A Structural Equation Model on Knowledge Management Performance in Higher Education Institutions in Region VIII

Review of Integrative Business & Economics Research

Kristin O. Espita*
University of Mindanao; Southern Leyte State University

Eugenio S. Guhao, Jr.
University of Mindanao

ABSTRACT

This study identifies the best fit model for knowledge management performance in higher education institutions located in Region VIII, Eastern Visayas. Empirical studies have been conducted in the areas of transformational leadership, organizational learning, and organizational strategy. However, there has been limited research on the interrelationships among these variables and their direct influences on knowledge management performance. To address this research question, this study employs the descriptive-correlation technique based on structural equation modeling (SEM). The respondents of the study are 400 administrative staff members of higher education institutions located in the Region. The findings reveal a significant relationship between the latent exogenous variables and knowledge management performance. The best fit model (namely, Structural Model 3) indicates that transformation leadership, organizational learning, and organizational strategy are critical determinants of knowledge management performance. The indicators of the variables in the best fit model include: idealized influence and inspirational motivation for transformational leadership; individual learning and team learning for organizational learning; knowledge management strategy for organizational strategy, and; performance scale and quality performance for knowledge management performance.

Keywords: knowledge management performance; structural equation model; higher education institution.

Received 3 June 2021 | Revised 1 September 2021 | Accepted 30 September 2021.

1. INTRODUCTION

1.1 Rationale

Challenges of globalization and the growing demand for higher learning emphasize the important role of knowledge management (Mathew, 2010). However, Bhusry and Ranjan (2011) state that few higher education institutions achieve all or most of the important elements of higher education and their benefits because of their lack of awareness and failure to integrate knowledge management into their daily functions. Knowledge management has been a high priority in the corporate world. Devi Ramachandran, Chong, and Wong (2013), for instance, consider that higher education institutions must adopt knowledge management to accommodate their academic and administrative purposes, conceivably because academic institutions, like their business sector counterparts, need to develop their abilities in timely responding to continuing challenges.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Knowledge management, according to Al-Husseini (2014), aims to enhance organizational performance. It is argued that successful knowledge management performance would result in sharing of best practices, better decision making, ability to respond to organizational issues, reduced mistakes in work, improved people skills, and thus would improve process handling (Ahmed and Shepherd, 2010; Bhusry and Ranjan, 2011; Chen and Huang, 2009). Similarly, by promoting knowledge creation and knowledge sharing, knowledge management can also improve the abilities and competencies of organizations, giving them competitive advantage (Humayun and Gang, 2013). In the context of higher education, knowledge management aims to translate knowledge created through the academic and administrative processes of teaching, counseling, training, research, and consultancy into institutional learning (Ranjan and Khalil, 2007). Higher education institutions can also use knowledge management to support their organizational missions by promoting knowledge-based activities that are in line with their institutional achievements, thereby improving the quality of their performance (Sunalai, 2015). The latter further states that this integration would lead to better operational services, capacity development, and institution effectiveness, subsequently leading to increased productivity and goal achievement.

As deduced in several studies, transformational leadership is considered a factor in successful knowledge management performance (Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, and Rezazadeh, 2013; Hayat, Hasanvand, Nikakhlag, and Dehghani, 2015). Transformational leaders have the power to inspire members to contribute to effective knowledge management performance by having a shared vision and subsequently spur motivation. On the other hand, organizational learning and knowledge management have gained popularity recently due to the increased acknowledgment that knowledge asset is vital to organizational success and sustainability (Turyasingura, 2011).

Correspondingly, organizational strategy is defined as a plan that ascertains the progress of an organizational initiative (Cahyaningsih, Sukmiati, Chasanah, and Sensuse, 2013). Particularly, organizational strategies in managing knowledge assets contribute to the attainment of successful knowledge management initiatives.

Despite the fact that several studies have been conducted in many areas of knowledge management, only a few educational institutions have adopted a full-fledged knowledge management system. According to Choy Chong, Salleh, Noh Syed Ahmad, and Syed Omar Sharifuddin (2011), this is mostly because of the lack of studies on knowledge management performance in the higher education context. Specifically, there is a paucity of empirical studies on knowledge management strategic factors such as transformational leadership, organizational learning and strategies, and their relationship with knowledge management performance within the higher education sector. Nevertheless, the growing demand and globalization put pressure on the academic sectors, which are the main producers of knowledge assets and play important roles in sustainable economic development. Hence, through this study's findings, we are able to impart insights to the leaders of the academic institutions and enable them to implement knowledge management practices more effectively. This study contributes to existing knowledge by providing an in-depth understanding of knowledge management performance in the Region VIII higher education institutions.

1.2 Research Objective

This study aims to determine the best fit model for knowledge management performance in higher education institutions in Region VIII. Specifically, this study aims to:

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

1.2.1 supplement leaders of organizations with understanding of the different factors affecting knowledge management performance such as transformational leadership, organizational learning, and organizational strategy in a growing knowledge economy.
1.2.2 aid academic sectors in the effective implementation of knowledge management systems and programs.
1.2.3 add to the body of literature on knowledge management performance and its correlation with various determinants considered in this study.

1.3 Hypothesis

This study empirically tests for following null hypotheses:

1.3.1 There is no significant relationship between:
1.3.1.1 Transformational leadership and knowledge management performance;
1.3.1.2 Organizational learning and knowledge management performance;
1.3.1.3 Organizational strategy and knowledge management performance.
1.3.2 There is not a best fit model for predicting knowledge management performance in higher education.

1.4 Review of Related Literature

1.4.1 Transformational Leadership

Among different leadership styles considered in past studies in the field of management, the most relevant one for the purpose of this study is transformational leadership (Diaz-Saenz, 2011). Burns (1978) developed the concept of transformational leadership and averred that transformational leadership is a vision-oriented and people-focused style of leadership. For this reason, people who are under transformational leaders feel respected and trust their leaders and thus are willing to commit more than what is expected of them. Further, transformational leaders effectively engage their employees in instituting knowledge management systems and encourage them to establish better communication among themselves.

There are four indicators of transformational leadership, namely idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass and Avolio, 1997; Bass and Riggio, 2012). In the study of Jovanovic and Ciric (2016), these dimensions of transformational leadership are perceived to be important, especially in the higher education sector, as it would build a positive academic environment for all the members of the institution and would eventually make the institution a better place for learning.

Several studies have explored the impact of transformation leadership style on individual employees and organizational knowledge management performance. Gowen III, Henagan, and McFadden (2009), for instance, affirmed that transformational leadership improves the overall knowledge management performance. Humayun and Gang (2013) opined that leaders can influence employees' intention regarding knowledge sharing by developing a knowledge-based organizational culture.

1.4.2 Organizational Learning

In an information and knowledge economy, organizational learning and knowledge management are two important concepts that could impact the realization of

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

organizational goals (Castaneda, Manrique, and Cuellar, 2018). Organizational learning has been constantly linked to an organization's competitive advantages and responsiveness to changes (Gilaninia, Ganjinia, & Karimi, 2013; Odor, 2018). Thus, it is imperative that organizations take advantage of and fully utilize their valuable knowledge assets that are unique to them. According to Smith (2012), more organizational learning is necessary for sustainability in a complex, dynamic, and stiff environment.

Since learning is the fundamental function of colleges and universities, the higher education sector must continually acquire new ideas and constantly update its knowledge to be sustainable and to respond to challenges (Veisi, 2010). Therefore, the concept of organizational learning should be on top of higher education concerns. Consequently, Namada (2018) stated that, while learning happens at three levels within an organization (namely, individual learning, team learning, and institutional learning), these levels interact to create organizational learning.

1.4.3 Organizational Strategy

Organizational strategy is a scheme employed by organizations to thrive and be successful in a competitive environment. Kafashpoor, Shakoori, and Sadeghian (2013) proclaimed that organizational strategy is one of the dynamics which can significantly affect organizational effectiveness and knowledge management performance.

Correspondingly, organizational strategy as a determinant of knowledge management performance is prompted by three indicators, namely, knowledge management strategy, performance measuring, and elimination of restrictions. These knowledge factors depict the economic factors that are instrumental to successful knowledge management performance (Kozjek and Ovsenik, 2016). Choo and Neto (2010) added that successful knowledge management performance depends on the efforts of the management to provide necessary infrastructure and circumstances for effective knowledge creation and sharing.

In the context of the higher education, all the constraints impeding knowledge management implementation, particularly the limitations arising from the bureaucratic structure, must be removed at all costs. Employees' awareness of the significance of knowledge management performance must be emphasized. Higher education institutions can well implement knowledge management if employees recognize it and are rewarded for openly and willingly sharing and applying their intellectual capital (Devi Ramachandran *et al*., 2013). This effort will ensure successful implementation of knowledge management initiatives in higher education institutions as well as in other organizations committed to knowledge management.

1.4.4. Knowledge Management Performance

Many organizations acknowledge that successful performance is not only attributable to tangible resources but also signifies effective management of knowledge assets (Bagorogoza, 2015). When organizations are challenged with rapid environmental changes and stiff competition, knowledge is recognized as an important resource to acquire and sustain competitive advantage (Sunalai, 2015). Similarly, Theriou, Maditinos, and Theriou (2011) argue that it is crucial for an organization to manage knowledge assets, especially in a knowledge economy. Therefore, knowledge management, if understood and implemented effectively, is a valuable tool for developing competitive advantages.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

The significance of knowledge management in higher education is indispensable. Higher education institutions have excellent opportunities of applying knowledge management practices to support every part of their missions, whether it be in training, research, or consultancy work (Turyasingura, 2011). Accordingly, the author concludes that knowledge management performance should be a key strategic area in higher education.

There are three vital indicators in measuring knowledge management performance, namely, performance scale, quality performance, and work speed. These indicators also reflect the overall organizational performance of the institution. It is important that these factors are measured so as to reveal how well the knowledge management initiatives and the organization perform and whether the strategies of implementation are effective or not (Qabbaah, 2013).

1.5 Theoretical Framework

Existing theories, models, and propositions are reviewed in this section to establish a reliable and valid basis for how knowledge management performance is related to transformational leadership, organizational learning, and organizational strategy. Frist, the association of transformational leadership and knowledge management performance anchors on Lee and Kim's (2001) Knowledge Management Model. The mutual link as depicted in the model can be viewed from the four critical roles that transformational leaders play, namely, idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Sayyadi Ghasabeh and Provitera, 2018). In the model, while it is understood that sharing of knowledge with different partners of the organization develops an innovative atmosphere, this, in turn, enables an intellectual stimulation which is aimed at promoting innovation in the organization (Wang and Wang, 2012). Moreover, the knowledge management process boosts the inspirational motivator role of transformational leaders by setting the desired goal to uncover opportunities for the organization. On the other hand, the idealized influence of transformational leaders is enhanced by knowledge management as they develop a more effective vision which includes detailed information about the environment. Lastly, empowerment of employees as the main purpose of individualized consideration is positively influenced by a climate which inspires knowledge creation (Badah, 2012). Thus, the preceding evidence provides a strong theoretical foundation regarding the link between transformational leadership and knowledge management performance.

On the other hand, the relational theory of organizational learning strongly supports the correlation between organizational learning and knowledge management performance. According to Scott (2011), this theory is based on the concept of knowledge sharing taking place at different levels in the organization. Scott (2011) further asserted that researchers have confirmed that the strength and potentials of learning at the individual level are high. Concisely, sharing of knowledge provides food for common intelligence and promotes individual and organizational learning which enhances competitive advantages and effectiveness at the individual, team and organizational levels (Beauregard, Lemyre, and Barrette, 2015). Earlier writings of Senge (1990) also explained that the ideas of organizational learning and knowledge sharing can create opportunities for the organization.

Successful knowledge management performance is linked with effective organizational strategies (AL-Hakim, Hassan, and Abdullah, 2012). Particularly, Chong, Choy and Wong (2009) discovered that an organization's ability to attain successful

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

knowledge management performance depends on how it chooses and utilizes organizational strategies, which would eventually give it competitive advantages. Thus, the link between organizational strategies and knowledge management performance is important to achieving organizational goals.

1.6 Conceptual Framework

This section presents hypothesized models for determining the best fit model for knowledge management performance in higher education institutions. Further, this section explains how to measure the relationship in each pair of the following variables: transformational leadership and knowledge management performance; organizational learning and knowledge management performance; and organizational strategy and knowledge management performance.

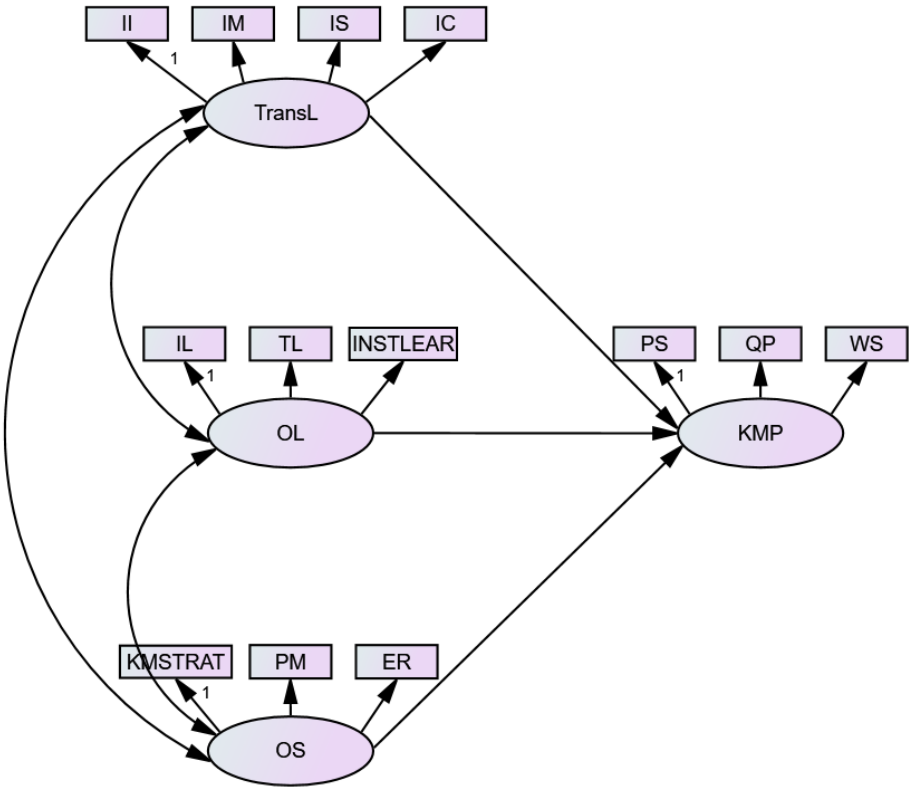

Figure 1. Hypothesized Model

Legend:
II – Idealized Influence
IM – Inspirational Motivation
IS – Intellectual Stimulation
IC – Individualized Consideration
TransL – Transformational Leadership
IL – Individual Learning
TL – Team Learning
INSTLEAR – Institutional Learning
OL – Organizational Learning
KMSTRAT – KM Strategy
PM – Performance Measuring
ER – Elimination of Restrictions
OS – Organizational Strategy
PS – Performance Scale
QP – Quality Performance
WS – Work Speed
KMP –Knowledge Management Performance

1.7 Significance of the Study

This study provides leaders with discernment that, with an adept understanding of knowledge management, they can quickly identify, organize, and apply knowledge and

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

transform individuals and organizations to become more responsive and effective players in the growing knowledge economy. Also, the nature of knowledge management is to nurture an environment that develops a commitment to lifelong learning in the institutions. Thus, this study will provide an in-depth account of the factors such as transformational leadership, organizational learning, and organizational strategy and their impacts on knowledge management performance.

Further, this study presents the social importance of knowledge management performance in the academic sector, especially for institutions of higher learning that are major producers of knowledge resources. Proper acquisition, utilization, and dissemination of knowledge between and among organizations must be preserved to uphold productive and harmonious relationships between them. Therefore, findings of this study assist proper implementation knowledge management systems and programs.

Finally, this study is useful for future research of knowledge management. The results may be utilized as an addition to the literature in the field knowledge management. Researchers may investigate different relationships among the variables to support or disprove their future propositions.

2. METHOD

This study uses a descriptive-correlational technique of Structural Equation Modeling (SEM) to examine the degree to which knowledge management performance is related to the following variables: transformational leadership, organizational learning, and organizational strategy. SEM is an appropriate and practical approach to validate causal relationships between variables and prediction. Yokell (2010) stated that a complex task of SEM is to determine the best fit model.

To collect relevant data, an adapted questionnaire was administered to 400 administrative staff members from the Region VIII higher education institutions. The first part of the questionnaire contains questions on transformational leadership that was based on the study of Al-Husseini (2014). The second part is a survey on organizational learning adapted from the study of Turyasingura (2011). The survey on organizational strategy was adapted from Kozjek and Ovsenik (2016). To evaluate the institutions' knowledge management performance, the questionnaire is focused on the following performance scale, quality performance, and work speed. This part of the instrument was based on a related study by Qabbaah (2013). A five-point Likert Scale was used to measure the level of agreement of the respondents to each question. Moreover, the questions were structured to fit the context of the higher education institutions.

We conducted a pilot test and used Cronbach's alpha for reliability analysis on the consistency and reliability of the instruments. The results suggest that Cronbach's alpha for the transformational leadership was 0.953; organizational learning was 0.947; organizational strategy was 0.936, and; knowledge management performance was 0.904. As all the alpha values were greater than 0.9, the instruments had excellent reliability and very high consistency. These findings ascertained that the items in the questionnaire are able to measure the concepts.

3. RESULTS

3.1 Correlation between transformational leadership and knowledge management performance

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

In Table 1, the results show a significant relationship between *transformational leadership* and *knowledge management performance*. The overall r-value is 0.690 with a p-value < 0.05, and thus the null hypothesis is rejected. Accordingly, the correlation between the overall *transformational leadership* and the indicators of *knowledge management performance* is statistically significant. Specifically, the resulting r-values of the correlations are 0.687 for *performance scale*, 0.619 for *quality performance*, and 0.629 for *work speed*, which are all significant at the 5% level.

Table 1: Correlation between transformational leadership and knowledge management performance

Transformational Leadership	**Knowledge Management Performance**			
	Performance Scale	**Quality Performance**	**Work Speed**	**Overall**
Idealized Influence	0.600* (0.000)	0.546* (0.000)	0.556* (0.000)	0.606* (0.000)
Inspirational Motivation	0.607* (0.000)	0.541* (0.000)	0.574* (0.000)	0.614* (0.000)
Intellectual Stimulation	0.612* (0.000)	0.569* (0.000)	0.545* (0.000)	0.615* (0.000)
Individualized Consideration	0.618* (0.000)	0.542* (0.000)	0.558* (0.000)	0.612* (0.000)
Overall Transformational Leadership	0.687* (0.000)	0.619* (0.000)	0.629* (0.000)	0.690* (0.000)

*Significant at the 0.05 significance level.

3.2 Correlation between organizational learning and knowledge management performance

In Table 2, the results show a significant relationship between *organizational learning* and *knowledge management performance.* The overall r-value was 0.784 with a p-value of less than 0.05. Thus, it is practical to say that there is a significant relationship between the two variables and thus the null hypothesis is rejected.

To examine closely, the correlation between the overall *organizational learning* and the indicators of *knowledge management performance* all show significant relationships. Specifically, *performance scale* has a r-value of 0.780, *quality performance* has a r-value of 0.714, and *work speed* has a r-value of 0.708. All of them have a p-value < 0.05. The analysis indicates that a significant relationship exists between the overall *organizational learning* and the indicators of *knowledge management performance.*

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

Table 2: Correlation between organizational learning and knowledge management performance

Organizational Learning	Knowledge Management Performance			
	Performance Scale	Quality Performance	Work Speed	Overall
Individual Learning	0.674* (0.000)	0.642* (0.000)	0.642* (0.000)	0.697* (0.000)
Team Learning	0.683* (0.000)	0.617* (0.000)	0.605* (0.000)	0.679* (0.000)
Institutional Learning	0.811* (0.000)	0.726* (0.000)	0.720* (0.000)	0.804* (0.000)
Overall Organizational Learning	0.780* (0.000)	0.714* (0.000)	0.708* (0.000)	0.784* (0.000)

*Significant at the 0.05 significance level.

3.3 Correlation between organizational strategy and knowledge management performance

Table 3 shows that the correlation between *organizational strategy* and *knowledge management performance* has an r-value of 0.828, which indicates that there is a significant relationship between the two variables. The p-value < 0.05 rejects the null hypothesis.

Additionally, the correlation between the overall indicators of the exogenous variable *organizational strategy* and the individual indicators of *knowledge management performance* suggest a significant relationship between them. The r-values of the correlations with p-values < 0.05 are 0.793 for *performance scale*, 0.754 for *quality performance*, and 0.828 for *work speed,*.

Table 3: Correlation between organizational strategy and knowledge management performance

Organizational Strategy	Knowledge Management Performance			
	Performance Scale	Quality Performance	Work Speed	Overall
KM Strategy	0.680* (0.000)	0.644* (0.000)	0.695* (0.000)	0.719* (0.000)
Performance Measuring	0.748* (0.000)	0.744* (0.000)	0.741* (0.000)	0.795* (0.000)
Elimination of Restrictions	0.748* (0.000)	0.683* (0.000)	0.697* (0.000)	0.758* (0.000)
Overall Organizational Strategy	0.793* (0.000)	0.754* (0.000)	0.778* (0.000)	0.828* (0.000)

*Significant at the 0.05 significance level.

3.4 Best Fit Model of Knowledge Management Performance

The last objective of this section is to determine the best fit model for knowledge management performance in higher education institutions. Three structural models were

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

estimated to identify the best model that reliably predicts knowledge management performance.

In identifying the best fit model, all test statistics must be within the acceptable ranges, i.e., the value of the Chi-Square/Degrees of Freedom must be between 0 to 2 with a corresponding p-value greater than 0.05, the Root Means Square of Error Approximation (RMSEA) must be smaller than 0.05, and the p-value of close fit must be greater than 0.05. All other test statistics such as the normed fit index, Tucker-Lewis index, comparative index, and the goodness of fit index must be greater than 0.95.

3.4.1. Goodness of Fit Measures of Structural Model 1

The first model in Figure 2 depicts the interrelationship between the exogenous variables, namely, transformational leadership, organizational learning and organizational strategy, and their causal relationship with the endogenous variable, knowledge management performance. The results of estimation show that all the test statistics are not within the acceptable ranges, and thus this model is considered a poor fit.

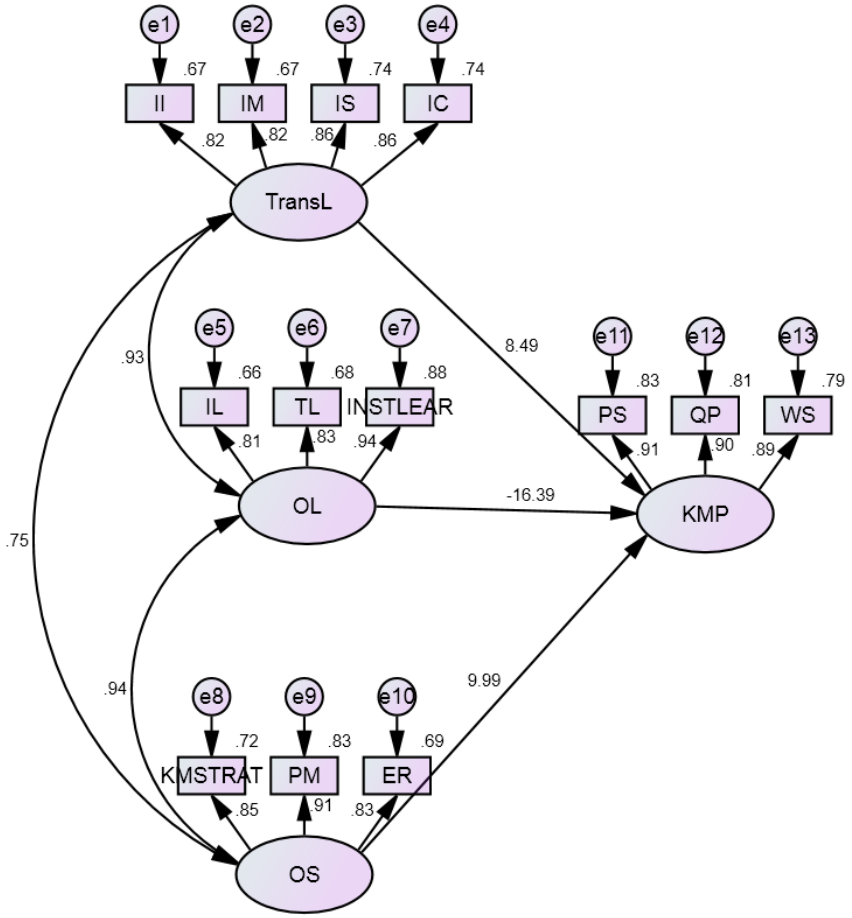

Figure 2. Structural Model 1

Legend: II – Idealized Influence
IM – Inspirational Motivation
IS – Intellectual Stimulation
IC – Individualized Consideration
TransL –Transformational Leadership
IL – Individual Learning
TL – Team Learning
INSTLEAR – Institutional Learning
OL – Organizational Learning
KMSTRAT – KM Strategy
PM – Performance Measuring
ER – Elimination of Restrictions
OS – Organizational Strategy
PS –Performance Scale
QP – Quality Performance
WS –Work Speed

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

KMP –Knowledge Management Performance

3.4.2. Goodness of Fit Measures of Structural Model 2

The second structural model in Figure 3 shows the interrelationship among the exogenous variables and their causal relationship with the endogenous variable. In this model, the indicators of idealized influence and inspirational motivation for the variable transformational leadership, and those of individual learning and team learning for organizational learning, knowledge management strategy, and elimination of restrictions of organizational strategy are considered. Likewise, the indicators of performance scale and quality performance for the endogenous variable knowledge management performance are included. All the other indicators are removed from the model. However, the test statistics including CMIN/DF, p-value, and RMSEA all fail to meet the standard for goodness of fit. Therefore, Model 2 is considered a poor fit even the other statistics are within acceptable ranges.

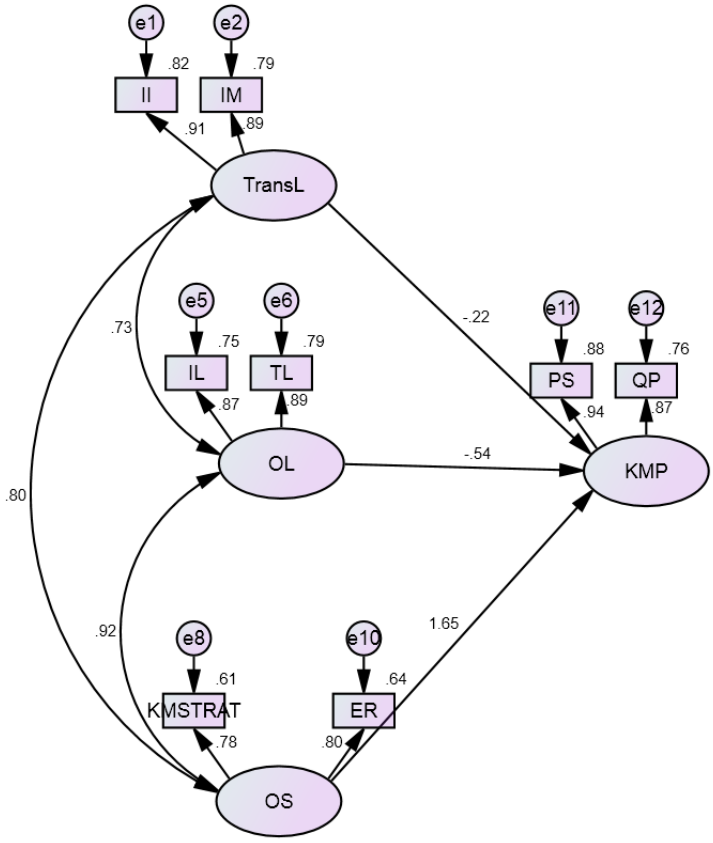

Figure 3. Structural Model 2

Legend: II – Idealized Influence
IM – Inspirational Motivation
TransL – Transformational Leadership
IL – Individual Learning
PS – Performance Scale
TL – Team Learning
OL – Organizational Learning
KMSTRAT – KM Strategy
ER – Elimination of Restrictions
OS – Organizational Strategy
QP – Quality Performance
KMP – Knowledge Management Performance

3.4.3. Goodness of Fit Measures of Structural Model 3

Finally, Structural Model 3 in Figure 4 is considered as the best fit model because all the test statistics for the coefficient values in this model are within the acceptable ranges for

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

goodness of fit as shown in Table 4. This finding rejects the null hypothesis that there is not a best fit model for knowledge management performance in the Region VIII higher education institutions.

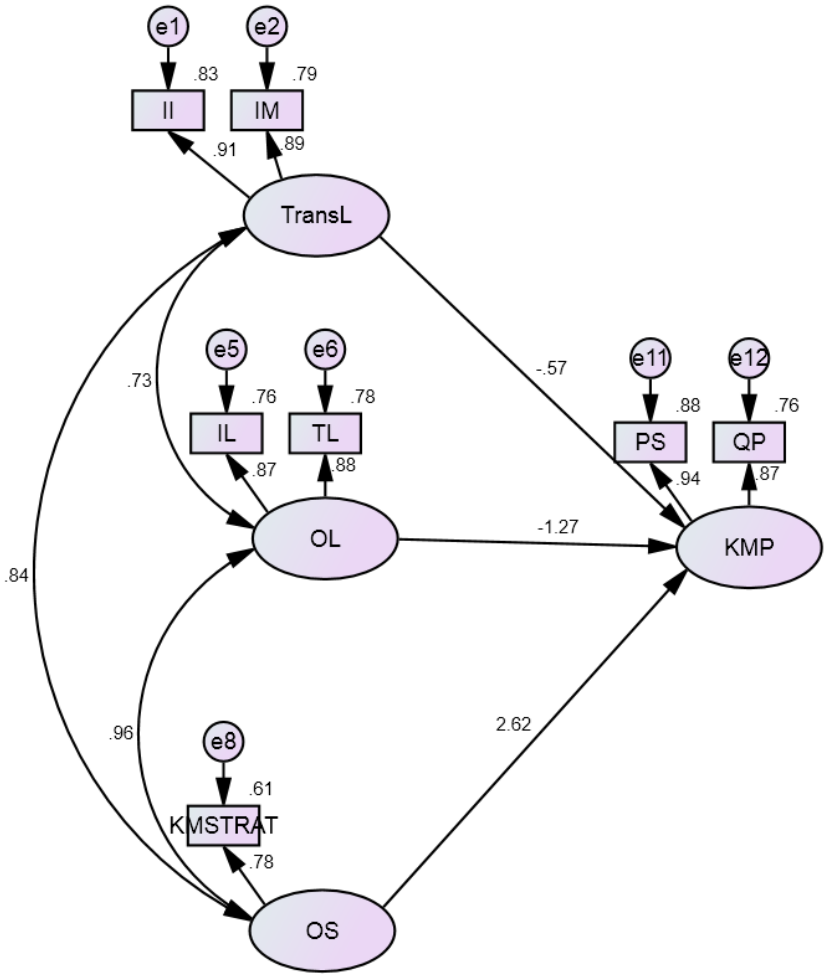

Figure 4. Structural Model 3 (Best Fit Model)

Legend: II – Idealized Influence
IM – Inspirational Motivation
TransL – Transformational Leadership
IL – Individual Learning
TL – Team Learning
OL – Organizational Learning
KMSTRAT – KM Strategy
OS – Organizational Strategy
PS – Performance Scale
QP – Quality Performance
KMP – Knowledge Management Performance

Table 4: Summary of Goodness of Fit Measures of the Three Structural Models

Model	CMIN/DF 0<value>2	P-Value > .05	NFI > .95	TLI > .95	CFI > .95	GFI > .95	RMSEA < .05	P-Close > .05
1	5.837	0.000	0.935	0.929	0.945	0.878	0.110	0.000
2	2.663	0.000	0.984	0.982	0.990	0.977	0.065	0.146
3	1.327	0.217	0.994	0.997	0.999	0.992	0.029	0.786

Legend:
CMIN/DF - Chi-Square/Degrees of Freedom
p-value - Probability value

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

NFI	- Normed Fit Index
TLI	- Tucker-Lewis Index
CFI	- Comparative Fit Index
GFI	- Goodness of Fit Index
RMSEA	- Root Means Square of Error Approximation
P-close	- P of Close Fit

4. DISCUSSION

This section discusses the results of this study. Structural models are developed to identify the best fit model for knowledge management performance in the Region VIII higher education institutions. The results reveal that transformational leadership, organizational learning, and organizational strategy all play pivotal roles in knowledge management performance.

4.1 Correlation Between Transformational Leadership and Knowledge Management Performance

The results of this study reveal a significant relationship between transformational leadership and knowledge management performance. This affirms the claim of Mas-Machuca (2014) that transformational leadership is a critical factor determining knowledge management performance. Further, Crawford (2005) also found a strong correlation between transformational leadership and knowledge management. In other words, it can be deduced that improved knowledge management performance can be a result of the presence of transformational leadership because a transformational leader is able to encourage employees to get involved in the knowledge management process and motivate them to take advantage of it.

The results of the correlation analysis suggest a significant relationship between the indicators of transformational leadership (including idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration) and the knowledge management performance indicators (including performance scale, quality performance, and work speed). The results regarding the overall correlation are consistent with those of the correlation between indicators. This constructs a strong correspondence with Analoui, Hannah Doloriert and Sambrook (2012) who presented a link between transformational leadership and activities pertaining to knowledge management. Furthermore, the results are aligned with Lee and Kim's (2001) Knowledge Management Model. For instance, Sayyadi Ghasabeh and Provitera (2018) documented that knowledge management performance is closely linked to the four elements of transformational leadership.

4.2 Correlation Between Organizational Learning and Knowledge Management Performance

The test for the relationship between organizational learning and knowledge management performance shows a significant relationship between the two variables - the r-value and p-value of the overall organizational learning and overall knowledge management performance indicates a significantly positive correlation. This is supported by the significant relationship between individual and team learning on the one hand and the overall knowledge management performance on the other. In addition, institutional learning and overall knowledge management performance are positively correlated.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

These findings are consistent with those of Farsan, Rizi, Azadi and Aroufzad (2014). Indeed, the strength of the correlations obtained from the present research suggests that the overall organizational learning and its sub-scales play a significant role in determining knowledge management performance. However, these findings deviates from Liao and Wu (2009) who showed that organizational learning and knowledge management performance can be either a cause or an effect of each other. This study confirms that organizational learning is a strong influential factor towards effective and successful knowledge management performance.

Furthermore, the positive correlation between organizational learning and knowledge management performance is an addition to the literature supporting the relational theory of organizational learning. This signifies that the success of knowledge management performance takes place at different levels of organizational learning (Scott, 2011).

4.3 Correlation Between Organizational Strategy and Knowledge Management Performance

The findings of this study show a significant relationship between organizational strategy and knowledge management performance. The values of the coefficients suggest a positive correlation between the indicators of these two variables. This indicates that, for every one-unit increase in the overall organizational strategy and its indicators, there is a corresponding increase in the overall knowledge management performance and its indicators. This corroborates the findings of Kozjek and Ovsenik (2016) suggesting that successful knowledge management performance is reflective of the effectiveness of organizational strategies. On the contrary, improper implementation of organizational strategies leads to poor performance of organizational initiatives for knowledge management (Kafashpoor *et al*., 2013).

Indeed, the link between organizational strategy and knowledge management performance is necessary in attaining organizational success. The studies by Al-Hakim *et al*. (2012) and Chong *et al*. (2009) conceptualized the importance of utilizing the best organizational strategies in developing successful knowledge management performance. Thus, this study's findings contribute to the substantiation of prior propositions.

4.4 Best Fit Model that Predicts Knowledge Management Performance

Another important finding of this study is the identification of the best fit model for knowledge management performance. Structural Model 3 (in Figure 4) shows that knowledge management performance is highly correlated with and influenced by transformational leadership, organizational learning, and organizational strategy. All the coefficient values of the hypothesized model meet the standard goodness-of-fit criteria. Thus, among the three models estimated in this study, Structural Model 3 is considered as the best fit model for predicting knowledge management performance at the Region VIII higher education institutions.

To estimate Structural Model 3, we considered the three exogenous variables presented in this study as significant predictors of knowledge management performance. Indicators of these variables were tested and those with small values were dropped. The best fit model was then estimated using structural equation model analysis. The best fit model shows that transformational leadership is measured in terms of idealized influence and inspirational motivation. Meanwhile, the two other indicators, namely, intellectual stimulation and individualized consideration, were found to be less significant in

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

determining knowledge management performance because of their small values. The model connotes that the respondents of the study considered that leaders who influence and inspire could elicit better performances from employees. For academic institutions, it is necessary to motivate employees to generate learning and knowledge because these institutions are major producers and suppliers of knowledge. Thus, it is imperative that the leaders and management of these institutions know how to motivate their employees to learn.

The findings reinforce the arguments of Sayyadi Ghasabeh and Provitera (2018) and Herman and Mitchell (2010) that transformational leaders who exemplify idealized influence share an effective vision and thus are being looked up to by employees as an inspiration to share their knowledge and skills. Moreover, employees also feel that leaders who emphasize a collective sense of mission is another success factor of transformational leadership (Al-Husseini, 2014). Furthermore, the inspirational motivation dimension of transformational leadership aims to build relationship among employees, which ensues the development of a collaborative spirit manifested in a common vision among them and thus increase their knowledge sharing commitment (Lynch, 2012).

Organizational learning is another variable in the best fit model that well predicts knowledge management performance. Organizational learning has been constantly linked to competitive advantages and the ability to respond to changes (Gilaninia *et al*., 2013 and Odor, 2018). Several studies stressed the importance of both abilities to meeting the challenges of globalization and rapid technological changes. Thus, in higher education, Veisi (2010) iterates that institutions must continually learn and update their knowledge bank for sustainable development not only for their own organizations but also for the industry as a whole.

In this study, organizational learning is predicted by individual learning and team learning. Institutional learning, on one hand, is disregarded because the respondents of the study do not consider it significant. On the other hand, there is motivation for individual learning if the employees feel the support from the management. For instance, such motivation can be created by giving the employees time to learn and help each other to learn and rewarding them for learning. This is in consonance with the arguments of Scott (2011) that the strengths and potentials of learning are strong at the individual level. Moreover, team learning also contributes to organizational learning as a predictor of knowledge management performance. Teams contribute more if they feel confident that the institution will consider their recommendations. Likewise, teams are empowered if they are given the freedom to adapt to their goals in response to emerging needs of the organization.

Finally, the third predictor variable identifying the best fit model for knowledge management performance in the Region VIII higher education institutions is organizational strategy. This supports the arguments of Kafashpoor *et al*. (2013) and Kozjek and Ovsenik (2016) that successful knowledge management performance is reflective of effective organizational strategies. However, among the three determinants of organizational strategy, namely, knowledge management strategy, performance measuring, and elimination of restrictions, only the first one is considered as an important indicator of organizational strategy. The other two indicators are found to be insignificant.

Knowledge management strategy is perceived by employees as a highly significant determinant of knowledge management performance. Similar to the findings of Kozjek and Ovsenik (2016), the respondents of this study suppose the necessity to develop knowledge management strategies. In addition, they consider that establishing

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

clear goals and objectives of shared visions supported by employees should be a primary commitment of an organization's management. Particularly, the organization should have distinct tasks and well-defined objectives for the knowledge management system to improve performance.

5. CONCLUSION

This study identifies major determinants of knowledge management performance. Consistent with the past literature, the findings suggest that knowledge management performance is significantly related to transformational leadership, organizational learning, and organizational strategy. Among the three hypothesized models estimated, the best fit model (Structural Model 3) is identified to predict knowledge management performance, which is consistent with Lee and Kim's (2001) Knowledge Management Model illustrating how knowledge management performance is associated with transformational leadership. It is also consistent with the relational theory of organizational learning that strongly adheres to the correlation between organizational learning and knowledge management performance (Scott, 2011), and consistent with Al-Hakim *et al.*'s (2012) proposition attributing successful knowledge management performance to effective organizational strategies.

6. RECOMMENDATION

Based on this study's findings, we recommend the following. First, the emphasis given by the respondents on transformational leadership, organizational learning, organizational strategy, and knowledge management performance connotes areas that can be further explored to raise organizational performance. For instance, performance can be improved by promoting to employees shared visions and continuous learning. Upholding the culture of knowledge sharing is important to enhancing learning activities within an organization.

Second, the significant effects of transformational leadership, organizational learning, and organizational strategy on knowledge management performance indicate that knowledge management performance can be improved by the commitment of the top management. In addition to being transformational leaders who promote organizational learning, the management should allocate sufficient organization resources for constructing a knowledge management technological system and ensuring regular assessments of the knowledge management impacts on financial performance.

Lastly, as the best fit model reveals that transformational leadership, organizational learning, and organizational strategy are significant predictors of knowledge management performance, the administrators of higher education institutions should focus on promoting transformational leadership among their officers, encouraging learning through knowledge sharing among employees, and implementing strategies committed to knowledge management performance.

REFERENCES

[1] Ahmed, P., & Shepherd, C. (2010). *Innovation management: Context, strategies, systems, and processes* London: Prentice-Hall.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[2] Al-Hakim, L. A. Y., Hassan, S., & Abdullah, O. Y. (2012). Critical success factors of knowledge management, innovation and organisational performance: An empirical study of the Iraqi mobile telecommunication sector. *British Journal of Economics, Finance and Management Sciences*, *4*(1), 31-49.
[3] Al-Husseini, S. J. (2014). *The impact of leadership style on innovation in Iraq's higher education institutions: The role of knowledge sharing* (Doctoral dissertation, University of Plymouth). Retrieved from https://pearl.plymouth.ac.uk/handle/10026.1/3108
[4] Analoui, B. D., Hannah Doloriert, C., & Sambrook, S. (2012). Leadership and knowledge management in UK ICT organisations. *Journal of Management Development*, *32*(1), 4-17.
[5] Badah, A. (2012). Relationship between the knowledge management processes and the administrative empowerment with the employees of the ministry of higher education and scientific research-Jordan. *European Scientific Journal, ESJ*, *8*(28).
[6] Bagorogoza, J. (2015). *Knowledge management and high performance: The Uganda financial institutions model for HPO*. Den Bosch: Uitgeverij BOX Press. Retrieved from https://pure.uvt.nl/ws/portalfiles/portal/9019234/Bagorogoza_Knowledge_24_11_2015.pdf
[7] Bass, B. M., & Avolio, B. J. (1997). *Full range leadership development: Manual for the Multifactor Leadership Questionnaire*. Palo Alto, California: Mind Garden
[8] Bass, B., & Riggio, R. (2012). *Transformational leadership*, 2nd ed., US, Lawrence Erlbaum Associates, Inc.
[9] Beauregard, N., Lemyre, L., & Barrette, J. (2015). The domains of organizational learning practices: An agency-structure perspective. *Societies*, *5*(4), 713-733. https://doi.org/10.3390/soc5040713
[10] Bhusry, M., & Ranjan, J. (2011). Implementing knowledge management in higher educational institutions in India: A conceptual framework. *International Journal of Computer Applications*, *29*(1), 34–46. https://doi.org/10.5120/3527-4805
[11] Burns, J. M. (1978). *Leadership*. New York: Harper and Row
[12] Cahyaningsih, E., Sukmiati, D., Chasanah, N., & Sensuse, D. I. (2013). Defining knowledge management strategy in Indonesian Government: Case study head office of Badan Kepegawaian Negara. *Jurnal Sistem Informasi*, *9*(2), 67-74. DOI: https://doi.org/10.21609/jsi.v9i2.353
[13] Castaneda, D. I., Manrique, L. F., & Cuellar, S. (2018). Is organizational learning being absorbed by knowledge management? A systematic review. *Journal of Knowledge Management*, *22*(2), 299-325. https://doi.org/10.1108/JKM-01-2017-0041
[14] Chen, C. J., & Huang, J. W. (2009). Strategic human resource practices and innovation performance: The mediating role of knowledge management capacity. *Journal of Business Research*, *62*(1), 104–114. https://doi.org/10.1016/j.jbusres.2007.11.016
[15] Chong, C. W., Choy, C. S., & Wong, K.Y. (2009). Is the Malaysian telecommunication industry ready for knowledge management implementation? *Journal of Knowledge Management*, *13*(1), 69-87. https://doi.org/10.1108/13673270910931170

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[16] Choo, C.W., & Neto, R.C.D.D.A. (2010). Beyond the ba: managing enabling contexts in knowledge organisations. *Journal of Knowledge Management*, *14*(4), 592-610. https://doi.org/10.1108/13673271011059545
[17] Choy Chong, S., Salleh, K., Noh Syed Ahmad, S., & Syed Omar Sharifuddin, S. I. (2011). KM implementation in a public sector accounting organization: An empirical investigation. *Journal of Knowledge Management*, *15*(3), 497-512. https://doi.org/10.1108/13673271111137457
[18] Crawford, C.B. (2005). Effects of transformational leadership and organizational position on knowledge management. *Journal of Knowledge Management, 9* (6), 6-16. https://doi.org/10.1108/13673270510629927
[19] Devi Ramachandran, S., Chong, S. C., & Wong, K. Y. (2013). Knowledge management practices and enablers in public universities: A gap analysis. *Campus-Wide Information Systems*, *30*(2), 76-94. https://doi.org/10.1108/10650741311306273
[20] Diaz-Saenz, H. R. (2011). Transformational leadership. *The SAGE Handbook of Leadership*, *5*(1), 299-310.
[21] Farsan, M., Rizi, R., Azadi, A., & Aroufzad, S. (2014). Relationship between knowledge management and organizational learning among physical education teachers. *European Journal of Experimental Biology*, 3(1), 526-530.
[22] Gilaninia, S., Ganjinia, H., & Karimi, K. (2013). The relationship between organizational learning and competitive strategies and its impact on performance of business and customer. *Nigerian Chapter of Arabian Journal of Business and Management Review*, *62*(1087), 1-7. DOI: 10.12816/0003625
[23] Gowen III, C. R., Henagan, S. C., & McFadden, K. L. (2009). Knowledge management as a mediator for the efficacy of transformational leadership and quality management initiatives in US health care. *Health Care Management Review*, *34*(2), 129-140. doi: 10.1097/HMR.0b013e31819e9169
[24] Hayat, A., Hasanvand, M.M., Nikakhlag, S., & Dehghani, M.R. (2015). The role of transformational leadership and its knowledge management processes. *Journal of Health Management & Informatics*, *2* (2), 41-46. Retrieved from http://jhmi.sums.ac.ir/index.php/JHMI/article/view/80/32
[25] Humayun, M., & Gang, C. (2013). Impact of leadership support on KMS-based knowledge seeking behavior: Lessons learned. *Research Journal of Applied Sciences, Engineering and Technology 5*(1)**,** 218-223.
[26] Jovanovic, D., & Ciric, M. (2016). Benefits of transformational leadership in the context of education. *The European Proceedings of Social & Behavioural Sciences EpSBS*. http://dx.doi.org/10.15405/epsbs.2016.09.64
[27] Kafashpoor, A., Shakoori, N., & Sadeghian, S. (2013). Linking organizational culture, structure, leadership style, strategy, and organizational effectiveness: Mediating role of knowledge management. *Advanced Research in Economic and Management Sciences (AREMS)*, *10*, 158-172. Retrieved from https://pdfs.semanticscholar.org/22aa/e332fbefd190b70e40094a1798c37212d247.pdf.
[28] Kozjek, D., & Ovsenik, M. (2016). Knowledge factors and their impact on the organisation. *RUO. Revija za Univerzalno Odlicnost*, *5*(4), 283. Retrieved from https://www.fos-unm.si/media/pdf/ruo/2016-5-4/pdf_05_04.pdf#page=4

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[29] Lee, J.H., & Kim, Y.G. (2001), A stage model of organizational knowledge management: a latent content analysis. *Expert Systems with Applications*, 20(4), 299-311. https://doi.org/10.1016/S0957-4174(01)00015-X
[30] Liao, S. H., & Wu, C. C. (2009). The relationship among knowledge management, organizational learning, and organizational performance. *International Journal of Business and Management*, *4*(4), 64-76. Retrieved from https://pdfs.semanticscholar.org/f998/8b009e07ac73d30091e8fadf471aa5de74d5.pdf.
[31] Lynch, M. (2012). *A guide to effective school leadership theories*. New York: Routledge. https://doi.org/10.4324/9780203181010
[32] Mas-Machuca, M. (2014). The role of leadership: The challenge of knowledge management and learning in knowledge-intensive organizations. *International Journal of Educational Leadership and Management*, *2*(1), 97-116. http://dx.doi.org/10.4471/ijelm.2014.10
[33] Mathew, V. (2010). Service delivery through knowledge management in higher education. *Journal of knowledge Management Practice*, *11*(3), 1-14.
[34] Namada, J. M. (2018). Organizational learning and competitive advantage. In *Handbook of Research on Knowledge Management for Contemporary Business Environments* (pp. 86-104). DOI: 10.4018/978-1-5225-3725-0.ch006
[35] Noruzy, A., Dalfard, V. M., Azhdari, B., Nazari-Shirkouhi, S., & Rezazadeh, A. (2013). Relations between transformational leadership, organizational learning, knowledge management, organizational innovation, and organizational performance: an empirical investigation of manufacturing firms. *The International Journal of Advanced Manufacturing Technology*, *64*(5-8), 1073-1085. https://doi.org/10.1007/s00170-012-4038-y
[36] Odor, H. O. (2018). A literature review on organizational learning and learning organizations. *Int J Econ Manag Sci*, *7*(494), 2. doi: 10.4172/2162-6359.1000494
[37] Qabbaah, H. (2013). *The impact of knowledge management on the organizational performance. A case study of the Jordanian social security corporation* (Master's thesis, UHasselt). Retrieved from https://uhdspace.uhasselt.be/dspace/bitstream/1942/15682/1/12338742012832.pdf
[38] Ranjan, J., & Khalil, S. (2007). Application of knowledge management in management education: A conceptual framework. *Journal of Theoretical and Applied Information Technology*, 15-25
[39] Sayyadi Ghasabeh, M., & Provitera, M. J. (2018). Transformational leadership and knowledge management: Analysing the knowledge management models. *The Journal of Values-Based Leadership*, *11*(1), 8. http://dx.doi.org/10.22543/0733.111.1206
[40] Scott, B. B. (2011). Organizational learning: A literature review. *IRC Research Program*, *126*. Retrieved from https://irc.queensu.ca/sites/default/files/articles/organizational-learning-a-literature-review.pdf
[41] Senge, P. (1990). *The fifth discipline: the art and practice of the learning organization*. New York: Doubleday.
[42] Smith, P. A. (2012). The importance of organizational learning for organizational sustainability. *The Learning Organization*, *19*(1), 4-10. https://doi.org/10.1108/09696471211199285

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)

[43] Sunalai, S. (2015). *Knowledge management systems in higher education institutions in Thailand: A holistic model of enablers, processes, and outcomes* (Doctoral dissertation). Retrieved from http://hdl.handle.net/1969.1/156246

[44] Theriou, N., Maditinos, D., & Theriou, G. (2011). Knowledge management enabler factors and firm performance: An empirical research of the Greek medium and large firms. *European Research Studies, 14*(2), 97. Retrieved from https://www.researchgate.net/profile/Dimitrios_Maditinos/publication/227430871_Knowledge_Management_Enabler_Factors_and_Firm_Performance_An_Empirical_Research_of_the_Greek_Medium_and_Large_Firms/links/5678498108ae0ad265c82a6c/Knowledge-Management-Enabler-Factors-and-Firm-Performance-An-Empirical-Research-of-the-Greek-Medium-and-Large-Firms.pdf

[45] Turyasingura, W. (2011). *Interdependency of knowledge management and learning: the case of higher education institutions in Uganda* (Doctoral dissertation). Retrieved from http://hdl.handle.net/10539/10895

[46] Veisi, H. (2010). Organizational learning in the higher education institutions (A case study of agricultural and natural recourses campus of University of Tehran). *International Online Journal of Educational Sciences, 2*(1). Retrieved from http://www.acarindex.com/dosyalar/makale/acarindex-1423904481.pdf

[47] Wang, Z., & Wang, N. (2012). Knowledge sharing, innovation and firm performance. *Expert Systems with Applications, 39*(10), 8899 - 8908.

[48] Yokell, M. R. (2010). *A quantitative correlational study of the relationship between knowledge management maturity and firm performance* (Doctoral dissertation, University of Phoenix). Available from UMI Dissertation Publishing. (UMI Number: 3463227).

ISSN: 2304-1013 (Online); 2304-1269 (CDROM); 2414-6722 (Print)