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# GAINING COMPETITIVE ADVANTAGE THROUGH INTELLECTUAL CAPITAL AND KNOWLEDGE MANAGEMENT: AN EXPLORATION OF INHIBITORS AND ENABLERS IN JORDANIAN UNIVERSITIES

## Abstract

This small-scale study aimed to explore the different factors that help or hinder the achievement of competitive advantage through the possession and development of intellectual capital and the delivery of effective knowledge management in a sample of Jordanian universities. Using a quantitative methodology, underpinned by a pragmatist theoretical approach, an electronic survey was conducted with staff working within three established universities based in Jordan. The concepts of intellectual capital, knowledge management and competitive advantage within an academic setting are first explored before focusing more specifically on investigating how different factors influence these and impact on competitive advantage. Overall, the study identified a range of inhibitors and enablers relating to intellectual capital and knowledge management and identified areas where universities need to develop in order to increase future competitive advantage. The study therefore makes a valuable contribution in adding to the body of evidence within this field.

**Keywords** competitive advantage, higher education, inhibitors and enablers, intellectual capital, knowledge management

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## INTRODUCTION

In recent years, there has been an increasing growth of interest in intellectual capital and knowledge management (Thomas et al., 2013; Klein, 2012), particularly in relation to the achievement of competitive advantage for organizations (Harris et al., 2013). It has been identified that whilst there has been a growing understanding of knowledge management within a university context, there has been limited research exploring this area, in this context, in more detail (Fullwood, Rowley, & Delbridge, 2013).

The exploration of the different inhibitors and enablers involved in gaining competitive advantage through intellectual capital and knowledge management practices is therefore a topical scientific problem and this study provides useful insights for policy makers and administrators within academic institutions to help plan and implement such practices with a view to gaining the edge over rivals.

# 1. LITERATURE REVIEW

## 1.1. The university context

Universities are knowledge-based organizations, and have a significant role in creating, transferring and disseminating knowledge through research (Fullwood, Rowley, & Delbridge, 2013). Unlike other types of organizations where the goal of knowledge sharing is generally motivated by profit, the impact of knowledge sharing in academia has the potential for a more significant impact than that within business organizations (Cheng, Ho, & Lau, 2009).

Universities have a high proportion of intangible resources in relation to tangible ones and their longevity, unlike most other business organizations, is due to their significant levels of intellectual capital. However, in recent times, due to increasing globalization, there has been increased scrutiny into intellectual capital and knowledge management in academic institutions due to the social need for greater public accountability and transparency (Bratianu, 2014). This has led to the acknowledgement that knowledge and intellectual capital management as a process is not always fully embedded in this sector (Schaller, Allert, & Richter, 2008) and has indicated that the culture within universities may be very individualistic making knowledge management more challenging than in other types of organizations (Donate & Canales, 2012).

## 1.2. Understanding knowledge management and intellectual capital

Before exploring how knowledge management and intellectual capital can be used to create competitive advantage, it is first useful to define what it meant by these terms. Over the last three decades, knowledge management has evolved from being an academic concept into a mainstream organizational essential (Girard & Girard, 2015) and is often viewed as a multi-dimensional concept (B. Meihami & H. Meihami, 2014). However, no single definition exists with variations resulting from different sectors, domains and contexts. Siegel and Shim (2010) define it as a means of generating competitive advantage and Serrat (2009) describes it as the practical result of the synthesis of information management and organizational learning. According to Ruggles (2012), knowledge management itself is made up of three key activities including: knowledge generation; knowledge codification; and knowledge transfer.

Intellectual capital has been described as the conversion of knowledge into value, and it fills the gap between the 'book value' and the 'market value' of an organization (Fathi, Farahmand, & Khorasani, 2013). Within the context of higher education, intellectual capital has often been described as comprising of three components including: human capital, structural capital and relational capital (Ruta, 2009). Human capital refers to the intangible value that can be found in the competencies, expertise, skills and experiences of lecturers, researchers, management and administrative staff and students. Structural capital refers to the resources, which can be found in the organization itself such as its research projects and the databases it holds, its research and education processes, its research infrastructure, the culture and the reputation of the university. Finally, relational capital refers to the intangible resources, which have the potential of generating value associated with the internal and external relations of the university, such as its relationships with public and private partners, its status in different networks, its level of involvement in industry education and research activities, its international collaborations with other global research centres, and its exchange with international students (Secundo et al., 2015).

## 1.3. Understanding the nature of competitive advantage in academia

According to Naser, Al-Shobaki, and Amuna (2016), the main aim of educational institutions is knowledge management where knowledge is created and managed through human activities and technical practices linking together individuals from across the organization.

Universities provide a platform for academics to articulate their ideas and insights and a key function of university knowledge management is to serve as a knowledge repository that members within the academic community can access. This

repository can be used as a diagnostic tool for enabling universities to identify any gaps in skills or knowledge within their institution (Koperwas et al., 2017) and can act as a source of competitive advantage for universities to enable scholars to advance knowledge and to make the institution stand out in the academic marketplace (Basu & Sengupta, 2007). There is a pressing need for universities to manage their intellectual capital and knowledge management processes due to increasing scrutiny on the use of public money and social accountability, and growing competition between academic institutions due to reduced levels of funding (Secundo et al., 2015). Naser, Al-Shobaki, and Amuna (2016) argue that measuring knowledge management maturity is an important task for academic institutions to undertake so that it can drive improvements and maximise performance. Within academia, there is growing belief that knowledge management can help to create a dynamic learning environment, improve the efficiency of knowledge sharing activities and ultimately improve the overall performance of the organization (Galah & Rahman, 2016; Khodaeea et al., 2016).

## 1.4. Enablers and inhibitors

### *1.4.1. Technology*

According to Omotayo (2015), technology is a critical enabler of effective knowledge management. With continuous advancements in Information and Communication Technologies (ICTs), knowledge management can be increasingly achieved through technological solutions. It allows for the easy transfer of knowledge overcoming some of the more traditional constraints such as geographical and time barriers. However, although ICT can act as a significant enabler to knowledge management, its existence itself does not mean that knowledge will be shared and there are a range of other socio-cultural factors, which need to be taken into account (Tjoflat et al., 2017).

### *1.4.2. Organizational culture*

Organizational culture is another factor, which is regularly discussed in relation to knowledge management (Veer Ramjeawon & Rowley, 2017; Hislop, 2009), although there is a lack of consensus over whether or not culture change should form part of a knowledge management initiative or if knowledge management initiatives should try to align to the prevailing organizational culture (Liebowitz, 2008).

Furthermore, there has been much debate about how the unique and distinct culture in academic institutes impacts on the use of intellectual capital and knowledge management in relation to achieving competitive advantage (Fullwood, Rowley, & Delbridge, 2013). It has been noted that as organizations, universities often operate differently to those found in other sectors and that unlike many large organizations, which have strong corporate cultures, universities and other academic institutions tend to have very complex and disparate academic departments and disciplines with widely differing cultures, which can subsequently lead to differences in attitudes towards knowledge sharing and the use of intellectual capital (Lee, 2007).

### *1.4.3. National culture*

National culture is also another factor that has been identified as having an impact on knowledge management. Hofstead (1998, p. 343) states that national culture differentiates between different human groups through a "collective programming of the mind". In relation to practices such as knowledge sharing, individuals from different countries and cultures often have different perceptions of what they feel is important as a result of their cultural heritage (Tung & Baumann, 2009).

In Jordanian national culture, religion, tradition and customs all play an important role in everyday life, but Jordan also hosts a relatively secular society. Due to ever increasing globalization and competition, the country has been forced to review its social and economic status and there has been an increasing focus on the development and implementation of knowledge management systems to create competitive advantage (Almarabeh, 2011).

However, according to Almarabeh (2011), Jordanian organizations face a number of barriers to strengthening knowledge management, which are associated with national culture. He argues that a strong power culture exists in many Arab organizations resulting in hierarchical and bu-

reaucratic structures and a patriarchal leadership approach where creativity and innovation is not encouraged, which in turn impacts on the implementation of knowledge management practices.

#### *1.4.4. Reward systems*

According to Jahani, Ramayah, and Effendi (2011), reward systems are a significant factor for determining the success of knowledge sharing in an organization. They argued that monetary rewards found monetary rewards and implicit rewards such as reputation, personal development and status all have a positive impact on knowledge sharing within organizations.

#### *1.4.5. Organizational structure*

Organizational structures are also seen as impacting significantly on knowledge sharing and the development and use of intellectual capital (Fullwood, Rowley, & McLean, 2018). The structures within academic institutions tend to differ from most other public and commercial organizations, which could act as an enabler or a hindrance to developing effective knowledge management practices. Academics traditionally have worked in silos with different fields and disciplines often having conflicting values and ideologies relating to research, although increasingly greater collaboration between departments and external partners has started to emerge (Bozeman & Boardman, 2014).

#### *1.4.6. Leadership*

It has been proposed that leadership can play a key role in promoting behaviors in universities to support knowledge creation and sharing through its role in the personal development of employees and through providing opportunities for employees to share and transfer their knowledge (Elrehail et al., 2018). However, as Hannouna and Rafat (2011) identify, the leadership role within universities can often differ from that found in other organizations. They propose that two types of leadership predominate within academic institutions: academic and managerial. Academic leadership emphasises knowledge creation, professional recognition, and personal development resulting in a power base, which is very individualistic. Managerial leadership, however, emphasizes hierarchies, control and authority, where the power base rests in the position rather than in the individual.

According to Secundo et al. (2015), strategic leadership is essential to making best use of intellectual capital and knowledge management in universities in relation to: tackling inertia in decision-making and managerial practices; countering the belief that 'management' is not needed for knowledge creation; and in terms of making difficult decisions relating to the reallocation of resources.

## 2. METHODOLOGY

This study focused on the experience of knowledge management and intellectual capital of a range of stakeholders working within three different universities based in Jordan. The stakeholders included lecturers, researchers, administrative and management staff. The emphasis was on which factors associated with knowledge management and intellectual capital were most prevalent within the case example universities and which of these were perceived as having the greatest potential contribution to make towards enabling or inhibiting competitive advantage.

An online questionnaire survey was used to gather the views and experiences of these stakeholders, as it was felt that this would provide a pragmatic and cost-effective way of gathering this data.

Three universities known to the researcher were selected and permission was sought to distribute and carry out the survey. It was agreed that the respondents would remain anonymous sharing only the name of their university and their broad occupational group. It was agreed that the key findings would be shared with each of the universities once the study was completed.

The questions contained within the survey were developed on the basis of the findings from a critical review of the literature and made reference to one of the few studies of its kind undertaken by Fullwood and Rowley (2017), which focused on the experiences of academics in the UK and also used a categorization of human capital, as it refers to academia proposed by Secundo et al. (2015).

**Table 1.** Respondents role by university

| Role | University 1 (n = 51), % | University 2 (n = 48), % | University 3 (n = 43), % | % of total (n = 142), % |
|---|---|---|---|---|
| Administrator | 33.33 | 22.92 | 9.30 | 23 |
| Lecturer | 19.61 | 20.83 | 23.26 | 21 |
| Manager | 27.45 | 14.58 | 20.93 | 21 |
| Researcher | 19.61 | 41.67 | 46.51 | 35 |

This categorization included: **structural factors** including the existence of systems and processes to share knowledge; organizational culture and willingness to share knowledge internally and externally and use and availability of technology; **human factors** including leadership, skills and competencies of those working within the university and students attending the university, opportunities for development and reward and incentives; and **relational factors** including relationships both internal and external to the university including inter-disciplinary relations, level of collaborative working, and engagement with international students.

The survey was sent out from the respective universities' Human Relations Departments with a covering email explaining the purpose of the survey, giving assurances of confidentiality and providing a link to the online survey. The results were then analyzed using Microsoft Excel. A Likert type scale was used in the questionnaire to gather strength of feeling against key statements relating to potential enablers and inhibitors within the respective universities of the respondents, using a scale of one (lowest level of agreement/importance) to five (highest level of agreement/importance). From this, a mean score could be calculated to enable a comparison between different roles and institutions.

# 3. KEY FINDINGS

## 3.1. Response rate and characteristics

It is not possible to calculate an exact response rate, as it is not known how many employees did not receive the email due to annual leave, sickness and so forth. However, it is known that 300 employees across the three universities were sent the email, and 142 responded giving an estimated response rate of 47%. A breakdown of the respondents by role and university is given in Table 1.

Table 2 illustrates a breakdown of the overall demographic profile of the respondents in terms of gender, age, discipline and length of time working within academia.

**Table 2.** Respondents' demographic profile

| Characteristic | | Percentage (n = 142), % |
|---|---|---|
| Gender | Male | 74 |
| | Female | 26 |
| Age | 18-25 | 7 |
| | 26-35 | 29 |
| | 36-45 | 35 |
| | 46-55 | 24 |
| | 56-65 | 6 |
| Discipline | Agriculture | 4 |
| | Art & Design / Humanities | 8 |
| | Business | 3 |
| | Computer and information technology | 8 |
| | Educational sciences | 3 |
| | Engineering | 4 |
| | Graduate services | 15 |
| | Law | 6 |
| | Medicine | 9 |
| | Nursing | 7 |
| | Pharmacy | 11 |
| | Science & Arts | 12 |
| Length of time working within an academic setting | Less than a year | 8 |
| | 1-2 years | 11 |
| | 3-4 years | 27 |
| | 5-6 years | 13 |
| | 7-8 years | 17 |
| | 9-10 years | 23 |
| | Over 10 years | 8 |

## 3.2. Awareness of knowledge management and intellectual capital

The questionnaire asked for respondents to indicate to what extent they agreed that they themselves had a good understanding of the concepts of knowledge management and intellectual capital. Table 3 provides a breakdown of the responses

**Table 3.** Mean scores – levels of understanding of concepts (5 = highest level of understanding, 1 = lowest level of understanding)

| Role | | Concept of knowledge management | Concept of intellectual capital | No. of respondents |
|---|---|---|---|---|
| | | Mean score | Mean score | |
| University 1 | Administrator | 2.88 | 3.12 | 17 |
| | Lecturer | 5.00 | 5.00 | 10 |
| | Manager | 4.14 | 3.93 | 14 |
| | Researcher | 5.00 | 5.00 | 10 |
| | University 1 overall | 4.06 | 4.08 | 51 |
| University 2 | Administrator | 3.36 | 4.00 | 11 |
| | Lecturer | 5.00 | 5.00 | 10 |
| | Manager | 5.00 | 5.00 | 7 |
| | Researcher | 4.30 | 4.30 | 20 |
| | University 2 overall | 4.33 | 4.48 | 48 |
| University 3 | Administrator | 3.00 | 3.00 | 4 |
| | Lecturer | 4.40 | 4.40 | 10 |
| | Manager | 5.00 | 5.00 | 9 |
| | Researcher | 4.40 | 4.40 | 20 |
| | University 3 overall | 4.40 | 4.40 | 43 |
| Overall – all universities | | 4.25 | 4.31 | 142 |
| Overall – all administrators | | 3.06 | 3.41 | 32 |
| Overall – all lecturers | | 4.80 | 4.80 | 30 |
| Overall – all managers | | 4.60 | 4.50 | 30 |
| Overall – all researchers | | 4.48 | 4.48 | 50 |

by role and university in terms of the mean scores for levels of understanding around the concepts of knowledge management and intellectual capital.

## 3.3. Existence of different human, structural and relational factors and perceived importance

Respondents were presented with a range of different factors that have been identified in the current literature as either enabling of inhibiting effective knowledge management and use of intellectual capital to gain competitive advantage. They were asked to indicate to what extent they felt these factors existed within their respective university and how important they perceived them to be in achieving competitive advantage on a scale of 1 to 5 with 1 being the least and 5 being the most. A mean score was then calculated to enable a comparison to be made between the different roles and universities. The results broken down into structural, human and relational factors are presented in Tables 4 and 5.

An ANOVA test on the importance of the factors in contributing towards achieving competitive advantage confirms that the difference between the means for the three groups of factors is significant ($F = 60.22$; $F_{crit} = 5.14$; $P = 0.0001$).

**Table 4.** Summary of existence and importance of factors

| Existence and Importance of Factors | Mean score (1 = non-existent/not important, 5 = fully established/extremely important) | | |
|---|---|---|---|
| | Structural factors | Human factors | Relational factors |
| Overall mean score: existence in university | 3.85 | 3.88 | 3.83 |
| Overall mean score: importance to achieving competitive advantage | 4.41 | 4.94 | 4.70 |

**Table 5.** Views on existence of key knowledge management and intellectual capital factors and their importance to contributing towards competitive advantage

| Key factors | Mean score (1 = non-existent/not important, 5 = fully established/extremely important) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | University 1 | | University 2 | | University 3 | | Overall | |
| | Exists within university | Importance to competitive advantage | Exists within university | Importance to competitive advantage | Exists within university | Importance to competitive advantage | Exists within university | Importance to competitive advantage |
| **Structural factors** | | | | | | | | |
| Information and knowledge are shared regularly between faculties | 4.12 | 4.63 | 4.06 | 4.56 | 4.21 | 4.40 | 4.13 | 4.54 |
| Systems and processes are in place to share knowledge and information | 4.12 | 4.67 | 4.06 | 4.52 | 4.21 | 4.47 | 4.13 | 4.56 |
| The structure promotes collective rather than individualistic behavior | 4.00 | 4.43 | 4.06 | 4.35 | 4.21 | 4.35 | 4.08 | 4.38 |
| Processes are in place to facilitate knowledge exchange across departmental boundaries | 4.12 | 4.47 | 4.06 | 4.40 | 4.21 | 4.37 | 4.13 | 4.42 |
| There is an open and transparent organizational culture when it comes to creating, sharing and transferring knowledge internally | 4.12 | 4.63 | 4.06 | 4.56 | 4.21 | 4.40 | 4.13 | 4.54 |
| There is an open and transparent organizational culture when it comes to creating, sharing and transferring knowledge externally | 4.00 | 4.63 | 4.06 | 4.57 | 4.21 | 4.40 | 4.08 | 4.54 |
| Different disciplines do not work in silos | 3.29 | 4.18 | 2.33 | 4.21 | 2.98 | 3.93 | 2.87 | 4.11 |
| Technology links all of the organization together and to relevant external institutions | 3.82 | 4.90 | 3.71 | 4.75 | 4.21 | 4.60 | 3.90 | 4.76 |
| Technology that supports collaboration is easily accessible to employees | 3.65 | 4.90 | 3.58 | 4.79 | 3.30 | 4.67 | 3.52 | 4.80 |
| There are incentives and rewards for creating and sharing knowledge | 3.27 | 3.39 | 3.71 | 3.54 | 3.51 | 3.51 | 3.49 | 3.48 |
| Overall structural factors | 3.85 | 4.48 | 3.77 | 4.43 | 3.93 | 4.31 | 3.85 | 4.41 |
| **Human factors** | | | | | | | | |
| Employees are encouraged to propose new ideas and new ways of working | 4.00 | 4.80 | 4.06 | 4.98 | 4.21 | 4.91 | 4.08 | 4.89 |
| There is a high calibre of staff working within this organization | 4.20 | 4.92 | 4.27 | 5.00 | 4.28 | 4.95 | 4.25 | 4.96 |
| Staff are encouraged to reach their potential | 3.73 | 4.92 | 3.79 | 5.00 | 4.21 | 4.95 | 3.89 | 4.96 |
| There are good opportunities for personal advancement in this university | 3.65 | 4.92 | 3.58 | 5.00 | 3.30 | 4.95 | 3.52 | 4.96 |
| The university is able to recruit high calibre students | 4.04 | 4.92 | 4.00 | 5.00 | 4.28 | 4.95 | 4.10 | 4.96 |
| We have the right level of support to help facilitate our research activities | 3.18 | 4.86 | 3.35 | 4.96 | 3.91 | 4.95 | 3.46 | 4.92 |
| Overall human factors | 3.78 | 4.89 | 3.84 | 4.99 | 4.03 | 4.95 | 3.88 | 4.94 |
| **Relational factors** | | | | | | | | |
| Differences in ideological views are respected | 3.92 | 4.88 | 3.79 | 4.98 | 4.00 | 4.95 | 3.90 | 4.94 |
| There is a high level of collaborative working internally within this university | 3.92 | 4.04 | 3.35 | 3.96 | 3.91 | 4.00 | 3.73 | 4.00 |
| There is a high level of collaborative working externally within this university | 3.96 | 4.92 | 3.35 | 5.00 | 3.91 | 4.95 | 3.74 | 4.96 |
| International students want to come to this university to study | 4.08 | 4.88 | 3.79 | 4.98 | 4.00 | 4.91 | 3.96 | 4.92 |
| Overall relational factors | 3.97 | 4.68 | 3.57 | 4.73 | 3.95 | 4.70 | 3.83 | 4.70 |

## 4. DISCUSSION

The findings from the survey suggest that although overall there was a generally high level of understanding amongst respondents about the concepts of knowledge management and intellectual capital, this varied across the different roles with lecturers and managers indicating a higher level of understanding.

Overall, the study found that human factors associated with knowledge management and intellectual capital were those which were felt to be most prevalent in the case study organisations and were also the factors, which were considered to have the greatest potential contribution towards achieving competitive advantage. This included having high calibre staff and being able to recruit high calibre students. The next group of factors that were indicated as having the greatest impact on competitive advantage were relational factors such as collaborations and relationships both internally and externally. In addition, it was felt that respect for different ideological views was an important factor, which could act as either an enabler or inhibitor to sharing knowledge. In terms of structural factors, it would appear that, consistent with the findings from other research studies, such as that of Donate and Canales (2012), there is a tendency towards an individualistic approach to work and sharing knowledge. It was indicated that silo working may be prevalent, but not necessarily considered to be an important influencing factor in achieving competitive advantage.

In addition, it would appear that although technology is felt to be an important contributor towards supporting knowledge management and achieving competitive advantage, this is not perceived to be as well established as some of the other enablers.

## CONCLUSION

Overall the study found that, consistent with other studies, human factors such as experience and skills of staff, calibre of students and leadership are important enablers in terms of implementing effective knowledge management strategies and making the most of human capital to achieve competitive advantage in universities. It was evident from the findings that universities have unique and distinct features to other types of organization, which needs to be taken into account when investigating how knowledge management is applied and the benefits of intellectual capital are realized.

It would appear that in order for universities to gain further competitive advantage through knowledge management and intellectual capital, there are a number of structural inhibitors that need to be overcome including the barriers to inter-disciplinary knowledge creation, sharing and transfer, and better use of communications technology to promote further collaborations, particularly those external to the university.

## LIMITATIONS OF THE STUDY AND AREAS FOR FUTURE RESEARCH

This study only reviewed quantitative data and it is possible that certain findings may have been enriched through the addition of some further qualitative investigation. In addition, there is potential for bias in the data as those choosing to participate may have had a greater or lesser interest in the topic area, which may have impacted their perceptions and views. It is recommended that further research is undertaken in this area to gain a deeper understanding of the unique nature of universities and their approach to using knowledge management and intellectual capital to gain competitive advantage.

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