowing the processes and raising constraints on information flow. In addition, such procedures often consume great amount of time in order for knowledge to filter through every level.

Syed-Ikhsan and Rowland (2004) argued that knowledge sharing prospers with structures that support ease of information flow with fewer boundaries between divisions.

**Methodology**

**Procedure**

The researchers chose to combine the quantitative research approach (through quantitative surveys) and the qualitative approach (through semi-structured interviews) in order to benefit from methodological triangulation and to develop a richer understanding of the research topic.

**Operationalization of variables**

The factors under study are classified into two main categories: independent and dependent variables. For each variable, indicators of existence in the work environment, which were extracted from the literature, will serve as the base for measuring its existence (see Table I).
For the purpose of this research, the independent variables are the organizational culture factors that influence the success of knowledge sharing. Consequently, knowledge sharing is the dependent variable to be measured.

Table I illustrates the independent and dependent variables as well as their corresponding indicators of existence.

### Design of the survey

The survey questions were designed to assess knowledge sharing according to respondents’ opinions and perceptions regarding each of the studied cultural factors. Knowledge sharing was measured by asking respondents to assess its level in their organizations into one of three categories: excellent, good or poor. Other questions concerning indicators of knowledge sharing were also included as a reliability measure. Independent variables were measured by obtaining the respondents’ extent of agreement with the existence of corresponding indicators in the work environment. The extent of agreement was measured through Likert scale assessment ranging from 5 = strongly agree to 1 = strongly disagree. Finally, an open-ended question was included to enable participants to express opinions regarding other significant cultural factors.

### Measurement models

The results of the study were computed and analyzed using Statistical Package for Social Sciences (SPSS) version 12. The Analysis of Variance (ANOVA) procedure with one factor
(one-way ANOVA) test was used to compare the means of the five factors between respondents who assessed knowledge sharing as excellent, good or poor.

**Distribution of the survey**

The researchers intended to cover organizations from the public and private sectors in the Kingdom of Bahrain. Not all ministries were chosen due to lack of English skills between some of its staff and due to lack of time.

A total of 300 questionnaires were distributed and 231 were returned, giving a response rate of 77 percent.

Public sector respondents were from Ministry of Commerce, Ministry of Housing, Ministry of Information, Ministry of Finance, University of Bahrain, Arabian Gulf University, The Crown Prince Office and Central Informatics Organization.

Private sector participants were from Investcorp, Ahli United Bank, Bahrain National Holding, Arab Company for Financial Services, BNP Paribas Bank, United Gulf Bank, Kuwait Finance House, Khaleej Finance & Investment, Zayani Motors, Advanced Bahrain Technology, Al Shamil Bank, BATELCO, Bahrain Islamic Bank, BAPCO, BALAXICO, BAAS and Bahrain Credit.

**Interviews**

Semi-structured interviews were used as a supporting tool to emphasize the basic data collected through surveys.

Several interviews were conducted with employees from different organizational levels with disregard to their job categories. In order to preserve anonymity, the responses are mentioned without reference to the names or organizations of the interviewees.

**Research credibility**

**Validity.** The validity of a measurement instrument can be measured by the degree to which the instrument measures accurately what it is supposed to measure (Leedy and Ormrod, 2001). In this study, the validity of the instruments was preserved as follows:

- **Designing the survey.** In order to preserve the accuracy of the measurement, each variable’s indicators of existence were extracted solely from the literature from the work of previous researchers such as Davenport and Prusak (1998), Nonaka and Takeuchi (1995), Al-Alawi (2005) and others. Moreover, wherever necessary, the variables were measured through direct questions. Comparing the direct-questions’ responses with the average responses helped verify the accuracy of the findings.

- **Pilot study.** Prior to administering the surveys, fourteen sample questionnaires were distributed to a group with the same characteristics of the target sample to ensure that suggested amendments were suitable. Additionally, the survey was tested by two experts in the field of research from University of Bahrain.

**Reliability.** Several checkpoints were included in the survey through replicating certain questions in alternative means. Examples to such check points can be seen in Table I. Further, the survey included a combination of positive and negative statements in order to encourage concentration and care while answering.

Although the interviews were semi-structured, using open-ended questions helped avoid bias.

**Results**

**Demographic characteristics of the research sample**

This section reports the demographic characteristics of the participants in the survey.

The largest group of the respondents was between the age of 25 and 35 (45 percent), nearly 22 percent were under 25 years and a share of 23 percent was between 36 and 45 years of
age. About 6 percent of the respondents were above 50 and only 4 percent were between the age of 46 and 50.

Approximately 34 percent of the respondents had a work experience ranging from one to five years. Nearly 22 percent had 11 to 20 years of experience, 17 percent had experience ranging from six to ten years, 16 percent have been working for over 20 years while 11 percent of the respondents started working less than a year ago.

About 42 percent of the participants were operational staff, 33 percent were middle level managers and 22 percent had other job categories (e.g. consultants, auditors, analysts and others). Nearly 3 percent of the respondents were senior/executive managers. Please refer to Table II.

Responses to knowledge sharing questions

Table III reveals the results of respondents’ assessment of knowledge sharing in their respective organizations. Around 66 percent thought that the level of knowledge sharing was good, 20 percent thought it was excellent while 14 percent believed knowledge sharing in their organizations was poor.

Techniques used to facilitate knowledge sharing

Table IV provides a summery of the responses to the techniques that most likely emphasize knowledge sharing in organizations (respondents were allowed to choose more than one option). Nearly 66 percent noted that collaboration and teamwork enhance knowledge

<table>
<thead>
<tr>
<th>Table II</th>
<th>Respondents’ demographic characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Results (%)</td>
</tr>
<tr>
<td>Sector</td>
<td></td>
</tr>
<tr>
<td>Public</td>
<td>38</td>
</tr>
<tr>
<td>Private</td>
<td>62</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>58</td>
</tr>
<tr>
<td>Females</td>
<td>42</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Less than 25</td>
<td>22</td>
</tr>
<tr>
<td>25-35</td>
<td>45</td>
</tr>
<tr>
<td>36-45</td>
<td>23</td>
</tr>
<tr>
<td>46-50</td>
<td>4</td>
</tr>
<tr>
<td>Above 50</td>
<td>6</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>9</td>
</tr>
<tr>
<td>Diploma</td>
<td>27</td>
</tr>
<tr>
<td>Bachelors</td>
<td>50</td>
</tr>
<tr>
<td>Masters</td>
<td>13</td>
</tr>
<tr>
<td>PhD</td>
<td>0.50</td>
</tr>
<tr>
<td>Position</td>
<td></td>
</tr>
<tr>
<td>Operational Staff</td>
<td>42</td>
</tr>
<tr>
<td>Middle-level managers</td>
<td>33</td>
</tr>
<tr>
<td>Executive managers</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>22</td>
</tr>
<tr>
<td>Work experience</td>
<td></td>
</tr>
<tr>
<td>Less than one year</td>
<td>11</td>
</tr>
<tr>
<td>1-5 years</td>
<td>34</td>
</tr>
<tr>
<td>6-10 years</td>
<td>17</td>
</tr>
<tr>
<td>11-20 years</td>
<td>22</td>
</tr>
<tr>
<td>More than 20 years</td>
<td>16</td>
</tr>
</tbody>
</table>
sharing. Training as well as formal and informal discussion scored almost similar results at about 50 percent and 48 percent respectively.

Focus groups and quality circles scored the lowest support at about 19 percent and 17 percent respectively.

**Respondents’ extent of agreement to the research related statements**

Table V provides a summary of the responses to questions relating to the variables under study.

The results and discussion of this research are presented in sub-sections each corresponding to one of the studied variables.

**Knowledge sharing.** Most of the respondents (81 percent) agreed that, by nature, they exchange experience and share knowledge with their peers while working, only 6 percent disagreed and about 13 percent were neutral.

Approximately 50 percent of the respondents agreed that the problem of hoarding knowledge does not exist and employees are willing to freely share their knowledge with their colleagues, about 32 percent disagreed and 18 percent were neutral.

**Trust.** Nearly 84 percent of the respondents agreed that they normally share their feelings and perceptions with their coworkers, 7 percent disagreed and about 9 percent abstained.

On the other hand, respondents had varying opinions regarding sharing personal information with their peers at work. Generally, around 47 percent agreed they should not share personal information; almost 29 percent disagreed while nearly 24 percent were indifferent.

Respondents were also asked whether knowledge-based trust (trust based on knowing coworkers personally) exists between employees. Approximately 65 percent agreed, around 20 percent disagreed and nearly 15 percent were apathetic. An interviewee further stressed:

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**Table III**  Respondents’ evaluation for the level of knowledge sharing in their organizations

<table>
<thead>
<tr>
<th>Knowledge sharing</th>
<th>Results (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>20</td>
</tr>
<tr>
<td>Good</td>
<td>66</td>
</tr>
<tr>
<td>Poor</td>
<td>14</td>
</tr>
</tbody>
</table>

**Table IV**  Techniques that emphasize knowledge sharing in organizations

<table>
<thead>
<tr>
<th>No.</th>
<th>Knowledge sharing technique</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Collaboration and teamwork</td>
<td>66.2</td>
</tr>
<tr>
<td>2</td>
<td>Training (either new or existing staff)</td>
<td>49.8</td>
</tr>
<tr>
<td>3</td>
<td>Formal and informal discussion</td>
<td>47.8</td>
</tr>
<tr>
<td>4</td>
<td>Utilizing knowledge sharing tools (e.g. e-mails, document management systems, groupware, intranet . . .)</td>
<td>45.3</td>
</tr>
<tr>
<td>5</td>
<td>Communication networks (internet, intranet and extranet)</td>
<td>44.3</td>
</tr>
<tr>
<td>6</td>
<td>Chatting during break time</td>
<td>38.8</td>
</tr>
<tr>
<td>7</td>
<td>Brainstorming</td>
<td>36.3</td>
</tr>
<tr>
<td>8</td>
<td>Workshops</td>
<td>34.8</td>
</tr>
<tr>
<td>9</td>
<td>Seminars</td>
<td>25.4</td>
</tr>
<tr>
<td>10</td>
<td>Conferences</td>
<td>21.9</td>
</tr>
<tr>
<td>11</td>
<td>Focus groups</td>
<td>18.9</td>
</tr>
<tr>
<td>12</td>
<td>Quality circles</td>
<td>17.4</td>
</tr>
</tbody>
</table>
The main cause of lack of trust in my organization is the shallow relationship between peers. If you don’t know people, you can’t trust them. However, rules to protect knowledge sharing exist and at least this improves the situation.

Respondents were also asked to directly assess trust in their organizations. Approximately 72 percent believed that a considerable level of trust exists; roughly 11 percent had an opposite opinion and 17 percent were indifferent.

In addition, one of the interviewees commented as follows:

It is hard to say that there is a high level of trust in my workplace. This is mainly because our organization hires many expatriates, who have a very low level of trust in citizens. As a result, they wouldn’t share the knowledge they have mainly from fear of losing their positions to Bahrainis.

**Communication.** The majority of the respondents (80 percent) agreed that they experience high level of face-to-face communication in the work environment. Only 10 percent disagreed and 10 percent were neutral.

Approximately 87 percent agreed that teamwork discussions and collaboration enhance communication, about 4 percent disagreed and 9 percent abstained.

**Information systems.** Respondents were asked whether their organizations provide information systems that facilitate knowledge sharing. Around 78 percent of the respondents agreed, 10 percent disagreed and about 12 percent were neutral.

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### Table V  Summery of responses to survey questions

<table>
<thead>
<tr>
<th>No.</th>
<th>Statement</th>
<th>Agree (%)</th>
<th>Neither (%)</th>
<th>Disagree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Certain tasks are accomplished through teamwork and collaboration between employees</td>
<td>88.3</td>
<td>5.7</td>
<td>6.1</td>
</tr>
<tr>
<td>2</td>
<td>Coworkers commonly exchange their knowledge and experience while working</td>
<td>81.3</td>
<td>12.6</td>
<td>6.1</td>
</tr>
<tr>
<td>3</td>
<td>The problem of people hoarding (keeping) knowledge does not exist and most staff members are willing to share their knowledge freely</td>
<td>49.8</td>
<td>17.9</td>
<td>32.3</td>
</tr>
<tr>
<td>4</td>
<td>I do not hesitate to share my feelings and perceptions with my fellow colleagues</td>
<td>84.3</td>
<td>8.7</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>I believe coworkers should not share personal information</td>
<td>47.1</td>
<td>24.2</td>
<td>28.6</td>
</tr>
<tr>
<td>6</td>
<td>Certain rules and procedures exist to protect the person sharing his/her knowledge against harmful intentions of others</td>
<td>58.7</td>
<td>21.3</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>Most of my colleagues are people whom I know well and thus are considered trustworthy</td>
<td>65.4</td>
<td>14.5</td>
<td>20.2</td>
</tr>
<tr>
<td>8</td>
<td>I have not been previously harmed as a result of sharing my knowledge with my coworkers</td>
<td>59</td>
<td>16.7</td>
<td>24.2</td>
</tr>
<tr>
<td>9</td>
<td>I believe people will not hesitate to take advantage of others’ knowledge and experience for personal gains</td>
<td>71.2</td>
<td>12.7</td>
<td>16.2</td>
</tr>
<tr>
<td>10</td>
<td>A considerable level of trust exists between coworkers in this organization</td>
<td>72.1</td>
<td>17.3</td>
<td>10.6</td>
</tr>
<tr>
<td>11</td>
<td>There is a high level of face-to-face interaction among colleagues in the workplace</td>
<td>79.5</td>
<td>10.9</td>
<td>9.6</td>
</tr>
<tr>
<td>12</td>
<td>Language is not a problem when communicating with other staff</td>
<td>72.6</td>
<td>7.4</td>
<td>20</td>
</tr>
<tr>
<td>13</td>
<td>Teamwork discussion and collaboration enhance communication between colleagues</td>
<td>87.4</td>
<td>9.1</td>
<td>3.5</td>
</tr>
<tr>
<td>14</td>
<td>The organization provides various tools and technologies to facilitate knowledge sharing and exchange (e.g. groupware, e-mail, intranet)</td>
<td>78.2</td>
<td>11.8</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>The technological tools available at the organization for sharing knowledge are effective</td>
<td>70.7</td>
<td>17</td>
<td>12.2</td>
</tr>
<tr>
<td>16</td>
<td>I feel comfortable using the knowledge sharing technologies available</td>
<td>81.3</td>
<td>12.2</td>
<td>6.5</td>
</tr>
<tr>
<td>17</td>
<td>Employees are rewarded for sharing their knowledge and experience with their colleagues</td>
<td>31.2</td>
<td>27.3</td>
<td>41.5</td>
</tr>
<tr>
<td>18</td>
<td>The knowledge sharing rewards available are effective in motivating staff to spread their knowledge</td>
<td>89.7</td>
<td>10.3</td>
<td>0</td>
</tr>
<tr>
<td>19</td>
<td>Employees are more likely rewarded on teamwork and collaboration rather than merely on individual performance</td>
<td>51.6</td>
<td>18.1</td>
<td>30.2</td>
</tr>
<tr>
<td>20</td>
<td>Workers actively participate in the process of decision-making</td>
<td>53.5</td>
<td>24.8</td>
<td>21.7</td>
</tr>
<tr>
<td>21</td>
<td>Information flows easily throughout the organization regardless of employee roles or other boundaries</td>
<td>52.6</td>
<td>20.9</td>
<td>26.5</td>
</tr>
<tr>
<td>22</td>
<td>Certain tasks require the formation of teams with members from different departments in order to be accomplished</td>
<td>84.7</td>
<td>8.3</td>
<td>7</td>
</tr>
</tbody>
</table>
When participants were asked if they felt comfortable while using knowledge sharing tools, nearly 81 percent agreed, close to 7 percent disagreed and about 12 percent were indifferent.

*Reward system.* Nearly 31 percent of the respondents agreed that their organizations reward employees who share their experience with colleagues. On the other hand, close to 42 percent disagreed and about 27 percent were neutral.

Those that agreed to the previous question were further asked to specify whether the knowledge sharing rewards were effective in reinforcing such behaviors. Almost 90 percent agreed and about 10 percent abstained.

*Organization structure.* Contrary to the researchers’ expectations, around 53 percent agreed that employees actively participate in the process of decision-making. Approximately 22 percent disagreed and 25 percent were neutral.

Further, nearly 53 percent agreed that information flows easily throughout organizational levels, 26 percent disagreed and 21 percent abstained.

Finally, 85 percent of the respondents agreed that certain tasks are accomplished through cross-functional teams. Only 7 percent disagreed and about 8 percent were neutral.

*Testing the hypotheses: one way ANOVA*

According to their knowledge sharing assessment, respondents were divided into three categories: excellent, good and poor. For each of the cultural factors, the mean scores for the three knowledge sharing categories were compared to observe whether the pattern of growth or decline in the means’ values, moving from the poor to the excellent knowledge sharing category, corresponds to a positive or negative relationship between each of the factors and knowledge sharing.

As Table VI depicts, the mean of trust for those who assessed knowledge sharing in their organizations as poor is the lowest (2.97). This value increases to 3.24 for those who...
believed knowledge sharing was good while it reaches its highest value at 3.43 for those who assessed knowledge sharing as excellent.

Apparently, the mean for trust increases among the categories of respondents as their knowledge sharing assessment improves. In other words, knowledge sharing is positively related to trust.

Therefore, the data confirm the first hypothesis:

H1. There is a positive relationship between trust among coworkers and knowledge sharing in organizations.

With respect to communication, the mean for those who fell in the poor knowledge sharing category is the lowest (3.55). As respondents’ knowledge sharing assessment improves, the mean increases to reach its highest level at 4.19 for those who thought knowledge sharing was excellent.

Hence, it is clear that as knowledge sharing improves communication between staff increases, which implies that communication and knowledge sharing are positively related. Therefore, according to the results, the second hypothesis is also confirmed:

H2. There is a positive relationship between communication (interaction between staff) and knowledge sharing in organizations.

This pattern can also be seen when exploring the mean for the rest of the factors.

With regards to information systems, the mean is 3.35 for the poor knowledge sharing category, 4.01 for the good category and 4.12 for the excellent category. Consequently, the results show that as knowledge sharing increases, the existence of information systems also increases. In other words, information systems and knowledge sharing are positively related. The third hypothesis is confirmed:

H3. There is a positive relationship between the existence of knowledge sharing information systems/technology and knowledge sharing in organizations.

Similarly, the lowest mean for the reward system is correspondent to the poor knowledge sharing category (1.43) while the highest mean corresponds to the excellent group (2.66). This implies that respondents’ knowledge sharing increases with the existence of reward systems aligned with knowledge sharing. Therefore, the fourth hypothesis is confirmed:

H4. There is a positive relationship between the existence of a reward system aligned with sharing and knowledge sharing in organizations.

Finally, in exploring the mean for organization structure, the poor knowledge sharing category scored the lowest value at 3.03. It increases slightly to reach 3.52 for the good category and it equals 3.91 for those who believed knowledge sharing in their organizations was excellent. Thus, one can conclude that knowledge sharing prospers with the presence of certain positive features in organization structure, which confirms the final hypothesis:

H5. There is a positive relationship between certain aspects of organization structure (participative decision making, ease of information flow, teams and communities of practice) and knowledge sharing in organizations.

The fifth column in Table VI reveals the standard deviation, which measures how well the mean represents the data. According to the table, the total standard deviation is 0.505 for
trust, 0.660 for communication, 0.781 for technology, 1.3 for the reward system and 0.736 for organization structure.

The sixth column illustrates the standard error, which is a measure of how representative a sample is likely to be of the population. According to the table, the total standard error scores are relatively small ranging from 0.034 for trust and 0.089 for the reward system.

Table VII illustrates the results of the ANOVA test. The fifth column depicts the F ratio, which measures the ratio between the variation explained by the model and the variation explained by unsystematic factors. According to Table VII, the results are significantly above one varying from 8.171 for trust to 14.244 for organization structure.

The final column labeled Sig. indicates the likelihood that the F ratio was obtained by chance. The sig. values appear below 0.001 for all the factors.

Discussion

The results of the study are discussed in two sections. The first section discusses generally the results of the frequency tests, while the second explains the results of the ANOVA test and hypotheses testing.

Frequency analysis

To begin with, a quick glance at the results of the study reveals generally positive results. With few exceptions, responses appeared to indicate the existence of the studied cultural factors at an acceptable level. Perhaps this finding is consistent with respondents’ overall knowledge sharing assessment, according to which 20 percent was excellent and 66 percent was at a good level (86 percent between excellent and good).

The overall trend in the results may be due to the nature of the research sample. That is, more than 50 percent of the participant organizations were from the private sector. Private sector organizations are known to be modernized and are characterized by flexible structures and advanced organizational cultures when compared to governmental sector organizations. Furthermore, participant governmental sector institutions were those generally known to have adopted modern managerial styles and undergone cultural transformations to become more flexible. Traditional governmental institutions known for excessive formality and bureaucracy in procedures were not included mainly due to the language barrier (lack of English skills between staff). Hence, these factors may have contributed in causing sampling bias.

Table VII The ANOVA test

<table>
<thead>
<tr>
<th></th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>3.908</td>
<td>2</td>
<td>1.954</td>
<td>8.171</td>
<td>0.000</td>
</tr>
<tr>
<td>Within groups</td>
<td>50.934</td>
<td>213</td>
<td>0.239</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54.842</td>
<td>215</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>8.231</td>
<td>2</td>
<td>4.116</td>
<td>10.237</td>
<td>0.000</td>
</tr>
<tr>
<td>Within groups</td>
<td>89.653</td>
<td>223</td>
<td>0.402</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>97.884</td>
<td>225</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>12.817</td>
<td>2</td>
<td>6.409</td>
<td>11.505</td>
<td>0.000</td>
</tr>
<tr>
<td>Within groups</td>
<td>123.654</td>
<td>222</td>
<td>0.557</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>136.471</td>
<td>224</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>13.786</td>
<td>2</td>
<td>6.893</td>
<td>14.244</td>
<td>0.000</td>
</tr>
<tr>
<td>Within groups</td>
<td>105.495</td>
<td>218</td>
<td>0.484</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>119.281</td>
<td>220</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reward system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>27.599</td>
<td>2</td>
<td>13.799</td>
<td>8.750</td>
<td>0.000</td>
</tr>
<tr>
<td>Within groups</td>
<td>334.338</td>
<td>212</td>
<td>1.577</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>361.937</td>
<td>214</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Knowledge sharing. The majority of the respondents seemed to agree that in their respective organizations, certain tasks are accomplished through teamwork (88 percent) and that coworkers exchange knowledge commonly while working (81 percent). However, when asked whether the problem of hoarding or keeping knowledge does not exist, only 50 percent agreed while the disagreement rate rose from 6 percent in the previous two questions to about 32 percent. Prior to distributing the survey, the researchers predicted that the three questions would yield comparable results as the three statements were believed to be indicators to the same variable (knowledge sharing). The disparity between the distributions of the responses to these three questions may be attributed to respondents’ inability to accurately assess their habits or acknowledge their own mistakes. Alternatively, it may be due to respondents’ belief that in spite of the fact that they normally share knowledge, lack of sharing still exists not in them personally, but rather in their coworkers or the organizational culture or due to other causes.

Trust. When respondents were asked if they share their feelings and perceptions with their colleagues, the majority (84 percent) agreed. On the other hand, only 29 percent believed that coworkers should share personal information with their colleagues. As explained earlier in the literature review, sharing feelings and perceptions and sharing personal information are both indicators of interpersonal trust. That is, generally when an average person trusts his/her colleagues and feels free to express feelings and perceptions, this person is also likely to express information relating to his/her life outside work. However, the disparity between the responses may signify that staff in organizations could be experiencing some form of conflict between freely expressing perceptions and being somewhat conservative. Another plausible explanation could be that respondents perceive a distinction between sharing general feelings and perceptions on work-related matters and sharing personal information. According to the latter explanation, respondents’ avoidance to share personal information should not negatively impact the knowledge sharing environment. This is because the type of knowledge desired to be shared between staff is work-related knowledge rather than personal knowledge.

In addition, past experience with trust was believed to have a strong impact on one’s ability to trust in the future. Bearing in mind that the majority of the respondents provided positive answers to knowledge sharing questions, only 59 percent of them agreed they have not been previously harmed as a result of sharing their knowledge. This might indicate that some individuals continue to share their knowledge even after having their trust betrayed. However, this attitude indeed varies from a person to another. For instance, one of the interviewees commented as follows:

... I used to be very transparent about everything I know. I learned now that information must take the official channel-flow for people to learn about it. This is because I lost my confidence in people around me when I knew they tend to misuse the information before it reaches the intended parties.

The above response clearly indicates that after being harmed as a result of sharing knowledge, this respondent lost trust in his/her coworkers, which reflected negatively on future knowledge sharing attitudes.

Further, the overall positive results of knowledge sharing were not disturbed by the fact that a large portion of the respondents (71 percent) believed that others will not hesitate to take advantage of their knowledge for personal gains.

The findings of the two questions above clearly indicate that some employees continue to share knowledge in spite of their unpleasant experience with trust and their belief that they might be taken advantage of.

Given the complexity of human beings’ nature, providing a valid explanation to certain behaviors can sometimes be difficult. While it may be possible to predict people’s reaction to certain situations, it is unrealistic to assume that all individuals will behave similarly in those situations. According to one of the participants:
Although organizational culture is very important to encourage smooth knowledge transfer, it [knowledge sharing] ultimately depends on employees’ personalities and their ethics. That is, if someone is objective and acknowledges that knowledge sharing is fundamental to the success of the business, this person will continue to share his/her knowledge even with the absence of proper rewards, technology or the other factors and vice versa.

It is also possible to argue that the interference of other factors such as the characteristics of employees’ personalities such as confidence, openness and sociability may cause them to share their knowledge more often as opposed to their conservative and quite colleagues in spite of the absence of important organizational culture factors. However, more research is required to clarify this phenomenon.

**Communication.** The majority of the respondents acknowledged high level of face-to-face interaction with their colleagues. Perhaps the best way to enhance communication is through emphasizing open-disk design in the workplace. According to one of the interviewees:

> It [open-disk policy] facilitates communication and eases it. Especially when you can turn your head or stand up to see a colleague behind his disk to tell him about something instead of picking up the phone trying to reach him or take the hassle to drop by at his office to tell him about anything. It also eases up communication from a person to a mass, like from the head of a department to the staff.

Another participant highlighted an additional advantage of open-disks design:

Open disks raise a sense of equality between staff. Separate offices sometimes encourage sensitivity, especially as some of them [staff] start comparing their own offices to their peers’ offices in terms of the size and other features. This situation often increases competition between colleagues and can ultimately impair knowledge sharing.

Nevertheless, emphasis on open disks should not be on the expense of employees’ need for sufficient privacy and quietness in order to concentrate while working, especially when handling sensitive tasks that require confidentiality.

Also, despite the important role of communication between colleagues, excessive interaction may cause some staff to waist time socializing with others instead of completing their tasks, which can sometimes harm professionalism and ethics. The following response further emphasizes this point:

> Forming strong bonds with your colleagues at work complicates situations sometimes and makes it difficult to act professionally. For instance, one gets confused when he/she must make an important decision that is likely to harm his/her colleague.

This is especially true in certain professions such as human resources and internal audit, whereas such staff sometimes prefer to maintain a certain distance from other employees to avoid embarrassing situations.

**Information systems.** The fact that 78 percent of the participants agreed that their respective organizations provide various knowledge sharing tools implies reasonable awareness by management of the importance of spreading knowledge.

However, one of the respondents introduced an interesting point:

> … my communication of information via e-mail or circulars is usually not taken very appreciatively by my coworkers because they think it is my personal initiative due to lack of management support and praise to that initiative.

“The most important characteristics of knowledge are uniqueness and originality.”
According to this response, introducing knowledge sharing information systems merely is not enough to insure effective knowledge transfer. It is indeed vital that such initiative be properly supported and continuously reinforced by top management in order to convey the importance of such tools to the success of knowledge transfer.

**Reward system.** Unfortunately, when employees were asked whether knowledge sharing was rewarded, only 31 percent agreed. The disagreement was higher at about 42 percent with a high abstention rate of 27 percent. Although abstention indicates neutrality, it logically tends to be closer to disagreement than to agreement. Hence, the results of this question appear to be rather negative.

Generally, employees in any organization tend to perceive rewards as measures for behaviors preferred and appreciated by top management. As expounded earlier, knowledge sharing can be an internal characteristic related to one’s personality. However, it is not sufficient to rely on the good intentions of staff to spread their knowledge without reinforcing such behaviors because unrewarded behaviors usually end up fading away due to lack of praise and appreciation.

The following statement by a participant further demonstrates the importance of rewards:

> ... if that [knowledge sharing] was connected to any sort of reward, I will make sure I do it [knowledge sharing] with the highest level of professionalism and I will insure that this communication concludes successfully.

Furthermore, in order for rewards to be successful in motivating staff to share their knowledge, these rewards must be properly designed to fit employees’ needs and perceptions. This is because, as highlighted earlier, ineffective or insufficient rewards can fail to reinforce knowledge sharing behaviors.

When asked whether financial or non-financial rewards are likely to encourage knowledge sharing, one of the interviewees answered as follows:

> Non-financial, recognition would be the strongest motivational force for me to share my knowledge with my colleagues.

Conversely, another participant explained:

> Financial rewards are more effective as they impact one’s life outside work. Although it feels nice to be recognized and appreciated by others, our pay check is what we ultimately seek. Also, financial rewards are more visible and imply a stronger sense of appreciation to staff.

Obviously, employees’ perceptions to rewards vary according to their backgrounds, previous experiences and objectives. Consequently, the best solution would be customizing the reward system to fit employees’ needs and suit their objectives.

**Testing the research hypotheses**

As highlighted in the findings section, the mean scores for trust, communication, information systems, rewards and organization structure exhibited an increase as respondents’ assessment for knowledge sharing improved. Therefore, one can imply that all of these factors are directly proportional to knowledge sharing in the sense that when each increases, knowledge sharing also increases.

Large values of standard deviation compared to the mean imply inaccurate representation of the data because the data points are distant from the mean and vice versa (Field, 2000). The descriptives table of the ANOVA test revealed small standard deviation values ranging from 0.505 for trust and 0.781 for information systems. An exception would be the reward system, for which the standard deviation reached 1.3. Therefore, it is possible to rely generally on the mean as an accurate representation of the data.

Small standard error values compared to the sample mean indicate that most sample means are similar to the population mean and hence, the sample is likely to be an accurate reflection of the population and the opposite is true (Field, 2000). The results revealed small
standard error values (ranging from 0.034 for trust and 0.089 for reward system). Thus, the sample can be considered representative of the whole population.

Furthermore, the F ratio is calculated by dividing the variance of the data explained through the model (the hypotheses) by the variance of the data unexplained through the model (Field, 2000). Thus, if the F ratio is more than one, this is an indication that the variance explained by the model is greater than that of the unexplained variance. The F ratio results were high ranging from 8.171 to 14.244 for trust and organization structure respectively. This indicates that the variance explained by the model is significantly higher than the unexplained variance, which further enhances the reliability of the results.

In addition, since the sig. results are all 0.000, the probability of obtaining the F ratio by chance is minimized.

As explained earlier, the results overwhelmingly confirmed all the hypotheses with the ability to draw valid conclusions on the whole population. The outstanding results may be justified by the following reasons:

- The cultural factors (independent variables) were carefully chosen after reading the literature and according to the results of previous studies.
- The probability of sampling bias in spite of the standard error results, as previously mentioned.
- Neglecting the impact of subcultures, which means that, by coincidence, the questionnaires might have been distributed to staff from departments characterized by high morale and motivation, unlike other departments in the same organizations.
- The interference of such factors as the reactivity or the Howthorne effect; when respondents change their opinions and actions while participating in an experiment due to excitement or as a result of receiving attention (Leedy and Ormrod, 2001). Respondents might have had a tendency to provide positive answers due to their enthusiasm for the research and possibly because they internally believed that such factors must be present in order to improve knowledge sharing.

Recommendations

The results of this study have many implications for staff and managers in organizations. The relationship that proved to exist between knowledge sharing and trust, communication, information systems, reward system and organization structure indicates the importance of such factors as prerequisites for the success of knowledge sharing. Such factors must be strongly emphasized in organizational cultures. The survey respondents suggested several ways to achieve this.

- Reinforcing trust between coworkers through arranging social events and outdoor discussions occasionally. Such events could play an important role in helping staff overcome work stress through building informal friendships.
- Improving office design in some organizations to allow for higher interaction and communication between staff. According to an interviewee: “Open disk policy is effective in simplifying communication between staff, especially because generally people in Bahrain don’t prefer to move a lot [between separate offices] while working.”
- Practicing job rotation to facilitate knowledge transfer and movement throughout the organization and increase motivation.
- Accomplishing a strong relationship between top management and employees along with expressing the importance of knowledge sharing for the success of the organization as a whole.
- Providing sufficient information systems to share knowledge in order to facilitate knowledge diffusion among departments.
- Providing effective rewards to reinforce knowledge sharing behaviors bearing in mind the variations in employees’ needs and objectives.
Increasing the level of participation in decision making and reducing the boundaries between organizational levels to enable easier information flow vertically. According to an interviewee: "Hierarchal structures hinder timely communication and decelerate knowledge sharing. Flat structure is the best facility for knowledge sharing."

Managers must not limit their attention to the above factors only. It is highly recommended that managers bear in mind the existence of factors outside the scope of this study such as ethics and loyalty, which may impact knowledge sharing.

Also, it is important to recognize the uniqueness of every organization's culture in removing obstacles to knowledge sharing. Hence, the best option for a given organization would be to investigate potential problems that may exist in its own culture and accordingly suggest the proper solution.

Limitations and further research

Future researchers must benefit from the limitations of this research. The following is recommended:

- Testing the role of other organizational culture factors (dimensions).
- Incorporating qualitative research methods to a deeper extent; methods such as qualitative observations and longitudinal studies are highly recommended.
- Addressing a more representative sample; further research must address more governmental sector institutions where organizational politics dominates a role in hoarding knowledge. As explained in the methods and discussion sections, the language barrier in such organizations could be overcome through presenting a translated version of the survey. Unfortunately, this solution was not feasible in this research due to the time constraint. Alternatively, future researchers could dedicate a separate study to highly politicized institutions to allow deeper investigation of knowledge transfer barriers and to arrive at effective recommendations to solve this problem.
- Examining in depth more aspects of organization structure and rewards to arrive at a richer understanding of the role of organizational culture in the success of knowledge sharing.

Generalization

Even though this paper's focus was on Bahraini organizations, the results could be easily generalized to other Gulf States (Qatar, Saudi Arabia, Kuwait, United Arab Emirates and Oman). In spite of physical borders, such countries share with Bahrain the same culture, religion and traditions. The results may also be generalized to other countries in the Arab world, which are also known to share similar beliefs and traditions.

Indeed, many studies previously conducted examined the impact of national culture in the Arab world in general on certain organizational issues such as effective organizational change, management and leadership (Wilkins, 2001; Yusuf, 1998; Ali, 1996). Such studies focused on countries in the Arab world in general based on the fact that such countries share the same culture, beliefs and traditions.

Overall, since the results of the study confirmed many of the assumptions and findings of previous research conducted abroad, this study can be replicated on countries outside the Arab world to yield comparable results. This is especially true since nowadays, globalization plays a vital role in enforcing global professional standards that help gradually eliminate disparities between organizational cultures in different countries.
Conclusion

This research focused on the role of certain factors in organizational culture in the success of knowledge sharing between staff.

The study was conducted in three different phases: the first phase was concerned with identifying the major aspects of knowledge sharing in organizations and the fundamental organizational culture factors that impacted knowledge sharing.

During the second phase, the researchers used the knowledge extracted from the literature to formulate the research instruments: surveys and semi-structured interviews. The instruments were exploited to gather necessary data, which was analyzed to reach the research findings.

In the third phase, the findings were discussed to arrive at relevant implications concerning knowledge sharing in organizations. A final confirmatory test was conducted by presenting the data to an expert in the field of statistics and quantity management.

In order to enhance the validity and reliability of the research, two different research methods were used to collect data. Quantitative survey was used to gather basic data while qualitative approach was also used in the form of semi-structured interpretive interviews and a confirmatory interview to collect supporting data.

Trust, communication, reward system and organization structure all received strong literature support. However, information systems/technology received mixed support. Therefore obviously further research is required in order to validate the findings of this study.

References


Further reading


About the authors

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Prior to completing her academic studies, Nayla was a sole representative of her school in significant events organized by different authorities. She was awarded as one of the best ten readers among public school students in 1998. Her outstanding communication and speech skills qualified her to participate in the National Millennium Speech Contest, in which participation was restricted to outstanding speech deliverers or previous winners. She also won the award of effective participation and presentation in solving the problem of the millennium bug (Y2K) in 1999. Nayla also played a key role in founding the IT Society in University of Bahrain and effectively participated in boosting the performance of the newly established Society. Due to her outstanding academic performance, Nayla was chosen to deliver the speech of excellent students to HH the Prime Minister and was awarded his certificate of excellence in 2000.

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