European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.8, No.15, 2016

The University as Technology-Focused Center on Entrepreneurship in the Middle East: Case of Jordan

Nazeeh Ghatasheh
Department of Business Information Technology, The University of Jordan

Abstract
Stringent business ecosystem raises the demand for novel ways of operation to survive and innovate. Such change and improved capabilities ask for reconsidering the role of the university in filling the gaps. This research puts in hand first steps and insights regarding the added value of the university in one of the Middle East countries. The main objective is to foster the economic development of the local community in Aqaba city by establishing a technology-focused center on entrepreneurship. Such center will strive to utilize the various resources in hand in order to make available high quality outcomes concerning the local community development. Expected benefits include providing various services to a wide number of clients. Such services assist the local community to overcome challenges as the scarce employment opportunities and the expanding number of higher education graduates.
Keywords: Center on entrepreneurship, Entrepreneurial learning center, Regional innovation ecosystem, Technology based business, University entrepreneurship

1. Introduction

Small businesses have tremendous role in creating a solid local economy (Robbins, 2014). Such businesses and entrepreneurs proved to be with great value in helping the local communities to overcome several issues. Small businesses created noticeable number of job offerings and most of their presence is in the digital world. Robbins (2014) showed that small businesses and new startups in particular need to work more on their sustainability. He highlighted number of strategies that aims to help small businesses in their growth and improvement. Two of the strategies is building small businesses resource center and creating incubator space.

Since more than four decades the number of business incubators increased exponentially, from 12 in the 80's to more than 1250 by late 2012 in the United States of America (Business Incubation FAQs). In addition, the estimated number of incubators over the world is more than 7000. The incubators serve various needs such as marketing the university technologies and promoting the employment process.

The main purpose of this research is to find the transformation enablers of the university into an entrepreneurial configuration, which increases the contribution to the regional and economic development. The enablers will make it possible to highlight the gaps in the current ecosystem of the university, as well as propose an adapted design of a technology-focused framework towards an integrated local innovation ecosystem. General scope of this research encompasses the enabling ecosystem variables at the University of Jordan branch in Aqaba, Jordan; towards being an Entrepreneurial Learning Center for the local small businesses or creating novel niches for entrepreneurs in Aqaba.

Introducing a new concept of "University Entrepreneurship" in the Middle East is novel. Furthermore, it would be one of the solutions for future job creation regarding the young entrepreneurs. The recommendations of this research and the design of a university incubator go along with expectations and issues found in the World Economic Forum Report about accelerating entrepreneurship in the Arab World (The Forum of Young Global Leaders, and Booz & Company, 2011). Aqaba is a special economic zone that is far from the capital, with low level of industrial establishments, high level of unemployment, and low level of job offerings. As a result, it would be a proper niche for small businesses and novel business models.

The proposed research is divided into two main areas: the analysis of the university ecosystem, and the analysis of the local business environment. Conducting the benchmark analysis tries to find the common bases of an incubator for entrepreneurial innovation. Benchmarks will take into consideration the current definitions of the "center on entrepreneurship" in Europe, United States of America, and the success factors which exist in literature or suitable for the local context. The main guidelines and scope will be tailored to the local context while relying on the different efforts found in the literature. Moreover, many researchers (Romano, et al., 2014a; Romano, et al., 2014b; O'Neal, 2005; Guerrero et al., 2011; Mian, 2011; Ollila & Williams-Middleton, 2011) contributed to the current area of research and highlighted many issues related to the contribution of the university in the entrepreneurial ecosystem.

The collective outputs of this research would lead to the design of an incubator within the local universities. Furthermore, it will show the gaps in terms of enabling processes or activities towards the activation of a suitable incubator. Looking further, incorporating the university in the local development and job creation according to the prospected needs and economic situations.

2. Related Literature

The case of the University of Central Florida (UCF) highlights some important considerations for designing a successful incubator (O'Neal, 2005). UCF's incubator showed a remarkable performance in the amount of the jobs created (more than 600), economic impact, intellectual capital of the clients, number of employees, and business revenues. UCF experience pointed to several success factors that include having an active research environment, connecting between clients and external environment, and filling the existing gaps to support the local community.

Secondo et al. (2015), Dickson et al. (2008) and Matlay (2008) showed the impact of the educational level on the success of entrepreneurial activities. Their findings showed that one of the major objectives of the university incubator is to leverage the educational level of the entrepreneurs, and fill in the existing gaps regarding their field of business. Another objective would be conducting continuous prediction of the possible changes in the business dynamics and tailor the educational/training programs accordingly.

iPark[1] is a Jordanian Technology-Based Incubator that managed to get grants from InfoDev[2]. The iPark tries to assist the new startups and entrepreneurs in leveraging their contribution to the local economy and job creation. InfoDev supports several incubators in the Middle East and provides several services as technical and financial assistance, networking, knowledge sharing, evaluation and monitoring, and research. Therefore, there are several potential opportunities in the Middle East and specifically in Jordan to have successful centers aiming to leverage the economic contribution and job creation.

Several concepts related to Entrepreneurship were emerged as Social Entrepreneurship (Sekliuckiene & Kisielius, 2015), Innovation-Driven Entrepreneurship (Groth et al., 2015), University Spin-Offs (Pattnaik et al., 2014; Dahlstrand et al., 2016), and the Analytics of Big Data (Davenport & Patil, 2012; Gupta et al., 2015; Paul, et al., 2010). Such trends and emergent concepts call for prospective look to the future of Entrepreneurship education. Business Analytics in the era of Big Data is gaining major attention in the meantime, and many experts in the field point to its prospective role in the future business environment. The authors in (Gupta et al., 2015) highlighted an expected issue of having graduates with less experience in Big Data Analytics. Therefore, a university incubator would be a place where students, potential entrepreneurs, and existing business stakeholders can get the required skills to follow up with the expected trends regarding Business Big Data Analytics.

Queen Rania Center for Entrepreneurship[3] (QRCE) is an example of an innovative entrepreneurship fosters in Jordan. QRCE is operating in Amman as non-profit organization since 2008 with main focus on aiding the Technology Focused Entrepreneurship in Jordan. Princess Summaya University for Science and Technology holds the QRCE as "Center of Excellence for Entrepreneurship" to help in developing the local business ecosystem. The center aims to leverage the capabilities of different participants in order to excel locally and globally. QRCE focus is mainly on funding, capacity building and support, recognition and awareness, and networking. The achievements of the center over ten years are presented in connecting more than 30k people, training more than 4k, creating more than 300 jobs, helping in the recognition of more than 100 startups and projects, the creation of more than 25 high growth technology startups, and organizing more than ten competitions and conferences. Despite the promising achievements of the QRCE, Aqaba as a distant city from the capital Amman needs more attention and tailored initiatives to the special needs of the local community.

3. Analysis of the Local Environment

The main role of the university in Jordan is about traditional education and skills building. While the university entrepreneurship centers are emerging and gain more attention at the capital Amman. Aqaba has three universities from which two are public and one is private. None of the three universities offer entrepreneurship education as mainstream among the several offers. Moreover, the three universities offer various undergraduate programs that are missing some important disciplines as medicine, engineering, nursing, and many others. Due to various limitations and challenges the university offerings are limited and need serious thinking of reforms. The promising opportunities may include the attraction of rural communities and nearby areas to be part of the university programs. Apart from the challenges, the universities offer business and business-related programs as the bachelor degree in business information technology. At the same time several business and technology oriented instructors are capable of providing technology-oriented education and training.

The study of Bills (2015) found that there is a limited role of entrepreneurship education in Amman, Jordan. Inducing entrepreneurship and business in Jordan requires reconsidering several aspects; As the rules and regulations for doing business. In addition, the study suggests several reforms to reduce the level of "quasi-legal grey market" activities in which workers does not benefit from legal protection and are not contributing in terms of tax paying. Another issue is that youth prefer jobs in the public sector, which in its turn suffer from having

[1] iPARK, http://www.ipark.jo
[2] InfoDev, http://www.infodev.org
[3] QRCE, http://www.qrce.org

"objectively bad policies". The young labor force strives to be part of a public sector job at first place, otherwise they work as employees in the private sector.

In Jordan there are many initiatives to increase the level of technology usage over the whole country. USAID with several partners from the public and private sector started teaching mothers and their children in rural communities. The education included technology usage and languages for the participants aiming to give more access to the information technology. The program showed impressive results and the initiative is going to cover several parts of the country (USAID, 2015). Even so, Aqaba still needs more attention and dedicated programs that would target the special needs of the local community. The Jordanian Knowledge Stations[1] is another initiative that aims to spread the awareness of information technology all over the country with more focus on rural and distant areas. The Knowledge stations at their current settings offer services to decrease the digital divide and prepare the community for the digital services. The knowledge stations offered means of job creation and enabling the participants to apply online for several jobs, this helped the rural and distant communities in finding jobs but not mainly towards being entrepreneurs. Most of the Jordanian initiatives are working towards the development, education, training and preparing the individuals from different levels for the job market. Meanwhile, Jordanian entrepreneurship initiatives are working hard to offer help with more concentration in the capital Amman.

Apart from the challenges and the obstacles that the local community in Aqaba face, there are several motivators and enablers for creating innovative initiatives. Aqaba city is considered a Special Economic Zone (ASEZ) in which doing business has many advantages. Aqaba Special Economic Zone Authority (ASEZA) offers several incentives to the investors in order to create an attractive business environment. The offers to the investors in ASEZ include low income tax compared to other Jordanian governorates, exemption from other taxes, duty-free imports, ownership guarantees, facilitation of several business activities, and many others. In addition, ASEZ has a multi-modal transportation hub that is composed of an international airport and seaport. On the other hand, there are several international trade agreements.

The business environment in Jordan is considered one of the promising ecosystems for startups and entrepreneurs. Most of the reports and studies focus on the capital Amman and reflect the business situation accordingly. Based on the World Bank Group (2016), the ease of doing business rank in Jordan is 113 and the Distance to Frontier (DTF) is 57.84 for the year 2016. Figure 1 shows the relative position of Jordan in terms of starting business indicators. The data is for the year 2016 (DB2016) in addition to the indicators for Jordan in the year 2015 (DB2015).

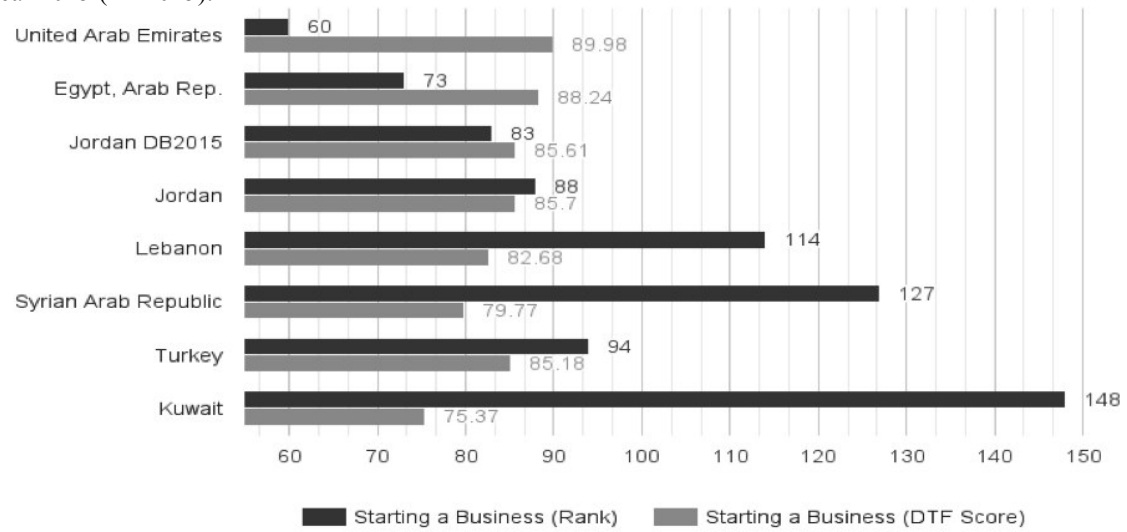

Figure 1. Starting business indicators (Adapted from World Bank Group, 2016)

According to the latest report of Global Entrepreneurship Monitor (2010) that includes Jordan, the key indicators for Jordan are the total early-stage entrepreneurial activity of 10.2%, the established business ownership of 5.3%, the perceived opportunities of 44%, the perceived capabilities of 57%, the entrepreneurial intention of 25%, and the fear of failure is 39%. Because of the difficulty of accessing more recent statistics about Jordan in general and about Aqaba in specific the presented figures give a general view of the expected situation.

[1] Jordanian Knowledge Stations , http://wwwks.gov.jo

4. Conceptual Framework and Discussion

The idea of creating the center on entrepreneurship would add value in terms of the top ranked issues of research priorities in Jordan; Higher Council for Science & Technology (2010) defined the research priorities that include fulfilling the market needs, providing better outcomes of vocational education, continuous learning, development of local community, matching the output of higher education with the market needs, technology adoption in fields as agriculture, and assisting rural women for better technology adoption.

The University of Jordan in Aqaba has the potential of holding an incubator for the local community and small businesses. Currently there are many agreements with different training organizations to offer training programs in collaboration with the university. Part of the training targets high schools graduates who are unable to be enrolled in the bachelor programs. The theme of the current training offerings focus on offering certificates that would increase the potential of employment. Improving the offered programs is possible by designing a technology-based incubator that would benefit from the capable instructors, the technical staff, the available infrastructure, the collaborations with training organizations, relations with institutions in the public/private sector, and the relation with the local community. The incubator would be operated and managed in collaboration with many local, national, and international institutions. Internationalization and diversity within the university incubator could enable the benefit from the knowledge of different communities and related initiatives. The main focus of the incubator should be prepare the enrolled participants to be entrepreneurs rather than increasing their possibilities in employment only. In terms of eligible candidates, the incubator should target a wide range of beneficiaries as small businesses and university graduates. At the same time, setting the ultimate goal to be improving the business ecosystem of local community and increasing the sustainability.

After considering several models of university incubators, this research proposes a conceptual model of a Technology-Based Center on Entrepreneurship at the University of Jordan, Aqaba Campus (UJA). Hence Aqaba is considered as a special economic zone that is far from the capital Amman, the center will be a major contributor in finding possible opportunities that match the local business environment. Being far from several potential job offerings and business opportunities as those found in other Jordanian cities is challenging. Intensive market research and analysis to find niches and innovative ideas would be one of the main activities of the center. In addition, facilitate the collaboration with distant companies, experts, and funding institutions. On the other hand, the center will strive to build the necessary foundations that will make the local community rich with knowledge, awareness, skills, and technology enablers.

The main pillars of the proposed model are divided into: (1) Enabling infrastructure, (2) core competences, (3) human resources and, (4) partners. All together provide several services to various types of potential clients. Table 1 lists the various components of the model.

Table 1. The model of UJA's Technology-Based Center on Entrepreneurship

Perspective	Details
Services	Education and Awareness Sessions Analytical Processing Hands-On Training Consultation Network Building Business Plans and Innovation Assistance Research and Development Scientific events organization Job Creation
Clients/Targets	Small and Medium Enterprises in the Local Community New Startups and Potential Entrepreneurs in the Local Community Students and Fresh Graduates Unemployed Households People with Special Needs and Disabilities Technology Adoption for Rural Women Freelancers and Employees
Core Competencies	Knowledge and Technical Skills Research and Development Skills Business Analytics Skills
Human Resources	UJA Educators and Trainers Training and Teaching Assistants Researchers Administration
Partners	Local and International Public and Private Universities Local and International Funding Organizations Specialists and Experts Training Centers Local Community Organizations
Infrastructure	The infrastructure acts as an enabler for number of services: (a) Knowledge Repository that includes a multi purpose Data Warehouse, (b) Audio/Visual Aids, (c) Personal Computers and Development Applications, and (d) Communication Technologies.

Concrete and applicable realization of a Technology-Focused center requires deep analysis of the enabling factors and local business environment. Such analysis would be possible by conducting qualitative and quantitative (hybrid) analysis (Creswell, 2002) in order to find the current state of the University ecosystem as well as the opportunities/risks of the local business environment. A SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis (Paul et al., 2010) of the University in the context of being an Entrepreneurial Learning Center would be a starting point to draw further recommendations. Additionally, the current state of the technological diffusion/awareness among current small businesses would be a key issue for building a suitable learning center. Afterwards, the designed framework would be validated by a comparison with other models such as the conceptual model of Romano et al. (2014a) for Entrepreneurial Learning Centre in order to increase the diffusion of knowledge-intensive entrepreneurship in the regional ecosystems.

4. Conclusion and Future Work

This study highlights the essential components of a technology-based center on entrepreneurship. The proposed model of the center is a starting point for further analysis and investigation. This was inspired from successful centers and similar international initiative. Expected benefits of the provided services include leveraging the business ecosystem in the local community, job creation, knowledge dissemination, and filling the gaps to follow up with the prospected trends. Innovation fostering environment reshapes the role of the university and tailors outcomes to recover the major issues. Collecting data about Aqaba city specifically is challenging, most of the international and public datasets report the business environment in Jordan based on the capital Amman.

Intensive analysis of the enabling factors and the local business ecosystem needs is one of the intended future work. The university system requires a deep investigation to assess strengths, weaknesses, opportunities, and threats that affect the technology-based center on entrepreneurship. Furthermore, gathering the specific needs of Aqaba as a special economic zone would be a great value in such domain.

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Nazeeh Ghatasheh received the B.Sc. degree in Computer Information Systems from The University of Jordan, Amman, Jordan, in 2004, then he was awarded merit-based full scholarships to continue his M.Sc. Degree in Electronic Business Management and the Ph.D. Degree in Electronic Business at the University of Salento, Lecce, Italy, in 2008 and 2011 respectively. He conducted research activities in the aerospace field related applications, information and communication technologies in the telecommunication industry, and corporate knowledge management. His research interests include entrepreneurship, e-business, knowledge representation and management, corporate learning, machine learning applications, and image processing applications. Dr. Ghatasheh, at present, is the Chairman of Business Information Technology and Computer Information Systems Departments at The University of Jordan, Aqaba, Jordan.