

Promoting a culture of innovation & entrepreneurship in Saudi Arabia: Role of the Universities

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Saudi's mission to diversify its economy depends heavily on innovation and entrepreneurship. The discussion evaluated the role of universities in building a culture of innovation and entrepreneurship in Saudi Arabia, employing a literature review and gap analysis method to design an approach for universities to play the aforementioned role. The literature review reveals that the role played by universities entails providing entrepreneurship education, providing support resources, and partnerships with non-academic institutions, while the gap analysis undertaken reveals that Saudi Arabia has made significant strides towards equipping its universities to contribute to innovation and entrepreneurship, but lags behind the top ten leaders.

The proposed initiative model entails seeking strategic alignment between university contributions and local and national economic goals, collaborating with international institutions to replicate best practices in Saudi Arabia, and establishing formal frameworks for partnerships with relevant stakeholders in innovation and entrepreneurship. Upon evaluation, the main arguments for the model rest on its focus on strategic alignment and partnerships, while counterarguments involve bureaucratic restrictions on innovation and entrepreneurial spirit owing to formal frameworks with the government, as well as possibilities of exportation of ideas and benefits away from Saudi Arabia through international partnerships. To address the aforementioned concerns, the stakeholders will need to address bureaucracy, allow inclusive participation, and strengthen implementation of intellectual property rights.

Keywords
Education infrastructure; entrepreneurship higher education; knowledge-based economy; innovation; Saudi Arabia

Introduction

Saudi Arabia has recently sought to diversify its economy in a bid to transform it from being heavily natural resource based, with a focus on improving human capital and creating a knowledge-based economy being a mainstay for Saudi economic planners and leaders. Salem (2014A) argues that innovation and entrepreneurship are pertinent factors behind Saudi Arabia's ambitions in economic diversification, besides noting that the country has established over 65 tertiary education institutions since the mid twentieth century. The rationale for such expansion in higher education lies in the need to develop human capital and stimulate innovation and entrepreneurship. Today, the goal is to transform Saudi Arabia into a global innovation and entrepreneurship leader in preparation for the eventual depletion of oil

resources. However, the country still lags behind current global innovation and entrepreneurship leaders despite opening many tertiary education institutions (Mehta, Vaidya, Chaudhary, Ramamrajan, & Ranjan, 2014). In light of this observation, research into how universities can contribute to innovation and entrepreneurship in Saudi Arabia is necessary. The present investigation seeks to establish the role that Saudi universities should play in promoting a culture of innovation and entrepreneurship in the country, exploring the curricular developments and partnership models necessary. The undertaking entails a literature review leading into a methodology for the role of universities in promoting an innovative and entrepreneurial culture, which then allows designing of an initiative model for education alongside accompanying arguments and counter-arguments that help generate crucial recommendations.

Literature Review

A number of scholars have examined the role that universities have played, can play, and should play in promoting innovation and entrepreneurship in societies and economies. The analysis of literature entails thematic categorization into the role of universities in undertaking entrepreneurship education, providing support infrastructure and resources, and establishing partnership models with non-academic institutions.

Entrepreneurship Education

One of the crucial ways in which universities can contribute to a culture of innovation and entrepreneurship is through undertaking entrepreneurship education, with the knowledge spillovers into society then helping stimulate entrepreneurial spirit and innovation beyond the educational setting. A study by the Organization for Economic Co-operation and Development (2009) explores entrepreneurship education in institutions of higher learning, employing a case study approach to evaluate the contribution of universities in the field of entrepreneurship. According to the study, several universities have established centers for entrepreneurship and technology transfer centers that seek to stimulate entrepreneurship and innovation within and beyond the universities. In such centers, the purpose of entrepreneurship education entails training students and other interested parties in entrepreneurial skills, such as creativity, problem-solving abilities, conflict management, communication, and negotiation, employing lectures and business simulation games in such education. The entrepreneurship courses and workshops exist as course modules in such universities. Entrepreneurship education is a core part of curricula in some courses, such as business administration and other business-inclined courses. However, the approach taken by some universities in offering entrepreneurship education outside business courses demonstrates how they help nurture entrepreneurship and innovation in the wider population. In this case, some universities offer all modules as elective units open to all students, as exemplified by the approach in the University of Applied Sciences Jena.

In another study, Vicens and Grullón (2011) explore how some universities have approached education in entrepreneurship and innovation, citing some institutional approaches as models that can be replicated elsewhere in the world. For instance, Stanford University employs a Design Thinking approach to train students in entrepreneurship. Design Thinking

approaches entrepreneurship education from the perspective of principles that can be tutored to and utilized by people from diverse academic levels and backgrounds. Irrespective of academic level and background, Design Thinking centers on employing the individual's sensibility and methods to match people's needs and wants with products that are technologically feasible, and for which a viable business strategy can convert into customer value and accompanying market opportunity. Ultimately, this approach links innovation with viable entrepreneurship, besides applying to individuals from diverse backgrounds in a way that promotes entrepreneurial and innovation culture. Meanwhile, entrepreneurship education at Babson College emphasizes holistic and integrative learning in a way that makes entrepreneurship a lifestyle, demonstrating contribution to entrepreneurial culture.

A study by Efi (2014) explores the various ways through which universities and other tertiary institutions of education promote entrepreneurship in society. In the study, the scholar observes that entrepreneurship education in universities can enable a society develop and produce more entrepreneurially inclined individuals. Universities play a crucial role in providing the much needed entrepreneurial knowledge and skills necessary for enterprise growth, as well as equipping individuals with adequate knowledge, skills, and capabilities in proper business management. However, the role played by the universities in promoting the culture of education not only concerns the education aspect, but also changing the mindset of individuals regarding the place of entrepreneurship in society. Here, universities also help change the attitudes of individuals in ways that create positive perceptions toward self-reliance and self-employment. In addition, universities help create awareness of entrepreneurship as a career option for individuals, helping promote entrepreneurial spirit in society.

Providing Support Infrastructure and Resources

Universities can help promote a culture of innovation and entrepreneurship in an economy through providing supportive infrastructure and resources. The Organization for Economic Co-operation and Development (2009) notes that universities can offer important resources that support innovation and entrepreneurship, beyond education and research in the two fields. The Organization provides examples of the infrastructural and resource support that universities can offer, including providing support to startups establishing business incubators. In addition, universities can establish support programs and create access to networks for future, emerging, and existing entrepreneurs. Establishing entrepreneurship research centers also provides another way through which universities can employ their resources in helping build a culture of innovation and entrepreneurship. Support may also be through providing a network and contacts to business support providers and financiers.

Wells' (2014) study also observes that universities play crucial roles in supporting innovation and entrepreneurial spirit through establishing business parks or incubators in which individuals within and outside the university can access a collaborative and conducive environment for business creation and technological development. In such business and technology incubators, individuals can access resources that may be unavailable to them outside large corporate organizations with massive research budgets. In addition, universities can aid promising individuals and startups with seed money to pursue their projects. Through

expanding the number of people accessing innovation and entrepreneurship development opportunities, universities help widen the culture of innovation and entrepreneurship beyond traditional boundaries.

Partnership Models with Non-Academic Institutions

Noting that research in entrepreneurship may not necessarily translate to supporting entrepreneurship in society, Wells (2012) proposes more emphasis on contract research approaches that have a direct link to entrepreneurs and innovators in society. Here, the scholar observes that many universities have research labs capable of undertaking research for the direct benefit of startup businesses. At the same time, many universities have departments and centers devoted to excellence in industrial design and prototype development, underscoring their high potential for innovation. Meanwhile, startups may be missing key or final pieces to complete innovation puzzles, or may be limited in capabilities in areas such as prototype development and industrial design. As a result, universities can establish direct partnership arrangements with such startups, enabling collaborative processes that allow startups to benefit from the opportunities, resources, and human capital present in universities. Such actions would help accentuate entrepreneurial and innovative capabilities in society.

Tornatzky and Rideout (2014) indicate that universities can promote innovation and entrepreneurship in society through undertaking boundary-spanning entrepreneurial activities and technology transfer through establishing community and industry partnerships. The aspect of moving beyond university boundaries entails instituting policies and practices that move research and action beyond traditional disciplinary structures, crossing the boundaries that exist between universities and the private sector world. Meanwhile, boundary-spanning technology transfer involves universities participating in the translation of innovative research into commercially viable intellectual property through collaborating with startups and pursuing industry partnerships. According to the Organization for Economic Co-operation and Development (2009), universities establish partnerships to external startup and nascent companies, cooperating with national commerce ministries and agencies to help nurture innovation and entrepreneurship.

Methodology

The proposed methodology for exploring the role that Saudi universities can play in promoting a culture of innovation and entrepreneurship in the country entails using the findings from the literature review and undertaking an audit of the current role played by Saudi universities in nurturing societal innovation and entrepreneurship. The next step entails exploring the current state of innovation and entrepreneurship in Saudi Arabia and the country's goals, alongside the strengths and areas in need of improvement in innovation and entrepreneurship in Saudi Arabia. The aforementioned activities help identify gaps and opportunities in present efforts, which then enables the discussion of a model for the role of universities in promoting a culture of innovation and entrepreneurship in Saudi Arabia.

Current State and Emerging Trends in Saudi Arabia: Innovation and Entrepreneurship, Role of Universities

The National U.S.-Arab Chamber of Commerce (2010) explores developments and promise in entrepreneurship in Saudi Arabia, noting the realization of the importance of an entrepreneurial culture in the growth of the economy. Entrepreneurship promises to be crucial to the Saudi economy, as small and medium-sized enterprises (SMEs) already constituted 92% of businesses in the country and employed over 80% of the workforce. Supporting their growth through furthering innovation and entrepreneurship will only translate to a more vibrant economy, which is a pertinent factor for success in Saudi Arabia's ambition to diversify its economy. National U.S.-Arab Chamber of Commerce (NUSACC) observes that Saudi Arabia aims to become one of the top ten most competitive nations in today's, an ambition that necessitates developing a vibrant knowledge-based economy. NUSACC indicates that the Saudi administration and policymakers are aware of the need for a new generation of creative individuals and forward-looking entrepreneurs in attempts to become a top economy that does not rely on natural resources. As a result, the country has established universities aimed at promoting innovation and entrepreneurship, chief among them the King Abdullah University of Science and Technology. This university is a graduate-level state-of-the-art research university that bears an Innovative Industrial Collaboration Program (KICP). The KICP seeks to foster partnerships among local, regional, and global organizations interested in nurturing entrepreneurship. In addition, the university aims at strengthening the link between academic research and economic growth, underscoring Saudi Arabia's awareness of the need to harness tertiary education in boosting innovation and entrepreneurship. Salem (2014B) agrees, observing that Saudi universities are creating a network of research centers, besides producing, spreading, transferring, and utilizing knowledge, and collaborating with local and international businesses.

However, some observers indicate that Saudi Arabia needs to do more to reach its ambitions in diversifying the economy through entrepreneurship and innovation. Rahatullah (2013) undertook a study to map the entrepreneurship ecosystem in Saudi Arabia, appreciating the efforts undertaken by the government, learning institutions, and the private sector in stimulating entrepreneurship. However, he also established that the country still has significant room for improvement in entrepreneurship and innovation. The scholar concludes that Saudi Arabia needs to start new study programs aimed at supporting entrepreneurship throughout the kingdom, develop and strengthen more enable entrepreneurship institutions, and develop heightened awareness of entrepreneurial activities and entrepreneurship in the Kingdom. Such recommendations point to a need for more involvement in innovation and entrepreneurship promotion by universities.

Mehta, Vaidya, Chaudhary, Ramamrajan and Ranjan (2014) also observe that Saudi Arabia is pursuing a heightened role of innovation and entrepreneurship in the economy, but note that the country is at crossroads today. The scholars indicate that most of the countries occupying the top ten competitive innovator positions have achieved strengths in human capital, research, strong institutional frameworks, and high quality output, depicting well-developed entrepreneurship and innovation ecosystems. The scholars provide a comparison of Saudi Arabia's innovation ecosystem with that of other regions from which the top performers in innovation exist (Figure 1). Although Saudi Arabia's highest score (40/100) is in institutions, this aspect is also where the country lags the top performers farthest (over 90/100), with Mehta,

Vaidya, Chaudhary, Ramamrajan and Ranjan (2014) calling for improvements in the institutional framework for innovation. Such findings indicate gaps in the role played by universities in contributing to a culture of innovation and entrepreneurship in Saudi Arabia.

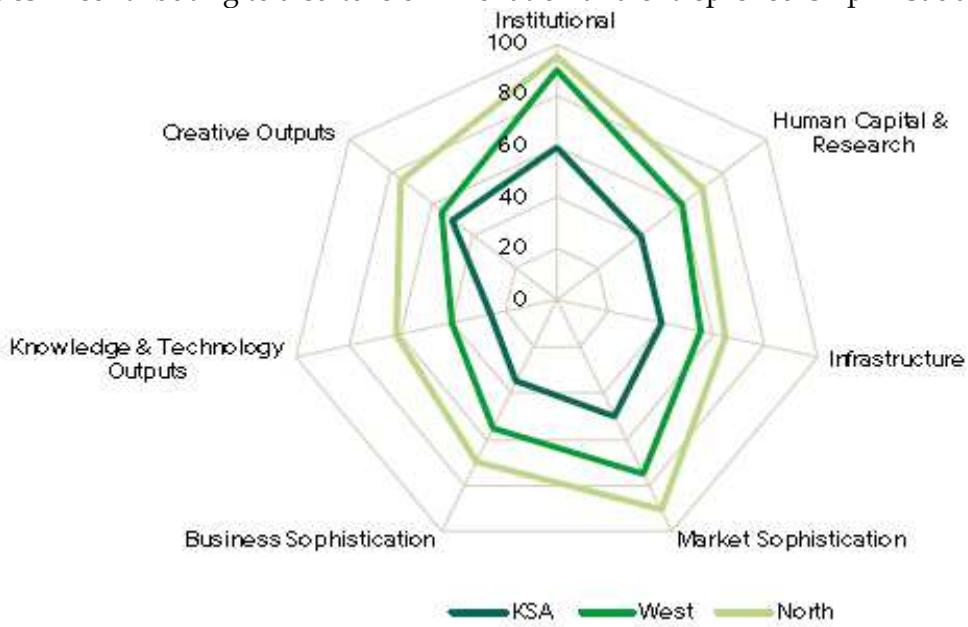


Figure 1: Saudi Arabia's innovation ecosystem, demonstrating room for improvement before the country can catch up with the top performers (Mehta, Vaidya, Chaudhary, Ramamrajan & Ranjan, 2014).

Initiative Model

The discussion indicates that Saudi has already established many universities with the potential to stimulate innovation and entrepreneurship in the country. However, there are gaps in the role played by such universities in promoting an innovative and entrepreneurial culture. The proposed model entails three parts, namely, strategic alignment, collaborating with international universities to establish and meet best practice standards, and formal frameworks for external partnership and networking.

Part 1: Strategic Alignment

This aspect concerns the need to align university innovation and entrepreneurship initiatives with the economy's mission and objectives. In this case, one of the reasons behind the observed gap between establishing universities and gaining from them in sparking entrepreneurship and innovation may arise from the lack of strategic objectives. As a result, a core part of the model should entail linking university innovation and entrepreneurship activities with local and national economy goals, all aimed at transforming Saudi Arabia into a top ten innovator. Such strategic alignment should also involve linking the role of universities with other aspects of the national strategy towards diversifying the economy.

Part 2: International Collaborations to Replicate Best Practices

The initiative model also entails establishing collaborations with international tertiary institutions that provide state-of-the-art examples and proven practices through which universities have been able to stimulate and support entrepreneurship and innovation in communities. For example, Stanford University and Babson College among other higher education institutions drawn from the developed and developing world can offer ideas that Saudi universities then localize to the country to great effect.

Part 3: Formal Frameworks for External Partnership and Networking

The last part of the proposed model entails the establishment of formal frameworks that ease and encourage partnership and networking with external non-academic entities. Formal frameworks will specify channels, provide linkages, and enable support of cooperation and collaboration between universities and external parties such as startups, established business, government agencies, and non-governmental organizations.

Arguments and Counterarguments

The main argument for the initiative model revolves around how it addresses current gaps in how Saudi universities contribute to innovation and entrepreneurship. In this case, pursuing a strategic fit between university efforts and local and national economic ambitions gives direction and strategic goals towards which universities can work. In addition, pulling in the same general direction through the proposed strategic alignment will enable concerted efforts and gains rather than dispersed efforts that contribute less to the desired knowledge economy. Another argument for the model arises from how the proposed partnership with foreign institutions will enable leapfrogging towards current best practices in how universities can contribute to an economy's innovation and entrepreneurship ecosystem. Further, the strategic alignment and formal frameworks for external partnerships will enable the country to benefit from existing resources in Saudi universities, bridging the institutions with the national economy.

One of the major counterarguments to the initiative model arises from the view that establishing formal frameworks and policies for strategic alignment may restrict innovation and entrepreneurship through introducing government bureaucracy in the system. In addition, the measures may result in curtailing of freedom of thought, which is pertinent for the creative process behind innovation and entrepreneurship. At the same time, collaborating with foreign institutions may result in ideas and inventions being exported through partnerships with such international universities, benefitting other economies rather than Saudi Arabia.

Conclusion

In a bid to create a knowledge-based economy, Saudi Arabia has invested in many universities recently. Scholars indicate that universities can help nurture a culture of innovation and entrepreneurship through entrepreneurship education, providing support infrastructure and resources, and establishing partnership models with non-academic institutions. An analysis of the state of Saudi Arabia notes gaps in innovation and entrepreneurship that translate to opportunities for universities to contribute in establishing the desired culture and ecosystem. The gap analysis undertaken helps generate an initiative model that prescribes strategic

alignment between university activities in innovation and entrepreneurship and local and national economic goals, collaborations with international universities to establish and meet best practice standards, and establishment of formal frameworks for external partnership and networking. The following suggestions will help address the counterarguments identified in the initiative model.

- The concerned stakeholders should establish modalities that ensure bureaucracy and other hindrances to creative processes do not accompany the strategic alignment sought between university activities and broader government economic ambitions.
- The stakeholders should strengthen intellectual property practices to protect against loss of ideas and products through the foreign partnerships formed through the initiative model.
- The implementation of the measures proposed to make universities more useful in promoting a culture of innovation and entrepreneurship should be participative and inclusive, enabling the stakeholders to own the process outside the formal structures established.

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