CHALLENGING TRADITION: EXPLORING THE TRANSITION TOWARDS UNIVERSITY ENTREPRENEURIALISM

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ABSTRACT

Purpose: This study explored, from the perspective of its staff, the extent to which a Jordanian University has become entrepreneurial and to examine the knowledge management factors which are most important in making this transition.

Methodology: Following a systematic review of the current literature, and using a quantitative methodology, supported by a pragmatist theoretical approach, this study used an online anonymous survey to gather the views and perceptions of university academic staff about the entrepreneurial maturity of their own institution specifically, and more generally about the knowledge management factors which can promote entrepreneurialism in academic institutions in developing countries.

Findings: The findings indicated that although the case example university was perceived as progressing well towards its aim of becoming an Entrepreneurial University, it was evident that institutions such as this face a number of barriers which is perhaps more prominent in a developing country like Jordan, where higher education is still more commonly viewed through a traditional lens. However, the findings indicated a good level of support for the use of entrepreneurial centres to act as business incubators, and there was an appetite for forging stronger links with businesses and on learning outside of the traditional university context. Furthermore, the findings suggested that the focus towards entrepreneurialism had led to improvements in knowledge transfer and application processes in particular, but that going forward academia and industry alike need to continue to adapt and change, align and strengthen knowledge management, and work collaboratively to achieve the archetype "third mission" with mutual benefits for all.

Originality: There are limited studies of university entrepreneurialism within developing countries and the exploration of barriers and enablers that impact upon entrepreneurship within universities more generally. This study therefore makes a makes a valuable contribution towards the strategic debate on entrepreneurial universities.

Keywords: Entrepreneurial University, Knowledge Management, Valorisation, Knowledge-based systems, Jordan.

INTRODUCTION

This paper presents the findings of a qualitative study undertaken within a large private Jordanian University focusing on the perceptions of academic staff around current progress and future developments relating to an Entrepreneurial University.

In recent decades, the involvement of universities in socio-economic development, has carved out a new role for them within society whereby their objectives are orientated towards impacting positively societally, economically and environmentally. This new role is often referred to as the "*entrepreneurial*" university (Riviezzo et al., 2017). According to Cunningham et al. (2017), entrepreneurial universities have become significant contributors for regions and countries in relation to the achievement of economic and social development

though being at the interface of knowledge creation and transfer. Globally, universities are undergoing intense transformation to meet the challenges of a knowledge-based economy. Stonkienė & Matkevičienė (2014), as key stakeholders in innovation systems and the production and dissemination of knowledge, they face increasing scrutiny about their ability to tackle the demands of "*fast business*", societal change and technological development (Bejinaro, 2017).

The entrepreneurial role of universities has been explored most frequently in more traditional market-economy countries, and their role in developing countries such as Jordan has been much less considered (Vadi & Haldman, 2010). Furthermore, according to Sarpong et al. (2017), making the transition from a traditional to entrepreneurial institution is more challenging in developing countries due to factors relating to national culture, and weaknesses in institutional design and working practices making them therefore worthy of specific attention.

In addition, there has been limited research on the barriers and enablers that impact upon entrepreneurship within universities more generally (Harrington & Walsh, 2017).

The aim of the study, therefore, was to identify and examine the knowledge management factors which impact on the transition from a traditional to an entrepreneurial university from the perspective of employees working within a large private university based in the middle eastern country of Jordan who have been affected by this transition. In particular, the study aimed to investigate what aspects of knowledge management were considered to have most importance in supporting this process. This study hence makes a valuable contribution towards the strategic debate on entrepreneurial universities and knowledge management which may be of interest to both policy makers, industry, and those working within academia, particularly in developing countries.

CONTEXT OF THE STUDY

Jordan is a relatively small, middle-income country with an estimated population of around 6.5 million people (Al-Hamdan et al., 2017). Within the country there are nearly 30 public and private universities serving around a quarter of a million students (Ministry of Higher Education & Scientific Research, 2017). The Jordanian government has focussed on promoting entrepreneurship in order to graduate students with the skills and competencies needed to deliver innovation and growth to the economy. Within the country, the economy has followed a significant reform agenda led by his Majesty King Hussein which has focussed on the expansion of foreign trade and privatised state-owned enterprises (Alhajahmad & Lockhart, 2017). Furthermore, one of the key strategic objectives of the Jordan Chamber of Industry (2018) is to increase competitiveness and innovation within the Jordanian industrial sector and therefore the cultivation of entrepreneurship within higher education is a key factor.

The case example university, as outlined in its strategic plan (2018/23), is currently striving to become an Entrepreneurial University and has started to make good progress towards achieving this goal.

Caggiano et al. (2016) However, the concept of an Entrepreneurial University is still relatively new in Jordan and whilst university entrepreneurship centres are starting to emerge in the capital city, many of the universities still focus on more traditional education and skills development (Ghatasheh, 2016).

LITERATURE REVIEW

The following literature review aims to systematically translate the findings from previous studies into a broad analysis of current knowledge relating to Entrepreneurial

Universities (Pittaway et al., 2004), to support the rationale for the study and the approach taken. From this analysis, themes were pursued which informed the development of the study questionnaire and line of questioning.

Defining Entrepreneurial Universities

There is no single definition of what constitutes an "*Entrepreneurial University*", however, it has been described as an academic institution which has adapted to environmental changes, has distinctive managerial and governance arrangements, orients its activities towards an entrepreneurial culture at all levels, and contributes towards economic development through the commercialisation of research and the creation of new ventures (Guerrero et al., 2015). Budyldina (2018) claims that entrepreneurial universities are most commonly typified by having a diversified funding base, a strong research intensity and an international perspective of its academic activities.

According to Clark (1998) who first coined the phrase "*Entrepreneurial Universities*", they are characterised by having the ability to innovate, create opportunities, risk take, respond to challenges and promote team work. A range of models of Entrepreneurial Universities have been proposed in the literature from commentators such as Clark (1998), Etzkowitz (2004) & Kirby (2005).

Guerrero-Cano et al. (2006) claim that common within all of these models, are a range of formal and informal factors which impact on the creation and development of Entrepreneurial Universities. Formal factors include: organisational and governance structures; measures to support new business; and education around entrepreneurship. Informal factors include: attitudes held by the university community; the teaching methodology used around entrepreneurship; and role models and the reward systems which are in place. Similarly, according to the European Organisation for Economic Co-operation and Development's (OECD) Guiding Framework (2012) an entrepreneurial university can be characterised by a number of distinguishing features organised under the headings of: leadership and governance; capacity, people and incentives; teaching and learning; pathways; external relationships for knowledge exchange; internationalisation; and impact. It is this definition that has been adopted in this study to guide the development of the study questionnaire.

Understanding Knowledge Management

As a result of the systematic review of the current literature, knowledge management has emerged as a key theme. Knowledge management has been defined in many different ways but it is generally agreed that in the context of universities, it is the process through which the institution increases its intellectual capital to generate benefits through its transference to the social environment (Ramirez et al., 2017).

Following an extensive review of knowledge management processes, Raudeliūnienė, et al. (2018) identified that most researchers focus on the following five knowledge management processes: knowledge creation; knowledge sharing; knowledge use; knowledge acquisition; and knowledge preservation. It the categorisation of these processes which have informed the development of this study

Knowledge Creation

Knowledge creation is essential associated with the development of new knowledge (Jali et al., 2017), and universities are inevitably seen as a major source of new knowledge (Ghio et al., 2016). However, in order for academic institutions to achieve the status of an

"*Entrepreneurial University*", it has been argued that they need to be able to demonstrate robust engagement with the wider community and key stakeholders in society in their knowledge creation processes (Gibb & Haskins, 2018).

Knowledge Sharing

Knowledge sharing relates to the transmission and dissemination of knowledge both internally and more widely across organisational boundaries (Jali et al., 2017). However, despite this being viewed as an essential component of knowledge management in universities, studies have shown that it is not always achieved effectively (Tan, 2016). Traditional universities are often constrained by their own internal organisational structures and practices focussed on around the premise that the core role of the university is teaching and scientific research. However, as Rifai (2015) argues, this 'ideal' can act as a significant barrier in bridging the knowledge gap and linking academic institutions with the wider science, economic and business ecosystems and enabling academic knowledge to be applied into practice. Similarly, according to Galan-Muros et al. (2017), there are often a lack of appropriate incentives in place within universities to promote entrepreneurship and collaboration in interdisciplinary research with industry with an emphasis on publication in high impact journals and grant acquisition as opposed to having a focus on knowledge transfer into industry.

Comprehending how to incentivise university staff to engage more fully in knowledge and technology transfers and commercialization is a challenge for institutions wanting to transition into an entrepreneurial organisation and requires an understanding of the mind-sets and motivations of employees as well as a recognition of the institutional culture in which they operate (Meissner, 2018).

Knowledge Use

Knowledge use or application involves organisations implementing new knowledge into their existing systems and practices allowing them to strengthen their product development and innovation capabilities and authenticating and testing out research findings in the "*real environment*" (Abbas et al., 2018). Within this process of knowledge management sits the concept of knowledge valorisation whereby the transfer of academic knowledge to parties in the commercial sector results in the creation of societal value by translating research findings into innovative products, services and processes (Hladchenko, 2016). However, studies have indicated that particularly in developing countries, many academics are unaware of the potential market value of their research findings (Abbas et al., 2018), which is something that needs to be addressed for those wanting to transition towards a more entrepreneurial model.

Knowledge Acquisition

In the context of universities, knowledge acquisition is a strategy intended to bring in new knowledge and experience from the surrounding environment into the university and may, for example, take the form of hiring in specialists in the field to work in the university (Bratianu & Bejinaru, 2017). From a business perspective, knowledge acquisition from universities can help firms to solve technological problems related to product and process innovations, which in turn can enhance commercial performance (Takanashi & Lee, 2019).

However, studies have suggested that knowledge acquisition from universities and other research institutions can provide a lower return on breakthrough innovation than that which is acquired from the business sector (Rivero et al., 2015). If a university wants to

become considered as entrepreneurial, this is a knowledge management process that needs to be strengthened.

Knowledge Preservation

Knowledge preservation is often considered to be one of the more traditional roles of a university (Ilnytskyy, 2015), but is sometimes considered to be a neglected area (Shaffiei et al., 2013). According to Kianto et al. (2016) knowledge preservation is associated with the management of human resources in order to ensure the retention of expertise. Other commentators have suggested that it is associated with the quality and integrity of knowledge and the security of archiving research information and repositories (Abubakar & Attahir, 2018). The preservation of knowledge in either of these associations is a key concern for institutions striving to become "*Entrepreneurial Universities*" and needs to be taken account of in its wider human resource management and information technology strategies.

Each of these processes discussed above were incorporated into this study to help structure and facilitate the examination of the key factors related to the transition of universities into the realms of entrepreneurialism.

Leadership and Governance

Leadership and governance are critical factors in developing an entrepreneurial mind set within higher education institutions (Ilie et al., 2017). Increasingly, such institutions are adopting a business-like leadership and management approach to keep up to date with other organisations competing in the information economy (Blaschke et al., 2014). According to Etzkowitz & Dzisah (2015), entrepreneurial university leadership teams need to comprise of leaders from both academic and non-academic backgrounds in order to generate the right entrepreneurial attitudes and strategic vision, and to have the capacity to generate both robust academic development and effective societal engagement. Employee views on leadership and governance, were therefore incorporated into the design of this study.

External Relationships for Knowledge Exchange

The development of external relationships between universities and industry faces a number of challenges due to the heterogeneous groups of actors involved, each of which have its own distinct characteristics, purposes and structures (Martinelli et al., 2008). Associated with this is consideration of the ecosystems in which universities and businesses operate. From their study of university-based entrepreneurial ecosystems, Boh et al. (2016) identified different approaches that universities take to developing their ecosystems and external relationships. They found that some institutions allowed their entrepreneurship ecosystems to develop more organically, whereas others systematically created structured networks to develop theirs. They also differentiated between how universities view their internal and external resources and the impact this has on their entrepreneurship ecosystems. They claim that universities which have a more internal focus grow and nurture entrepreneurial resources within the university and work to make these resources available to support university spinoffs and start-ups. Conversely, universities with a more external focus seek to leverage more outward resources for entrepreneurship.

In their study of networking and innovation, Pittaway et al. (2004) stress the importance of network relationships in relation to improving performance and productivity through building innovation capacity.

One of the questions included in the survey therefore focused on networking relations and perceptions of whether an internal or external focus is more beneficial to promoting entrepreneurship.

According to Kitagawa et al. (2015), the conceptualisation of university entrepreneurial ecosystems needs to become broader and more integrated. They argue that such ecosystems need to be viewed as a wide spectrum comprising of education and activities which fall outside the regular curriculum alongside the more traditional conceptualisation of entrepreneurial ecosystems which are based on the commercialisation of research and spin-off formation of firms. They further claim that alternative forms of knowledge creation, skills and competencies are required to stimulate entrepreneurial developments, and that these should be acknowledged as being an integral part of university-based entrepreneurial ecosystems.

The role of entrepreneurial centres (or business incubators) in relation to how they drive the development of entrepreneurial universities has also been the subject of debate and studies have shown that they are an effective tool in supporting businesses and innovation (Krechovska & Taudl, 2014). Another key factor which impacts on the development of external relations relates to communication. Advancements in communications technology and the rise of social media has released new channels of communication and knowledge transfer for all stakeholders including universities. It has transformed the way in which knowledge is shared with others. For example, Roblek et al. (2013) argue that social media, as a communication development, provides opportunities to improve the full value chain of knowledge-based organisations resulting not only in financially focussed benefits, but also more intangible benefits including improved customer experience and enhanced networking.

Teaching and Learning

As a distinct educational subject, entrepreneurship has evolved beyond the notion that "*entrepreneurs are born*" and instead it is more widely accepted that there are some aspects of entrepreneurship can be cultivated and learned with the numbers of universities offering entrepreneurship courses increasing dramatically in recent years (Qureshi et al., 2016). However, there are differing views and evidence relating to what actual impact entrepreneurial education has on entrepreneurial intention and self-efficacy (Bae et al., 2014), and some commentators argue that rather than being a distinct and separate taught subject, entrepreneurship should instead be built into the teaching of all other subjects and that this would be a key characteristic of an Entrepreneurial University (Bester, 2017).

Pathways

According to the OECD (2012), in order for universities to be entrepreneurial they should be able to support the full pathway taken by its potential staff and student entrepreneurs from the initial initiation of ideas through to commercialisation or employment. This includes creating the conditions of entrepreneurship including the opportunity for supervised experimentation, collective supervision, mentoring and coaching. It also includes the provision of support to access funding. The support provided through transitional process was therefore included as a key line of questioning in the study.

Internationalisation

Internationalisation also emerged as a theme from the systematic review of the current literature. There appeared to be general agreement that an international perspective is seen as a critical feature of an Entrepreneurial University (OECD, 2012). However, according to

Larionova (2012), the interface of internationalisation and entrepreneurship has received limited analysis, despite there being important synergies between the two. According to Renc-Roe & Torgny (2014), universities need not only a policy context or funding on the national and international agenda, to steer them towards internationalisation, but also a system of complex, interconnected and context specific processes to support this journey. Views on the span of perspective was therefore built into the design of this study.

Impact

According to O'Reilly & Robbins (2018), the knowledge transfer capabilities of universities have been difficult to quantify and to make comparisons between institutions and the OECD (2012) argue that measurement in this respect is underdeveloped. However, an Entrepreneurial University would be one where mechanisms to quantify and demonstrate evidence of economic and societal impact were well established. Furthermore, as Kaklauskas et al. (2018) point out, when measuring impact, there needs to be consideration given to the wider concept of decision making which takes account of a range of factors such as those which are behavioural, cognitive, cultural and ethical. This study therefore aims to take account of this and identify the factors which are perceived to have most impact and importance in making the transition towards becoming an "*Entrepreneurial University*".

METHODOLOGY

The study adopted a quantitative methodology underpinned by a pragmatist approach involving the use of an online survey directed at the academic staff based within the case example university. The methodological approach and the development of the survey instrument was informed by a systematic review of the literature (Centobelli et al., 2019) which identified the key themes that have emerged from previous studies relating to universities and their transition into entrepreneurial institutions.

In particular standards adapted from the European Organisation for Economic Co-operation and Development's (OECD) Guiding Framework (2012), and evidence of the key knowledge management processes identified by Raudeliūnienė et al. (2018), were used to develop, an anonymous questionnaire. This was developed and sent to all academic staff working within the institution *via* email where they were invited to undertake an assessment as to the maturity of the university in terms of becoming an Entrepreneurial University using a Likert scale from 1-10 indicating their level of agreement with each statement.

From this a mean score for each overall category was calculated in order to enable a comparison between them. In addition, they were asked for their views on specific aspects of an Entrepreneurial University and what they considered the most important factors were in relation to aiding the case example's university's transition into an Entrepreneurial University. This included asking for their views on changes in knowledge management, knowledge-based systems; valorisation of knowledge assets; and entrepreneurship ecosystems.

RESULTS

Response Rate

The electronic survey was sent out to 260 academic staff working within the case example university *via* email, and 148 individuals responded giving an estimated response rate of 57%. It is not possible to calculate an exact response rate as it is unknown how many

individuals in the sample did not receive the email during the survey period due to being, for example, absent from work.

Self-Assessment of Current Position

Respondents were first asked to indicate where they felt the case example university was positioned in terms of its current entrepreneurial status in relation to criteria covered under the 7 domains identified in the OECD (2012) guiding framework. Respondents indicated their level of agreement with each criterion statement under each of the categories on a scale of 1 (Strongly Disagree) to 10 (Strongly Agree), and an overall mean score for each category was calculated.

The results indicated that respondents perceived the case example institution to be more developed in relation to the factors of "*leadership and governance*" and "*capacity*". However, the areas of "*impact*" and "*external relations*" were identified as being less well developed. The results are illustrated in Figure 1.
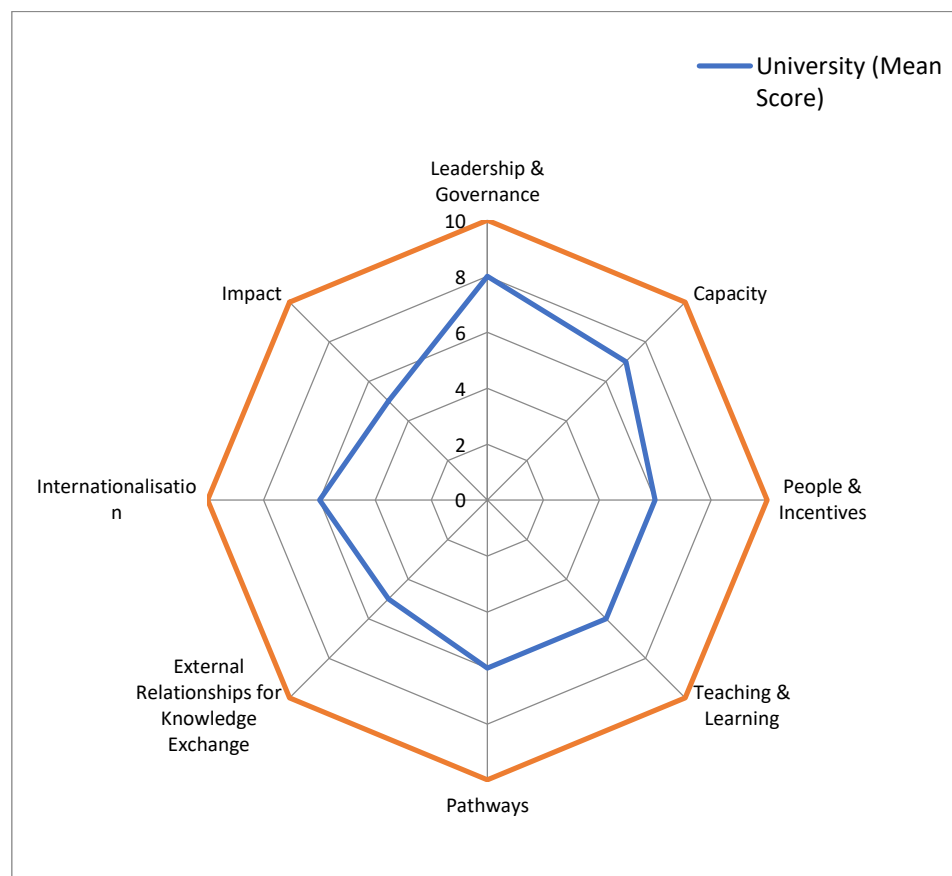
FIGURE 1
MEAN SCORE AGAINST EOCD STANDARDS (2012)

Respondents were also asked to indicate where they perceived the maturity of their organisation to be in relation to the five key knowledge management processes identified by Raudeliūnienė et al. (2018), both now and 12 months previously (for those respondents who were employed by the University at that time), on a maturity scale ranging from 0 (not at all mature) to 10 (fully mature). The results are illustrated in Figure 2.
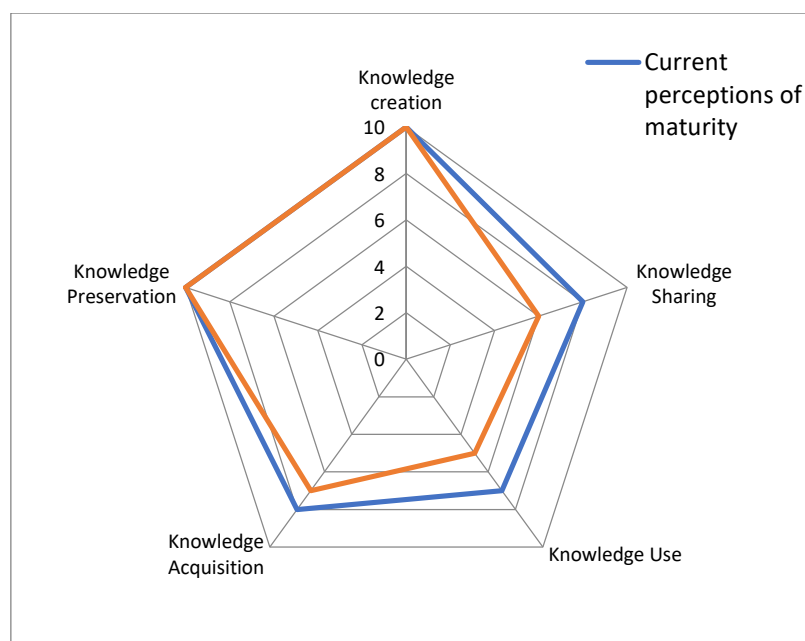
FIGURE 2
MEAN SCORE AGAINST FIVE KEY KNOWLEDGE MANAGEMENT COMPONENTS

Respondents were asked to explain the reasons for their scores. Many of those who commented noted that the University was already mature in relation to its knowledge creation processes:

"Knowledge creation is what we do. It's our core business".
"Of all the components of knowledge management; the creation of knowledge is probably the most developed and was before we started working towards becoming more entrepreneurial".
"Creating new knowledge is a core feature of our institution and something we're good at".

However, some respondents acknowledge the need for greater engagement with wider society and more collaboration with industry in their knowledge creation processes:

"We need to do more joint research with the people in our local communities and representatives of our society".
"It is important that we strive towards more collaboration with industry in our pursuit of knowledge creation. We need to focus more on those gaps in knowledge that are most relevant and pertinent to today's needs".

Views on knowledge changes and knowledge-based systems.

Respondents were first asked to indicate what they perceived the most significant knowledge changes to be that impacted on the transition of their university into an Entrepreneurial University.

Over half of the respondents (51%), indicated that advancements in communication technology such as the development of the internet and the rise of social media had been a significant change in relation to knowledge systems and knowledge changes. In particular, they commented on the increasing accessibility to source new knowledge.

"Advancements in communications technology such as social media, have had a significant impact on knowledge creation and exchange. This will continue to impact on the overall entrepreneurship strategy and the university needs to embrace this as a key factor".

"Sharing knowledge is so different now than it used to be. The university needs to make sure it's at the leading edge when it comes to communication technology".

The areas of greatest change were in perceptions of knowledge transfer and knowledge use. Comments made by respondents confirmed that this had been associated with the increased focus on entrepreneurialism and the "*third mission*".

"The biggest change, which has come through working more collaboratively, is in our knowledge transfer and use processes. Through working together we are creating the type of knowledge our industry partners want and in a way that they can use and translate into practice".

"There has definitely been more support for sharing the knowledge we have created through research to the benefit of the wider community and this has also raised the profile of our work".

Respondents were also asked to indicate which knowledge processes they felt were most important in supporting the development of an entrepreneurship ecosystem shaped by the university currently. The results indicated that knowledge creation and sharing was considered to be most important, with knowledge preservation and application being considered less of a priority. The results are shown in Figure 3.
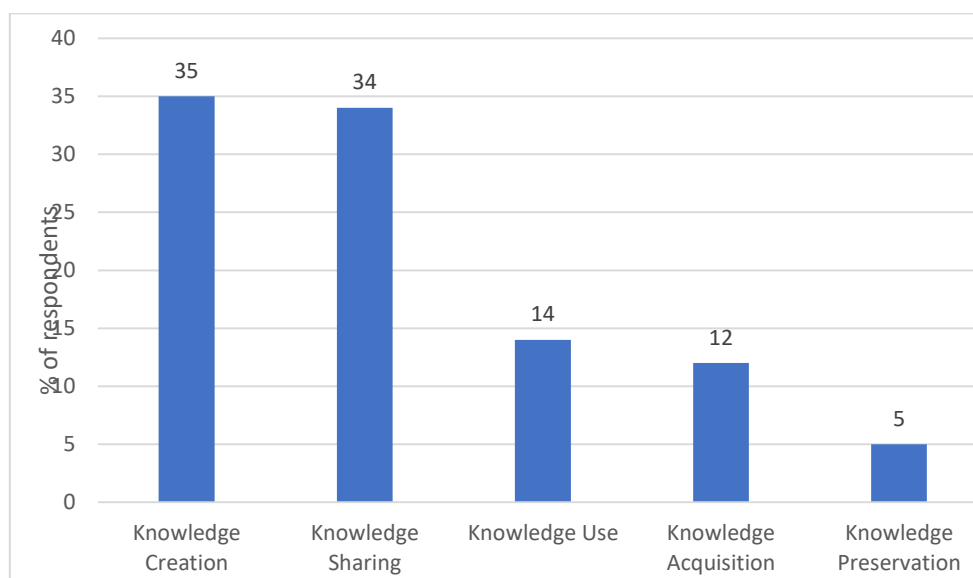
FIGURE 3
PERCENTAGE OF RESPONDENTS WHO INDICATED KNOWLEDGE PROCESS WAS 'MOST IMPORTANT'

Despite knowledge preservation not being identified as most important by the majority of respondents, there were some comments made relating to how the strengthening of other knowledge management processes could help with this through the retention and recruitment of expert staff as a result of the university becoming a more attractive place to work.

"I think if we had more opportunities to work more closely with industry we would improve our senior staff turnover and retention rates".

"More collaborative working in industry and a higher profile through being seen as key players in turning knowledge into innovation will help attract a higher calibre of staff to the university and keep the expertise we already have".

Knowledge Use: Valorisation

Focusing on the use of knowledge and its application respondents were asked which methods and approaches they felt were most effective in valorising their university's knowledge assets. The methods that were most frequently identified are listed and included: publication, spin-offs and training.

Furthermore, respondents were asked how important they felt that entrepreneurial centres and business incubators were in driving forward the development of their entrepreneurship of their university so that knowledge could be used and valorised. The majority of respondents indicated that they felt such centres had an important role to play as shown in Figure 4.
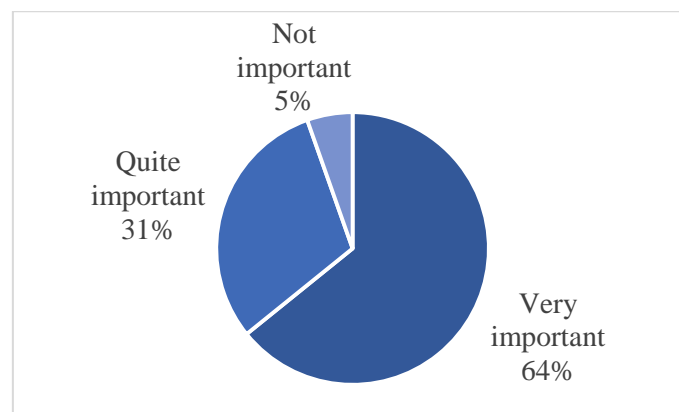
FIGURE 4
HOW IMPORTANT DO YOU FEEL ENTREPRENEURIAL CENTRES AND BUSINESS INCUBATORS ARE IN SUPPORTING UNIVERSITIES SUCH AS YOURS TOWARDS BECOMING MORE ENTREPRENEURIAL?

Supporting Entrepreneurship

Respondents were then asked to indicate what they felt would be the most useful initiatives to support the development of external links with industry. The most frequently identified initiatives and include the provision of placement and shadowing opportunities, access to grants and loans for start-up projects and access to ongoing mentoring support from business leaders (note that some respondents indicated more than one initiative as being important).

Comments received by the respondents suggested that there was a need for further development of external links to support entrepreneurship and a shift from the traditional mind-set on the role of the university:

"Universities need to move away from the traditional academic mindset and start to share information in a way that is meaningful to industry and businesses, and in formats that are accessible to them".

"We need more opportunities for working collaboratively with industry and outside of the normal education and learning environments".

Furthermore, it was evident that academic staff felt there should be a greater focus on measuring the impact of the outputs from the university on the economy and society as a whole:

"More research is needed on what regional impact knowledge generated in universities has on the local economy."

DISCUSSION

Overall, the application of the OECD Guiding Framework has provided a useful structure from which to explore the views and perceptions of academic staff within the case example university. The findings indicated that the university is considered to have made good progress in meeting the OECD standards and characteristics particularly in relation to 'leadership and governance' which perhaps is one of the factors with most significance when trying to shift mind-sets from a more traditional view of the role of the university to a one which is more entrepreneurial. However, the findings showed that respondents identified with the more traditional knowledge management processes (knowledge creation and sharing) and methods of valorisation (publications and training). However, the findings indicated that there was a perception that the university had matured the most in relation to its knowledge sharing and knowledge application processes, with increased collaboration between the university and industry partners being cited as one of the catalysts for this. This shift in particular may help the institution achieve its ambition of being an Entrepreneurial University. However, it was also acknowledged by some respondents, that different processes within the University's current knowledge management system needed to be strengthened. Greater engagement with society and industry in knowledge creation processed was one area that was identified for further development.

In relation to other enablers, there was a good level of support for the use of entrepreneurial centres which could act as business incubators to turn knowledge into some other form of asset that can be applied in practice to the benefit of the economy and society. There also appeared to be an appetite for looking more outwardly to local businesses to forge links and partnerships and opportunities for learning outside of the university; with business placements and shadowing opportunities being rated highly and potentially supporting the preservation of knowledge by encouraging the retention of and recruitment of experienced staff.

CONCLUSION

The OECD Guiding provides a useful model for exploring the key characteristics of an Entrepreneurial University and examining the key issues which impact on the transition of a university towards entrepreneurship and the areas of the knowledge management process that need to evolve. The study identified that the case example university was perceived as making good progress on the path to becoming more entrepreneurial, but it was evident that organisations such as this face a number of barriers which is perhaps more prominent in a developing country like Jordan, where higher education is still more commonly viewed through a traditional lens. It is clear that, going forward, universities and industrial businesses alike need to continue to adapt and change, align and strengthen their knowledge management processes, and work together to make the "*third mission*" a reality with mutual benefits for all.

The findings from this study may be of interest to both policy makers, industry, and those working within academia, particularly in developing countries, as they highlight the

areas they may want to give particular attention to when promoting and facilitating the transition to entrepreneurialism within identified institutions.

LIMITATIONS OF THE STUDY

Although this study has added to the body of evidence within this field, a mixed methodology combining interviews with academic staff and local business leaders may have enhanced the richness of the information gathered and a comparison between different universities may also be an area for further investigation. Furthermore, a deeper dive into the specific ways in which knowledge management processes have changed in the pursuit of entrepreneurialism would be beneficial.

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