# Organizational culture and knowledge management processes: case study in a public university

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## Abstract

**Purpose** – The purpose of this paper is to examine knowledge management interrelationships in higher education institutions and to assess the impact of the university's culture on knowledge management processes: creation, dissemination, exchange and application.

**Design/methodology/approach** – The proposed model establishes the relationships between organizational culture (OC) and knowledge management processes in a single framework. The study used the organizational culture assessment instrument to determine the culture type and used structural equation modeling to assess the underlying relationships between knowledge management process and OC.

**Findings** – The results of the factor analysis used in this study suggest that adhocracy organizational culture, in which an organization is characterized by emphasis on individual initiative and employee empowerment, may not necessarily affect all knowledge management processes equally. In particular, an organization's culture principally influences the knowledge creation process, followed by knowledge exchange, in a public university setting.

**Originality/value** – The study provides a comprehensive outlook on the effect of adhocracy culture in higher education on the knowledge management process through the lens of one cultural context. In addition, this is the first study that explores the OC effect on knowledge management process in a Saudi public university.

**Keywords** Government–university–industry, Knowledge management, Knowledge-supporting culture

**Paper type** Research paper

## 1. Introduction

With the increased changes in the external environment and the need to be part of building a knowledge economy in their countries, higher education institutions are currently under pressure to generate new initiatives in their pursuit to be a learning organization. The main reasons behind these changes are the many challenges posed on universities from different stockholders to prepare their graduates to deal with the dynamic and complex job market and the increased competition between institutions in the higher education to improve their curriculum and to foster a climate encouraging sharing and applying knowledge.

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Organizations realize the importance of managing knowledge effectively in the contemporary competitive business environment. Knowledge has become an important tool for enhancing the quality of all processes in many kinds of organizations, and as a result, knowledge has to be considered a driving force for cultural, economic and technological developments in all sectors worldwide. Possessing the knowledge needed for a given organization to function effectively provides a basis for managers to make accurate and timely decisions, thereby improving the internal efficiency of processes, rendering the organization more flexible in responding to threats and opportunities and encouraging commitment among the organization's employees. In fact, many international and local organizations depend heavily on knowledge such that managing this asset effectively has become the lynchpin in efforts to improve economic performance and ensure the survival and development of organizations in both the public and the private sector.

Massaro *et al.* (2015) reviewed the studies in the knowledge management literature that was carried out in the public sector and found that research published in this sector is few and fragmented, although, most of the studies were focused on education and research centers they were mostly concentrated in India and Malaysia[1]. For example, in the education sector, Ranjan and Khalil (2007) studied the knowledge management tool and features implemented in business schools in India and highlighted several problems hindering knowledge management practices. Elia *et al.* (2017) examined ways to enhance the third mission of universities and keeping alumni involved in producing knowledge.

Although, many efforts have been made to integrate knowledge management practices into a range of processes within multiple organizations, numerous studies have shown that such efforts are met with many challenges. Among these challenges is an unsupportive organizational culture (OC), which is a matter of great concern given that OC undoubtedly plays a pivotal role in supporting and in some cases hindering knowledge management in any organization (Brown and Duguid, 2000; De Long and Fahey, 2000; Ruggles, 1998). Other researchers have also highlighted the role of OC in supporting knowledge management practices (Davenport *et al.*, 1998; Heaidari *et al.*, 2011; Lehner and Haas, 2010).

In the higher education context, Rowley (2000) argued that although higher education institutions would gain a lot through knowledge management, these institutions should make significant changes in their institution's culture and values; thus, a suitable institution culture is very crucial in carrying out knowledge management. In addition, Wahda (2017) found that organization learning culture in higher education has the biggest effect on achieving organizational performance through knowledge management.

Based on the above discussion, the purpose of the present study is to undertake and report on a comprehensive and integrated examination of the effects of OC on the process of knowledge management in a higher education institution through the lens of one cultural context. In particular, the study will investigate interrelationship between the knowledge management process and the relationship between OC and knowledge management process to determine whether any given OC type has a positive or negative influence on the success of knowledge management practices in a public university located in Saudi Arabia.

In the context of Saudi Arabia, there are number of studies that have focused on knowledge management but not in the higher education sector, for example, Alatatawi *et al.* (2013) studied the effect of environmental factors on the adoption of knowledge management in the public sector in particular government institutions. Al-Aama (2014) explored on the use of technology in managing knowledge management in Saudi municipality. Other studies have analyzed the private sector in Saudi Arabia (Al-Adaileh and Al-Atawi, 2011; Dulayami and Robinson, 2015; Migdadi, 2009; Nafei, 2014). To fill this gap of research in Saudi Arabia, this study is designed to shed light on how an organization's culture may

facilitate or hinder the creation, dissemination, exchange and application of knowledge in higher education institutions.

In this research, we aim to answer the following research questions:

*RQ1.* What influence does organizational culture as identified by Cameron and Quinn's (1999), Organizational Culture Assessment Instrument (OCAI) have in terms of determining the success of knowledge management practices?

*RQ2.* Is there a statistically significant relationship between organizational culture and knowledge management processes?

*RQ3.* Are there interrelationships between knowledge management processes?

The remainder of the paper is organized as follows. In Section 2, we review the literature related to knowledge management processes and OC. In Section 3, we describe the research methods including a description of the sample and the survey procedures. In Section 4, we present the research model analysis and discussion, followed by concluding remarks in Section 5.

## 2. Literature review and hypothesis development

Knowledge is at the foundation of all management processes. According to Lawson (2003), a general understanding of the characteristics of knowledge is required for the effective implementation of knowledge management practices, and this understanding is reflected in the ways knowledge is managed. Knowledge management is regarded as an important tool for organizational success from the viewpoint that it enhances the creation of new knowledge and through organizational values promotes efforts to share that knowledge, thereby contributing to an organization's competitiveness. Holsapple and Joshi (2000) stressed that the management of invisible and intangible people assets – featured in the minds and experiences of employees – are of great importance, arguing that without these assets, companies lack the vision to predict and create their organizational future.

Organizations adopt knowledge management protocols for many reasons, including enhancing efforts to create and share tacit knowledge, to improve internal collaboration, to share best practices, to provide competitive intelligence and to sustain a competitive advantage. King (2009) argued that the significance of knowledge management processes appears to be directly related to enhancements to organizational processes, such as innovation, collaborative decision-making and individual and collective learning—all of which support improvements in decision-making, in the management of organizational behaviors, and in regard to products, services and relationships. Other researchers, such as Rašula *et al.* (2012) and De Long and Fahey (2000), measured knowledge management practices through information technology to show that organizational type and knowledge positively affect organizational performance, make individuals more effective at sharing explicit knowledge and provide new ways to expose tacit knowledge, which in turn leads to achieving a competitive advantage.

### *2.1 Knowledge management processes*

Most of the research on knowledge management relies on either the process approach or the practice approach. The process approach focuses on strategies to codify and store knowledge in database systems, which can be accomplished by formalized controls, processes and technologies within the organization (Hansen *et al.*, 1999). Especially suitable for managing explicit knowledge within an organization, this approach is developed from

direct experience and action. However, it can neither capture nor manage the tacit knowledge embedded in people's heads (De Long and Fahey, 2000). On the other hand, the practice approach focuses on managing tacit knowledge that can be shared only through highly interactive conversation, storytelling and shared experience. In this approach, information technology tools are not used to gather information but are used as a means of communication to support the goal of building a social environment within an organization to facilitate the sharing of tacit knowledge. To accomplish this, an organization may find it necessary to invest heavily in its employees (Foray and Gault, 2003).

Researchers have identified several stages in the knowledge management process: knowledge creation (KC), knowledge acquisition, knowledge storage, knowledge exchange (KE), knowledge sharing and knowledge application (KA) (Bergeron, 2003; Heaidari *et al.*, 2011; Horwitch and Armacost, 2002; King, 2009; Lawson, 2003; Parikh, 2001; Wiig, 1997). In addition, many researchers have studied the relationships between these distinct processes (Baker and Sinkula, 1999; Fugate *et al.*, 2009; Hult *et al.*, 2004) and have identified a positive impact across each of them.

The first stage in knowledge management process is the creation of knowledge that indicates the organization ability to develop new or novel ideas that could be useful solutions and would not be reduced or easily reproduced (Ichijo and Nonaka, 2006). The created knowledge would take different format such as discovering new content or reconfiguring the foreground and background knowledge of existing content within all kinds of knowledge owned by the organization. The created knowledge will then be disseminated inside the organization boundaries both formally and informally (Kingston, 2012) through different means such as reports, boards, notes, internal publications, printed documents, training programs, rotating in steady jobs, stories and myths, temporal workforce and informal networks. Knowledge dissemination (KD) is a critical factor in any organization's success, however, this process depends on different motivations, inspiration, experimentation that play an important role, also interactions within the environment of organization that can generate new facts and meanings. Fugate *et al.* (2009) argued that when employees uncover new knowledge, they feel obligated to share that knowledge such as taking advantage of that knowledge, their findings found evidence that high levels of KC has a positive effect on KD. Thus, we propose the following hypothesis:

*H1.1.* Knowledge creation has significant impact on knowledge dissemination.

Sharing knowledge in a timely manner does help making the knowledge accessible when needed by others in the organization (Fugate *et al.*, 2009). In this regard, sharing knowledge depends on knowledge management systems used in the organization and its information and communication technology as it aids in collecting data and information. However, this may depend on the employee's willingness and satisfaction in supporting others with self-confidence in sharing their knowledge. Prior studies exploring the knowledge management process found evidence that KD has a positive effect on KE (Fugate *et al.*, 2009; Islam *et al.*, 2017). Thus, we hypothesize the following:

*H1.2.* Knowledge dissemination has a significant impact on knowledge exchange.

Previous research (Alavi and Leidner, 2001; Masa'deh *et al.*, 2017; Pfeffer and Sutton, 2000) describes KA as one of the important vehicles for organizational performance, as KC and exchange would not yield to any improvement if not applied. In fact, KA could be viewed as a source of competitive advantage. Islam *et al.* (2017) explored the effect of knowledge management on service innovation, their findings show that

KE has a positive effect on knowledge application. Thus, we hypothesize the following:

*H1.3.* Knowledge exchange has a positive significant on knowledge application.

*2.2 Knowledge management and culture*

The assessment of success factors related to applying knowledge within organizations is considered an important step in the direction of establishing a generally relevant validation of knowledge management (Hariharan, 2005). An effective and accurate assessment protocol helps to establish the critical areas identified as a potential for the successful knowledge management needed to create a competitive advantage. Researchers have identified several critical success factors, such as leadership that values and drives knowledge management, an OC that supports the values of KC and sharing, technology that connects knowledge thorough a network to develop and share a breadth of knowledge, and a learning organization that relies on virtual teams and exchange forums for sharing knowledge (Akhavan *et al.*, 2006; Jennex and Olfman, 2005; Yew Wong, 2005).

As discussed, the knowledge management process depends on several critical factors, among which is the culture of the organization. Alavi *et al.* (2005) highlighted the important and complicated role of OC in the field of knowledge management. Further, O'Reilly *et al.* (1991) emphasized the role of OC in crystallizing employees' attitudes, values and norms. In a recent study, Danish *et al.* (2012) also showed that knowledge management practices have strong positive associations with organizational effectiveness and that these relationships are positively moderated by a conducive OC. Tseng (2011) also provided results that hierarchical culture influences the knowledge management process and argued that hierarchical culture can act as mediators for knowledge conversion and knowledge management process.

Other researchers have also highlighted the role of OC in supporting knowledge management practices (Davenport *et al.*, 1998; Heaidari *et al.*, 2011; Lehner and Haas, 2010). The OC concept in any kind of enterprise is considered a key element in managing employees to work together, to adapt to external conditions and the internal climate through organizational changes (Al-Alawi *et al.*, 2007). Finally, Donate and Guadamillas (2010) found that an organization culture oriented toward process or product innovation and knowledge management would contribute toward the improvement of the organization technological results.

There are several established models of culture in the literature, including:

- Hofstede's (1980) cultural dimensions model, which is focused on individualism, power distance, uncertainty avoidance and masculinity;
- the organizational culture profile developed by O'Reilly *et al.* (1991), which is based on the idea that cultures can be distinguished by values reinforced within organizations; and
- the competing values framework developed by Quinn and Rohrbaugh (1983), which examines competing demands within organizations in reference to conflicting dimensions.

The first dimension of Quinn and Rohrbaugh's model is the organization's focus on internal improvement or its interaction with the external environment and the second dimension is a focus on stability and control. The combination of the two dimensions' results in four

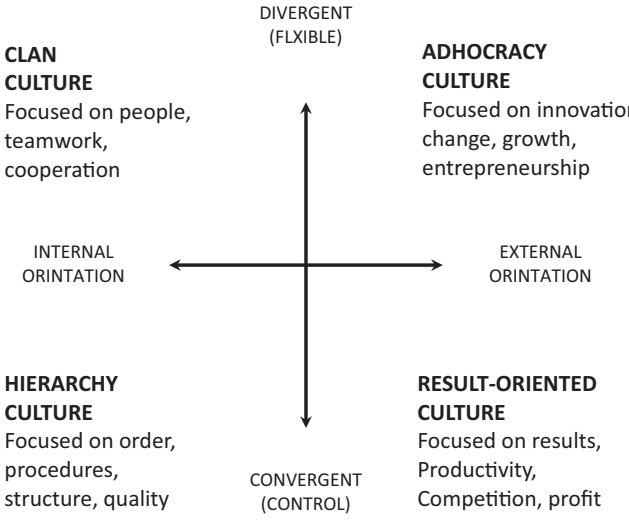
distinct types of culture: clan culture, adhocracy culture, hierarchal culture and result-oriented culture (Figure 1).

Some of the barriers to the effective implementation of knowledge management practices within organizations could be related to the lack of knowledge sharing while learning, a lack of education specialists in knowledge management, a lack of training, and a culture that does not support creative learning in generating knowledge. Researchers have studied the effects of OC on each of the knowledge management processes separately. For example, Wang *et al.* (2011) examined the effect of OC on KC capability in terms of three dimensions of OC: collectivism, uncertainty avoidance and power distance. According to their findings, collectivism has a positive impact on KC, whereas each of the other two dimensions has a negative effect. Earlier studies by Smith *et al.* (2005) and Park *et al.* (2004) had also indicated important role of organization culture on KC capability that would facilitate the way organization develop knowledge. Thus, we hypothesize the following:

*H2.1.* An organization's culture has a positive or negative impact on knowledge creation based on the type of organization culture.

Ajmal and Koskinen (2008) argued that OC can constrain or facilitate KC and KD within an organization. To that end, Bhagat *et al.* (2002) proposed a theoretical framework for assessing the significance of cultural pattern in moderating cross-border organizational knowledge transfer; their proposed model show that the level of difficulty in transferring knowledge between different OC is dependent on the organization culture. In addition, Sankowska (2013) studied the role of trust, which is considered one of the attribute to an OC, on KC, knowledge transfer and firms' innovativeness and found that organization with a climate of trust can facilitate the KC and transfer, thus we hypothesize the following:

*H2.2.* An organization's culture has a positive or negative impact on knowledge dissemination based on the type of organization culture.




**Source:** Cameron and Quinn (1999, p. 35)

**Figure 1.**
The competing values framework

Some of the barriers on the organizational level that play an important role on hindering knowledge sharing practice may include a lack of effective organization communications, a lack of organizational training, a lack of trust in the organization and a culture that does not support knowledge-sharing. Many studies have explored the factors affecting KE in different industries and highlighted the role of different OC attributes on effective KE (Rhodes *et al.*, 2008; Kim and Lee, 2006; Chong and Choi, 2005; among others). For example, Al-Adaileh and Al-Atawi (2011) examined the effect of OC on KE by using 10 attributes of OC: openness to change, innovation, trust, teamwork, morale, information flow, employees' involvement, supervision, customer service and reward orientation. Their results showed a statistically significant correlation between OC and KE. Based on the above discussion, we hypothesize the following:

*H2.3.* An organization's culture has a positive or negative impact on knowledge exchange based on the type of organization culture.

Rubenstein-Montano *et al.* (2001) showed that to implement knowledge management practices effectively in organizations, managers must take steps to improve the culture of the organization, as this is a driving factor in determining the success or failure of any given knowledge management endeavor. Haamann and Basten (2018) identified a set of barriers of KA at the individual, group and organizational level. They argued that OC issues, such as lack of trust and insufficient mutual understanding could be considered as barriers while incentives and job rotations can foster KA. Pfeffer and Sutton (2000) and Davenport and Prusak (2000) also addressed that employees would feel discouraged to present suggestion and improvement that will aid in applying their existing knowledge when the culture is characterized with mistrust and fear. Thus, we hypothesize the following:

*H.2.4.* An organization's culture has a positive or negative impact on knowledge application depending on the organization culture.

## 3. Research methods

The purpose of the present study is to determine the OC of King Abdulaziz University (KAU)[2], a public university in the Kingdom of Saudi Arabia, and assess its role in the university's knowledge management processes. Conducting the survey in a university setting provided a distinctive environment for our research purpose, as most of those employed at a university can be divided into two groups that meet in a cultural environment with specific standards and characteristics: academic staff and administrative staff. In addition, the culture of Saudi Arabia's public organizations presents distinct challenges for knowledge management practices.

To that end, we developed a survey comprising two parts: one designed to assess OC and another to assess knowledge management practices. We adapted the items in the first part from the OCAI, which has been found to be accurate for diagnosing the underlying culture of different types of organizations. We developed the items in the second part based on a number of surveys found in the knowledge management literature. Two versions of the questionnaire were created and used: one in Arabic and one in English. The questionnaire was translated from English into Arabic using the back-to-back translation method to ensure that the two versions would have exactly the same meaning across both languages. We used a seven-point Likert scale where 1 = strongly disagree and 7 = strongly agree for all the items. The English version of the survey is shown in Appendix.

The framework presented in this section differs from the previous research, as we have designed it with the purpose of obtaining a comprehensive picture of the impact of an organization's culture on the overall process of knowledge management. Specifically, we used the framework to identify the type of OC that prevails at KAU, after which we tested its effect on the range of processes involved in knowledge management. The measures shown in the theoretical framework are discussed below.

OC can be identified using the OCAI (Cameron and Quinn, 1999). The instrument comprises 24 questions divided equally to create six constructs that address employees' perceptions of core cultural elements: the dominant characteristics of the current culture, organizational leadership, management of employees, organizational glue, strategic emphases and criteria for success.

KC is considered the first step in the knowledge management process. The created knowledge would be the result of discovering new content or reconfiguring the foreground and background knowledge of existing content within all kinds of knowledge owned by the organization. This process depends on a range of motivations, inspiration, and experimentation, as well as on interactions within the organization whereby new facts and meanings can be generated. We used a six-item scale to assess knowledge creation, and we found that KC has a high-level of reliability ($\alpha = 0.870$).

The KD measure is designed to capture the effort required to store knowledge in a reasonable format capable of surviving the elements over time, as an organizational memory, including written documents, structured information stored digitally in electronic databases, codified human knowledge stored in expert systems, organizational procedures and documentation of processes. We used a five-item scale to assess the KD, and we found that this construct has a high-level of reliability ($\alpha = 0.860$).

KE is considered one of the core elements of knowledge management and the most difficult aspect of the knowledge management process. KE takes place at a number of levels, such as between individuals and groups, between groups, across groups and between groups and the organization. We used a seven-item scale to assess KE, and we found that this construct has a high-level of reliability ($\alpha = 0.864$).

The last step in the knowledge management process, KA refers to how knowledge is applied within an organization by using information based on the needs of the user. KA can be classified as either an instrument that is directly observable and conceptual that looks like a less readily. We used a six-item scale to assess KA, and we found that this scale has a high-level of reliability ($\alpha = 0.916$).

### *3.1 Participants and procedures*

Over a three-month period in 2017, we distributed questionnaires to a sample of 360 faculty members and administrators working at the university by visiting them in their offices. The participants were given up to a month to fill out the surveys, and a collection date was agreed upon. In total, 335 responses were obtained, representing a response rate of 93 per cent.

The respondents represent a diverse sample in terms of educational level, academic rank, and age. In terms of educational level, the highest level reached by 14 per cent was a diploma, for 66.3 per cent the highest level was a bachelor's degree, and for about 17.2 per cent the highest level was a master's or doctoral degree. About 4.6 per cent of the respondents had worked at KAU for less than 1 year, 31.9 per cent had worked at KAU for 1-5 years, 35.9 per cent had worked at KAU for 6-10 years and 27.6 per cent for more than 10 years. The respondents ranged in age as follows: 17.6 per cent were in the age range of 20-29,

51.9 per cent were in the age range of 30-39, about 23.8 per cent were in the age range of 40-49 and the rest were 50 years of age or older.

*3.2 Reliability and validity analysis*

Next, we established the convergent and discriminant validity and the construct reliability, by performing confirmatory factor analysis (CFA) using IBM SPSS AMOS software, after which we tested the hypotheses.

In the CFA, Chi-square value ($\chi^2$ = 496.799, DOF = 216) was found to be highly significant at $p = 0.00$ level, and the value of ($x^2/df$) was found to be 2.30 which is lower than 5.00. Normed fit index (NFI) value was found to be 0.911 and comparative fit index (CFI) value was found to be 0.947 both within the acceptable range. RMSEA value was found to be 0.062 which is lower than 0.1 indicating good fit. In overall, these values indicate that the overall fit of the proposed model represents an acceptable overall goodness of fit for the research model. The model obtained after CFA is shown in Figure 2.

In addition, for ensuring the goodness of fit for the overall model, Table I provides evidence of reliability, convergent validity and discriminant validity between the variable measures (Hair *et al.*, 2010), which indicates a good fit for the five-factor model.

## 4. Data analysis and results

*4.1 Structural equation modeling*

We proposed a model to establish the relationships between OC and knowledge management processes in a single framework (Figure 3). First, we used OCAI to determine the culture type of the university.

We obtained a cultural profile score by taking the average of the respondents' ratings for each of the six dimensions, namely, the dominant characteristics of the current culture, organizational leadership, management of employees, organizational glue, strategic emphases and criteria for success. This score indicates the current cultural orientation at KAU (Table II). Adhocracy culture is the dominant culture at KAU, with the market culture type identified as the next most dominant type at the university.

These results suggest that KAU can be characterized as an innovative workplace in concerned with performance outcomes and interactions between people motivated to solve their own problems. Among the most valuable aspects of this type of culture are flexibility, compatibility and creativity associated with positive feedback from the external environment. This kind of culture exists within expert organizations that work with a very high-level of technology. This culture is distinct from a risk-taking culture, the ability to predict and the ability to promote innovative strategies. Instead, the positivity of this kind of culture can be found in maximizing the outcomes from employees' energy and time by ensuring that they enjoy their work and are satisfied with it.

Market culture, the second most dominant culture at KAU as identified by the respondents, suggests that the university is concerned with external expectations and stability to support its competitive position. Among the main values for this kind of culture are high-performing products and productivity. An organization that adopts a culture of this kind is interested in competing with rival organizations and in executing a professional marketing plan to increase profits and returns on its capital.

It is worth mentioning that it is not surprising that almost two dominant cultures exists at KAU given that the sample consisted of both academic staff and administrative staff. It can be argued that both groups experience different OC, yet, the overlap in a cultural environment with specific standards and characteristics. For research purposes we will only

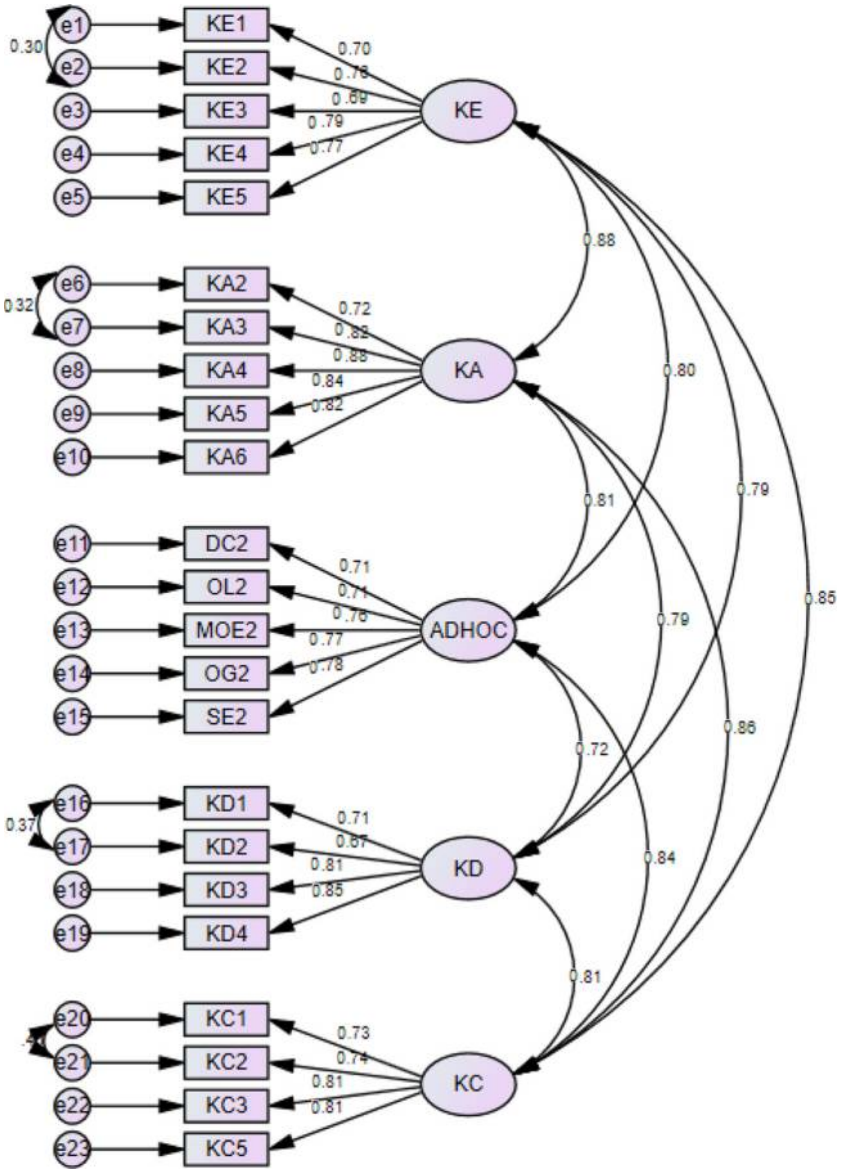



**Figure 2.**
Confirmatory factor analysis

focus on of the most dominant, although not significantly dominant, OC at KAU, namely, adhocracy culture.

Next, we developed our hypothesized model based on the dedicated culture and our map of the knowledge management process. We estimated the hypothesized model using ML estimation in AMOS and the indicator variables from the CFA. Table III shows the results related to the goodness of fit for the proposed model are within the acceptable range.

Figure 3 shows the standardized path coefficient ($\beta$). In regard to the knowledge management process, *H1.1-H1.3* were supported at $p < 0.001$. More specifically, the results indicate that KC is positively related to KD ($\beta = 0.85$, $t = 5.797$), KD is positively related to

| Factor | Mean | SD | CR | AVE |
|---|---|---|---|---|
| KC | 10.90 | 4.884 | 0.856 | 0.599 |
| KD | 9.76 | 4.471 | 0.849 | 0.586 |
| KE | 13.25 | 6.061 | 0.861 | 0.553 |
| KA | 13.38 | 6.155 | 0.909 | 0.668 |

**Note:** SD = standard deviation; CR = composite reliability; AVE = average variance extracted

**Table I.** Assessment of reliability, Convergent validity, and discriminant validity ($n = 335$)

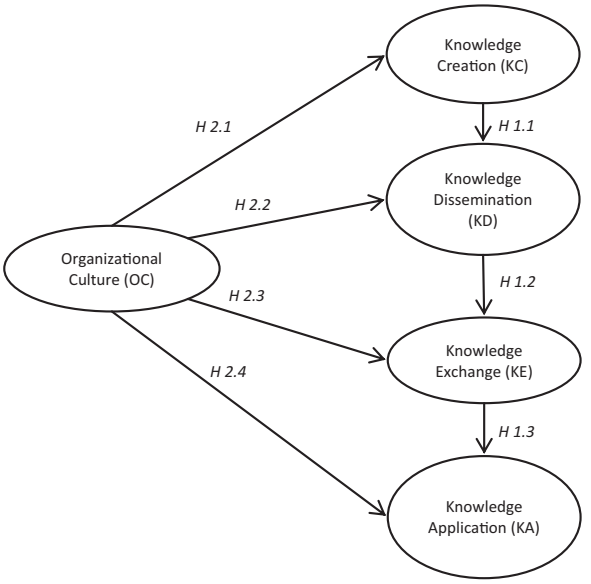



**Figure 3.** Research theoretical framework

| | Mean | SD |
|---|---|---|
| Clan culture | 24.865 | 3.913 |
| Adhocracy culture | 25.634 | 2.885 |
| Market culture | 25.090 | 3.419 |
| Hierarchy culture | 24.411 | 3.117 |

**Table II.** Organization culture type

KE ($\beta$ = 0.51, $t$ = 6.739) and KE is positively related to KA ($\beta$ = 0.68, $t$ = 7.307). On the other hand, the results regarding the effect of OC on knowledge management suggest that OC has a significantly positive effect on all the KM processes with the exception of KD. Therefore, only *H2.1, H2.2* and *H2.4* are supported. The results suggest that OC has a significantly positive effect on KC, KE and KA, but an insignificantly negative effect on KD. One possible explanation that our results does not support *H2.3*, could be related to the current design of the information system platform used by the university, in which it is mostly used for administration communications and the use of electronic forms and not designed to capture and store knowledge discovered by faculty members or other academic staff (Figure 4).

To check for the robustness of these result we performed a post hoc analysis in which we examined the effect of OC on the knowledge management process while considering the interrelationship between the knowledge management processes. To that end, we

**Table III.** Goodness of fit measure of the proposed model

| Goodness of fit measure | Recommended value | Values |
|---|---|---|
| Distinct parameters | | 57 |
| Chi-square ($x^2$) of estimated model | | 521.823 |
| Degree of freedom (*df*) | | 219 |
| Chi-square/degree of freedom ($x^2/df$) | $\leq$ 5.0 | 2.383 |
| Root mean square residual (RMSR) | $\leq$ 0.10 | 0.064 |
| NFI | $\geq$ 0.90 | 0.907 |
| Non-normed fit index(NNFI) | $\geq$ 0.90 | 0.935 |
| CFI | $\geq$ 0.90 | 0.943 |
| Adjusted goodness of fit index (AGFI) | $\geq$ 0.80 | 0.850 |

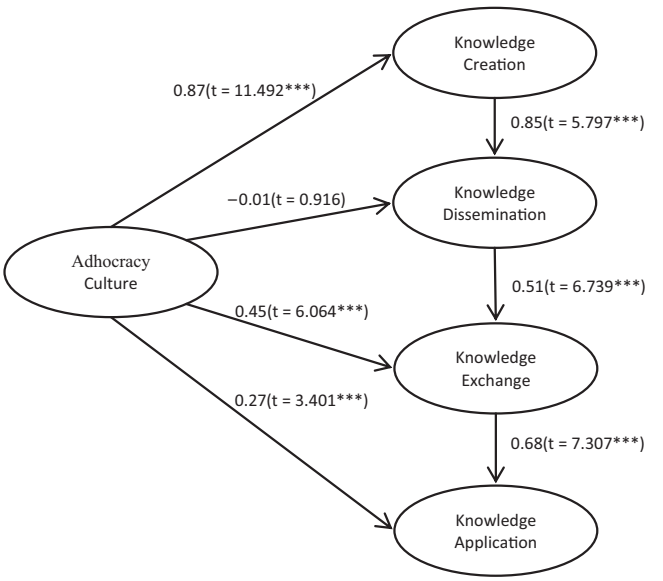



**Figure 4.** Hypothesized model and its estimates

**Note:** ***$p$ < 1%

established the following interrelationship between KC and KE, KC and KA, and KD and KA. The new model is highly significant ($\chi^2$ = 586.81, DOF = 219, $p$ = 0.00 level) and presents an overall goodness of fit ($x^2/df$ = 2.679, RMSEA = 0.071, CFI = 0.931). The standardized path coefficients are presented in Table IV. The main results remain the same as of hypothesized model.

These results suggest that OC does not necessarily affect all the knowledge management processes and that the effects of OC on the knowledge management process may vary depending on the OC type. In particular, the results suggest that OC principally influences the knowledge creation process ($\beta$ = 0.87, $t$ = 11.492), followed by the KE process ($\beta$ = 0.45, $t$ = 6.064). These results are in line with results reported by Wang *et al.* (2011) and Al-Adaileh and Al-Atawi (2011).

Many researchers take the position that the core of knowledge management is KE (Al-Adaileh and Al-Atawi, 2011; King, 2006; Noor and Salim, 2011; Trivellas *et al.*, 2015; Yang, 2007). Therefore, one would expect OC to have a greater effect on KE than on the other processes. Yet, our results suggest that KC is more affected by OC than KE, although this result may relate specifically to Saudi Arabia.

In the context of Saudi Arabia, Alsereihy *et al.* (2012) argued that sharing knowledge and helping others to learn might create conflicts and barriers among people who hoard knowledge. That is, those who are responsible for managing knowledge may be very unwilling to share it, fearing that a loss of status would accrue from such sharing. In addition, Alhamoudi (2010), addressed some of the challenges in implementing knowledge management in the public sector of Saudi Arabia one of which the lack of a free flow of information within the institutions and a tendency to hold onto information rather than share it. Thus, learning is obstructed because knowledge is not transferred to others such that the organization's knowledge management goals cannot be met.

## 5. Conclusion

Constructive cultural factors could be used to build a better understanding of the effectiveness of using supportive knowledge in making decisions and taking subsequent action. A better understanding of organizational type and knowledge management processes provides a basis for enhancing internal collaboration and capturing and sharing best practices, and it has the potential to lead to advances in managing customer relationships and securing and benefiting from competitive intelligence. However, given its

**Table IV.** Structural path standardize estimates

| | Hypothesized model | | Post hoc model | |
|---|---|---|---|---|
| Path | Effect ($\beta$) | $t$-value | Effect ($\beta$) | $t$-value |
| KD ← KC | 0.849*** | 5.797 | 0.793*** | 6.173 |
| KE ← KD | 0.513*** | 6.739 | 0.264*** | 2.951 |
| KA ← KE | 0.681*** | 7.307 | 0.442*** | 4.722 |
| KC ← Ad hoc culture | 0.870*** | 11.492 | 0.844*** | 11.068 |
| KD ← Ad hoc culture | −0.140 | 0.916 | 0.039 | 0.737 |
| KE ← Ad hoc culture | 0.449*** | 6.064 | 0.275*** | 2.825 |
| KA ← Ad hoc culture | 0.271*** | 3.401 | 0.161* | 1.913 |
| KE ← KC | | | 0.400** | 2.959 |
| KA ← KC | | | 0.268** | 2.208 |
| KA ← KD | | | 0.095 | 1.224 |

**Note:** ***$p < 1\%$; **$p < 5\%$; *$p < 10\%$

pervasive influence on how staff learns and how they share knowledge, OC is considered the basic key for knowledge management. It is also identified as the main obstacle to knowledge management, although very little is known about how OC fosters or hinders knowledge management practices.

These results highlight the importance of identifying and understanding the underlying OC to creating and implementing a successful knowledge management strategy, as the effect of OC on knowledge management processes may differ based on the type of the OC.

In higher education institutions, using knowledge management processes, influenced by the identification of OC, can positively affect the organization outputs. The effectiveness can be measured against the level of improvement in each or specific, procedure in the institute. For example, reduction in curriculum development cycle time, services enhancement on an academic and administrative level, and development in decision-making processes are evidences of successful implementations of knowledge management.

The effect of OC on knowledge management processes may differ from one institute to another. Our findings suggest that in Saudi Arabia, the cultural factors, especially of higher education institutes, are influencing KC more than KE. As a result, relying on the institutional knowledge of individuals to creating knowledge may challenge the organization improvement. The challenge might be in facilitating tactic knowledge discussions between employees, with regard to culture, trust between employee and their level of motivation. Overcoming cultural barrier can be achieved by accepting it. As a result, this will influence individual attitude by allowing them to create and share knowledge. Interaction and communication between academic and administrative bodies in an educational institute can help in building the trust between employees by which it adheres to the role and status of knowledge management. Additionally, rewarding team instead of individuals could motivate knowledge creating and sharing. This will shift employs to create colleagues rather than competitors.

Finally, KAU has to improve the ways it stores the knowledge created by its faculty members and staff. For example, KAU culture should be encouraging faculty member who had successfully completed a curriculum revision to document and disseminate their knowledge to be exchanged with other faculty members. On the other hand, KAU culture has to find ways to encourage and support employees who knows how to navigate the complex proposal or apply for complex funds to disseminate their knowledge as well.



## Notes

1. Some of the reasons for such concentration in India and Malaysia is the government policies and research funding that promote knowledge management in pursue of enhancing the quality of education in Malaysia (Mohayidin *et al.*, 2007) and to become a knowledge economy in India (Batra, 2009).
2. KAU University is one of the public universities in the Kingdom of Saudi Arabia. Within four decades, the university has become a premier institute of higher education on an international level.

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## Appendix

| Question | Notation | Description |
|---|---|---|
| 1 | KC1 | KAU actively seeks information form-relevant external sources; employees, students, consulting firms, third parties |
| 2 | KC2 | KAU motivates employees to use external information sources; employees, students, consulting firms, third parties |
| 3 | KC3 | KAU ensures that there is quick information flow across departments |
| 4 | KC4 | KAU holds regular cross-departmental meetings to exchange information |
| 5 | KC5 | KAU employees are able to link existing information with any new information received |
| 6 | KC6 | KAU has mechanisms for creating new knowledge from existing knowledge |
| 7 | KD1 | KAU uses various written devices such as newsletters and manuals to store knowledge they captured from employees |
| 8 | KD2 | KAU uses various electronic ways to store knowledge they captured from employees. |
| 9 | KD3 | KAU regularly trains their employees on storing and retrieving knowledge. |
| 10 | KD4 | KAU works at keeping research and relevant information up-to-date |
| 11 | KD5 | KAU regularly keeps employees with high-level of knowledge |
| 12 | KE1 | KAU offers training programs by individuals with experience and competence |
| 13 | KE2 | KAU staff are encouraged to exchange views and ideas with each other |
| 14 | KE3 | KAU staff are trained by veterans experienced colleagues |
| 15 | KE4 | All Processes and procedures at KAU are documented clearly |
| 16 | KE5 | KAU regularly ensures that all updated information regarding operating procedures is made available to employees |
| 17 | KE6 | KAU uses modern means of technology to transfer and exchange information, such as the internet and e-mail and mobile phone messages |
| 18 | KE7 | KAU employees performs their jobs predominantly using their own individualized knowledge |
| 19 | KA1 | KAU has different methods for employees to further develop their knowledge and apply them to new situations |
| 20 | KA2 | KAU has mechanisms to protect knowledge from inappropriate or illegal use inside and outside of the organization |
| 21 | KA3 | KAU applies knowledge to critical competitive needs and quickly links sources of knowledge in problem solving |
| 22 | KA4 | KAU has methods to analyze and critically evaluate knowledge to generate new patterns and knowledge for future use |
| 23 | KA5 | KAU regularly trains our employees to ensure that they understand all company processes |
| 25 | KA6 | KAU regularly works on the development of new business practices for products and services we offer |

**Table AI.**
The survey: responses to the following questions ranged from 1= "totally disagree" to 7 = "totally agree"

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