THE ROLE OF KNOWLEDGE MANAGEMENT INFRASTRUCTURE IN ENHANCING JOB SATISFACTION: A DEVELOPING COUNTRY PERSPECTIVE

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ABSTRACT

Aim/Purpose This research aims to examine the role of Knowledge Management (KM) infrastructure (technological, structural, and cultural) in enhancing job satisfaction in the context of developing countries, as exemplified by Jordan.

Background Despite the presence of job satisfaction studies conducted in educational institutions across the world, knowledge management issues have not been taken into consideration as influencing factors.

Methodology A total of 168 responses to a questionnaire survey were collected from the academic staff at Zarqa University in Jordan. Multiple regression analysis was conducted to test the research hypotheses.

Findings Results of the current study revealed that there are significant positive impacts of technological and cultural KM infrastructures on job satisfaction, whereas structural KM infrastructure does not have a significant impact on job satisfaction. Also, the results revealed significant gender difference in perception of the impact of knowledge management infrastructure on job satisfaction. On the other hand, an ANOVA test found no significant difference in the impact of knowledge management infrastructure on job satisfaction among groups by age, experience, and academic rank.
Role of Knowledge Management Infrastructure in Enhancing Job Satisfaction

**Contribution**
This study offers deeper understanding about the role that knowledge management infrastructure plays in enhancing job satisfaction from a developing country perspective. The proposed model is tested the first time in Jordan.

**Recommendation for Researchers**
Our findings can be used as a base of knowledge for further studies about knowledge management infrastructure and job satisfaction following different criteria and research procedures.

**Future Research**
The current model can be applied and assessed further in other sectors, including public universities and other services sectors in developed and developing countries.

**Keywords**
knowledge management infrastructure, knowledge management, job performance, Jordan

**INTRODUCTION**

Universities aim to build a world where leaders are prepared to lead the nation with social justice. In order to do this, universities need to create and accumulate the appropriate knowledge. Many factors should be taken into account when it comes to the welfare of human resources in achieving the mission and vision of universities. One particular factor is job satisfaction (Masum, Azad, & Beh, 2015). University academics work in a complex and increasingly demanding environment where they are assigned different tasks such as teaching, following up with their students’ projects, researching and so on. In this environment, many factors can increase or decrease the job satisfaction of these individuals (Yilmaz, Çelebi, & Çakmak, 2014). Management should focus on job satisfaction given the important role it plays in determining the behavior of employees, defining their individual performance, and in turn their performance. Therefore, it is clear that job satisfaction is an indispensable factor of organizational behavior that should be understood and monitored, and organizations should continuously strive to improve it in order to avoid the catastrophic repercussions of dissatisfaction (Bakotić, 2012; Obeidat, Al-Suradi, & Tarhini, 2016).

Many challenges have encouraged the shift from the resource economy of controlling tangible resources to the knowledge economy of creating business value through the use of knowledge (Mikkawi, Masa'deh, & Al-Lozi, 2017; Yeh, La, & Ho, 2006). These challenges range from globalization, fierce competition, and the financial crisis, to advances in communication and information technology. The emergence of the knowledge economy has thus forced organizations to depart from traditional ways of dealing with human resources and to undertake a knowledge management approach (Al-Busaidi & Olfman, 2017; Obeidat, Hadidi, & Tarhini, 2017; Trivellas, Akrivouli, Tsifora, & Tsoutsou, 2015).

Considering that universities, like any other type of organization, are knowledge-based institutions, managing the knowledge it possesses should be at the core of business growth. This stems from the fact that knowledge represents a fundamental part of any organization, as it can be incorporated into the abilities of people or ingrained into structural and technological capital (Schiuma, 2012). Furthermore, academic staffs working in universities are known as knowledge workers. Knowledge workers are those whose work is based on the knowledge gained through their formal education or work experience. These workers contribute to the growth and development of their organizations due to their competences and abilities to solve challenging problems and develop new solutions. In turn, organizations should focus on the job satisfaction of knowledge workers because only satisfied workers will be motivated and productive. In order to do this, organizations need to provide them with resources and any type of organizational support (Bakotić, 2012). This is where knowledge management infrastructure comes into play.

Knowledge management is a vital strategic asset in organizations, especially in a highly competitive environment; it helps the organization to use new ways to gain and manage knowledge. Knowledge
management infrastructure is considered the foundation for knowledge management, and it reflects the organization’s culture, organization’s structure, organization’s information technology infrastructure, common knowledge, and physical environment (Pannu, 2017). Unfortunately, many organizations do not have the ability to extract knowledge and share it because of the ineffective methods and improper infrastructure they use to manage its knowledge. Establishing an appropriate infrastructure enhances the sharing and spreading of knowledge in organizations by adopting appropriate culture and structure that improve the interaction, build a close relationship among employees, and encourage the employees to share and spread knowledge (Chow & Chan, 2008).

Research conducted across the globe has found that teachers are unsatisfied with their jobs. Teachers have been reported to have the highest level of work stress and are less satisfied with their jobs compared to any other professional group (Neves de Jesus & Lens, 2005). Several studies have been conducted to examine the determinants of job satisfaction in educational institutions (e.g., Amzat & Idris, 2011; Darmody & Smyth, 2010; Hanaysha, 2016; Masum et al., 2015; Noordin & Jusoff, 2009; Pan, Shen, Liu, Yang, & Wang, 2015; Umaru & Ombugus, 2017). These studies focused mainly on intrinsic and extrinsic motivators in improving job satisfaction. In other words, although job satisfaction is one of the most researched topics among academics and practitioners (Applebaum, Bailey, Berg, & Kalleberg, 2000; Machado-Taylor et al., 2016; Mishra, 2013; Toker, 2011), it has been rarely approached from a knowledge management perspective. The few studies that have explored the relationship between knowledge management and employee job satisfaction include Almahamid, McAdams, and Kalaldeh (2010), Kianto, Vanhala, and Heilmann (2016), Koseoglu, Bektas, Parnell, and Carraher (2010), Lee and Chang (2007), and Singh and Sharma (2011). These studies took place in different sectors, such as electric wire and cable sector, telecommunication sector, hospitality sector, and public governmental sector, but none were conducted in the educational sector. As a result, it can be concluded that existing research on the relationship between knowledge management and job satisfaction is rather scant and inconclusive, especially in educational institutions. This study thus focuses on the dimensions of knowledge management infrastructure as a means of influencing the job satisfaction of academic staff (i.e., knowledge workers) operating in universities in Jordan. Its aim is to explore how the KM infrastructure dimensions (culture, structure, technology) affect their job satisfaction, and also to examine how the other factors (gender, age, academic rank, experience) contribute on the effect of KM infrastructure in job satisfaction.

**Literature Review**

**Knowledge Management Infrastructure**

Applying knowledge in an efficient and correct way will help organizations increase their competitive advantage. Facilitating the management of knowledge depends on the presence of KM capabilities. These capabilities assist in the creation of knowledge by integrating/combining different resources and activities that have a positive effect on competitive advantage, KM effectiveness, and organizational effectiveness (Aujiropongpan, Vadhanasindhu, Chandrachai, & Cooparat, 2010; Masa’deh, Shannak, Maqableh, & Tarhini, 2017). This is also supported by Nielsen (2006) who stated that organizations operating in a dynamic environment must possess strong KM capabilities that develop and support work practices and routines and that enable organizations to respond to changing conditions and sustain competitive advantage.

Knowledge management capabilities refer to organizational mechanisms that continuously create knowledge and encourage the acquisition, storing, protecting, and sharing of knowledge in organizations (Lin, 2013). According to Gold, Malhotra, and Segars (2001), these knowledge management capabilities include knowledge management infrastructure capability and process capability. The focus of this study is on the infrastructure part of knowledge management capabilities. In this study three key capabilities will be used to refer to knowledge management infrastructure. These capabilities are culture, structure, and technology, as proposed by Gold et al. (2001).
Culture
Culture refers to the values, beliefs, principles, and behaviors that exist within an organization (Cho, 2011). Each organization has its unique culture; therefore, it is important for these organizations to understand their own culture as it may act as a barrier or enabler to knowledge management (Iftikhar, 2003). Having an appropriate organizational culture may be a prerequisite for the effectiveness of knowledge management (Islam, Jasimuddin, & Hasan, 2015). This is due to the fact that if an organization's culture does not readily accept change, then KM programs are doomed to fail (Aujirapongpan et al., 2010). Therefore, an appropriate organizational culture is one that comprises a culture of knowledge sharing, coordination, cooperation, and acquisition by employees (Yang & Chen, 2007).

Structure
Organizational structure is specified as the formal allocation of employment functions and administrative mechanisms to keep in line and integrate work activities (Ghani, Jayabal, and Sugumar, 2000). In order to realize the full potential of knowledge, an appropriate structure should be in place (Claver-Cortés, Zaragoza-Sáez, & Pertusa-Ortega, 2007). Researchers have suggested that structural elements, such as incentive systems, work design, management support policy of the administrator, and rules, regulations, and practices, may act as barriers to knowledge management. The reason behind this relates to the fact that organizational structure plays an important role in the leveraging of technology and communication networks and in facilitating the collaboration and sharing of knowledge in organizations (Aujipongpan et al., 2010; Pandey & Dutta, 2013).

Technology
Technological capability refers to “the fundamental information technology structure of the organization, including hardware and software, and internal and external system networks and databases” (Pandey & Dutta, 2013, p. 437). Technology is considered an indispensable tool for knowledge management as it affects the effectiveness of KM in two ways. First, it ensures that an appropriate technology is in place to facilitate KM effectiveness. Second, technology enables flatter organizational structures that lead to increased KM effectiveness (Aujipongpan et al., 2010). Furthermore, technology has been classified into three categories based on its purpose to knowledge management: (1) knowledge generation tools which enable the acquisition, synthesis, and creation of knowledge; (2) knowledge codification tools that codify tacit and explicit knowledge in a way that makes them easy to access and transfer; and (3) knowledge transfer tools that remove the temporal, physical, and social distances associated with knowledge sharing and distribution (Cho, 2011).

Job Satisfaction
Employees are a major determinant of organizational productivity, given that they contribute to an organization's competitive edge. However, due to changing and complex conditions surrounding them, employees face various problems. Stressed, depressed, and unsatisfied employees show lower levels of work quality and productivity compared to employees with low stress and high satisfaction (Alkalha, Al-Zu’bi, Al-Dmour, & Alshurideh, 2012; George & Zakkariya, 2015). As a result, organizations must pay close attention to the psychological aspects of employees. Job satisfaction has received great attention over the years. One reason for this is its association with the physical and mental well-being of employees. People spend a large part of their life at work and, therefore, having an understanding of the factors involved in job satisfaction would help in improving the well-being of many people. Thus, employee attitudes and behaviors connected to job satisfaction are crucial aspects for researchers and employers to understand (Halepota & Shah, 2011). Another reason relates to the implications job satisfaction has for job related behaviors. Therefore, understanding whether and how job satisfaction can be improved is a viable economic decision undertaken by any type of organization (Oshagbemi, 2000).
Job satisfaction is considered an important phenomenon for both individuals and organizations. Individuals who are satisfied with their jobs are reported to have higher levels of loyalty, continue to work for the organization for a longer period, and are motivated to perform better at their jobs. As a result, it can be noted that satisfaction with the job builds mental relaxation that bonds employees to their organizations (Aslan, Shaukat, Ahmed, Shah, & Mahfar, 2014; Kabak, Şen, Göçer, Küşçüksöylemez, & Tuncer, 2014). Job satisfaction has further implications for organizations. Organizations whose employees have higher levels of job satisfaction enjoy increased levels of productivity and organizational commitment, lower levels of absenteeism and turnover, and ultimately increased organizational effectiveness (Abdulla, Djebarni, & Mellahi, 2011).

**Knowledge Management Infrastructure and Job Satisfaction**

Cross and Cummings (2004) found a positive relationship between knowledge management and individual's outcomes in knowledge-centered businesses, and Karia and Asaari (2006) stressed that social relations are essential for reaching higher levels of employees' satisfaction at the workplace. In addition, Schmidt (2007) and Teh and Sun (2012) found that instructive training opportunities and knowledge sharing play significant role in employee's job satisfaction. However, scholars (i.e., Abualoush, Masa’deh, Bataineh, & Alrowwad, 2018; Almahamid et al., 2010; Becerra-Fernandez & Sabherwal, 2014; Chen, 2014; Koroshnia & Forozan, 2018; Masa’deh, 2016) called for further research concerning the effect of knowledge management on job satisfaction, since previous findings needed to be generalized to other sector of industries or in other countries.

Job satisfaction is one of the most researched concepts in the field of organizational behavior due to its importance in shaping various organizational outcomes. Therefore, extensive efforts have been made to understand the antecedents of job satisfaction. The antecedents of job satisfaction can be categorized as organizational and individual, with the latter receiving the most attention (Bellou, 2010; Masa’deh, Gharaibeh, Maqableh, & Karajeh, 2013; Masa’deh, Obeidat, & Tarhini, 2016; Masa’deh, Shannak, & Maqableh, 2013; Shannak, Obeidat, & Masa’deh, 2012) and the former needing further investigation. This study is conducted to examine the influence of the various dimensions of KM infrastructure on job satisfaction, in order to enrich the existing literature regarding different factors affecting job satisfaction. Here, each dimension is investigated on its own in an attempt to discover whether a relationship exists between KM infrastructure present in organizations and the satisfaction of employees working in those organizations.

**Theoretical Model and Hypotheses**

This section provides the methodology applied in the current study. It consists of the research model, operational definitions of independent and dependent variables, research hypotheses, and data collection tool and research population and sample.

**Research Model**

The major elements of this research are established based on preceding literature, either theoretically or empirically. Indeed, this study used variables that are common in knowledge management literature. Figure 1 represents a model for the study that shows the independent variables within the construct of knowledge management infrastructure, and the dependent variable (job satisfaction), and the proposed relationship between them. The current research considers three independent variables within the construct of knowledge management infrastructure, and one dependent variable (job satisfaction). Further, knowledge management infrastructure includes technological knowledge management infrastructure, structural knowledge management infrastructure, and cultural knowledge management infrastructure.
Role of Knowledge Management Infrastructure in Enhancing Job Satisfaction

**RESEARCH HYPOTHESES**

In order to test the research model of the impact of knowledge management infrastructure on job satisfaction, the study is hypothesized as follows.

Innovations in technology play an essential role in the way organizational activities are performed, as they can help employees work smarter. Findings revealed that the more organizations invest in IT the more satisfied their employees will be with their working conditions, their relationships with co-workers, and personal job characteristics (Attar & Sweis, 2010; Hajir, Obeidat, Al-dalahmeh, & Masa'deh, 2015; Obeidat & Al-dalahmeh, 2015). Attar and Sweis (2010) reported other benefits that warrant the investment in IT, such as faster access to information, performing work faster, and better communication.

**H1:** There is a statistically significant impact of technological knowledge management infrastructure on job satisfaction.

Given that organizations are perceived as knowledge integrating institutions, a great deal of emphasis should be placed on designing the organization's structure (Islam et al., 2015). Not many studies have been conducted to investigate the impact of structure on job satisfaction. An organizational structure that promotes flexibility in the work place, where faculty members can enjoy some latitude as not many rules and regulations exist, facilitates open communication between department members and external personnel. It is suggested that faculty members who work in such a structure will report higher levels of job satisfaction (Kessler, 2007).

**H2:** There is a statistically significant impact of structural knowledge management infrastructure on job satisfaction.

Organizational culture is one of the most important organizational level antecedents for job satisfaction. This relates to the effect that different types of it dimensions have on job satisfaction (e.g., Huang & Wu, 2000; Lund, 2003; McKinnon, Harrison, Chow, & Wu, 2003; Silverthorne, 2004). The
reason behind the hype to study the relationship between culture and job satisfaction is that culture creates a common way of thinking and understanding that influences how employees interpret organizational reality and in turn shapes employees’ attitudes and behaviors (Bellou, 2010). Several studies have found that culture and job satisfaction are positively associated (see Lund, 2003; McKinnon et al., 2003; Platonova, Hernandez, Shewchuk, & Leddy, 2006); whereas researchers such as G. Johnson (2004) and Navaie-Waliser, Lincoln, Karutri, & Resich (2004) found no relationship between culture and job satisfaction. Despite all the studies conducted to examine the relationship between culture and job satisfaction, Masa’deh (2016) has argued that the link between culture and job satisfaction needs further investigation.

H3: There is a statistically significant impact of cultural knowledge management infrastructure on job satisfaction.

A consensus appears to exist among researchers in the field of job satisfaction regarding the factors that account for academics’ job satisfaction. However, the empirical data concerning the effect of demographic and personal factors on their job satisfaction are quite confusing (Platsidou & Diamantopoulou, 2009). Oshagbemi (2003) further noted that it is difficult to draw solid conclusions given the limited number of relative studies. With regards to gender, studies have found that male faculty members have higher levels of job satisfaction than their female counterparts when it comes to benefits, salary, and promotion (Bilimoria et al., 2006; Hult, Callister, & Sullivan, 2005; Sabharwal & Corley, 2009). Other studies indicated that gender did not have any significant impact on job satisfaction (Smith & Plant, 1982; Toker, 2011; Ward & Sloane, 2000). In addition to gender, age is probably the most researched characteristic in respect to its association with job satisfaction (Moyes, Williams, & Koch, 2006).

The relationship between age and job satisfaction has yielded contradictory results, where some studies have shown that the relationship between them is U-shaped (Blanchflower & Oswald, 2004; Ghinetti, 2007; Sloane & Ward, 2001) and others have concluded that job satisfaction increases with age (G. J. Johnson & Johnson, 2000). Several studies have indicated that the years of experience in general and in certain institutions are likely to affect employees’ feeling of job satisfaction (Belias, Koustelios, Sdolias, & Koutiva, 2013). For example, Wae (2001) found that employees with longer experience were more satisfied than employees with shorter experience. Others have found that experience has no effect on the satisfaction levels of employees (Green, 2000; Sukumar, 2009; Yilmaz et al., 2014). Academic rank has been suggested to be one of the most important predictors of job satisfaction, with full professors expressing greater satisfaction compared to junior faculty members (Oshagbemi, 1997; Toker, 2011). In addition, based on the researchers’ experience, we argued that the higher the academic rank, the more job stability, and in turn a higher job satisfaction.

H4A: There is a significant difference in the impact of knowledge management infrastructure on job satisfaction due to gender.

H4B: There is a significant difference in the impact of knowledge management infrastructure on job satisfaction due to age.

H4C: There is a significant difference in the impact of knowledge management infrastructure on job satisfaction due to experience.

H4D: There is a significant difference in the impact of knowledge management infrastructure on job satisfaction due to academic rank.

RESEARCH METHOD

As a survey study, it employed a questionnaire to collect quantitative data for hypothesis testing. The questionnaire consisted of two sections. The first section in the questionnaire gathers demographic information about respondents, including the gender, age, academic rank, and years of experience. The second section is further divided into two parts, with the first part measuring technological,
structure, and cultural knowledge management infrastructures (the independent variable) and the second part measuring job satisfaction (the dependent variable). See Appendix A for measured variables and Appendix B for their corresponding items.

The instrument for measuring technological, cultural, and structural infrastructures of knowledge management was adapted from Gold et al. (2001), and it has been validated by Gold et al. and later again by Masa’deh (2016). It includes 11 items for technological KM infrastructure, 11 items for structure infrastructure, and 12 items for cultural infrastructure, all being 5-point Likert scale questions (with 1 meaning “not agree at all” and 5 “totally agree”).

The instrument for measuring the “job satisfaction” construct was derived from the scale first developed by Hackman and Oldham (1975) and later validated by Fried and Ferris (1987) and again by Masa’deh (2016). It measures the construct in terms of five dimensions, using 14 items: two for pay, two for job security, three for social, three for supervisor, and four for growth satisfaction. Again, all items are 5-point Likert scale questions as noted above. Also, it’s worthy to highlight that the questionnaire asks respondents to indicate if an item is relevant for job satisfaction regardless of the context in which they work.

The data was collected through a drop-and-collect survey technique. The surveys were distributed to all the academic staff working in the Zarqa University in Jordan who agreed to participate in the study. The targeted population of this study is all academic staff at the university. According to the human resource department, for the academic year 2016/2017, Zarqa University’s academic staff consists of 290 employees. According to Krejcie and Morgan’s (1970) advice, 165 employees should be included to meet the minimum requirement of sample size for this research. Indeed, the researchers reached the whole population. In order to gain the respondent’s trust and to ensure privacy, a quick interview was conducted with each staff member to explain the aim of the survey study, and if agreeing to participate a hard copy questionnaire was given, completed, and collected onsite. In total, 178 questionnaires were collected from participants, achieving a response rate at 61.4%. However, only 168 responses were included in analysis, with the rest being incomplete and thus excluded.

**DATA ANALYSIS AND RESULTS**

In order to explore the impact of knowledge management infrastructure on job satisfaction, reliability and validity analyses were conducted, and descriptive analysis was used to identify the characteristics of survey respondents. ANOVA analyses were conducted to explore the relations of demographic factors to the independent and dependent variables, and multiple regression analysis was employed to test the research hypotheses.

**VALIDITY AND RELIABILITY**

Validity and reliability are two important measures to determine the quality and usefulness of the data collecting instrument. Validity is about accuracy and whether the instrument measures what it is intended to measure, while reliability is about precision; it is used to check the consistency and stability of the questionnaire. Indeed, the researchers depended on scales and items that were previously developed and used by other researchers with similar interest. The questionnaire was reviewed by seven academic lecturers—who have a sufficient knowledge and experience in the business management and management information systems disciplines—to ensure that each item is measuring what it is intended to measure, and to avoid the ambiguity and complexity in the phrasing of questions. In addition, the questionnaire underwent a pilot test using 9 potential respondents. The reliability of the instrument was measured by the Cronbach’s alpha coefficient. Further, some scholars (e.g., Bagozzi and Yi, 1988) suggested that the values of all indicators or dimensional scales should be above the recommended value of 0.60. Table 1 presents the results of Cronbach’s alpha for the independent and dependent variables. Cronbach’s alpha coefficients of all the tested variables are above 0.60, suggesting that the composite measure is reliable.
Table 1. The Cronbach's alpha coefficients of study variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of items</th>
<th>Cronbach alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological Knowledge Management Infrastructure</td>
<td>11</td>
<td>0.960</td>
</tr>
<tr>
<td>Structural Knowledge Management Infrastructure</td>
<td>11</td>
<td>0.951</td>
</tr>
<tr>
<td>Cultural Knowledge Management Infrastructure</td>
<td>12</td>
<td>0.947</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>14</td>
<td>0.964</td>
</tr>
</tbody>
</table>

Respondents Demographic Profile

As indicated in Table 2, the demographic profile of survey respondents showed that they are typically males, most of them are 30 years old and more, the majority of the respondents are assistant professors and associate professors, and most of the respondents have five to ten years of experience working at the university.

Table 2. Demographic profile of survey respondents

<table>
<thead>
<tr>
<th>Category</th>
<th>Category</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Males</td>
<td>124</td>
<td>73.8</td>
</tr>
<tr>
<td></td>
<td>Females</td>
<td>44</td>
<td>26.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>168</td>
<td>100</td>
</tr>
<tr>
<td>Age</td>
<td>24 years - less than 30</td>
<td>16</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td>30 years - less than 40</td>
<td>78</td>
<td>46.5</td>
</tr>
<tr>
<td></td>
<td>40 years - less than 50</td>
<td>35</td>
<td>20.8</td>
</tr>
<tr>
<td></td>
<td>More than 50 years old</td>
<td>39</td>
<td>23.2</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>168</td>
<td>100</td>
</tr>
<tr>
<td>Academic Rank</td>
<td>Lecturer</td>
<td>18</td>
<td>10.7</td>
</tr>
<tr>
<td></td>
<td>Assistant Professor</td>
<td>77</td>
<td>45.8</td>
</tr>
<tr>
<td></td>
<td>Associate Professor</td>
<td>55</td>
<td>32.8</td>
</tr>
<tr>
<td></td>
<td>Professor</td>
<td>18</td>
<td>10.7</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>168</td>
<td>100</td>
</tr>
<tr>
<td>Experience</td>
<td>Less than 5 years</td>
<td>37</td>
<td>22.0</td>
</tr>
<tr>
<td></td>
<td>5- less than 10 years</td>
<td>85</td>
<td>50.6</td>
</tr>
<tr>
<td></td>
<td>10 - less than 15 years</td>
<td>21</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td>More than 15 years</td>
<td>25</td>
<td>14.9</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>168</td>
<td>100</td>
</tr>
</tbody>
</table>

Descriptive Analysis

In order to describe the responses, and thus the attitude of the respondents toward each question they were asked in the survey, the mean and the standard deviation were calculated for each item. The means may be interpreted in terms of the levels defined as: 1-1.80 “very low”, 1.81-2.60 “low”, 2.61-3.40 “moderate”, 3.41-4.20 “high”, and 4.21-5 “very high”. Then the variables were ordered based on their means.

As presented in Appendices A and B, the results of descriptive analysis show that knowledge management infrastructure is applied to a less extent in the Zarqa University in which the mean score is 2.134. This is an indicator on the reflectance of knowledge management infrastructure, and such low level of presentation denotes a weak attitude regarding the infrastructure of knowledge management. In addition, job satisfaction was found to be low as well. This suggests that Zarqa University is currently not paying a great attention to the academic staff job satisfaction schemes.
HYPOTHESES TESTING RESULTS

The current research is mainly seeking to investigate the impact of technological, structural, and cultural infrastructures of knowledge management on job satisfaction of academic staff. Consequently, in order to test the hypotheses developed for this study, multiple regression technique was used. The level of significance (α-level) was chosen to be 0.05, and the probability value (p-value) obtained from statistical analysis is checked against the threshold value of significance level for rejecting the null hypotheses (Creswell, 2009).

In addition, the normality of independent variables and absence of multi co-linearity problem—a case of multiple regression in which the independent variables are themselves highly correlated—were checked. According to Pallant (2005), most of the values should be inside the adequate ranges for normality (i.e., -1.0 to +1.0). For this purpose, skewness and Variance Inflation Factor (VIF) were investigated and the results are given in Appendix C. As shown there, the skewness values were within the normal values (-1.0 to +1.0), suggesting that the data of the independent variables is normal. The VIF values were less than the critical value 10, which is common among most studies, suggesting that there is no multi co-linearity problem among the independent variables.

The results of multiple regression analysis for testing the three hypotheses on the impact of knowledge management infrastructure on job satisfaction are listed in Table 3.

<table>
<thead>
<tr>
<th>Variable</th>
<th>r</th>
<th>R²</th>
<th>f</th>
<th>Sig (f)</th>
<th>β</th>
<th>t</th>
<th>Sig (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological KM Infrastructure</td>
<td>0.822</td>
<td>0.676</td>
<td>113.893</td>
<td>0.000a</td>
<td>0.192</td>
<td>2.548</td>
<td>0.012</td>
</tr>
<tr>
<td>Structural KM Infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.079</td>
<td>0.905</td>
<td>0.367</td>
</tr>
<tr>
<td>Cultural KM Infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.603</td>
<td>7.756</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The multiple correlation coefficient r=0.822 indicates that there is a strong positive correlation between knowledge management infrastructure (technological, structural, and cultural KM infrastructures) and job satisfaction. The adjusted R² indicates the generalizability of the model. It allows us to generalize the results taken from the respondents to the whole population. In this case, it equals 0.676. The results showed that F-ratio for these data is equal to 113.893, which is statistically significant at p<0.05. Therefore, we conclude that there is a statistically significant effect of knowledge management infrastructure on job satisfaction.

Table 3 shows the standardized coefficient (β value) for each of the knowledge management infrastructural dimensions. The β values (predictor coefficients) indicate the individual contribution of each predictor (independent variable) to the model with the other predictors held constant. The levels of effect of these variables are indicated by the β value: the higher the β value, the higher effect on dependent variable. The β values for technological and cultural infrastructures (0.192 and 0.603 respectively) are statistically significant, but the β value for structural infrastructure (0.079) is very small and also not statistically significant. We conclude that cultural infrastructure has the highest contribution in the model, technological infrastructure has weaker contribution, and structural infrastructure does not have a significant effect on job satisfaction.

Hypotheses H4A, H4B, H4C, and H4D argued that there is a significant difference in the impact of knowledge management infrastructure on job satisfaction due to gender, age, experience, and academic rank. Independent Samples T-test was employed in order to investigate potential gender difference in the impact of knowledge management infrastructure on job satisfaction, and found that the means for male and female participants (2.3036 and 1.9334) are indeed significantly different (t=2.268, p=0.025). Also, ANOVA test was employed to examine if there are any significant differences in the impact of knowledge management infrastructure on job satisfaction that can be attributed to age, experience, and academic rank. However, in each case, no significant difference was found among the groups defined by age, experience, and academic rank categories.
DISCUSSION

The results of this research confirmed Hypothesis 1 that there is a statistically significant impact of technological knowledge management infrastructure on job satisfaction. This result is consistent with the findings by Ali and Ali (2005) and by Masa’deh (2016). It confirms that technology is significantly related to job satisfaction. When organizations invest in technology, they affect employees’ perceptions about the firm, which in turn enhances their job satisfaction (Maroofi, Rastad, & AMjadi, 2015). Investing in technology allows employees to perform their jobs better, as it helps them to process information in more efficient and effective ways, relieving them from repetitive and tedious tasks, which generates positive attitudes towards their jobs (Wang & Zhang, 2015). Furthermore, organizations that wish to engage in knowledge management activities should have the appropriate tools in place that enable employees to facilitate such activities.

Hypothesis 2, that structural knowledge management infrastructure has a statistically significant impact on job satisfaction, was not confirmed. This result is inconsistent with some previous studies. For instance, Masa’deh (2016) found that organizational structure and job satisfaction are not related, but studies by Willem, Buelens, and De Jonghe (2005) and Kessler (2007) indicated that organizational structure positively affects the job satisfaction of employees.

Hypothesis 3, that cultural knowledge management infrastructure has a statistically significant impact on job satisfaction, was confirmed. This result is consistent with the conclusions reached by several researchers such as Silverthorne (2004), Bellou (2010), Boerebach, Lombarts, Keijzer, Heineman, and Arah (2012), and Masum et al. (2015). These researchers all agreed that culture is an important antecedent of job satisfaction. This dimension suggests that individuals are more dependent on groups and teamwork (Obeidat, Shannak, & Al-Jarrah, 2012). As such, it can be inferred that teamwork leads to a more satisfying job experience as individuals feel they are contributing to the organization, which in turn leads to improved job satisfaction. Arab cultures are also suggested to be closer to the feminine side as opposed to the masculine side of the femininity-masculinity continuum (Obeidat et al., 2012). In feminine cultures, personal recognition is considered an important motivator for employees. Recognition involves interaction with others and is a social affirmation of one’s performance. Workers who receive recognition in feminine cultures are thus more satisfied with their jobs than those who go unnoticed (Masa’deh, 2016). However, other studies argued that organizational culture and job satisfaction are not related (See G. Johnson, 2004; Navaie-Waliser et al., 2004). This contradiction may be attributed to the differences in culture between each of the countries studied by the researchers as suggested by Hofstede (2001).

The results confirmed H4A, which stated that there is a significant gender difference in the impact of knowledge management infrastructure on job satisfaction. These differences may be attributed to the dissimilar socialization processes adopted by each gender (Helms & Stern, 2001). Oshagbemi (2000) suggested that women tend to be more concerned with the quality of their physical work environment and the adequacy of their working facilities than men are. Bellou (2010) also indicated that different cultural traits in an organization enhance job satisfaction differently for men and women. Men, for example, regard having a good reputation, sharing information, and opportunities for personal growth as job satisfaction enhancers, while stability and informality as detractors. Women, on the other hand, consider enthusiasm for the job, taking quick advantage of opportunities, people orientation, calmness, and decisiveness as important factors that improve their satisfaction on the job. However, some researchers, such as Ward and Sloane (2000), indicated that there are no differences between females and males in terms of job satisfaction.

H4B, that there is a significant difference in the impact of knowledge management infrastructure on job satisfaction due to age, was not supported by the results of this study. Researchers such as Pook, Füstös, and Marian (2003), Sarker, Crossman, and Chinmeeepituck (2003), and Tu, Bernard, and Maguiraga (2005) agree with this conclusion, as they suggested that age and job satisfaction are not related. On the contrary, other researchers have reported that job satisfaction and age are significantly
Role of Knowledge Management Infrastructure in Enhancing Job Satisfaction

related (See Pickett & Sevastoss, 2003; Saner & Eyupoglu, 2012; Sharma & Jyoti, 2009; Ssesanga & Garrett, 2005). These researchers stated that job satisfaction differs due to various factors depending on the age of employees. These factors may pertain to those of culture and structure. In terms of culture, the age of the employees affects the way they perceive it (Helms & Stern, 2001). It has been reported that younger employees are satisfied with their jobs in an organizational culture that promoted enthusiasm for the job and working long hours, and that aggressiveness and being different from others reduces their satisfaction. Older employees, on the other hand, prefer a culture that promotes fairness and stability, whereas competition and support reduce their satisfaction (Bellou, 2010). In terms of structure, it is argued that top positions in an organization are occupied by older and more knowledgeable workers. Organizational structure thus influences satisfaction by affecting the ability of top and bottom employees to share knowledge among each other (Saner & Eyupoglu, 2012). Moreover, the experience gained and the patterns of interaction between employees also differ by age. Individuals belonging to the same age group are likely to have experienced similar societal and organizational events such as technological changes and organizational trends (Bellou, 2010). Individuals of the same age are also more likely to communicate and share information with each other than with those of a different age (Helms & Stern, 2001).

In regard to H4C, this study found no significant difference among groups of varying experience in the impact of knowledge management infrastructure on job satisfaction. This is in agreement with several researchers (Green, 2000; Nestor & Leary, 2000; Sukumar, 2009) who also found no statistically significant difference in the levels of job satisfaction in terms of years of experience. Other researchers, however, found that employees with longer years of experience were more satisfied compared to those with shorter experience (Bader, Hashim, & Zaharim, 2013; Belias et al., 2013; Wae, 2000).

Finally, H4D, that there is a significant difference between academic ranks in the impact of knowledge management infrastructure on job satisfaction, was not supported. This is in agreement with Eyupoglu and Saner (2009) who also found that academic rank and job satisfaction were not related. This means that Zarqa University provided employees of all ranks with similar opportunities to utilize knowledge management infrastructure present in the organization to improve their job satisfaction.

CONCLUSIONS

The aim of this research is to explore the role of technological, structural, and cultural infrastructures of knowledge management in enhancing job satisfaction in Jordan. The study revealed that technological and cultural KM infrastructures have significant positive impacts on job satisfaction, as technology is one of the tools that facilitate the creation of new knowledge by linking information and communication systems in order to integrate previously fragmented flows of information and technology, thereby eliminating barriers to communication between the various parts of the organization (Gold et al., 2001). Therefore, giving employees such tools makes their tasks in organizations much easier, which in turn contributes to their satisfaction. Also, having a culture that promotes opportunities, supportive relationships with colleagues and management, teamwork, trust, and leadership improves job satisfaction considerably (Park & Kim, 2009). Hofstede (1980, 1991, 2001) indicated that specific cultural dimensions relate to certain work behaviors. According to him, Arab cultures are characterized as being collective.

However, structural knowledge management infrastructure does not have a significant impact on job satisfaction. This refers to the different elements that make up the structure of Zarqa University which do not contribute to the feeling of satisfaction attained by academic staff while on the job, even though it has been reported that having a structure that utilizes rewards and incentives contributes significantly to the satisfaction of employees. Being rewarded for performing job-specific tasks thus improves employees’ satisfaction. Employees that take the time to learn, share their knowledge, and help others in the organization should be rewarded, which motivates them to continue being part
of the knowledge management cycle of continuously creating, sharing, and applying knowledge throughout the organization (Gold et al., 2001).

The findings revealed that the relationship between knowledge management infrastructure and job satisfaction does differ by gender. This may be due to the fact that the gender of employees is related to the way in which information is processed as well as how employees interact with each other, which in turn influences their perception of their work environment. It has been reported that expectation with regard to work may be one of the factors contributing to these differences as men and women use different criteria to assess their work. For instance, women place more emphasis on social factors of a job than men do, whereas men place more value on self-expression in their work. Therefore, a job that scores high on social satisfaction but low on skill utilization and career prospects may result in higher job satisfaction for females than for males (Oshagbemi, 2000). Several studies have revealed that male faculty members have higher levels of job satisfaction than their female counterparts, particularly in terms of benefits and salary received and promotion opportunities (Sabharwal & Corely, 2009). As a result, differences in the determinants of job satisfaction between men and women warrant the need for adjustments of human resource policies adopted by organizations to take into consideration the discrepancies that exist according to employees’ gender (Garcia-Bernal, Gar-gallo-Castel, Marzo-Navarro, & Rivera-Torres, 2005).

The study found no significant difference in the impact of knowledge management infrastructure on job satisfaction among groups by age, experience, and academic ranks. This indicates that in the Jordanian context the satisfaction gained through the use of knowledge management infrastructure is the same for all employees regardless of their age, experience, and academic ranks. However, Belias et al. (2013) argue that employees with shorter experience may be characterized by greater anxiety in carrying out their assigned tasks, thereby leading to a higher percentage of mistakes made and in turn reduced satisfaction. They also believe that employees who hold a higher academic rank are more likely to believe that they work in a pleasant environment, their work satisfies their expectations, and that the organization takes good care of its employees, as a result contributing to their satisfaction.

**Implications of the Study**

Some universities in Jordan are dealing with high turnover of skilled academics due to the presence of dissatisfaction factors that are urging them to leave the organization. The findings of the current study can aid the university in determining what factors can contribute to the enhancement of the job satisfaction of its academic staff. The research suggests that appropriate investment in KM infrastructure can enhance job satisfaction. Therefore it is important for organizations to recognize the value of this knowledge capability and the need to deploy strategies that facilitate the acquisition and deployment of this capability in line with the organization’s goals. For instance, the university can pay more attention to the structural factor of knowledge management infrastructure given the important role rewards play in enhancing satisfaction. Therefore, a structure that promotes the use of extrinsic factors in the form of rewards and incentive as a means of recognizing the work done by employees in order to increase job satisfaction can be adopted. Furthermore, the technological dimension has been found as an essential factor affecting the way employees perform their jobs. Therefore, managers need to demonstrate their support for adoption of IT and emphasize IT as an important organizational dimension. Management can also create an appropriate environment and culture that fosters certain aspects that are desired by academics to improve their satisfaction. The results of this study can be further applied to other universities in Jordan, as most universities suffer from the same problem (i.e., dissatisfied employees) and their employees work under similar conditions as those in Zarqa University.

**Limitations and Future Research Directions**

To sum up, the motivation of this study was to determine the influence of KM infrastructure (technological, structural, and cultural) on job satisfaction. A theoretical model was proposed and empiri-
cal testing was completed using a sample of 168 academic staff at Zarqa University in Jordan. The findings increase our understanding of the KM infrastructure mechanisms, and their associations with the context of job satisfaction. However, there are some limitations of the study.

The first limitation is the use of the same sample of participants for gathering data on both knowledge management infrastructures (the independent factor) and job satisfaction (the dependent factor), even though the researchers tried to reduce data incorrectness by asking the best positioned to answer the questionnaire (academic staff). Consequently, further research should consider both academic staff and administrative staff not only to avoid depending on a single source of information as a way of testing the research model from several perceptions, but also as an attempt to identify the source of any differences between them. Another limitation is that the proposed conceptual model was tested with the cross-sectional data from Zarqa University in Jordan. Longitudinal investigation is preferred for better understanding of the KM infrastructure and its impacts. In addition, it might be possible that examining the main constructs in this study over a longer period would yield more insights into the associations between the research variables. Moreover, even though the response rate of this study was sufficient for satisfying the condition of statistical analysis, the percentage of those who did not respond was still relatively high. In other words, even though the research results could be representative, it is reasonable to be watchful in its generalization. Therefore, to increase statistical validity, future research should try to achieve a higher response rate.

Another limitation that can be observed from the results of this study is the under-representation of the female respondents, as only 26.2% of the participants were females. This low percentage may affect the generalizability of the findings due to the different perception of job satisfaction by males and females, as indicated in the discussion section. Also, the data were collected in a single country, Jordan, and thus its findings may be specific to the Jordanian context, which raises questions about the generalizability to other cultures and different contexts. Further, the data were obtained from a single university in the Jordan, which may be a problem if trying to generalize the results of this study to other universities operating in Jordan. Therefore, further research is needed to include several countries and other universities to advance the understanding of issues related to KM infrastructure in different contexts. Indeed, although this study investigated several hypotheses with empirical evidence, a more generalized research model that includes more potentially impacting variables and takes the limitations of this study into consideration is needed. In addition, in order to gain more specific insight on why the technological component of the KM infrastructure has a positive impact on job satisfaction, qualitative interview could be incorporated in future research. As noted by Byrne (2004), qualitative interview is valuable as a research technique to gain in-depth understanding of participants’ attitudes, which is not feasible in a formal questionnaire survey.

REFERENCES


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APPENDICES

APPENDIX A. OVERALL MEAN AND STANDARD DEVIATION OF THE STUDY’S VARIABLES

<table>
<thead>
<tr>
<th>Type of Variable</th>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variables</td>
<td>KM Infrastructure</td>
<td>2.134</td>
<td>0.935</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Technological KM Infrastructure</td>
<td>2.129</td>
<td>1.065</td>
<td>Low</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Structural KM Infrastructure</td>
<td>2.121</td>
<td>0.987</td>
<td>Low</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Cultural KM Infrastructure</td>
<td>2.152</td>
<td>0.988</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>Dependent Variables</td>
<td>Job Satisfaction</td>
<td>2.206</td>
<td>1.080</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pay</td>
<td>2.026</td>
<td>1.310</td>
<td>Low</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Job Security</td>
<td>2.285</td>
<td>1.193</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Social</td>
<td>2.224</td>
<td>1.319</td>
<td>Low</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Supervisory</td>
<td>2.232</td>
<td>1.216</td>
<td>Low</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Growth Satisfaction</td>
<td>2.225</td>
<td>1.136</td>
<td>Low</td>
<td>3</td>
</tr>
</tbody>
</table>

APPENDIX B. DETAILED MEAN AND STANDARD DEVIATION OF THE STUDY’S VARIABLES

<table>
<thead>
<tr>
<th>Technological Knowledge Management Infrastructure</th>
<th>Mean</th>
<th>SD</th>
<th>Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>The department I work for has clear rules for formatting and categorizing its knowledge.</td>
<td>1.94</td>
<td>1.42</td>
<td>Low</td>
<td>10</td>
</tr>
<tr>
<td>The department I work for uses technology that allows it to monitor its competition and business partners.</td>
<td>1.91</td>
<td>1.29</td>
<td>Low</td>
<td>11</td>
</tr>
<tr>
<td>The department I work for uses technology that allows us to collaborate with others inside the department.</td>
<td>2.11</td>
<td>1.24</td>
<td>Low</td>
<td>7</td>
</tr>
<tr>
<td>The department I work for uses technology that allows us to collaborate with others outside the department.</td>
<td>2.10</td>
<td>1.18</td>
<td>Low</td>
<td>8</td>
</tr>
<tr>
<td>The department I work for uses technology that allows us in multiple locations to learn as a group from a single source or at a single point in time.</td>
<td>2.17</td>
<td>1.22</td>
<td>Low</td>
<td>5</td>
</tr>
<tr>
<td>The department I work for uses technology that allows us in multiple locations to learn as a group from a multiple source or at multiple points in time.</td>
<td>2.35</td>
<td>1.27</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>The department I work for uses technology that allows it to search for new knowledge.</td>
<td>2.33</td>
<td>1.30</td>
<td>Low</td>
<td>2</td>
</tr>
<tr>
<td>The department I work for uses technology that allows it to map the location (i.e., an individual, specific system, or database) of specific types of knowledge.</td>
<td>2.12</td>
<td>1.19</td>
<td>Low</td>
<td>6</td>
</tr>
<tr>
<td>The department I work for uses technology that allows it to retrieve and use knowledge about its services and processes.</td>
<td>2.18</td>
<td>1.19</td>
<td>Low</td>
<td>4</td>
</tr>
</tbody>
</table>
The department I work for uses technology that allows it to retrieve and use knowledge about its markets and competition. 2.19 1.17 Low 3

The department I work for uses technology that allows it to generate new opportunities in conjunction with its partners. 1.97 1.32 Low 9

<table>
<thead>
<tr>
<th>Structural Knowledge Management Infrastructure</th>
<th>Mean</th>
<th>SD</th>
<th>Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>The structure of the department I work for facilitates interaction and sharing of knowledge.</td>
<td>1.88</td>
<td>1.22</td>
<td>Low</td>
<td>11</td>
</tr>
<tr>
<td>The structure of the department I work for promotes collective rather than individualistic behavior.</td>
<td>1.99</td>
<td>1.18</td>
<td>Low</td>
<td>10</td>
</tr>
<tr>
<td>The structure of the department I work for facilitates the discovery of new knowledge.</td>
<td>2.11</td>
<td>1.19</td>
<td>Low</td>
<td>8</td>
</tr>
<tr>
<td>The structure of the department I work for facilitates the creation of new knowledge.</td>
<td>2.14</td>
<td>1.16</td>
<td>Low</td>
<td>6</td>
</tr>
<tr>
<td>The structure of the department I work for bases our performance on knowledge creation.</td>
<td>2.19</td>
<td>1.15</td>
<td>Low</td>
<td>3</td>
</tr>
<tr>
<td>The structure of the department I work for designs processes to facilitate knowledge exchange across functional boundaries.</td>
<td>2.24</td>
<td>1.19</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>The structure of the department I work for has a large number of strategic alliances with other departments.</td>
<td>2.17</td>
<td>1.16</td>
<td>Low</td>
<td>4</td>
</tr>
<tr>
<td>The structure of the department I work for encourages us to go where they need for knowledge for errors/mistakes.</td>
<td>2.13</td>
<td>1.21</td>
<td>Low</td>
<td>7</td>
</tr>
<tr>
<td>The head of the department I work for frequently examines knowledge for errors/mistakes.</td>
<td>2.16</td>
<td>1.26</td>
<td>Low</td>
<td>5</td>
</tr>
<tr>
<td>The structure of the department I work for facilitates the transfer of new knowledge across structural boundaries.</td>
<td>2.07</td>
<td>1.17</td>
<td>Low</td>
<td>9</td>
</tr>
</tbody>
</table>

| My colleagues of the department I work for are readily accessible. | 2.23 | 1.32 | Low | 2 |

<table>
<thead>
<tr>
<th>Cultural KM Infrastructure</th>
<th>Mean</th>
<th>SD</th>
<th>Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>My colleagues of the department I work for understand the importance of knowledge to corporate success.</td>
<td>2.12</td>
<td>1.34</td>
<td>Low</td>
<td>8</td>
</tr>
<tr>
<td>In the department I work for, high levels of participation are expected in capturing and transferring knowledge.</td>
<td>2.08</td>
<td>1.28</td>
<td>Low</td>
<td>12</td>
</tr>
<tr>
<td>My colleagues of the department I work for are encouraged to explore and experiment.</td>
<td>2.20</td>
<td>1.32</td>
<td>Low</td>
<td>3</td>
</tr>
<tr>
<td>In the department I work for, on-the-job training and learning is valued.</td>
<td>2.16</td>
<td>1.25</td>
<td>Low</td>
<td>4</td>
</tr>
<tr>
<td>My colleagues of the department I work for are valued for their individual expertise.</td>
<td>2.10</td>
<td>1.17</td>
<td>Low</td>
<td>10</td>
</tr>
<tr>
<td>My colleagues of the department I work for are encouraged to ask others for assistance when needed.</td>
<td>2.26</td>
<td>1.23</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>My colleagues of the department I work for are encouraged to discuss their work with people in other workgroups.</td>
<td>2.14</td>
<td>1.20</td>
<td>Low</td>
<td>6</td>
</tr>
</tbody>
</table>
In the department I work for, overall vision is clearly stated.

<table>
<thead>
<tr>
<th>Pay</th>
<th>Mean</th>
<th>SD</th>
<th>Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of pay and fringe benefits I receive are satisfied.</td>
<td>1.98</td>
<td>1.36</td>
<td>Low</td>
<td>2</td>
</tr>
<tr>
<td>The degree to which I am fairly paid for what I contribute to this department is satisfied.</td>
<td>2.06</td>
<td>1.30</td>
<td>Low</td>
<td>1</td>
</tr>
</tbody>
</table>

In the department I work for, overall objectives are clearly stated.

<table>
<thead>
<tr>
<th>Job Security</th>
<th>Mean</th>
<th>SD</th>
<th>Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of job security I have is satisfied.</td>
<td>2.30</td>
<td>1.24</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>How secure things look for me in the future in this department is satisfied.</td>
<td>2.26</td>
<td>1.25</td>
<td>Low</td>
<td>2</td>
</tr>
</tbody>
</table>

In the department I work for, Knowledge is shared with other departments (e.g., partners, trade groups).

<table>
<thead>
<tr>
<th>Social</th>
<th>Mean</th>
<th>SD</th>
<th>Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel satisfied when talking to the people I work with on my job.</td>
<td>2.19</td>
<td>1.40</td>
<td>Low</td>
<td>2</td>
</tr>
<tr>
<td>The chance to get to know other people while on the job is good.</td>
<td>2.18</td>
<td>1.35</td>
<td>Low</td>
<td>3</td>
</tr>
<tr>
<td>The chance to help other people while at work is good.</td>
<td>2.29</td>
<td>1.39</td>
<td>Low</td>
<td>1</td>
</tr>
</tbody>
</table>

In the department I work for, the benefits of sharing knowledge compensate the costs.

<table>
<thead>
<tr>
<th>Supervisory</th>
<th>Mean</th>
<th>SD</th>
<th>Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>The degree of respect and fair treatment I receive from my supervisor are good.</td>
<td>2.18</td>
<td>1.36</td>
<td>Low</td>
<td>3</td>
</tr>
<tr>
<td>The amount of support and guidance I receive from my supervisor are satisfied.</td>
<td>2.26</td>
<td>1.26</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>The overall quality of the supervision I receive in my work is satisfied.</td>
<td>2.25</td>
<td>1.31</td>
<td>Low</td>
<td>2</td>
</tr>
</tbody>
</table>

In the department I work for, senior management clearly supports the role of knowledge in our department’s success.

<table>
<thead>
<tr>
<th>Growth Satisfaction</th>
<th>Mean</th>
<th>SD</th>
<th>Level</th>
<th>Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of personal growth and development I get in doing my job are satisfied.</td>
<td>2.11</td>
<td>1.24</td>
<td>Low</td>
<td>4</td>
</tr>
<tr>
<td>The feeling of worthwhile accomplishment I get from doing my job is satisfied.</td>
<td>2.26</td>
<td>1.27</td>
<td>Low</td>
<td>2</td>
</tr>
<tr>
<td>The amount of independent thought and action I can exercise in my job is satisfied.</td>
<td>2.27</td>
<td>1.25</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>The amount of challenge in my job is satisfied.</td>
<td>2.24</td>
<td>1.30</td>
<td>Low</td>
<td>3</td>
</tr>
</tbody>
</table>
APPENDIX C. SKEWNESS AND VIF FOR THE INDEPENDENT VARIABLES

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological KM Infrastructure</td>
<td>0.348</td>
<td>2.871</td>
<td>0.877</td>
</tr>
<tr>
<td>Structural KM Infrastructure</td>
<td>0.260</td>
<td>3.843</td>
<td>0.858</td>
</tr>
<tr>
<td>Cultural KM Infrastructure</td>
<td>0.328</td>
<td>3.053</td>
<td>0.965</td>
</tr>
</tbody>
</table>

BIographies

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