



INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN ECONOMICS & MANAGEMENT SCIENCES



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To Link this Article: <http://dx.doi.org/10.6007/IJAREMS/v7-i3/4286>

DOI: 10.6007/IJAREMS/v7-i3/4286

Received: 29 May 2018, Revised: 15 June 2018, Accepted: 23 June 2018

Published Online: 29 June 2018

In-Text Citation: (Alshatnawi & Ghani, 2018)

To Cite this Article: Alshatnawi, H. A. M., & Ghani, M. B. A. (2018). The Effect of Total Quality Management and Knowledge Management on Organizational Performance in Higher Education Institution in Jordan. *International Journal of Academic Research in Economics and Management Sciences*, 7(3), 17–29.

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Vol. 7, No. 3, July 2018, Pg. 17 - 29

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www.hrmars.com

ISSN: 2226-3624

The Effect of Total Quality Management and Knowledge Management on Organizational Performance in Higher Education Institution in Jordan

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Abstract

The general purpose of this study was to investigate the perceptions of Higher education institutions members regarding the application of Total Quality Management and Knowledge Management principles to their universities in Jordan, In addition, the study examined the extent to which these faculty members differ in their perceptions and the extent to which differences in perceptions were influenced by rank, educational level and years of experience. The sample consisted of 72 faculty members from four Education College's in Jordan. They completed a 31 - item questionnaire covering five dimensions of TQM and five dimensions of KM and one dimension of Organizational Performance. This study provides some insights in the resource-based view. It reveals that the resources in an organization may be hierarchical. KM may be one-step closer to organizational performance in the paths leading from TQM to organizational performance. This study contributes to the understanding of the relationship between TQM, KM and organizational performance.

Keywords: *Total Quality Management, Knowledge Management, Organizational Performance.*

Introduction

Throughout the world, organizations are now facing a common challenge resulting from rapid changes in the business environment. Organizations need to improve their performance in order to gain sustainable competitive advantages to survive in today's competitive environment. This serves as the driving force for a number of innovative strategic changes in many organizations. To cope with the changing expectations of the organization, there is a need for continuous improvement of the organizational performance. Different innovations can be integrated to keep

the performance above the competitors of all time. In enhancing the performance of any organization, in doing this effectively, the factors that drive such performance have to be well understood.

Both Total Quality Management (TQM) and Knowledge Management (KM) practices have been used for improving the performance of many organizations (Hung, Lien, Fang & McLean, 2010; Janpen, Palaprom & Horadal, 2005). The clear definition of TQM is not given until the 1980s (Crosby, 1979; Deming, 1986; Juran, 1986). Practitioners, researchers and the like have collectively defended the positive effects of TQM practices on organizational performance. Many organizations adopt TQM as a management paradigm worldwide.

Sirvanci (2004) cited that higher-education institutions (HEIs) are the knowledge base with research and teaching/learning as the fundamental functions. It is ironical that HEIs have been lagging behind other organizations in adopting and embracing this paradigm. TQM models in HEIs are based on the orientation of quality scholars, usually involves a number of "essential factors" or "core elements" such as leadership, customer focus, employee participation and development, training, continuous improvement and several other elements, which are all required for successful TQM achievement (Sirvanci, 2004). In our modern world popularly referred as the information age, knowledge is the key resource in this era. The problem today is not how to find the information, but how to manage it; the most important challenge for organizations is how to process knowledge and to make it profitable in the recent knowledge-driven organization (Sallis & Jones, 2002). Thus, KM today is attracting great attention in both business and academic realms (Wong, 2005; Zack, McKeen & Singh, 2009). Organizations are viewing KM as a critical success factor in today's dynamic environment (Ju, Lin, Lin & Kuo, 2006; Yeh & Ta, 2005).

The Situation of Higher Education in Jordan

Higher education in Jordan is recognized as a key force for development and modernization. This has caused an increase in the demand for its access, accompanied by a number of challenges. Higher education institutions in Jordan, as do higher education institutions in other countries, face many challenges, resulting from the advancement of science and technology, economic growth, social changes, and the internationalization and globalization of the world economy, as well as of higher education (Weifang, 1999). At present, Jordanian higher education enrolls about 398 thousand students in 34 public and private universities and 51 community colleges, under the supervision of the Ministry of Higher Education and Scientific Research which was established in 1985 (Ministry of Higher Education and Scientific Research). The Ministry of Higher Education and Scientific Research has confirmed its commitment to improving the quality of higher education in Jordanian institutions. The most important accomplishments of the Ministry have been the issuance of the new "Law of Higher Education No. (23), for the year 2009" and "The Jordanian Universities Law No. (20), for the year 2009". Accomplishments also include developing the Management Information System to support University decision-making, strategic planning, and development of higher education infrastructure. In addition, the Higher Education Accreditation Council for both public and private universities is now independent (Chapman, 2011; Ministry of Higher Education and Scientific Research). Despite these reform efforts to achieve high quality education, many universities and colleges in Jordan still struggle to integrate

quality to their management efforts. Khader (2009) stated that "Jordan has missed many spotlights on the road to educational excellence".

More recently, Salameh et al. (2011) tried to identify the requirements for implementing TQM in the Faculty of Planning and Management at Al-Balqa Applied University. Their results showed that the adoption of TQM was limited in Arab countries, particularly at higher education institutions. The results also indicated that there was a weakness in training for administrative leadership in the universities and colleges which is essential to the success of implementing TQM. Additionally, there was no concentration on teamwork, continuous improvement and coordination which lead to creativity and innovation.

Problem Statement

Nowadays, there are a series of competitions among organizations of all kinds, and this can be traced to the innovation brought by the information technology. No doubt, it takes extra steps for organizations to survive in such a competitive environment. Thus, there is a need for constantly improving the organizational performance to achieve an acceptable level of performance capable of gaining and sustaining competitive advantage. Enhancing organizational performance is not a new thing but the perspectives have been different and most especially, the question is what is the best approach for improving organizational performance in this knowledge-driven economy.

In spite of the large body of literature in TQM, Venkatraman (2007) noted that the first main barrier for the application of TQM in educational organization is the misinterpretation of TQM philosophy. The lack of proper understanding due to the process of TQM implementation is different in the educational sector as compared to the industry; and the other reason may lie in the lack of necessary knowledge about TQM core elements in the higher-education context (Venkatraman, 2007). Hence, the current study will try to bridge this gap. Therefore, this study aims to explore the adoption of total quality management and knowledge management principles in colleges of education in Jordan from faculty members' perspective.

The research questions for this study are:

- 1) To what extent the principles of TQM are implemented at Jordanian HEIs?
- 2) To what extent the principles of KM are implemented at Jordanian HEIs?

Literature Review

TQM can be regarded as the consequences of its successful implementation. Such can be estimated using a number of approaches, the most common approach in estimating TQM benefits is measuring the cost of poor quality (Evans & Dean, 2003; Juran, 1989). It has been revealed by so many researchers that the most important goal of TQM is improving organizational performance (Hellsten & Klefsjo, 2002; Motwani, 2001; Vouzas & Psychogios, 2007). In this regard, one can consider organizational performance enhancement as the best nexus of evaluating TQM benefits. Therefore, TQM is considered worthy if organizational performance is enhanced. Similarly, it is revealed that adopting TQM has a benefit of improving customer satisfaction, higher products and services quality and better market share (Hung & Lien, 2004; Pheng & Jasmine, 2004; Sharma & Kodali, 2008).

Continuous improvement, leadership and top management commitment to the aim of customer satisfaction, employee empowerment and customer focus have been identified as the goals of

TQM (Ugboro & Obeng, 2000). All these are equally considered as the benefits of TQM since they are all achieved via TQM. Higher education institutions are considered as the knowledge home where learning takes place through the research effort, only that it is unfortunate that they were lagging behind other non-education organizations in terms of TQM adoption and implementation (Sirvanci, 2004). This is because TQM applied first in the industry organizations, and then followed by the service-organizations in terms of TQM adoption (Venkatraman, 2007). Many researchers have established the elements of TQM into different aspects of the educational field, as a step to get better management of higher education (Bayraktar et al., 2008 and Lim et al., 2004).

Knowledge management has been recognized as an important tool in achieving organizational performance to the extent that many organizations are now making its implementation mandatory although only few studies have been done to assess the rate at which knowledge management improves organizational performance (Crnkovic, Belardo & Asoh et al., 2005; Zack et al., 2009).

KM in education can be defined as such a tool that gives clues to managers and staffs of educational organizations in the emerging world of KM to meet the challenge of the knowledge era. KM helps educational organizations to realize the merits and beauty of knowledge creation and sharing as means of enhancing teaching and learning process. However, there are limited studies performed to determine the effect of KM in educational organizations (Daud & Abdul Hamid, 2006; Muhammad et al., 2011). Bose (2004) stated that organizational leaders play the key role in ensuring KM effectiveness. Therefore, it is very important for them to effectively understand the nature of knowledge and knowledge development activities ranging from managing, measuring and extending KM values to provide tangible additional value to their organizations.

Methods

In this study, 72 faculty members from the faculties in Jordanian HEIs participated in the study. Fifty-five of the participants (76.4%) held a doctoral degree and only 17 (23.6%) held a master degree. Their professional experience in ranged from 2 to 32 years ($M = 11.69$ $SD = 8.72$). In relation to their academic rank, 5 (6.9%) hold the position assistant lecturer, 13 (18.1%) the position of Lecturer, 33 (45.8%) the position of assistant professors, 14 (19.4%) were associate professors, and 7 (9.7%) were full professors.

Instrument

There are three key concepts that form the constructs of this study; TQM, KM and OP. All the constructs are multidimensional, and they include multiple items of measurement for each of the variables. The main questionnaire was divided into four sections; the first section gives the background information about the respondent. The second section contained questions relevant to the degree of TQM core elements practices in Jordanian HEIs. Also, section three included questions related to the degree of KM processes practices of the Jordanian HEIs, the fourth section about organizational performance.

Each of the items in the survey was rated on a 5-point Likert scale. According to their perceptions of TQM and KM implementation on organizational performance, participants were asked to assign a rating of 1 to 5 (1 meaning "strongly not agree" and 5 meaning "strongly agree").

Data Analysis

All statistical analyses were carried out using SPSS version 18. Initially, the internal consistency coefficients were examined to ensure the instrument used in this study was reliable for the present sample. Frequencies, means and standard deviations were calculated to describe the sample as a whole. T-test and one-way analysis of variance (ANOVA) were also used to answer the research questions.

Data Collection Procedures

The survey was distributed to faculty members in Jordanian HEIs. They were delivered through mails and emails to the participant's email address along with a cover letter introducing and explaining the purpose of the study, stressing the confidentiality of responses and enlisting the response of the participant. Initially, 100 surveys were distributed, and with follow-up phone calls and emails, 72 usable surveys were returned resulting in a 72% response rate.

Results

There are various types of instrument reliability methods; the most popular technique used in the survey researches is internal consistency reliability. Meanwhile, the Cronbach's coefficient alpha is the most widely used test of internal consistency employed in quantitative research (Sekaran & Bougie, 2010). In line with several authorities in quantitative research, that the reliability of research constructs is considered acceptable with Cronbach's alpha value of .70 and above (Cavana et al., 2001; Hair et al., 2010; Sekaran & Bougie, 2010). The result of reliability analysis for each construct is revealed in Table 1.

Table 1
Statistical Summary of Reliability Analysis

Construct	No. of items	Construct code	Cronbach's alpha
TQM core elements			
1. Leadership Commitment	3	LC	.942
2. Strategic Planning	4	SP	.940
3. Training & Learning	4	TL	.944
4. Management by Fact	3	MF	.939
5. Process Focus	2	PF	.941
KM Processes			
1. Knowledge Acquisition	2	KAC	.910
2. Knowledge Identification	2	KID	.902
3. Knowledge Storage	3	KST	.896
4. Knowledge Sharing	3	KSH	.900
5. Knowledge Application	2	KAP	.895
OP Measures			
1. Job Satisfaction	3	JS	.841

Based on the displayed in Table 1, the results indicate that all the values of Cronbach's Alpha are greater than .70. Thus, reliability of measures was achieved. As a result, the instrument measures used in this study is valid and reliable.

Descriptive Statistics of Constructs

This section explains the descriptive statistics of all constructs, which involved in this study. Table 2 provides the information in terms of minimum value, maximum value, mean, and standard deviation of the data.

Table 2
Descriptive Statistics of Constructs

Variable	Minimum	Maximum	Mean	Std. Deviation
TQM core elements				
1. Leadership Commitment	2.626	4.884	4.015	.442
2. Strategic Planning	2.428	4.856	3.813	.490
3. Training & Learning	2.001	5.000	3.705	.512
4. Management by Fact	2.570	5.000	3.843	.523
5. Process Focus	2.665	4.831	3.787	.499
KM Processes				
1. Knowledge Acquisition	2.832	5.000	3.925	.434
2. Knowledge Identification	2.501	5.000	3.941	.462
3. Knowledge Storage	2.402	5.000	3.811	.518
4. Knowledge Sharing	2.801	5.000	3.907	.442
5. Knowledge Application	2.573	4.857	3.882	.441
OP Measures				
1. Job Satisfaction	2.220	5.000	3.912	.513

Based on the results presented in Table 2, the descriptive statistics explain that the mean of TQM core elements ranges from 3.705 to 4.015, with a small standard deviation ranging between .442 and .523. This indicates that the Jordanian HEIs have been applying TQM core elements. Generally, Strategic Planning, and training and learning are the two elements with the highest and the lowest extent of implementation, respectively.

In relation to the KM processes, the mean values range from 3.811 to 3.941, with a small standard deviation ranging between .434 and .518. This shows that the processes of KM have been implemented in Jordanian HEIs context. In general, the Knowledge Identification process has the largest mean value of all the KM processes, while the knowledge storage process is the slightest. Finally, in terms of Job Satisfaction (JS) the mean values of OP measures indicate to the need for further improvement. The mean values are 3.912 (JS) with standard deviation .513 (JS).

Test Hypothesis

The output SPSS we concerned with three tables are summary model, ANOVA and coefficient tables. The main hypotheses proposed to answer the research questions. The hypothesis was tested by using the correlations and multiple regressions as it was seeking to determine the relationships between total quality management and knowledge management (independent variables) and organizational performance (dependent variables).

The hypothesis is:

H1: There is significant, positive relationship between total Quality management and organizational performance.

The relationships between the TQM variables (Leadership Commitment, Strategic planning, Training & Learning, Management by Fact, Process Focus) and OP employed in this study are presented. Using correlation analysis, the results show that all variables are positive correlation. The correlation value suggests the five TQM dimensions are significantly correlated to the OP. Furthermore, the result showed the TQM overall is a positive and significant correlation with OP. The results of correlations indicated the existence of the relationship between the variables but did not identify the most crucial variables for this relationship. To achieve this objective, the multiple regressions were conducted between TQM variables and OP. Stepwise Multiple Regression analysis was used to determine the importance of each independent variable and its contribution to the mathematical model. According to the standardized beta (Beta-B-) coefficient, we can arrange them according to strongest contribution in explaining the dependent variable.

Table 3 Results of correlation test between TQM variables and OP

Correlations		LC	SP	TL	MF	PF	OP
OP	Pearson	.768**	.705**	.860**	.856**	.071	1
	Correlation						
	Sig. (2-tailed)	.000	.000	.000	.000	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4 Results for multiple regression analysis between TQM variables and OP

Coefficients

Model	Unstandardized	Standardized	Beta
	Coefficients	Coefficients	
	B	Std. Error	
(Constant)	.369	.088	.356
LC	.310	.045	.341
SP	.299	.039	.343
TL	.311	.034	.318
MF	.286	.047	.299
PF	.290	.044	.315

H2: There is significant, positive relationship between knowledge management and organizational performance.

The relationships between the KM variables (Knowledge Acquisition, Knowledge Identification, Knowledge Storage, Knowledge Sharing, Knowledge Application) and OP employed in this study are presented. Using correlation analysis, the results show that all variables are positive correlation. The correlation value suggests the five KM dimensions are significantly correlated to the OP. Furthermore, the result showed the KM overall is a positive and significant correlation with OP. The results of correlations indicated the existence of the relationship between the variables but did not identify the most crucial variables for this relationship. To achieve this objective, the multiple regressions were conducted between KM variables and OP. Stepwise Multiple Regression analysis was used to determine the importance of each independent variable and its contribution to the mathematical model. According to the standardized beta (Beta-B-) coefficient, we can arrange them according to strongest contribution in explaining the dependent variable.

Table 5 Results of correlation test between TQM variables and OP

Correlations		KAC	KID	KST	KSH	KAP	OP
OP	Pearson	.732**	.711**	.799**	.834**	.079	1
	Correlation						
	Sig. (2-tailed)	.000	.000	.000	.000	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

Table 6 Results for multiple regression analysis between TQM variables and OP Coefficients

Model	Unstandardized Coefficients B	Standardized Coefficients Std. Error	Beta
(Constant)	.366	.087	.344
KAC	.289	.038	.331
KID	.343	.037	.329
KST	.272	.041	.303
KSH	.293	.046	.347
KAP	.325	.049	.381

Table 7 Summary of the results of the hypothesis

(IV)	T	sig.	Beta	Result
TQM	5.399	.000	.249	Accepted
KM	6.913	.000	.267	Accepted

DV: OP

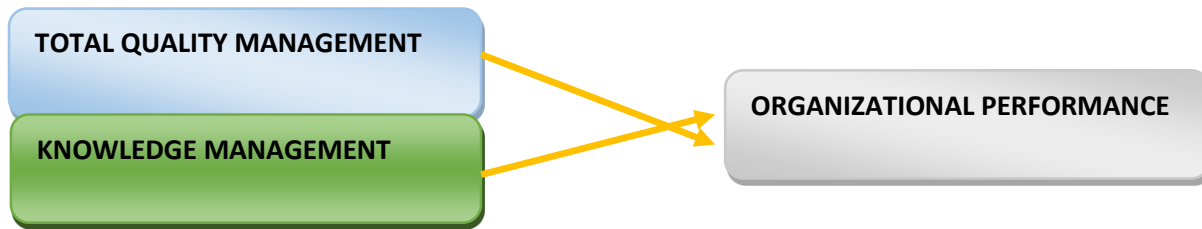


Figure 1. Research Framework

Conclusions and Recommendations

From the discussion and the arguments so far, it can be seen that virtually all the principles of TQM are related to KM practices. It's therefore important to take advantage of the knowledge era and its methodology while accessing organizational performance using TQM. There have been series of evidences from the reviewed literature both theoretically and empirically that the main principles of TQM are related to KM practices and thus, the advantage of such relationship can be tapped by combining the two paradigms towards enhancing OP. This paper, based on the literature review and content analysis carried out concludes that such relationship exists between TQM and KM. In this regard, it is hoped that further research will be undertaken to explore these relationships empirically.

Finally, in responding to a research question on the application of TQM and KM dimensions contributing to the improvement of organizational performance, from the evidence of this research, the conclusions reached, which also serve as recommendations to this study, are that the success of TQM and KM depends on the following:

- Top management must commit and support the implementation of TQM in the MAP Municipality.
- Top management must develop a TQM strategy that understand what customers want because customer-driven quality is a key strategic organizational issue which needs to be integral of overall organizational planning.
- The best way to improve organizational performance is by involving and empowering employees at all levels.
- The central feature of KM that needs to be emphasized is the idea of organizational culture being grafted onto management theory and practice.
- Information systems can help organizations achieve their quality goals.
- Communication must be an integral part of all management functions.
- Lastly, a willingness is required to satisfy customers by meeting and exceeding their expectations.

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