

Contributions to Management Science

Nezameddin Faghih  
Mohammad Reza Zali *Editors*

# Entrepreneurship Education and Research in the Middle East and North Africa (MENA)

Perspectives on Trends, Policy and  
Educational Environment

 Springer

# **Contributions to Management Science**

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Nezameddin Faghieh • Mohammad Reza Zali  
Editors

# Entrepreneurship Education and Research in the Middle East and North Africa (MENA)

Perspectives on Trends, Policy  
and Educational Environment

 Springer

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*This book is dedicated to the loving memory of Rokneddin Faghieh (1926–2000), a cherished philanthropist and agricultural entrepreneur who believed in education and research; founded the first high school in his agricultural lands in a corner of the MENA Region, namely Roniz (Estahban, Fars, Iran); and initiated domestic research on saffron cultivation issues in his hometown, Estahban.*

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# Introduction



Nezameddin Faghih and Mohammad Reza Zali

Nowadays, entrepreneurship, as an important economic and social phenomenon and as a contemporary discipline, has been studied and researched in both developed and developing countries, among policymakers and academic researchers (Fayolle and Gailly 2008). Peter Drucker, a well-known Entrepreneurship and Management guru, has said, “Entrepreneurship is not magic, it is not mysterious, and it has nothing to do with genes. It is a discipline and like any discipline, it can be learned” (Drucker 1985; Valerio et al. 2014).

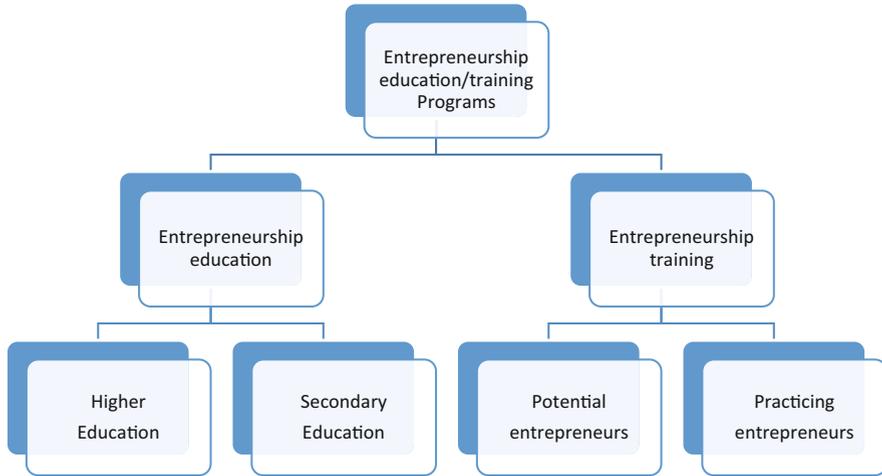
In an annual survey of American college freshmen, 41% of respondents said that “becoming successful in a business of my own” is an aim they considered “essential” or “very important”. Further, according to a recent American Society for Engineering Education (ASEE) survey, about 50% of faculties and administrators reported that access to entrepreneurship programs is important for their engineering undergraduates (Byers et al. 2013). As shown in Fig. 1, entrepreneurship education programs can be divided into two categories of education and training.

Training programs are suitable for business owners or potential entrepreneurs who are likely to start their business as a result of receiving training packages. In Iran, a 52-hour program in entrepreneurship training has been offered by the Social Security and Labor Institute (affiliated with the Ministry of Co-operation, Labor and Social Welfare, Iran); from 2007 to 2013, the program mainly focused on young people as potential entrepreneurs and even on novice entrepreneurs who were seeking to develop their business. Another entrepreneurship training program in Iran is the “Know About Business” (KAB) training course, developed by the

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**Fig. 1** Classifying entrepreneurship education and training programs

International Labor Organization (ILO). KAB is a training methodology to create awareness about entrepreneurship among youth and includes entrepreneurship education programs that seek to introduce young people to business and entrepreneurship. KAB can also strengthen business education at the primary and secondary levels and address the increasing demand for developing knowledge and skills in the area of business start-up (ILO Website 2017).

Nonetheless, entrepreneurship education programs can be offered both in high schools and in higher education (such as universities). Both types of entrepreneurship education and training programs are offered in high schools and universities, e.g., at the University of Tehran (Faculty of Entrepreneurship) as the pioneer and more than 15 other universities in Iran. The entrepreneurship education and training indicator is measured in the Global Entrepreneurship Monitor (GEM) program at both levels of high school and university. As shown in Fig. 2, the entrepreneurship education at high school level in UAE is higher than MENA countries like Egypt, Iran and Saudi Arabia. In Iran, entrepreneurship education at high school level is underway in the form of various programs. For instance, the Faculty of Entrepreneurship at the University of Tehran, with the implementation of the National “KASHEF” Plan, and surveying over 2 million high school students (and their parents), seeks to develop a culture of entrepreneurship among students as future entrepreneurs.

Figure 3 also reveals that post-secondary entrepreneurship education and training is at the same level in Iran and Egypt, while in Turkey, it is above the other three countries, i.e., Egypt, Iran and Saudi Arabia.

However, the goal of entrepreneurship education is to create entrepreneurship attitude, and provide entrepreneurship knowledge and skills to potential entrepreneurs to create and reinforce their entrepreneurial intention. According to the



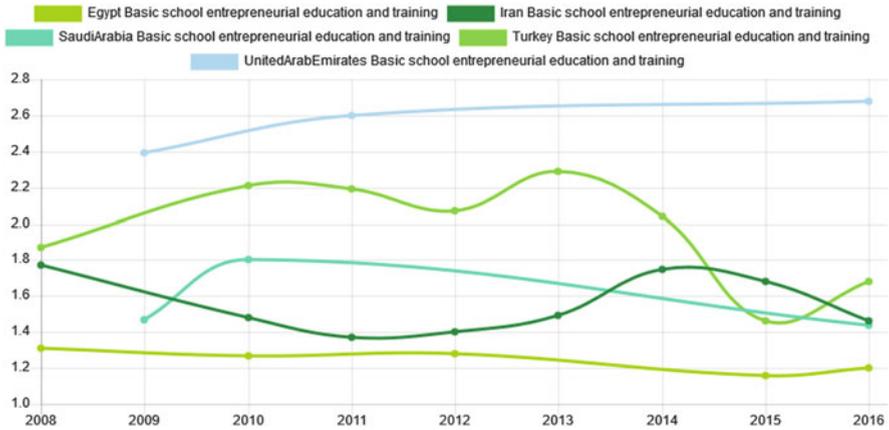


Fig. 2 Entrepreneurship education in high schools in the MENA countries (GEM Website 2017)

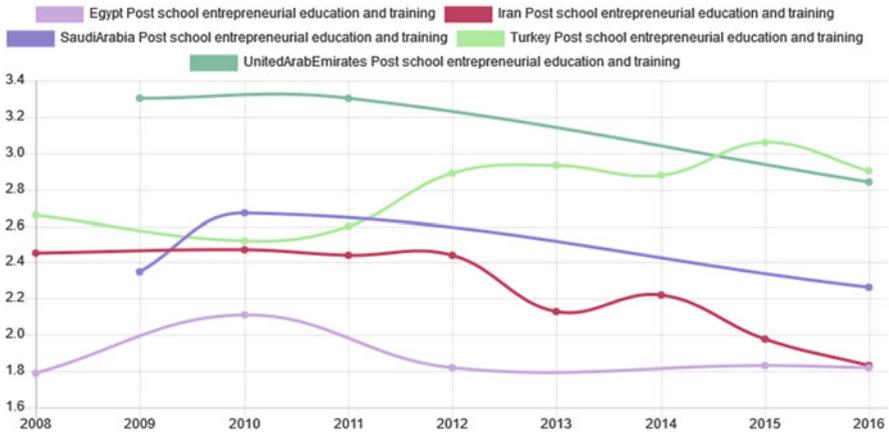


Fig. 3 Entrepreneurship education in universities in MENA countries (GEM website 2017)

Global Entrepreneurship Monitor (GEM) 2008 report, 31.7% of those who received volunteering entrepreneurship education and 44.4% of those who received compulsory entrepreneurship education in Egypt can recognize entrepreneurial opportunities, while the data also reveals that 30% of people without any entrepreneurship trainings in Egypt have the ability to recognize entrepreneurial opportunities. This situation has been more or less the same in Iran and Turkey.

Nevertheless, entrepreneurship is not only based on attitude but also on intention and involves the practical and experimental activities of starting new businesses. According to GEM Report in 2008 (shown in Table 1) about 73% of those who received voluntary entrepreneurship education and 60% of those who received compulsory entrepreneurship education in Egypt intended to launch a new business in the following 3 years (Bosma et al. 2008).

**Table 1** The relation between the entrepreneurial intention, total early stage entrepreneurial activity (TEA) and entrepreneurship education in some MENA countries

Country	Entrepreneurial intention			Total early stage entrepreneurial activity (TEA)		
	Education and training		No training	Education and training		
	Voluntary	Compulsory		Voluntary	Compulsory	No training
Iran	50.8	46	32.9	18.1	7.3	7.5
Egypt	73.5	60.5	35.1	25.5	22	12.2
Turkey	41.5	42.5	22.6	10.5	21.2	5.3

The important point to be noted is that voluntary (as opposed to compulsory) entrepreneurship education is more effective in increasing the entrepreneurship intention and entrepreneurial activities in Iran and Egypt. Overall, it can be concluded that entrepreneurship education in the MENA region has led to development of entrepreneurship in practice. This can also be observed in a chapter in this book devoted to outlining entrepreneurship education and research at the Faculty of Entrepreneurship of the University of Tehran.

Aligned with entrepreneurship education, entrepreneurship research also had to be enhanced at the Faculty of Entrepreneurship. Investigating entrepreneurship research publications points us to the fact that the establishment of the Faculty of Entrepreneurship at the University of Tehran in 2007 positively impacted the depth of entrepreneurship research in Iran, and even in the MENA Region too. For instance, prior to the establishment of the Faculty of Entrepreneurship at the University of Tehran, research and publications on entrepreneurship were very limited in Iran, and mainly focused on general issues of entrepreneurship, e.g., some topics on entrepreneurs' personality traits. In fact, after Iran joined the Global Entrepreneurship Monitor (GEM) Research Consortium, in 2007, represented by the University of Tehran (Faculty of Entrepreneurship), the number of countries in the region joining GEM increased from three countries (Jordan, the United Arab Emirates and Kazakhstan) to 14 countries in 2016; thus, an opportunity for comparative studies of entrepreneurship in the MENA Region was created (Zali et al. 2014; GEM Website 2017).

In addition, along with comparative entrepreneurial studies, new research has been undertaken in the field of entrepreneurship knowledge in the Middle East and North Africa (MENA), some of which are presented in this book. This book is an attempt by a number of researchers and scholars involved in entrepreneurship training, education, and research in scholarly communities to address and discuss the most recent issues and developments in entrepreneurship education and research in the MENA Region.

The book contents have been divided into 3 parts with 18 chapters. **Part I** includes five chapters and deals with the research undertaken by the Global Entrepreneurship Monitor (GEM) in the MENA Region. GEM is a research consortium of universities for global study of entrepreneurship, and this part of the book contains the GEM Middle East and North Africa Regional Report 2017. The report gives

some background information on the MENA Region, describes the general characteristics of MENA, presents an evaluation of the regional socio-economic situation, and narrates some Entrepreneur's stories.

The GEM model recognizes entrepreneurial attitudes, activity, and aspiration as dynamic interactive components of national entrepreneurial environments, and entrepreneurial activity as a continuous process rather than as individual events. An account of entrepreneurial activity in MENA is given, comprising societal attitudes and perceptions, entrepreneurial propensity, entrepreneurial intentions, early-stage entrepreneurial activity, established business activity, entrepreneurial employee activity, and business discontinuance.

GEM's focus on individual-level participation enables its research to reveal a range of demographic and other characteristics about entrepreneurs. The research also makes possible an assessment of the level of inclusiveness in an economy—in other words, the extent to which various groups (for example, age, gender, or education level) engage in entrepreneurial activity. This information can assist policy makers in targeting effective interventions aimed at increasing participation as well as productivity in the economy. Thus, a chapter is devoted to the description of characteristics and motives of early-stage entrepreneurs in the MENA Region.

The GEM model explicitly acknowledges that particular environmental factors (social, cultural, political, and economic) are influential in creating unique business and entrepreneurial contexts. Annually, each economy participating in the GEM cycle surveys at least 36 key experts or informants. Based on this National Experts Survey (NES), this chapter considers the MENA Region national entrepreneurial framework conditions, and the country-level insights into the MENA entrepreneurial framework conditions.

The last chapter in this part of the book is devoted to policy implications and recommendations for the MENA Region countries; though given the challenges that the region faces, it is difficult to propose a 'one solution for all' approach.

**Part II** is divided into seven chapters related to entrepreneurship education and training in the MENA Region. The growth of entrepreneurship education in a MENA country, and specifically in the main university of that country, is reviewed. Their current educational programs are explained and the new directions for entrepreneurship education such as techno-preneurship, professional master of entrepreneurship at the faculty of entrepreneurship at that university are explored.

The impact of entrepreneurship education on development of students' entrepreneurial intentions and qualities, and on entrepreneurship education and research, are explored and discussed. Additionally, perceptions towards entrepreneurship and intention to become entrepreneurs among female undergraduate students, and the relationship between spiritual intelligence and social entrepreneurial intentions among students (according to the mediating role of entrepreneurial passion) are also considered.

Moreover, entrepreneurship education in the MENA Region is studied by examining the nature of entrepreneurship education, the extent of its provision in the MENA region, the need for higher education reform, and what needs to be done if MENA universities are to address the enterprise agenda. An integrated approach is

also considered as a way of overcoming entrepreneurship education challenges in elementary schools in the MENA countries. It is observed that in order to promote entrepreneurial knowledge, skills and attitude in elementary school students, entrepreneurship concepts can be integrated in courses like mathematics, sciences, social sciences, linguistics, work, and technology.

A chapter is devoted to trace the present status of entrepreneurship education and training (EET) in a MENA country and to assess the design of the entrepreneurship training programs offered by public and private institutes and universities. A number of initiatives are observed from the public and private sectors in the form of training, counseling, funding, incubation, and other advisory and material supports to potential as well as nascent entrepreneurs, leading to a number of recommendations regarding overall improvement of EET.

Furthermore, in this part of the book, a journey towards entrepreneurial support in Pakistan (a factor-driven economy) is also presented, where the Centre for Entrepreneurial Development (CED) at the Institute of Business Administration (IBA) was established in 2010 to play a key role in promoting entrepreneurship in the country. The objective was to train the urban and rural youth to pursue agriculture, technology, and other low-cost business opportunities in their own villages, towns and cities to spur innovation and growth. Starting from a single room, CED now has a dedicated three-story building and has helped hundreds of youth to develop an entrepreneurial mindset and start their businesses. The case describes the emergence of CED as a premier center and discusses various challenges and issues that arose during the journey. It provides valuable lessons and has implications for policy makers and university administrators confronted with similar situations.

**Part III** contains five chapters focusing on entrepreneurship research in the MENA Region. A chapter is devoted to bibliometric analysis of entrepreneurship research in the Middle East and North Africa.

Research contributes to the innovation process, and research and innovation play a direct role in prosperity of a society and the well-being of people. It is basically an investment in technology and capabilities which can be transformed into new processes, products, and services. Research and development, as a component of innovation at the front end of the innovation life cycle, turns investments into knowledge. Thus, innovation builds on research and development, includes commercialization phases, and is the creation of business out of this knowledge (The Europe Union 2018; Lindegaard 2016). In this part of the book, a taxonomic study of innovation in the MENA Region economies and its reflections on entrepreneurship in two MENA countries is presented. To narrow the focus of the study, two countries are selected: one has an efficiency-driven economy and is the most populated country in MENA, mainly in North Africa but partially in West Asia; while the other one has an innovation-driven economy with the smallest populations and is in the easternmost portion of the Arabian Peninsula.

A chapter also investigates the current trends and future research agendas for entrepreneurship in a MENA country. Additionally, another chapter reviews the status of social entrepreneurship research and education in the same country, and

attempts to shed light on social entrepreneurship research and education in this MENA country.

Understanding the challenges facing financing ventures is an important issue especially in the MENA Region. Raising the capital has long been highlighted as the key factor that not only influences venture creation and survival, but also affects its success and growth. Hence, challenges of entrepreneurial finance are studied through a systematic analysis of empirical research focused on entrepreneurial finance.

Throughout the book the emphasis is principally on entrepreneurship education and research in the MENA Region, and the research papers presented in this book can also provide new insights for the individuals who are interested in comparative studies.

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**Part I**  
**Global Entrepreneurship Monitor (GEM)**  
**in the MENA Region**

**(GEM: A Research Consortium of Universities  
for Global Study of Entrepreneurship)**

# GEM Middle East and North Africa Regional Report 2017

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Although GEM data were used in the preparation of this report, their interpretation and use are the sole responsibility of the authors. The usual disclaimer applies.

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## **Executive Summary**

Since the 2011 Arab Spring, political and economic crises have occurred in large segments of the MENA region. The MENA region has experienced significant economic and social losses from poor economic management and conflicts. There is an urgent need to deploy its substantial human, natural, and financial assets more efficiently through adopting economic and social policies that create long-term sustainable and inclusive economic growth for the region. A critical aspect of this is for policy-makers in the region to focus on establishing an enabling environment in which entrepreneurs can emerge, compete and innovate.

Eight countries in the MENA region—namely Egypt, Iran, Jordan, Lebanon, Morocco, Qatar, Saudi Arabia and the United Arab Emirates—participated in the 2016 GEM survey. We also included Tunisia data from the 2015 GEM survey. This report focuses on these countries, providing macro-level insights across the region as well as country-level insights into the people who participate in different phases of entrepreneurial activity.

### ***Participation in Entrepreneurship Across Multiple Phases of Activity***

Overall, people in the MENA region have strongly positive attitudes towards entrepreneurship. On average, almost three-quarters of people in the region see entrepreneurship as a good career choice—substantially higher than the averages for all the other regions, with the exception of sub-Saharan Africa. Egyptians have



the most positive perceptions of entrepreneurship as a career choice as well as the highest regard for entrepreneurs. In Iran, on the other hand, only half the population see entrepreneurship as a good career choice—the lowest rate in MENA.

Despite the highly positive attitudes towards entrepreneurship, the MENA region report average scores in terms of perceived opportunities and capabilities. An encouraging finding, though, is that on average, close to half of people in the MENA region know a start-up entrepreneur—only Africa reports a (marginally) higher score for this indicator. At the individual country level, the MENA countries show divergent results. Saudi Arabia displays the highest level of perceived opportunities, by a significant margin, as well as the highest level of confidence in their entrepreneurial capabilities, while Lebanon reports encouragingly positive levels of entrepreneurial perceptions and competencies across all parameters. On the other hand, despite strongly positive attitudes towards entrepreneurship in the United Arab Emirates, only a quarter of the population perceived good opportunities in their area (the lowest rate of opportunity perception in MENA). Less than half of Egyptians believe they have the skills to pursue entrepreneurial opportunities; Egyptians are also least likely to know a start-up entrepreneur (19%, which is less than half the MENA average).

The percentage of intending entrepreneurs in the MENA region is, along with Africa, higher than the average for the other geographical regions—more than a third of working-age individuals in the MENA countries express entrepreneurial intentions. This is in line with the strongly positive social as well as self-perceptions regarding entrepreneurship in the region as a whole. Egypt tops the rankings with respect to entrepreneurial intention, with almost two-thirds of adults expressing an intention to start a business within the next 3 years. The lowest level of entrepreneurial intention is in Jordan—at 16% less than half the regional average. Jordan also reported among the lowest levels of both opportunity and capability perception in the region.

An area of concern is that there is a marked drop off between intending and active entrepreneurs in the MENA region as a whole. In terms of entrepreneurial intention, the MENA region as a whole reported amongst the highest levels when compared to the other geographical regions. The average for the MENA region was on a par with the averages for Africa and Latin America & the Caribbean—however, both these regions report early-stage entrepreneurial rates that are double those for the MENA region. Although the MENA region has, on the whole, positive attitudes towards entrepreneurship, the proportion of early-stage entrepreneurs is 70% lower than the number with entrepreneurial intentions. The drop off between intending and active entrepreneurs is of greatest concern in Egypt and the United Arab Emirates. Both these countries have highly positive attitudes towards entrepreneurship, and healthy pools of intending entrepreneurs. The level of early-stage activity, however, is less than a fifth the number with entrepreneurial intentions.

From an individual country perspective, Lebanon has the highest rate of early-stage entrepreneurial activity (TEA) by a substantial margin. A fifth of Lebanese adults are engaged in early-stage entrepreneurial activity—double the regional average. This is in line with Lebanon's encouragingly positive levels of entrepreneurial perceptions and competencies across all parameters. Morocco and the United Arab Emirates have the lowest TEA rates (half the MENA average).

The MENA region has among the lowest proportions of established business owners, compared to the other geographic groups—a discouraging finding. From an individual country perspective, Lebanon reports the highest rate of established business ownership. A fifth of the adult population are established business owners—three times the regional average. What is particularly encouraging is that the TEA rate and established business rate in Lebanon are the same. Iran also reports a robust established business ownership rate and good firm sustainability. The United Arab Emirates and Saudi Arabia have the lowest rates of established business ownership in the MENA region. This is of particular concern in Saudi Arabia, whose TEA rate is five times higher than the established business rate, suggesting a poor level of new firm sustainability in this country.

Qatar reports an Employee Entrepreneurial Activity (EEA) rate that is the highest in the region by a substantial margin (almost three times the regional average) and very similar to its TEA rate of 7.8%. In the United Arab Emirates, on the other hand, the low TEA rate is not offset by high employee entrepreneurial activity.

From a regional perspective, the MENA region has a high rate of business discontinuance. Although Africa has a higher rate of discontinuance, it also has a substantially higher TEA rate. The MENA countries also have a ratio of TEA to business discontinuance that is of concern. Across all the other geographic groups, for every person exiting a business in 2016 approximately three were engaged in early-stage entrepreneurial activity. For the MENA region, however, for every person exiting a business there were only 1.7 people engaged in early-stage entrepreneurial activity. Lebanon is the exception, with three people engaged in TEA for every individual discontinuing a business.

The most common reason for business discontinuance in the MENA region as a whole is lack of profitability. Personal reasons and problems accessing finance are also fairly common reasons for business exits in the MENA region. From an individual country perspective, financial issues are a particularly pernicious problem in Jordan and Morocco, with lack of profitability or problems getting finance together accounting for over 70% of business exits in these countries. Business exits because of an opportunity to sell are relatively common in the UAE and Saudi Arabia, with a quarter of businesses discontinued for this reason. Saudi Arabians are most likely to exit their businesses as part of a planned exit/retirement.

### ***Motives for Starting a Business***

There are relatively high levels of necessity-driven entrepreneurial activity among the MENA countries—in six of the nine countries, the proportion of necessity-driven entrepreneurs is over 25%. Lebanon, Iran and Egypt have the highest proportion of necessity-driven entrepreneurs. Although Lebanon has the highest TEA rate in the MENA region, almost 40% of this activity is necessity-motivated. In Iran, a third of entrepreneurs are motivated by necessity.

Saudi Arabia, Qatar and Tunisia report encouragingly high levels of opportunity-motivated TEA. Tunisia and Qatar also stand out in terms of their proportion of improvement-driven opportunity (IDO) entrepreneurs—close to two-thirds of early-stage entrepreneurs in these two countries fall into this category. In Qatar and Saudi Arabia, entrepreneurs are around six times as likely to be improvement-driven opportunity entrepreneurs rather than necessity-driven entrepreneurs. Egypt has the lowest proportion of IDO entrepreneurs—in this country, early-stage entrepreneurs are as likely to be motivated by necessity as they are to IDO entrepreneurs.

### *Influence of Gender and Age on Entrepreneurial Activity*

The MENA region as a whole exhibits the widest gender gap (compared to other geographical regions) in terms of early-stage entrepreneurial activity—in 2016, women in this region were only half as likely to be engaged in TEA as their male counterparts. In Africa and Latin America & the Caribbean, by contrast, eight women were engaged in TEA for every ten male entrepreneurs. At the country level, the MENA region shows divergent results. Gender parity is positive in Qatar and Saudi Arabia—in these two countries, there are around eight women entrepreneurs for every ten male entrepreneurs. Jordan reports the widest gender gap, with fewer than three women engaged in entrepreneurial activity for every ten men. Gender gaps are also significant in Tunisia and Egypt.

In terms of reason for starting a business, an encouraging finding is that on average, men and women in the MENA region are equally likely to be motivated by opportunity. Male entrepreneurs in the MENA region and Africa report the highest levels of necessity motivation—a quarter of men in these two regions are pushed into entrepreneurship because of no better options to earn a livelihood. Female entrepreneurs in the MENA region, on the other hand, paint a more positive picture—they are more likely to be motivated by opportunity than are their counterparts in Africa and Latin America & the Caribbean, and are on a par with female entrepreneurs in Europe. Women are more likely to be opportunity-motivated than their male counterparts in six of the nine MENA countries. Jordan is a significant outlier in the region in this respect, exhibiting a wide gender gap in opportunity motivation. In Saudi Arabia and Qatar opportunity motivation is particularly high in both genders. Male necessity motivation is highest in Lebanon (at 41% of overall TEA by males), while the United Arab Emirates, Lebanon and Jordan all report female necessity entrepreneurship levels of just under 40%.

The influence of age on entrepreneurial activity tends to be very similar throughout the world, with the highest prevalence of entrepreneurial activity among the 25–34 and 35–44 year olds across all three development phases. Most of the countries in the MENA region follow the general global pattern with respect to the influence of age on entrepreneurial behavior. Egypt and the United Arab Emirates are exceptions: Egyptians display almost identical levels of entrepreneurial participation in the first three age cohorts, while in the UAE peak entrepreneurial activity—by a substantial

margin—is in the 45–54 year age cohort. Entrepreneurial activity among 18–24 year olds is highest in Lebanon (double the regional average) and Egypt; the UAE and Morocco report very low TEA activity (3% or less) in this age group. The relatively low levels of entrepreneurial activity among the youth in the MENA region is of concern in the context of the high level of un- and underemployment among this age group. Senior entrepreneurship (55 years and older) is low in the majority of the MENA countries. Lebanon has the highest TEA rate in this age cohort (double the regional average). In Jordan, seniors are more likely to be involved in entrepreneurship than are the 18–24 year olds; Qatar also shows a positive level of entrepreneurial activity by seniors.

### *Entrepreneurship Impact Characteristics*

On average, just over half of all early-stage entrepreneurs in the MENA region are active in the wholesale/ retail sector. Saudi Arabia, the United Arab Emirates and Lebanon have the highest proportion of TEA activity in this sector—two-thirds of early-stage entrepreneurs in these countries are in wholesale/ retail. Tunisia and Iran have the lowest proportion of TEA activity in the wholesale/retail sector. Iran has a particularly balanced industry profile, with robust participation in manufacturing & transportation, as well as the professional and other services sector. Iran also reports the second highest proportion of early-stage entrepreneurs in the ICT & finance sector. Morocco and Iran have the highest involvement in manufacturing and transportation—double the regional average—while mining accounts for a quarter of Tunisia’s early-stage entrepreneurial activity (almost four times the regional average). Saudi Arabia has a particularly unbalanced industry profile, with more than 90% of entrepreneurs concentrated in wholesale/retail and professional/other services. Saudi Arabia has the highest proportion of entrepreneurs in the health/ education/government and social services (22%). The most resilient sectors tend to be communication, financial services and information technology (IT). Jobs in these sectors comprise the type of high-level skills that countries need to compete in the global economy. Qatar is the only country in the region with more than 10% of early-stage entrepreneurs in ICT and finance.

The MENA region as a whole has a relatively high proportion of entrepreneurs who do not expect to create any new jobs in the next 5 years. Just over half of entrepreneurs in the MENA region expect to add at least one new job. An encouraging finding is that the MENA region has one of the highest proportions of medium-to-high growth entrepreneurs (i.e. those projecting to employ six or more people in the next 5 years). In both North America and the MENA region, a quarter of entrepreneurs exhibit these higher-growth aspirations.

At the country level, the MENA region shows divergent results in terms of job creation aspirations. Over 80% of entrepreneurs in Saudi Arabia have no future hiring expectations; in Tunisia and Qatar, on the other hand, only a fifth of entrepreneurs anticipate creating no new jobs in the next 5 years. Qatar has the highest

high-growth expectations, with half of the entrepreneurs in this country expecting to create six or more new jobs in the next 5 years. Tunisia and the United Arab Emirates also have robust high-growth expectations. These job-creation aspirations must, however, be seen in the context of the MENA region's low established business rate—which needs to be addressed if these economic benefits are to be realized.

The MENA region exhibits a relatively positive level of innovation, with a quarter of early-stage entrepreneurs in the region offering products that are new to all/some customers AND offered by few/no other businesses. This level of innovation is on a par with Latin America & the Caribbean, higher than for Africa and Asia & Oceania, and only marginally lower than for Europe. At the individual country level, Lebanon reports the highest innovation levels by a substantial margin (more than double the regional average). At the other end of the scale, Saudi Arabia reports the lowest levels of innovation—only half the regional average.

Innovation in entrepreneurial businesses can also be assessed by determining the use of new technologies by the business. An encouraging finding is that the MENA region has a high technology orientation. Compared to the other geographical groups, the MENA region tops the ranks, by a substantial margin, in terms of the use of both latest and new technology. Only a third of entrepreneurs in the region, on average, use no new technology. At the individual country level, Morocco stands out with respect to use of the latest technology—almost three-quarters of entrepreneurs in this country use technology that has only been available since the previous year. A mere 5% of Moroccans use no new technology. Tunisia and Lebanon also exhibit a high technology orientation, with over 60% of entrepreneurs in these two countries having access to latest technology. Iran, on the other hand, lags conspicuously with only 4.5% of entrepreneurs using latest technology, while a substantial majority of entrepreneurs (79%) use no new technology.

### ***The Entrepreneurial Framework Conditions***

The National Expert Survey (NES) helps to identify key weaknesses in national entrepreneurial environments, in order to provide policy makers and business leaders with information that enables them to put into place precise, practical and targeted recommendations. On average, the experts in the MENA region rated school-level entrepreneurship education and R&D transfer as the two main areas constraining entrepreneurship in the region. The MENA experts also report average ratings (below 4.0) for government policy (taxes and bureaucracy), government entrepreneurship programs, and market burdens/entry regulations. In ten of the twelve entrepreneurship areas assessed, the MENA experts report scores below the GEM average.

Physical infrastructure is the entrepreneurial framework condition (EFC) which is ranked most positively, overall, among the MENA countries. With the exception of Lebanon (with a mean score of 3.7) the rest of the countries all rate physical infrastructure as good, with the United Arab Emirates rating it as very good.

The country which the experts assessed as the weakest entrepreneurial framework is Iran. Experts in Iran gave only two EFCs mean scores of above 4.0—access to physical infrastructure, and market dynamics. Five EFCs were judged as very weak, receiving mean scores of below 3.0. Iran is the only country in the region with mean scores below 3.0 for government programs and access to finance. Saudi Arabia's experts also regard the country's entrepreneurial framework conditions as generally insufficient—seven EFCs were given ratings below 4.0. The countries with the most enabling entrepreneurial frameworks are the United Arab Emirates and Qatar—the two innovation-driven economies in the region. In both these countries, all the EFCs receive mean scores above 4.0—in the case of the UAE, seven of the EFCs receive ratings of 5.0 or higher.

In order to facilitate a deeper understanding of entrepreneurship development within the MENA countries, GEM National Teams were asked to provide information about the status of entrepreneurial conditions in their countries. This could include the way in which people who want to be entrepreneurial would perceive the national framework, in terms of limitations and opportunities; critical focus areas; as well as best policy practices or strategies that the government, NGOs and private sector have introduced to encourage entrepreneurship. Their insights are provided in chapter “The MENA Region Entrepreneurial Framework Conditions”.

# Background to the MENA Region



**Ayman Ismail, Thomas Schøtt, Abbas Bazargan, Basheer Salaytah, Hamad Al Kubaisi, Majdi Hassen, Ignacio de la Vega, Nihel Chabrak, Abier Annan, Mike Herrington, and Penny Kew**

## 1 General Characteristics of the MENA region

The term MENA refers to the Middle East and North Africa. The MENA region includes the area from Morocco in northwest Africa to Iran in southwest Asia and down to Sudan in Africa. It comprises 22 countries, and accounts for approximately 6% of the world's population. The following countries are typically included in MENA: Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, West Bank and Gaza, and Yemen. Ethiopia and Sudan are sometimes included. The population of the MENA region is about 436 million people, the vast majority living in middle-income economies with a GDP in the region of US\$3.111 Trillion. The region accounts for 60% of the world oil reserves and 45% of the world's natural gas reserves. Due to the region's substantial petroleum natural gas reserves, MENA is an important source of global economic stability.

There are two important characteristics among MENA countries: the availability of oil resources and the size of their native populations. Based on these two factors, MENA countries can be classified into three main groups (O'Sullivan et al. 2011).

1. Resource-rich, labour-abundant: these countries are producers and exporters of oil and gas and have large native populations, which represent almost the totality of their residents. This group of countries includes Algeria, Iraq, Syria, and Yemen.

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2. Resource-rich, labour-importing: these countries are producers and exporters of oil and gas and have large shares of foreign or expatriate residents, who represent a significant percentage of the total population, even the majority in some cases. This group of countries comprises the Gulf Cooperation Council (GCC) members (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) and Libya.
3. Resource-poor: these countries are small producers or importers of oil and gas, and include Djibouti, Egypt, Jordan, Lebanon, Mauritania, Morocco, Tunisia, and the Palestinian Authority.

## 2 The Economic Situation in the MENA region

Since the 2011 Arab Spring, political and economic crises have overwhelmed large segments of the MENA region, with disastrous human and economic consequences. According to Fardoust (2016), the region has witnessed huge economic and social losses from poor economic management and conflicts requiring massive military outlays. There is an urgent need to deploy its substantial human, natural, and financial assets more efficiently through adopting economic and social policies that lead to more rapid and inclusive economic growth for the region. Saudi Arabia, Egypt, Iran, and Turkey are the most influential countries in the region.

The growth in MENA region slowed to 2.7% in 2016, reflecting fiscal consolidation in some countries and oil production constraints in others (MENA Economic Monitor 2017). Growth is expected to reach a rate of 3.1% this year, with oil importers registering the strongest gains. Due to ongoing reforms, growth could exceed 3% in 2018 and 2019 in the region (World Bank 2017a, b). Table 1 presents the projected forecasts for the MENA countries.

However, there are some risks associated with oil price volatility, such as spillovers from existing conflicts in several countries as well as terrorism, which are risks to regional economic activity. Consequently, economic uncertainty will increase and investment will slow.

Figure 1 shows the forecast macroeconomic situation in the region. Though still below potential, the improvement in growth offers hope. MENA countries are expected to grow; the main driver of regional growth is quadrupled in 2016—reaching 4.9% from its 2015 level of 1.1%—and is projected to remain around 4% by 2019.

According to Rouis and Tabor (2013), oil and gas are the primary commodities in the region (76% in 2008–2010). On the other hand, manufactured goods account for just over 11% with other sectors accounting for the remaining 13%. The exports are highly concentrated in spite of recent efforts, with Egypt, Jordan, Lebanon, Morocco, and Tunisia faring better than the rest. Medium or high-technology products exports in these five countries represent only 21%, compared to 37% in other middle-income economies.



**Table 1** Middle East and North Africa estimated forecasts (annual % change unless otherwise indicated)

	2014	2015	2016	2017	2018	2019
GDP at market prices (2010 US\$)						
Algeria	3.8	3.9	3.6	2.9	2.6	2.8
Bahrain	4.4	2.9	2.0	1.8	2.1	2.4
Djibouti	6.0	6.5	6.5	7.0	7.0	7.0
Egypt, Arab Rep.	3.7	4.4	4.2	4.4	5.1	5.4
Iran, Islamic Rep.	4.3	1.7	4.6	5.2	4.8	4.5
Iraq	0.1	2.9	10.2	1.1	0.7	1.1
Jordan	3.1	2.4	2.3	2.6	3.1	3.4
Kuwait	0.5	1.8	2.0	2.4	2.6	2.8
Lebanon	1.8	1.3	1.8	2.2	2.3	2.5
Morocco	2.6	4.5	1.5	4.0	3.5	3.6
Oman	2.5	5.7	2.5	2.9	3.4	3.6
Qatar	4.0	3.6	1.8	3.6	2.1	1.3
Saudi Arabia	3.6	3.5	1.0	1.6	2.5	2.6
Tunisia	2.3	0.8	2.0	3.0	3.7	4.0
United Arab Emirates	3.1	3.8	2.3	2.5	3.0	3.3
West Bank and Gaza	-0.2	3.5	3.3	3.5	3.5	3.6

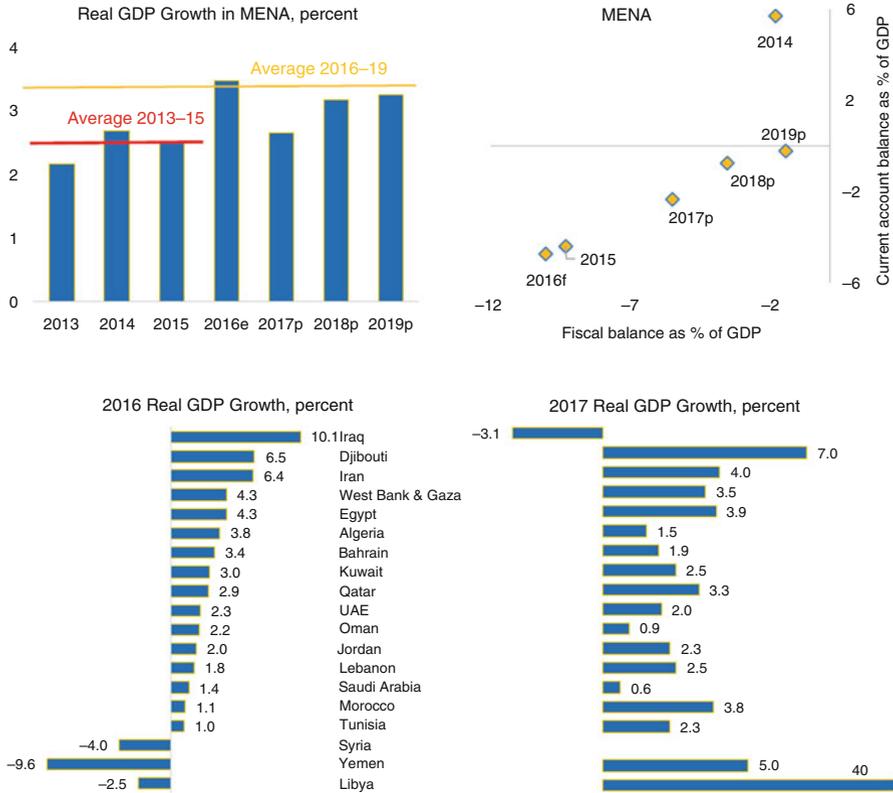
Source: World Bank (2017a, b)

World Bank forecasts are frequently updated based on new information and changing (global) circumstances. Consequently, projections presented here may differ from those contained in other Bank documents, even if basic assessments of countries' prospects do not significantly differ at any given moment in time

### 3 The Social Situation in the MENA region

Over the past two decades, the poverty rate in MENA has been declining. However, the number of people in poverty has not declined since 1990 due to rapid population growth, and in 2005 still remained around 50 million at under \$2 a day (Table 2) (Najat 2010). Five percent of the MENA population are below the lowest (\$1.25 a day) poverty line and suffer from many forms of social and economic deprivation, including malnutrition. Moreover, 17% of Egyptians, 15% of Yemenis and 10% of Moroccans consume less than 50 cents per day above \$2 a day. The events of 2011 resulted in the poverty of 2.6 million people. GDP per capita growth (annual %) in Middle East and North Africa (developing only) was reported at 1.0482% in 2014, according to the World Bank collection of development indicators, compiled from officially recognized sources (Fig. 2).

According to Moghadam and Decker (2010), income inequalities in the region are very obvious. Those from the upper middle classes live very comfortable lives while the lower-income groups struggle to survive and earn a livelihood. Youth can't afford the high costs of living, especially with the current unemployment levels, and



**Fig. 1** MENA region’s macroeconomic situation. Source: MENA Economic Monitor Report (2017)

may engage in social protest either for jobs, housing, and income or for cultural change and freedom.

The MENA region has a rich historical, cultural and religious heritage (Jawad 2015). It is blessed with human, natural, and financial resources, has valuable biodiversity, and exhibits a high level of infrastructure development. However, there are a number of social development challenges in the MENA region such as issues relating to youth, women, and vulnerable groups); social cohesion in urban and rural areas; and greater accountability of governments and other service providers to citizens (World Bank 2008).

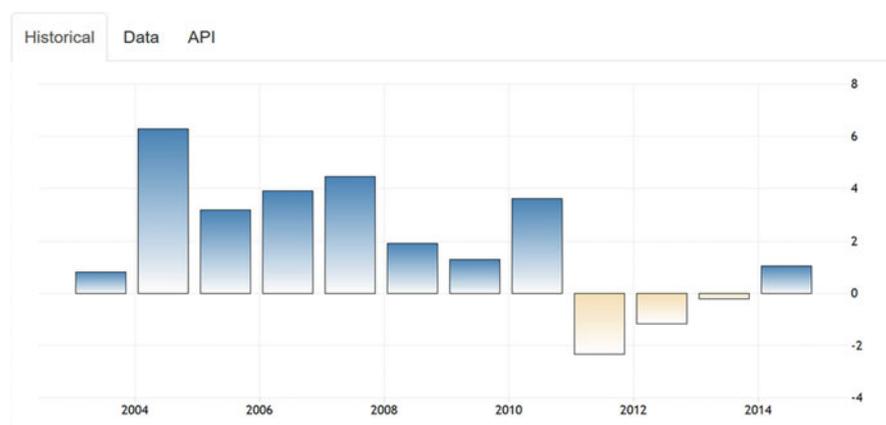
The Millennium Development Goals (MDGs) have made a noticeable contribution of social protection policies in the region in the 2000s (MDGs) and the post-2015 UN development agenda (UN/LAS 2013). Additionally, there is a wider global development policy shift (Silva et al. 2012). These developments contribute to the cash transfer programs and the exploration of the concept of shared prosperity. There has also significant progress in the MENA countries when it comes to social development such as: (i) the inclusion of youth, women and other vulnerable groups;

**Table 2** Poverty and inequality in the Middle East and North Africa

Country	Population living below the national poverty line, 2000–2006 (%)	Income share held by poorest 20% of population (%)	Population living on less than US\$2 per day 2000–2007 (%)	Gini index 2000–2006
Egypt	40.93	9	18.4	32.1
Iran	–	6.4	8	38.3
Israel	–	5.7	–	39.2
Jordan	11.33	7.2	3.5	37.7
Lebanon	28.6	–	–	–
Morocco	39.65	6.5	14	40.9
Saudi Arabia	–	7.8	–	33
Syria	30.1	–	–	–
Tunisia	23.67	6	12.8	39.8
Turkey	–	5.2	9	43.2
Yemen	59.9	7.2	46.6	37.7

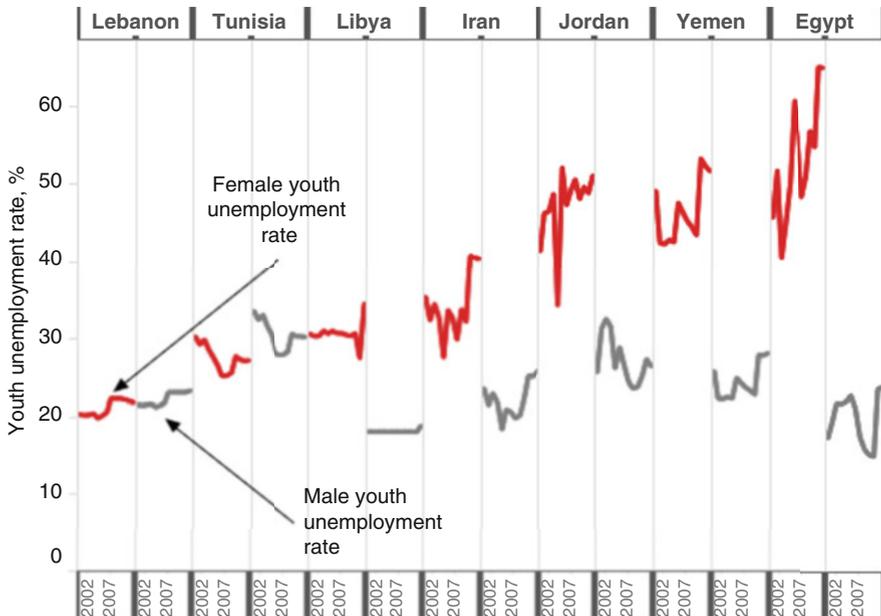
Source: Data for percentage of population living below national poverty line: Arab Human Development Report 2009 (New York: United Nations Development Program, 2009), Table 5-6; data for percentage of population living on less than US\$2 per day: Human Development Report United Nations Development Program, various years, <http://hdr.undp.org/en/statistics/data/>; all other data from “Key Development Data and Statistics,” World Bank, 2000–2006

Note: Data for Algeria, Bahrain, Iraq, Kuwait, Libya, Oman, Qatar, United Arab Emirates, and the West Bank and Gaza are not available



**Fig. 2** Middle East and North Africa (developing only)—GDP per capita growth (annual %). Source: Trading Economics (2014)

(ii) the reinvigoration and empowerment of local communities; and (iii) improving citizen and private sector access to information on government-related opportunities and benefits.

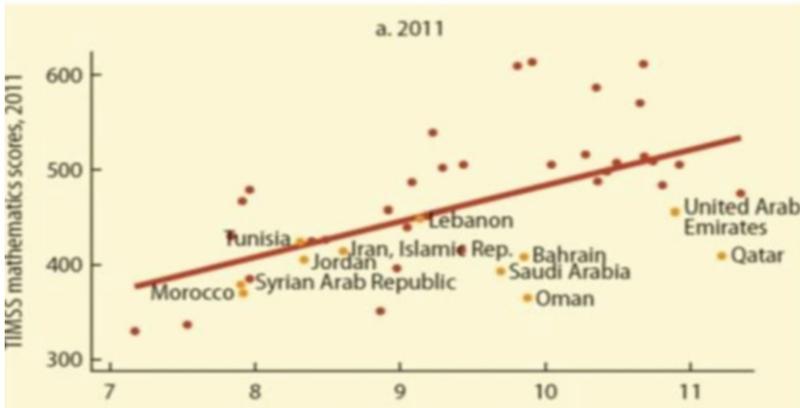


**Fig. 3** Unemployment rates in the MENA region by gender

Employment and job creation is a primary issue for the MENA countries. Some countries experience high unemployment rates among youth (15–24 years of age)—these include Egypt, Iran, Jordan, Lebanon, Libya, Tunisia and Yemen. Women have the highest unemployment rate of 39% compared to 22% of males. Tunisia has an unemployment rate of 40% while Iran is the lowest with 25%. Lebanon recorded the highest gender gap in unemployment compared to the other countries in the region. Figure 3 indicates the youth unemployment rates for the MENA region. The female youth unemployment rate is almost three times the male unemployment in Egypt and double in Iran, Jordan and Yemen. In Egypt, female unemployment is 65%, Jordan and Yemen 55%, and 40% in Iran.

Education remains of central concern to MENA region. The regional challenges affect education; conversely, education can contribute to the solution of these challenges. Although the current problems and weaknesses in the educational system represent a huge challenge, educational progress in the region has also taken place.

A concern is that 4.5 million children are not enrolled in schools while 2.9 million youth don't have access to secondary schools. Syrian children face the greatest education crisis as 2.8 million of them do not have access to education in their home or in neighboring countries. Many children in other countries such as Sudan, Iraq, Libya, the Palestinian Territories, Egypt and Yemen face similar educational challenges. According to Hoel, school systems in the MENA region are generally of low quality. Students do not even learn basic skills, a fact clearly highlighted by



**Fig. 4** Quality of education in the MENA countries, relative to international standards. Source: World Bank 2013a. Jobs for Shared Prosperity: Time for Action in the Middle East and North Africa. Washington, DC: MNSHD, World Bank, page 172

international standardized tests whose results reveal that the region is still below the level expected, given MENA countries' per capita income (Fig. 4).

Social and political instability represent negative impacts in the MENA countries. However, they also represent a unique opportunity for political and economic change and progress. The Arab Spring has put the weaknesses of MENA countries into the spotlight. Although high unemployment rates, corruption, lack of government transparency, education, and lack of political representation have been critical problems in the region, there is now an urgency in addressing those issues.

This social and economic situation in MENA is the background for entrepreneurship. The following chapters offers an account of:

- people's involvement in entrepreneurship (Chap. 3);
- entrepreneurs' motives and contribution to society (Chap. 4);
- the national eco-systems of institutions supporting entrepreneurship; and
- some options for policies for promoting entrepreneurship.

Issues of inclusion of women, youth, and unemployed, and policies for inclusion are elaborated in a new article by GEM scholars in MENA.

## 4 Entrepreneurs' Stories

### 4.1 *Nadia Gamal El Din (Egypt)*

Nadia Gamal El Din is a remarkable example of an entrepreneur who had to hustle her way through and juggle a huge number of responsibilities at the same time.



Nadia graduated from The American University in Cairo with a BA in Finance [Business Administration] and a minor in Economics. She graduated with highest honors, at the top of her class. Her entrepreneurial journey only began, though, when she gave birth to Yassin.

“I don’t have siblings and none of my friends have kids yet,” she says. “I was looking for a place that could answer my many questions and offer me some much needed new-mom support. I was surprised to find that there wasn’t a single trusted support platform for new moms.” And that was the trigger—Rahet Bally was born.

Nadia did not want any woman to go through her difficult experience of feeling lost as a new mom. With her baby just a few days old, she single-handedly built her entrepreneurial venture. “I had to have a lot of self-belief,” she says. “I guess you could call my vision of giving moms all across Egypt some well-deserved peace of mind the muse that kept me going.”

She started off by visiting countless doctors and experts to bring them on board. As part of Rahet Bally, they would offer moms on the spot answers to all their questions, free of charge, through social media. “I chose social media to start with as it is definitely the easiest and fastest way for moms to communicate with the doctors, and with one another,” she notes. Within 1 month, she managed to recruit over a hundred doctors and experts.

Her vision of what Rahet Bally could offer did not end there, though. Her next initiative was to come up with a number of pillars to support moms—mentally, physically, spiritually and emotionally. “My baby boy was with me every step of the journey,” she smiles. “I took him to meetings, working on my laptop with one hand and hugging him with the other.” Her passion and willpower motivated her to provide every mom the peace of mind that she deserved.

The mental support pillar took the form of crisp, short reads (including tips, articles, and guides) for moms to prepare them for motherhood, coupled with Rahet Bally’s 24/7 access to doctors and expert support. Nadia then realized that moms’ spending patterns increased rapidly due to all the baby necessities: doctors, care products, nurseries and so on. This triggered the birth of Rahet Bally’s financial support pillar: The Rahet Bally Card.

The Rahet Bally Card is Egypt’s first and biggest premium benefit card, giving moms access to discounts at a variety of stores and on numerous services related to a mother and her child. These include Egypt’s best hospitals, pharmacies, children’s stores, nurseries, schools, bookstores, spas, educational workshops, support groups, groceries, party planning, and catering. “The aim of the card was not just on the spot discounts, but also to encourage moms to explore stores/services that they never knew existed and that could make their lives so much easier, healthier and happier,” Nadia adds.

Only a year and a half after its launch, Rahet Bally already has 34,000 active mothers on the platform. Continuously responding to her customers’ needs, Nadia noticed that a significant number of moms lose their physique and gain weight after giving birth. In response, she launched Egypt’s first fitness and nutrition program for mothers where they can work out, enjoy babysitting services for all ages, eat healthily and socialize. This program now operates across Egypt, and is a life-changer for all the moms who join.

Nadia relies on bootstrapping to fund her business and support its growth. She has been approached by numerous investors and has been interviewed on international channels, but she still believes that the essence of what she does is in her genuine approach to things and intends to keep it that way for the time being. What is the secret of her success? “I am a mother who decided to be the change I wanted to see, to change lives and rely on my own strength and hard work to do so,” she says.

## ***4.2 Saif al Saudi (Jordan)***

Returning to Jordan after a stint of living abroad, Saif Al Saudi was disturbed by the amount of deforestation that had devastated the Gila’ad area. “Being a vocal

advocate of environmental causes, I decided to take action and purchased a large plot of land in the area,” he says. The land, which later became the Mountain Breeze Country Club, was planted with more than 4300 trees and returned to its former green glory.



Located 32 km north-west of Amman, the Mountain Breeze Country Club first opened its doors in 2007. To be able to secure the cash flow to maintain it, Saif decided he would use part of the land to build and rent out a paintball arena. In a short space of time, the Club became very popular, which helped Saif to further develop the Club.

With the increasing number of visitors, it became obvious that a restaurant needed to be established to cater to their needs. Saif established his restaurant in a lush part of the property, followed closely by a small inn for overnight stays. After careful consideration, Saif decided to build log cabins to accommodate more visitors. His search for funding took him to the European Union (EU) and Jordan Enterprise Development Corporation (JEDCO).

With the grant he was awarded by JEDCO and the EU, Saif built nine log cabins complete with kitchenettes, bathroom utilities and electricity, and laid the foundation for a tenth. He also created paths between the cabins and landscaped the area to



amplify its aesthetic appeal. “A real bonus was that JEDCO and the EU provided the project with a promotional website that has since helped increase the number of Mountain Breeze Country Club’s visitors and helped make it into a tourist landmark in the area,” notes Saif.

The Club has successfully created work opportunities for the locals, revived Gila’ad by increasing tourist traffic, and attracted students, outdoor enthusiasts and employees participating in team building exercises. Driven by his passion for nature and environmental sustainability, Saif is currently working on using green energy, like solar paneling, to power his cabins, as well as recycling used water from the cabins.

### **4.3 Saideh Ghods (Iran)**

Mrs. Saideh Ghods was born at Shemiran, Tehran, in 1951. From her early childhood, she was raised in a family characterized by a blend of integrity, kindness and grace in general, and a core of charity, culture, and dedication in particular. Her father, a teacher and a philanthropist, founded a school for boys from underprivileged families. His students often credit their success to the disciplined education they received at this school. “The milieu of my upbringing immersed me in the works of renowned Iranian poets like Saadi, Moulavi, Ferdowsi, and Hafiz, encouraged and supported by my mother,” she remembers.

Saideh matriculated at the University of Tehran in Geography in 1969. A year later, her father passed away suddenly. Only 19 years old, she took on the heavy responsibility of caring for her younger siblings. Despite this early tragedy, the family thrived in the coming years and each member has achieved a great level of success in their own right.

In 1975, Saideh married an Iranian diplomat and spent a few years in Germany during her husband’s diplomatic mission there. During her time in Germany, a number of chemically wounded victims of the Iran-Iraq war were dispatched to this country for treatment. Saideh was involved in caring for these victims on humanitarian grounds. After returning to Iran, she faced the most trying experience of her life. Her young daughter, Kiana, was diagnosed with cancer.

While Kiana was undergoing treatment, Saideh met many underprivileged families in the hospitals of Tehran whose children were also suffering from cancer. “These families often came from remote provinces of Iran and did not have sufficient funds or proper lodging in the capital,” she recalls. “They struggled with the cost and complications of the treatment and lost their children, sometimes to entirely preventable causes.”

In response to this need, Saideh founded Mahak in 1991 with the vision of providing full cost of treatment and rehabilitation for children with cancer. From the initial handful of volunteers, the charity has grown to one of the largest NGOs in Iran with a 120-bed pediatric oncology hospital. Since its inception a quarter of a century ago, Mahak has helped over 25,000 Iranian children as well as hundreds of

Iraqi and Afghan refugee children. Today in Iran, no child dies of cancer due to lack of funds or access to treatment.

Saideh also co-founded other non-profit organizations including ISCC, BCSI, and the GFI to advance Iran’s cancer treatment and promote environmental causes important to prevention. She has been recognized by IDB, CCI, *Wall Street Journal*, and other international bodies for spearheading the expansion of NGOs in Iran as well as her contributions to the civil society in the region. She has become a role model and a mentor for young Iranian women who want to take an active role in society. In addition to her philanthropic endeavors, Saideh is the best-selling author of the award-winning novel *Kimia Khatoon* which has been republished 30 times in Iran and translated into four languages.



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# Entrepreneurial Activity in the MENA Region



**Ayman Ismail, Thomas Schøtt, Abbas Bazargan, Basheer Salaytah, Hamad Al Kubaisi, Majdi Hassen, Ignacio de la Vega, Nihel Chabrak, Abier Annan, Mike Herrington, and Penny Kew**

In the current economic climate, it is becoming increasingly important for policy makers, business and civil society leaders to work together, in order to identify and strengthen the forces that drive future economic growth. In particular, it is imperative that governments focus on reforms that help to create enabling environments that foster innovation, facilitate more productive economies and, critically, open up new and better job opportunities for all segments of the population.

Academics and policy makers agree that entrepreneurs, and the new businesses they establish, play a critical role in the development and well-being of their societies. As such, there is increased appreciation for and acknowledgement of the role played by new and small businesses in an economy. GEM contributes to this recognition with longitudinal studies and comprehensive analyses of entrepreneurial attitudes and activity across the globe. Since its inception in 1997 by scholars at Babson College and London Business School, GEM has developed into one of the world's leading research consortia concerned with improving our understanding of the relationships between entrepreneurship and national development.

Eight countries in the MENA region—namely Egypt, Iran, Jordan, Lebanon, Morocco, Qatar, Saudi Arabia and the United Arab Emirates—participated in the 2016 GEM survey. Although Tunisia did not participate in the 2016 GEM survey, it did participate in 2015. Tunisia's data from the 2015 GEM survey has therefore been included in the analysis. The remainder of this report will focus on these countries, providing macro-level insights across the region as well as country-level insights into the people who participate in different phases of entrepreneurial activity. Although these nine countries fall within the same geographic region, they are diverse in terms of social and economic development, as indicated in Table 1.

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**Table 1** MENA economies by economic development level<sup>a</sup>

Factor-driven economies	Efficiency-driven economies	Innovation-driven economies
Iran	Egypt, Jordan, Lebanon, Morocco, Tunisia, Saudi Arabia	Qatar, United Arab Emirates (UAE)

<sup>a</sup>Classification of economies by economic development level is adapted from the World Economic Forum (WEF). According to WEF's classification, the factor-driven phase is dominated by subsistence agriculture and extraction businesses, with a heavy reliance on (unskilled) labour and natural resources. In the efficiency-driven phase, an economy has become more competitive with more-efficient production processes and increased product quality. As development advances into the innovation-driven phase, businesses are more knowledge-intensive, and the service sector expands (<http://weforum.org>). Economies in transition from factor- to efficiency-driven have been grouped with the factor-driven economies, while those in transition from efficiency- to innovation-driven have been included in the efficiency-driven category

### Participation in Entrepreneurship Across Multiple Phases of Activity

The GEM model recognises entrepreneurial attitudes, activity and aspiration as dynamic interactive components of national entrepreneurial environments. Entrepreneurial activity does not take place in a vacuum, and entrepreneurial attitudes and perceptions (both societal and individual) play an important part in creating an entrepreneurial culture.

GEM sees entrepreneurial activity as a continuous process rather than as individual events. As such, the Adult Population Survey (APS) is designed to allow for the measurement and assessment of individual participation across the range of phases comprising entrepreneurial activity: potential entrepreneurship, entrepreneurial intentions, nascent and new business activity, progression into established business ownership, and the reasons for business discontinuance. This process can be viewed as a pipeline, where people participating in each phase are the source of those potentially advancing to the next phase.

## 1 Societal Attitudes and Perceptions<sup>1</sup>

Although not a direct step in the entrepreneurial process, societal attitudes and perceptions play an important part in creating an entrepreneurial culture. Entrepreneurial activities are carried out by people living in specific cultural and social conditions, and the positive or negative perceptions that society has about entrepreneurship can have a strong influence on the entrepreneurial ambitions of potential and existing entrepreneurs, as well as the extent to which this activity will be supported. GEM assesses what people think about entrepreneurship as a good career choice, whether entrepreneurs are considered to have high status, and whether entrepreneurs garner significant levels of positive media attention.

<sup>1</sup>The questions in this section were optional and were not answered by Lebanon.

**Table 2** Societal values about entrepreneurship in the MENA countries, with global comparisons

	Entrepreneurship as a good career choice (% of adult population)	High status to successful entrepreneurs (% of adult population)	Media attention for entrepreneurship (% of adult population)
Egypt	83.4 <sup>a</sup>	87.1	62.1
Iran	52.4	80.5	57.9
Jordan	73.5	82.3	74.7
Morocco	79.3	58.7	60.7
Qatar	71.2	80.4	66.7
Saudi Arabia	81.3	78.7	75.9
Tunisia (2015)	71.1	72.1	48.3
UAE	75.1	82.3	83.8
Average (MENA)	73.4	77.8	66.3
<i>Regional averages</i>			
Africa	70.2	79.3	67.2
Asia & Oceania	62.5	68.5	66.2
Latin America & Caribbean	65.3	64.6	62.7
Europe	57.5	66.7	54.8
North America	64.6	74.0	72.5

<sup>a</sup>Read as: 83.4% of Egyptian adults between the ages of 16 and 64 years in 2016 regarded entrepreneurship as a good career choice

Table 2 indicates that overall, people in the MENA region have strongly positive societal attitudes towards entrepreneurship. On average, almost three-quarters of people in the region see entrepreneurship as a good career choice—substantially higher than the averages for all the other regions, with the exception of Africa. In terms of status for successful entrepreneurs, only Africa scores marginally higher.

At the individual country level, the United Arab Emirates, Saudi Arabia and Jordan show consistently high levels of societal attitudes across all three measures. Despite relatively low levels of media attention for entrepreneurs, Egyptians have the most positive perceptions of entrepreneurship as a career choice as well as the highest regard for entrepreneurs. In Iran, on the other hand, only half the population see entrepreneurship as a good career choice—the lowest regional score and perhaps surprising for the only factor-driven economy in the sample. Iran also has the second lowest regional score for media visibility for entrepreneurs.

## 2 Entrepreneurial Propensity

GEM research has confirmed the importance of individuals' perceptions of their entrepreneurial ability, their recognition of start-up opportunities, how risk-averse they are, and the extent to which their social networks include entrepreneurs as being instrumental in whether or not they become involved in starting new businesses.

GEM considers those who perceive good opportunities for starting a business, as well as believe they have the required skills, the potential entrepreneurs in a society. Opportunities (or the perception of good opportunities) play an important role in determining whether an individual will even consider starting a business. The quantity and quality of the opportunities that people perceive and their belief about their own capabilities may well be influenced by various factors in their environment, such as economic growth, culture and education. While opportunity perceptions demonstrate people's views of the environment around them, beliefs about capabilities are more reflective of self-perceptions.

Another factor taken into account is the fear of failure, assessed as the percentage of the adult population (aged 18–64 years) perceiving good opportunities, who indicate that fear of failure would prevent them from setting up a business. Fear of failure can be influenced by intrinsic personality traits, as well as by societal norms and regulations. For the risk-averse person, the downside risk of failure often outweighs the most promising opportunities, while in some countries the legal and social ramifications of business failure may act as a strong deterrent, reducing the pool of potential entrepreneurs.

Table 3 shows that, from a regional perspective, the MENA countries report average scores in terms of perceived opportunities and capabilities (despite the highly positive societal attitudes towards entrepreneurship shown in Table 2). North America and Africa report higher averages in terms of perceived opportunities, while individuals in Africa and Latin America & Caribbean (LAC) have more confidence in their own ability to start a business. An encouraging finding is that on average, close to half of people in the MENA region know a start-up entrepreneur—only Africa reports a (marginally) higher score for this indicator.

At the individual country level, the MENA countries show divergent results. Table 2 indicates that entrepreneurship is particularly highly regarded in Saudi Arabia, and the trend continues here with Saudi Arabia displaying the highest level of perceived opportunities, by a significant margin, as well as the highest level of confidence in their entrepreneurial capabilities. Seventy percent of Saudi Arabians have access to entrepreneurial role models in their social networks—1.5 times the regional average. Lebanon reports encouragingly positive levels of entrepreneurial perceptions and competencies across all parameters—60% of individuals perceive good entrepreneurial opportunities, while two-thirds believe they have the skills to run a business and a similar proportion have access to entrepreneurial role models.

**Table 3** Entrepreneurial perceptions and competencies in the MENA countries, with global comparisons

	Perceived opportunities	Perceived capabilities	Know a start-up entrepreneur <sup>a</sup>	Fear of failure
Egypt	53.5 <sup>b</sup>	46.4	18.9	27.6
Iran	34.4	59.3	50.6	43.8
Jordan	30.5	48.4	30.6	44.3
Lebanon	59.6	68.0	66.8	22.5
Morocco	45.0	56.1	43.6	32.9
Qatar	48.4	50.6	30.2	35.4
Saudi Arabia	81.5	70.7	71.7	39.4
Tunisia (2015)	48.8	59.9	48.9	40.3
UAE	25.8	55.2	61.7	54.4
Average (MENA)	47.5	57.2	47.0	37.8
<i>Regional averages</i>				
Africa	53.6	63.5	51.9	24.0
Asia & Oceania	40.1	40.7	41.7	40.1
Latin America & Caribbean	46.8	64.3	40.9	27.5
Europe	36.7	44.0	33.7	39.4
North America	58.1	54.6	33.5	36.2

<sup>a</sup>The extent to which individuals' social networks include entrepreneurial role models is assessed through the question: Do you know someone personally who started a business in the past 2 years?

<sup>b</sup>Read as: 53.3% of Egyptian adults in 2016 perceived good entrepreneurial opportunities in their area

On the other hand, despite strongly positive societal attitudes towards entrepreneurship in the United Arab Emirates, only a quarter of the population perceive good opportunities in their area (the lowest regional rate of opportunity perception). This is substantially below the regional average, as well as the average for all innovation-driven economies that participated in the 2016 GEM survey (41%). The UAE also has the highest fear of failure rate for the region, with more than half of adults indicating that this factor would constrain them from pursuing entrepreneurial opportunities. However, it must be noted that fear of failure tends to be more common in developed economies, where the greater prevalence of alternative career options can create the impression that people have more to lose by forgoing these other opportunities. Less than half of Egyptians believe they have the skills to pursue entrepreneurial opportunities; Egyptians are also least likely to know a start-up entrepreneur (19%, which is less than half the regional average).



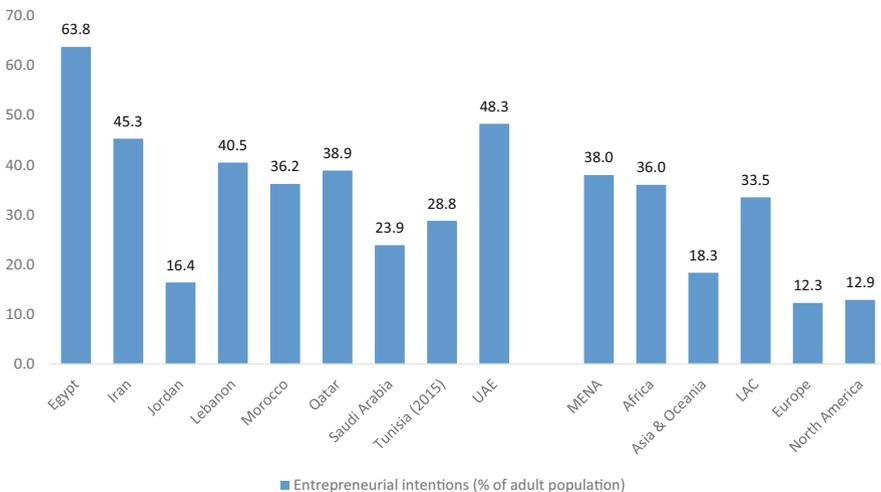
### 3 Entrepreneurial Intentions

Potential entrepreneurs see good opportunities for starting a business and believe that they have the necessary skills, knowledge and experience to start a business. However, perceiving a good opportunity and having the skills to pursue it will not necessarily lead to the intent to start a business. Individuals will assess the opportunity costs, and risks and rewards, of starting a business versus other employment preferences and options, if these are available. In addition, the environment in which potential, intentional and active entrepreneurs exist needs to be sufficiently enabling and supportive. A variety of national characteristics could act as deterrents for potential entrepreneurs, for example, “red tape” which could present unfavorable administrative burdens or high costs to those thinking about starting a business; access to resources and technical assistance; the attractiveness of the market; and the competitive environment.

GEM defines entrepreneurial intention as the percentage of the 18–64 year old population (individuals already engaged in any stage of entrepreneurial activity excluded) who are latent entrepreneurs and who intend to start a business within the next 3 years.

The percentage of intentional entrepreneurs in the MENA region is, along with Africa, higher than the average for the other geographical groups—more than a third of working-age individuals in the MENA countries express entrepreneurial intentions (Fig. 1). This is in line with the strongly positive societal as well as self-perceptions regarding entrepreneurship in the region as a whole.

From an individual country perspective, the MENA countries again report widely divergent results. Egypt tops the rankings, with almost two-thirds of adults expressing an intention to start a business within the next 3 years.



**Fig. 1** Entrepreneurial intentions in the MENA countries, with global comparisons

This is in line with Egypt's highly positive societal attitudes towards entrepreneurship—as indicated in Table 2, more than 80% of Egyptians feel that entrepreneurs are well-regarded and that it is a good career choice. Adults in the United Arab Emirates show the second highest levels of entrepreneurial intention—despite being least likely to report that they perceive opportunities in the areas in which they live.

The lowest level of entrepreneurial intention is in Jordan—at 16% less than half the regional average. Jordan also reported among the lowest levels of both opportunity and capability perception in the region. In Saudi Arabia, despite reporting among the most positive levels of both societal and self-perceptions regarding entrepreneurship, only a quarter of adults intend to start an entrepreneurial venture in the next 3 years.

## 4 Entrepreneurial Activity

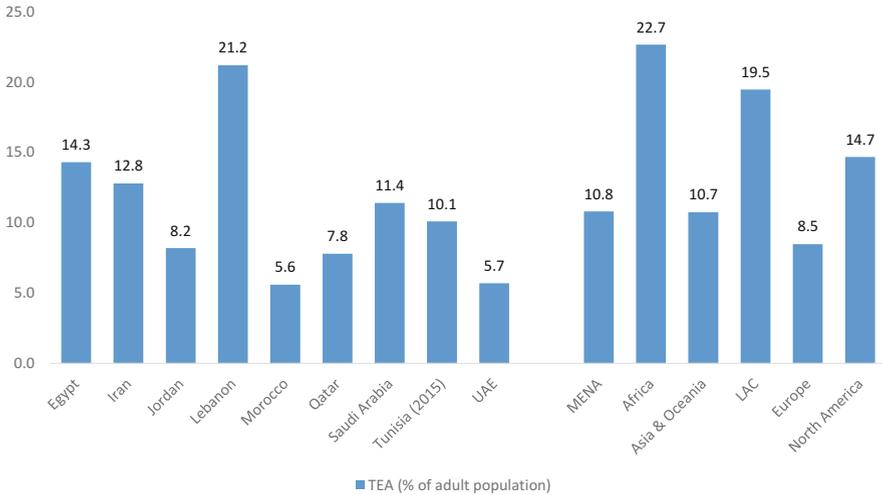
### 4.1 *Early-Stage Entrepreneurial Activity*

Entrepreneurial activities are presented by using the organisational life-cycle approach (nascent and new businesses, established businesses and business discontinuation). The central indicator of GEM is the Total Early-stage Entrepreneurial Activity (TEA) rate, which measures the percentage of the population that are in the process of starting or who have just started a business. This indicator measures individuals who are participating in either of the two initial processes of the entrepreneurial process:

- Nascent entrepreneurs—those who have committed resources to starting a business, but have not paid salaries or wages for more than 3 months, and
- New business owners—those who have moved beyond the nascent stage and have paid salaries and wages for more than 3 months but less than 42 months.

Measuring these two types of entrepreneurs is important as it provides the level of early-stage activity that will hopefully be transformed into established businesses—i.e. mature businesses, in operation for more than 42 months.

Even when individuals have favorable perceptions of entrepreneurship and exhibit entrepreneurial intentions, it is by no means certain that this will be translated into actually starting businesses. It is useful for policy makers to determine the factors that contribute to the fall off between intentional and active entrepreneurs, as this has a strong influence on the next stage of the entrepreneurial pipeline—actually starting a business. The entrepreneurship process is a complex endeavour carried out by people living in specific cultural and social conditions. A variety of entrepreneurship factors could contribute to individuals' willingness to engage in entrepreneurial activity, for example, “red tape” which could present unfavorable administrative burdens or high costs to those thinking about starting a business; access to resources and technical assistance; the openness of the market; and cultural values with regard to entrepreneurial behaviour.



**Fig. 2** Total early-stage entrepreneurial activity in the MENA countries, with global comparisons

Figure 2 shows that there is a marked fall off between intentional and active entrepreneurs in the MENA region as a whole. In terms of entrepreneurial intention, the MENA region as a whole reported amongst the highest levels when compared to the other geographical regions. The average for the MENA region was on a par with the averages for Africa and Latin America & the Caribbean—however, both these regions report early-stage entrepreneurial rates that are double those for the MENA region. Although the MENA region has, on the whole, positive societal attitudes towards entrepreneurship, the proportion of early-stage entrepreneurs is 70% lower than the number with entrepreneurial intentions.

For the majority of MENA countries, there is a fall off between intentional and active entrepreneurs. This is of greatest concern in Egypt and the United Arab Emirates. Both these countries have highly positive attitudes towards entrepreneurship, and healthy pools of intentional entrepreneurs. The level of early-stage activity, however, is less than a fifth the number with entrepreneurial intentions. Egypt reported the lowest score for capabilities perceptions. Capabilities perceptions may reveal not only people's skills, but also confidence in their ability to start a business—as such, they are likely to play a significant role in the transition from potential to intentional entrepreneur. Low TEA rates in the United Arab Emirates are likely to be influenced by the low opportunity perceptions and high fear of failure rates in this country.

From an individual country perspective, Lebanon has the highest TEA rate by a substantial margin. A fifth of Lebanese adults are engaged in early-stage entrepreneurial activity—double the regional average. This is in line with Lebanon's encouragingly positive levels of entrepreneurial perceptions and competencies across all parameters (Table 2). Morocco and the United Arab Emirates have the lowest TEA rates (half the regional average).

**Table 4** Early-stage entrepreneurial activity (% of population) in the MENA countries, with global comparisons

	Nascent entrepreneurship rate	New business ownership rate	Total early-stage entrepreneurial activity (TEA)
Egypt	8.2 <sup>a</sup>	6.6	14.3
Iran	6.9	6.2	12.8
Jordan	4.1	4.6	8.2
Lebanon	9.5	12.1	21.2
Morocco	1.3	4.3	5.6
Qatar	4.3	3.6	7.8
Saudi Arabia	3.7	7.7	11.4
Tunisia (2015)	5.4	4.9	10.1
UAE	1.3	4.4	5.7
Average (MENA)	5.0	6.0	10.8
<i>Regional averages</i>			
Africa	14.3	9.2	22.7
Asia & Oceania	5.1	5.8	10.7
Latin America & Caribbean	12.3	7.7	19.5
Europe	5.2	3.4	8.5
North America	9.5	5.4	14.7

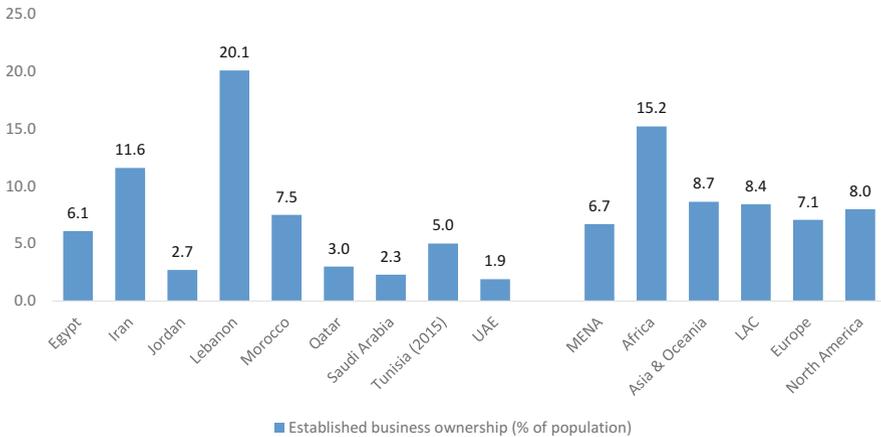
<sup>a</sup>Read as: 8.2% of entrepreneurs in Egypt in 2016 were engaged in nascent entrepreneurial activity

A discouraging finding is that the MENA region has among the lowest proportions of nascent entrepreneurs, compared to the other geographic groups (Table 4). Africa, which was on a par with the MENA region in terms of entrepreneurial intention, has three times as many nascent entrepreneurs. Although the nascent entrepreneurship rate for the MENA region is disappointingly low, this is offset to some extent by a more robust new business rate.

From an individual country perspective, the three countries with the lowest nascent entrepreneurship rates all have new business rates that are substantially higher than the nascent rates—more than three times higher for Morocco and the United Arab Emirates, and twice as high for Saudi Arabia. Lebanon also reports a positive ratio of new to nascent businesses.

## 4.2 *Established Business Activity*

The established business rate is the percentage of the adult population that are owners/managers of businesses that have been in operation for more than 42 months. Information on the level of established businesses is important as it provides some



**Fig. 3** Established business ownership rate in the MENA countries, with global comparisons

indication of the sustainability of entrepreneurship in an economy. These businesses have moved beyond the nascent and new business phases, and are able to contribute to a country's economy through the ongoing introduction of new products and processes and a more stable base of employment.

The GEM survey is a point-in-time snapshot of entrepreneurial and business activity around the world. It does not follow individual entrepreneurs over time, to see how many of them progress to the established business phase. However, the GEM survey does provide a means through which the level of mature business activity relative to start-up activity can be examined.

Figure 3 indicates that the MENA region has among the lowest proportions of established business owners, compared to the other geographic groups—a discouraging finding. The poor sustainability of start-ups and new firms in this region therefore highlights the need for policy interventions aimed at supporting and mentoring entrepreneurs through the difficult process of firm growth.

From an individual country perspective, Lebanon reports the highest rate of established business ownership. A fifth of the adult population are established business owners—three times the regional average. What is particularly encouraging is that the TEA rate and established business rate in Lebanon are the same—this suggests that support structures for start-ups/new firms in Lebanon are effective, or that the quality of early-stage entrepreneurs is good. Iran also reports a robust established business ownership rate and good firm sustainability.

The United Arab Emirates and Saudi Arabia have the lowest rates of established business ownership in the MENA region. This is of particular concern in Saudi Arabia, whose TEA rate is five times higher than the established business rate, suggesting a poor level of new firm sustainability in this country.

### 4.3 Entrepreneurial Employee Activity (EEA)

The Entrepreneurial Employee Activity (EEA) indicator includes the development of new activities for an individual’s main employer, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary.

Entrepreneurial Employee Activity (EEA) tends to be negligible in both the factor- and efficiency driven economies; however, it accounts for a substantial portion of entrepreneurial activity in the innovation-driven group. It is clear that although the presence of formal job options may decrease start-up activity in these developed economies, entrepreneurial behaviour finds a place within existing organisations. From the employee’s perspective, conducting entrepreneurial activities from within the safety of a larger organisation may present a more viable option than risking a start-up, particularly where the organisational leadership, culture and systems foster these efforts.

Figure 4 shows that the above holds true for one of the innovation-driven economies in the MENA region. Qatar reports an EEA rate that is the highest in the region by a substantial margin (almost three times the regional average) and very similar to its TEA rate of 7.8%. In the United Arab Emirates, on the other hand, the low TEA rate is not offset by high employee entrepreneurial activity. The United Arab Emirates EEA rate is lower than the regional average, as well as less than half the average EEA rate for all innovation-driven economies in the GEM sample (5.1%). Saudi Arabia shows a robust level of Employee Entrepreneurial Activity—double the average for the efficiency-driven economies.

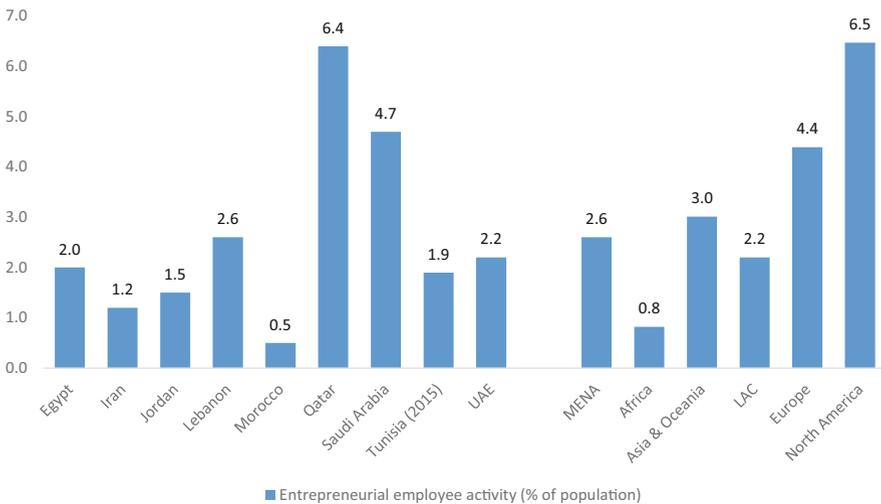
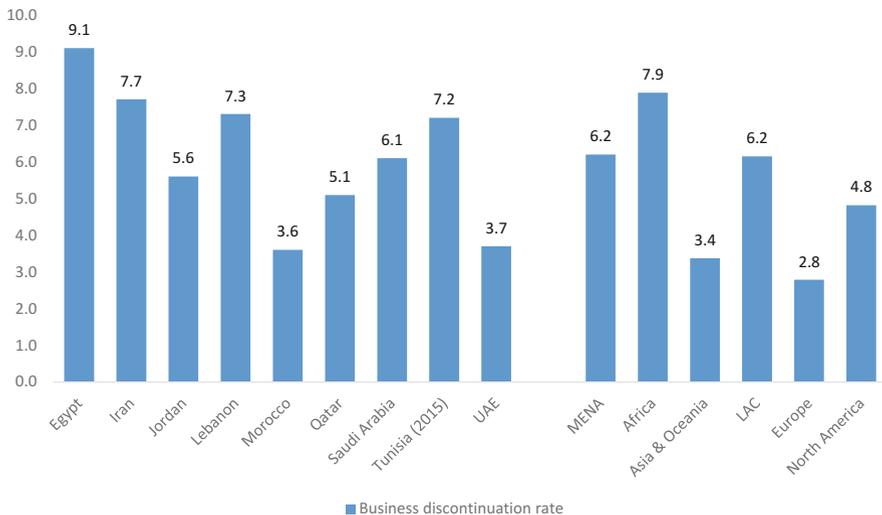


Fig. 4 Entrepreneurial employee activity rate in the MENA countries, with global comparisons

#### 4.4 Business Discontinuance

Figure 5 shows the business discontinuance rates, defined as the percentage of adults who for any reason (personal, sale, financial, market, health, business failure, death, etc.) in the last 12 months decided to exit one or more entrepreneurial activities in which he/she was involved. Information on the rate of business discontinuance is another potential indicator of the sustainability of entrepreneurship in an economy. Entrepreneurship is inherently risky, and a certain level of business closure is inevitable when there are numerous start-ups. However, an excessively high business closure rate could mean that few entrepreneurs are starting viable businesses, or that they are unable to sustain these businesses. In addition, the entrepreneurship environment may not be sufficiently supportive or enabling. However, it must be remembered that closure does not necessarily equate to failure.

From a regional perspective, the MENA region has a high rate of business discontinuance. Although Africa has a higher rate of discontinuance, it also has a substantially higher TEA rate. The MENA countries also have a ratio of TEA to business discontinuance that is of concern. Across all the other geographic groups, for every person exiting a business in 2016 approximately three were engaged in early-stage entrepreneurial activity. For the MENA region, however, for every person exiting a business there were only 1.7 people engaged in early-stage entrepreneurial activity. Lebanon is the exception, with three people engaged in TEA for every individual discontinuing a business.



**Fig. 5** Business discontinuation rate in the MENA countries, with global comparisons

It must be noted that the interpretation of the business discontinuation rate is often highly contextualised. A high rate could indicate low levels of preparations for venturing (capabilities, wrong perceptions about an opportunity, low level of motivation, etc.). A low rate, on the other hand, is not necessarily a positive indicator as entrepreneurs may be stuck in “dead” ventures because of complicated exit regulations, taxation policy, etc. The reasons for business discontinuance are many and varied. Some reasons could be seen as positive, such as the opportunity to sell, pursuing another opportunity or planned retirement. On the other hand, discontinuation may be due to lack of business profitability, problems with accessing finance and running out of working capital. Table 5 shows some of the reasons given for discontinuing businesses, for the MENA countries.

The most common reason for business discontinuance in the MENA region as a whole is lack of profitability. A lack of business profitability is consistently cited as the major reason for business discontinuance across the GEM sample, with a third of business exits in 2016 due to this reason, on average, across all three development phases. Personal reasons and problems accessing finance are also fairly common reasons for business exits in the MENA region. In terms of reason for business exit, therefore, the MENA countries are no different to all other GEM countries, irrespective of geographic location or economic development level.

From an individual country perspective, financial issues are a particularly pernicious problem in Jordan and Morocco, with lack of profitability or problems getting finance together accounting for over 70% of business exits in these countries. Access to finance, specifically, is a significant problem in Tunisia, with a quarter of respondents citing this reason. Bureaucracy is an issue in Jordan, Egypt and Morocco, while incidents account for 10% of business exits in Lebanon.

Business exits because of an opportunity to sell are relatively common in the UAE and Saudi Arabia, with a quarter of businesses discontinued for this reason. Saudi Arabians are most likely to exit their businesses as part of a planned exit/retirement.

## 5 Entrepreneurs' Stories

### 5.1 *Eve Tamraz Najjar (Lebanon)*

A graduate of the Ecole Normale Supérieure de Paris, Dr. Eve Tamraz Najjar has a scientific background in toxicology, health and environment. Opting to specialize in synthetic biology, Eve found herself exploring an emerging research area that fused chemistry and biology with computer science and engineering.



**Table 5** Reason for business exit in MENA countries

Country	Opportunity to sell	Unprofitable	Problem getting finance	Another job/opportunity	Exit planned	Retirement	Personal reason	Incident	Bureaucracy
Egypt	0.3 <sup>a</sup>	47.7	11.7	7.6	1.3	0.9	20.5	2.4	6.7
Iran	2.4	44.6	12.4	6.1	2.4	1.2	20.6	2.3	2.2
Jordan	3.4	55.4	16.1	8.2	1.7	0.0	7.8	0.0	7.2
Lebanon	2.5	43.7	6.4	11.1	3.5	2.1	18.6	10.3	1.8
Morocco	0.0	51.7	19.0	1.4	0.0	0.0	21.3	0.0	6.6
Qatar	8.6	28.6	16.3	11.4	1.1	3.0	26.2	1.8	3.0
Saudi Arabia	24.7	25.5	18.2	11.5	7.9	6.1	6.0	0.0	0.0
Tunisia	2.3	24.2	25.6	13.3	0.0	1.5	27.1	2.9	2.3
UAE	28.7	39.9	8.4	10.6	1.0	4.6	6.9	0.0	0.0
Average	8.1	40.1	14.9	9.0	2.1	2.2	17.2	2.2	3.3

<sup>a</sup>Read as: 0.3% of Egyptian early-stage entrepreneurs in 2016 exited their business because of an opportunity to sell



Now an ambassador for Allergy UK, Eve works alongside architect and industrial designer Cyrille Najjar to promote allergy and asthma prevention. “Having both suffered from respiratory conditions for the majority of our lives, we decided to utilize our skills and experience and found White Lab—a healthcare analytics start-up that develops cutting-edge technology for air quality monitoring and allergen identification,” says Eve. The co-founders and their team work together to provide similar individuals with the means to predict, prevent and manage their symptoms.

The start-up went on to unveil Sensio AIR—a mobile application that enables users to log their respiratory symptoms, monitor their health over days, weeks or months and view real-time air quality statistics. Sensio AIR has already caught the attention of international organizations and won an array of awards from Harvard MIT, Mass Challenge UK and more.

More recently, the start-up partnered with Lebanon’s Ministry of Environment in order to provide air quality information to the public. This collaboration means White Lab will play a major role in raising awareness when it comes to air quality issues and respiratory diseases. In addition to working with the ministry, White Lab’s clientele include the United Nations, Renault and other car manufacturers.

## ***5.2 Mohammad Reza Ansari (Iran)***

Mohammad Reza Ansari is the founder and board chairperson of Kayson International Company. His success in life he attributes to two key factors: first, a love of

work in civil and structural engineering that dates from his childhood and second, his love of mankind in a caring and humane society.

Mohammad Reza was the last sibling in a ten-member family. He was born in Arak but moved to Tehran at the age of 70. He notes that in his childhood, he was restless and difficult and often a recalcitrant boy in the school. Despite this, he was often was a top student during his secondary school days. "I certainly had an athletic spirit as a child, and was involved in swimming, horse-racing, track and field, water-skiing and more," he recalls. "I believe that this can help a person control his excitement and stresses." He experienced earning his first income at the age of 12 during which he started to work as a shop assistant. In 1968, he graduated from the Engineering Faculty of University of Tehran in the field of civil engineering.



During his college education, Mohammad Reza worked with National Construction Company. This paved the way for him to get involved in the design and execution of large civil construction projects, including projects such as the Prime Minister’s palace; Ghazvin Industrial Township; three bridges on the Dez and Maroon Rivers; and the Fooman Plain Drainage and irrigation projects.

Engineer Mohammad Reza created the Kayson Company in 1975 with a number of foreign engineers and skilled manpower among his staff members. He employed an innovative construction method which helped to accelerate the success of a reinforced concrete method. For this innovative system, he conducted studies on

the concrete construction method in Germany, France, United Kingdom, Switzerland, Italy and the U.S.A.

Kayson Company recently executed the design and construction of tens of thousands of dwellings. In addition, Kayson has carried out numerous projects building schools, clinics and centers for disabled people in disadvantaged areas in Iran, as well as participated in construction projects in other countries such as Venezuela. "I believe that it is important for us all to take our social responsibilities seriously," he says.

Engineer Mohammad Reza is now considered a successful Iranian entrepreneur leader and forerunner of the Fourth Festival of Entrepreneurial Leaders. He has a deep belief in the interconnectedness of lofty human values and success in a business. Promotion of this life style among entrepreneurs, in his view, could result in sustainable development in a country.

### ***5.3 Abeer Daoudiyeh (Jordan)***

After the passing of her husband, Abeer Daoudiyeh chose to dedicate her life to caring for orphaned children. Her passion spurred her to create Fenan Kindergarten, an institution that serves children residing in Tafileh and nearby areas. "I turned to Sameeha Al Mahasneh, a colleague who had longstanding experience in the fields of teaching and management, and presented my project idea to her," says Abeer. "Together, we began the complex journey of securing funding."

During their search, it was brought to Abeer and Sameeha's attention that the European Union (EU) and Jordan Enterprise Development Corporation (JEDCO) were conducting field visits to various governorates in order to educate residents across the Kingdom about the types of grants they offer. After learning of this, both women decided to attend a meeting hosted by JEDCO, in hopes of obtaining the support they needed. And so it was that after several studies and a grant application, the project was approved and was given the required funding from JEDCO and the EU in May 2013.

Abeer and Sameeha began by looking for a suitable location that would serve the largest number of residents possible, and finally found a plot of land that was ideally situated to serve four remote areas. These consisted of Bseria District, Gharandal Village, Om Sarab Village and Al Maqam area, all of which direly lacked the most basic of services.



“We allocated a portion of the grant to marketing the kindergarten by handing out flyers and brochures, as well as launching an official website,” recalls Abeer. The newly established kindergarten, which features four classrooms that can accommodate up to 70 students, was a resounding success and parents were rushing to enroll their children. The kindergarten provided an array of services that were previously unavailable in the area such as daycare and academic education for students between 4 and 5 years of age. It also catered for children suffering from learning disabilities, after appointing a qualified teacher specialized in this field.

Furthermore, the kindergarten organized multiple activities geared towards benefiting the children and broadening their horizons. These included visits to the Civil Defense Directorate, Public Security Directorate and Tafleh Women's Centre, in addition to various entertainment and cultural functions. The kindergarten also carries out humanitarian and volunteer activities such as hosting and providing meals to underprivileged children, and distributing goodwill parcels among youngsters from the area at its own expense.

The kindergarten has also created jobs for the area's residents, offering employment to four teachers, two drivers and a janitor. Abeer and Sameeha dream of expanding the kindergarten's operations by increasing the number of classrooms and employees, and establishing a specialized department that is dedicated to caring for children with learning disabilities.

# Characteristics and Motives of Early-Stage Entrepreneurs in the MENA Region



Ayman Ismail, Thomas Schøtt, Abbas Bazargan, Basheer Salaytah, Hamad Al Kubaisi, Majdi Hassen, Ignacio de la Vega, Nihel Chabrak, Abier Annan, Mike Herrington, and Penny Kew

GEM's focus on individual-level participation enables this research to reveal a range of demographic and other characteristics about entrepreneurs. The research also makes possible an assessment of the level of inclusiveness in an economy—in other words, the extent to which various groups (for example age, gender or education level) engage in entrepreneurial activity. This information can assist policy makers in targeting effective interventions aimed at increasing participation as well as productivity in the economy.

## 1 Motives for Starting a Business

The relative prevalence of opportunity-motivated versus necessity-motivated entrepreneurial activity provides useful insights into the quality of early-stage entrepreneurial activity in a given country. The motives that drives entrepreneurs to start businesses is as important as the level of entrepreneurial activity in countries. GEM has shown that businesses started by opportunity-driven entrepreneurs are much more likely to survive and employ people than those started by necessity-driven entrepreneurs.

**Necessity Based Early-Stage Entrepreneurial Activity** This is defined as the percentage of those involved in early-stage entrepreneurial activity that claim to be

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driven by necessity (having no better choice for work) as opposed to opportunity. This is also described as survivalist-driven motivation.

**Opportunity Based Early-Stage Entrepreneurial Activity** This is the percentage of those involved in early-stage entrepreneurial activity driven purely or partly by opportunity, as opposed to finding no other option for work. This includes taking advantage of a business opportunity or having a job but seeking a better opportunity.

The *GEM Global Report 2016/17* notes that most entrepreneurs around the world are opportunity-motivated. On average, three-quarters of respondents in the 2016 survey stated they chose to pursue an opportunity as a basis for their entrepreneurial motivations. Two-thirds of entrepreneurs in the factor-driven economies were opportunity-motivated rather than starting out of necessity, because they had no better options for work. In efficiency-driven economies the figure was 71% while the innovation-driven economies show the highest proportion of opportunity-motivated entrepreneurs, at 79%.

Among entrepreneurs with opportunity-driven motives, a portion of these seek to improve their situation, either through increased independence or through increased income (versus maintaining their income). GEM calls these individuals improvement-driven opportunity (IDO) entrepreneurs. To assess the relative prevalence of improvement-driven opportunity entrepreneurs versus those motivated by necessity, GEM has created the Motivational Index.

Table 1 summarises the motives for starting a business for the MENA region. There are relatively high levels of necessity-driven entrepreneurial activity among the MENA countries—in six of the nine countries, the proportion of necessity-driven entrepreneurs is over 25%. Lebanon, Iran and Egypt have the highest proportion of necessity-driven entrepreneurs. Although Lebanon has the highest TEA rate in the MENA region, almost 40% of this activity is necessity-motivated. In Iran, a third of entrepreneurs are motivated by necessity. Iran is a factor-driven economy—these economies tend to have lower GDP per capita, indicating that a large percentage of the population is either unemployed or underemployed (i.e. they earn very low wages). Individuals therefore start businesses because they are unable to find employment, or to supplement low wages. On the other hand, the United Arab Emirates is an innovation-driven economy—its third lowest proportion of opportunity-motivated TEA in the region is therefore a concern.

Saudi Arabia, Qatar and Tunisia report encouragingly high levels of opportunity-motivated TEA. Tunisia and Qatar also stand out in terms of their proportion of improvement-driven opportunity (IDO) entrepreneurs—close to two-thirds of early-stage entrepreneurs in these two countries fall into this category. Qatar and Saudi Arabia's Motivational Index scores are particularly positive—in these two countries, entrepreneurs are around six times as likely to be improvement-driven opportunity rather than necessity-driven entrepreneurs. Egypt has the lowest proportion of IDO entrepreneurs—in this country, early-stage entrepreneurs are as likely to be motivated by necessity as they are to IDO entrepreneurs.



**Table 1** Entrepreneurial motives for TEA in the MENA countries, with global comparisons

	Necessity-driven (as % of TEA)	Opportunity-driven (as % of TEA)	Improvement-driven opportunity (as % of TEA)	Motivational Index
Egypt	31.3 <sup>a</sup>	61.2	30.8	1.0
Iran	33.9	63.5	49.3	1.5
Jordan	26.4	68.8	49.0	1.9
Lebanon	39.4	57.3	43.6	1.1
Morocco	27.4	72.6	50.3	1.8
Qatar	10.5	82.7	62.8	6.0
Saudi Arabia	7.5	92.3	40.8	5.4
Tunisia (2015)	18.0	79.3	64.1	3.6
UAE	29.2	61.8	40.8	1.4
Average (MENA)	24.8	71.1	47.9	2.6
<i>Regional averages</i>				
Africa	28.6	67.9	38.7	1.4
Asia & Oceania	21.6	75.3	49.4	2.5
Latin America & Caribbean	27.0	70.2	48.6	2.5
Europe	21.7	75.1	50.9	3.4
North America	12.9	83.7	61.0	4.9

<sup>a</sup>Read as: 31.1% of TEA activity in Egypt in 2016 was necessity-driven

## 2 Profile of the MENA Region Entrepreneurs

### 2.1 Gender

Many studies maintain that women face greater difficulties in becoming entrepreneurial. These obstacles include: higher levels of domestic responsibility; lower levels of education (particularly in developing countries); lack of female role models in the business sector; fewer business-orientated networks in their communities; lack of capital and assets; lower status in society and a culturally-induced lack of assertiveness and confidence in their ability to succeed in business. These factors may prevent women from perceiving as well as acting on entrepreneurial opportunities.

The International Labor Organization notes in its *World Employment and Social Outlook—Trends 2017* that despite improvements in educational attainment, women

in North Africa remain twice as likely to be unemployed as their male counterparts. The gender gap in unemployment currently stands at just over 10 percentage points, meaning Northern Africa has the second highest gap worldwide, after the Arab States. The unemployment rate for women in the Arab States remained almost 13 percentage points higher than that for men in 2016 and the female labour market participation rate remained the lowest globally, at 21.2% in 2016, against a world average of 49.5%. The male participation rate, on the other hand, was slightly above the world average (76.5% in 2016, against a global rate of 76.1%). Such large gender disparities in labour market performance undoubtedly highlight the fact that although women have achieved high levels of education, this has not translated into their inclusion in the world of work.<sup>1</sup>

The *2016 GEM Global Report* shows that although the ratio of male to female participation in early-stage entrepreneurial activity varies considerably across the total sample of GEM countries, reflecting differences in culture and customs regarding female participation in the economy, a consistent finding is that men are more likely to be involved in entrepreneurial activity, regardless of level of economic development. Table 2 shows that the MENA countries follow this pattern: in all nine countries the propensity toward entrepreneurship, measured by TEA, is higher in males than in females. The MENA region as a whole exhibits the widest gender gap in terms of early-stage entrepreneurial activity—in 2016, women in this region were only half as likely to be engaged in TEA as their male counterparts. In Africa and Latin America & the Caribbean, by contrast, eight women were engaged in TEA for every ten male entrepreneurs.

At the individual country level, the MENA region shows divergent results. Gender parity is positive in Qatar and Saudi Arabia—in these two countries, there are around eight women entrepreneurs for every ten male entrepreneurs. Jordan reports the widest gender gap, with fewer than three women engaged in entrepreneurial activity for every ten men. Gender gaps are also significant in Tunisia and Egypt.

In terms of reason for starting a business, an encouraging finding is that on average, men and women in the MENA region are equally likely to be motivated by opportunity (Table 3). In terms of regional comparisons, male entrepreneurs in the MENA region and Africa report the highest levels of necessity motivation—a quarter of men in these two regions are pushed into entrepreneurship because of no better options to earn a livelihood. Female entrepreneurs in the MENA region, on the other hand, paint a more positive picture—they are more likely to be motivated by opportunity than are their counterparts in Africa and Latin America & the Caribbean, and are on a par with female entrepreneurs in Europe.

At the individual country level, women are more likely to be opportunity-motivated than their male counterparts in six of the nine countries. Jordan is a significant outlier in the region in this respect, exhibiting a wide gender gap in opportunity motivation. In Saudi Arabia and Qatar opportunity motivation is

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<sup>1</sup>[http://www.ilo.org/global/research/global-reports/weso/2017/WCMS\\_541211/lang--en/index.htm](http://www.ilo.org/global/research/global-reports/weso/2017/WCMS_541211/lang--en/index.htm)

**Table 2** TEA rates by gender in MENA countries, with global comparisons

	Male TEA rate (as % of adult male population)	Female TEA rate (as % of adult female population)	Female to male ratio
Egypt	20.9 <sup>a</sup>	7.5	0.36
Iran	16.6	8.9	0.54
Jordan	12.8	3.3	0.26
Lebanon	26.2	16.1	0.61
Morocco	6.7	4.5	0.67
Qatar	8.1	6.8	0.84
Saudi Arabia	12.9	9.7	0.75
Tunisia (2015)	15.0	5.3	0.35
UAE	6.6	3.7	0.56
Average (MENA)	14.0	7.3	0.52
<i>Regional averages</i>			
Africa	24.8	20.9	0.84
Asia & Oceania	12.7	8.8	0.69
Latin America & Caribbean	21.6	17.5	0.81
Europe	10.9	6.1	0.56
North America	17.5	11.9	0.68

<sup>a</sup>Read as: 20.9% of the adult male population in Egypt in 2016 were engaged in TEA activity

particularly high in both genders; in Lebanon, on the other hand, opportunity motivation is below 60% for both genders. Male necessity motivation is highest in Lebanon (at 41%), while the United Arab Emirates, Lebanon and Jordan all report female necessity entrepreneurship levels of just under 40%. Narrowing the gender gap in terms of entrepreneurial activity must become a priority focus for policy makers in these countries.

## 2.2 Age Distribution

The influence of age on entrepreneurial activity tends to be very similar throughout GEM, with the highest prevalence of entrepreneurial activity among the 25–34 and 35–44 year olds across all three development phases. Higher participation rates among those in their early to mid-careers could be attributed to the fact that these individuals have had time to develop their skills and knowledge through education as well as through work experience, building their confidence in their own abilities. A critical factor is that they may have accumulated other resources such as networks, personal savings and access to other financial resources.

**Table 3** Entrepreneurial motives in the MENA countries, by gender, with global comparisons

	Male opportunity (as % of male TEA)	Female opportunity (as % of female TEA)	Male necessity (as % of male TEA)	Female necessity (as % of female TEA)
Egypt	60.5 <sup>a</sup>	63.1	32.9	26.7
Iran	61.7	66.8	36.6	29.0
Jordan	71.7	56.2	24.0	36.8
Lebanon	55.7	59.8	40.7	37.2
Morocco	71.3	74.6	28.7	25.4
Qatar	80.4	94.4	11.5	5.6
Saudi Arabia	91.2	94.1	8.5	5.9
Tunisia (2015)	80.8	75.1	16.9	21.1
UAE	62.4	59.4	26.8	38.5
Average (MENA)	70.6	71.5	25.2	25.1
<i>Regional averages</i>				
Africa	71.6	64.0	24.6	32.8
Asia & Oceania	75.2	75.4	21.7	21.4
Latin Amer- ica & Caribbean	73.9	66.0	23.2	31.6
Europe	76.9	72.2	20.0	24.8
North America	83.3	84.2	12.7	13.1

<sup>a</sup>Read as: 60.5% of male early-stage entrepreneurs in Egypt in 2016 were opportunity-motivated

Table 4 indicates that the MENA region follows the general GEM pattern with respect to the influence of age on entrepreneurial behavior. Egypt and the United Arab Emirates are exceptions: Egyptians display almost identical levels of entrepreneurial participation in the first three age cohorts, while in the UAE peak entrepreneurial activity—by a substantial margin—is in the 45–54 year age cohort.

Entrepreneurial activity among 18–24 year olds is highest in Lebanon (double the regional average) and Egypt; the UAE and Morocco report very low TEA activity (3% or less) in this age group. The relatively low prevalence of entrepreneurial activity in the 18–24 age cohort in the MENA region as a whole is in line with general GEM trends—however, the low levels of entrepreneurial activity among the youth is of concern in the context of the high level of un- and underemployment among this age group. The International Labor Organization notes in its *World Employment and Social Outlook—Trends 2017* that tackling joblessness among youth in the MENA region will remain a particular challenge. Active youth remain almost five times more likely to be unemployed than their adult counterparts, experiencing an unemployment rate of above 31% in 2016, against 6.8% among adults. In North Africa, youth unemployment is more than three times higher than

**Table 4** TEA rates by age group in the MENA countries, with global comparisons (% of adult population in each age category involved in TEA)

	18–24 years	25–34 years	35–44 years	45–54 years	55–64 years
Egypt	16.2 <sup>a</sup>	17.7	15.4	9.3	5.5
Iran	11.3	18.3	13.0	7.8	6.1
Jordan	6.0	9.0	10.3	8.4	7.0
Lebanon	18.7	27.6	28.2	14.8	12.0
Morocco	3.2	8.4	7.1	4.5	3.5
Qatar	6.3	8.3	8.8	6.0	7.4
Saudi Arabia	11.7	14.3	10.0	9.7	4.9
Tunisia (2015)	6.5	14.9	10.1	10.6	4.4
UAE	2.6	4.6	6.3	11.4	5.5
Average (MENA)	9.2	13.7	12.1	9.2	6.3
<i>Regional averages</i>					
Africa	20.6	26.0	24.0	21.4	16.0
Asia & Oceania	8.0	13.5	12.3	10.4	7.3
Latin America & Caribbean	16.3	23.2	22.9	18.4	13.3
Europe	8.1	11.4	9.7	7.8	5.0
North America	12.6	19.0	18.1	14.0	9.0

<sup>a</sup>Read as: 16.2% of 18–24 year olds in Egypt in 2016 were engaged in early-stage entrepreneurial activity

adult unemployment, with a gap of almost 20 percentage points.<sup>2</sup> There is no simple solution to the youth un- and underemployment challenge, but it is critical to identify and explore factors which to contribute to strategies that enable economies to benefit from the talents, energy and ideas that young people bring to the labour market. Important elements of such strategies include education and skills development as well as entrepreneurship development.

Senior entrepreneurship (55 years and older) is low in the majority of the MENA countries. Lebanon has the highest TEA rate in this age cohort (double the regional average). In Jordan, seniors are more likely to be involved in entrepreneurship than are the 18–24 year olds; Qatar also shows a positive level of entrepreneurial activity by seniors. Higher levels of entrepreneurial activity in this age category may be as a result of older workers who are made redundant, and are aware that they are likely to face insufficient prospects on the job market. Such individuals will start a business because it is their best chance of finding employment and overcoming age discrimination in hiring practices. An additional driver for unemployed individuals in this age group may be the need to supplement their retirement savings or because their pension is not sufficient to maintain their current standard of living. On the other hand, these may also be mature individuals who have had to put personal goals and dreams on hold when younger because of family obligations. They may now have

<sup>2</sup>[http://www.ilo.org/global/research/global-reports/weso/2017/WCMS\\_541211/lang--en/index.htm](http://www.ilo.org/global/research/global-reports/weso/2017/WCMS_541211/lang--en/index.htm)

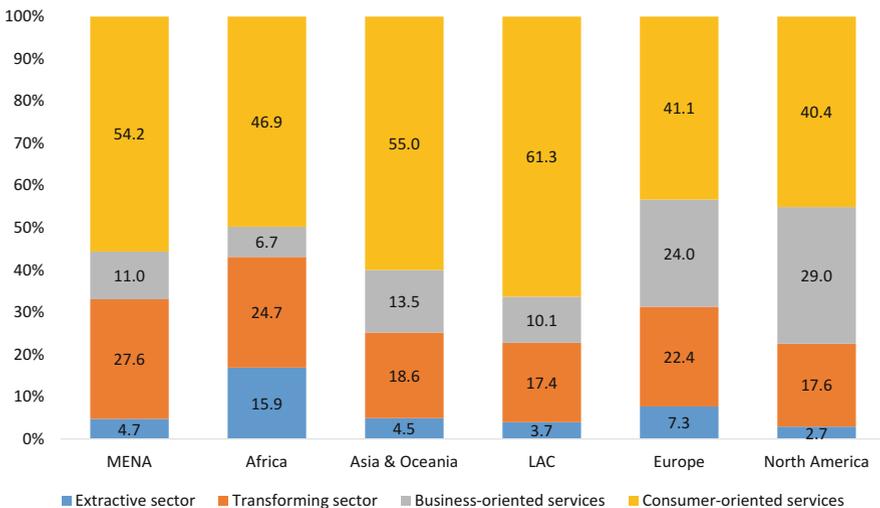
the necessary resources as well as freedom to pursue their passions and work on their own terms.

### 3 Entrepreneurship Impact Characteristics

In studying the impact of entrepreneurs, GEM recognizes that while all entrepreneurs are important, they have differing impacts on their societies. Key to economic development and growth are job creation, mix of industries and level of innovation. This section focuses on these factors with respect to the MENA countries.

#### 3.1 Industry Sector Participation

Figure 1 shows the distribution of early-stage entrepreneurial activity, according to industry sector participation, for the geographic regions. The extractive sector is based on natural resources and includes agriculture, forestry, fishing and mining; the transforming sector involves the manufacturing of goods and is generally capital-intensive, but it may also be labour-intensive, including construction, manufacturing, transportation, communication, utilities and wholesale distribution; business services target the business customer and generally rely on greater knowledge intensity, which includes finance, insurance and real estate; and the consumer sector serves customers directly through products and services that include retail, motor



**Fig. 1** Geographical region averages for TEA by industry sector

**Table 5** Distribution of TEA by industry sector in the MENA countries

	Agriculture	Mining	Manufacturing & transportation	Wholesale/ retail	ICT & finance	Professional & other services
Egypt	13.0 <sup>a</sup>	3.8	18.6	50.3	1.8	12.5
Iran	7.5	4.4	21.2	33.0	8.3	25.7
Jordan	5.2	3.3	13.7	63.0	1.6	13.2
Lebanon	3.0	2.4	6.7	64.9	1.9	21.3
Morocco	2.1	0.7	22.5	58.2	0.9	15.7
Qatar	0.2	8.6	4.9	51.8	11.4	23.1
Saudi Arabia	0.2	1.7	2.9	68.3	2.2	24.7
Tunisia (2015)	9.6	25.5	11.0	28.0	3.0	23.0
UAE	0.0	9.8	6.1	66.9	5.3	11.9
Average (MENA)	4.5	6.7	11.9	53.8	4.1	18.9

<sup>a</sup>Read as: 13.0% of TEA activity in Egypt in 2016 was in the agriculture sector

vehicles, lodging and restaurants, personal services, education and recreational services.

The MENA region as a whole has a relatively balanced profile in terms of industry sector participation: just over half of the early-stage business activity in the region is in the consumer services sector, while the transforming sector shows the highest activity of all the geographical regions (28%). The proportion of business services oriented entrepreneurs is on a par with Asia & Oceania and the LAC region.

Table 5 shows a more detailed distribution of early-stage entrepreneurial activity in the MENA region according to industry sector. On average, just over half of all early-stage entrepreneurs in the region are active in the wholesale/retail sector. Saudi Arabia, the United Arab Emirates and Lebanon have the highest proportion of TEA activity in this sector—two-thirds of early-stage entrepreneurs in these countries are in wholesale/retail. Barriers to entry in this sector, in terms of both skills and capital required, are low. As a result, however, this is often an over-traded sector populated by low profit margin businesses. The high level of competition for limited markets can threaten the sustainability of these businesses. Another factor to bear in mind is that the consumer services sector tends to be particularly vulnerable in periods of economic slowdown. Saudi Arabia and the UAE have the lowest rates of established business ownership in the region (Fig. 3, in Chap. 3). The fact that a high proportion of TEA entities are concentrated in such a vulnerable sector is likely to exacerbate the poor sustainability of start-ups in these countries.

Tunisia and Iran have the lowest proportion of TEA activity in the wholesale/retail sector. Iran has a particularly balanced industry profile, with robust participation in manufacturing & transportation, as well as the professional and other services sector. Iran also reports the second highest proportion of early-stage entrepreneurs in

the ICT & finance sector. Morocco and Iran have the highest involvement in manufacturing and transportation—double the regional average—while mining accounts for a quarter of Tunisia’s early-stage entrepreneurial activity (almost four times the regional average). Saudi Arabia has a particularly unbalanced industry profile, with more than 90% of entrepreneurs concentrated in wholesale/retail and professional/other services. Saudi Arabia has the highest proportion of entrepreneurs in the health/education/government and social services (22%).

The most resilient sectors tend to be communication, financial services and information technology (IT). Jobs in these sectors comprise the type of high-level skills that countries need to compete in the global economy. Qatar is the only country in the region with more than 10% of early-stage entrepreneurs in ICT and finance, and this is the industry sector with the lowest average for the region. Further development of the services sector—especially sophisticated, high-productivity modern services such as finance, ICT and business services—is thus important, particularly in enabling the MENA region to participate in global value chains.

### 3.2 Job Creation

A key focus in most countries’ development strategies is to facilitate growth that is sustainable and inclusive in order to generate widespread employment and to reduce poverty. The potential of the SME sector to create job opportunities is thus a crucial factor.

GEM asks early-stage entrepreneurs how many employees (other than the owners) they currently have and expect to have in the next 5 years. The difference between current and expected employees indicates growth expectations. It is important to note that the expressed growth potential has, as yet, not been tested—however, businesses that do not aspire to grow are significantly less likely to do so successfully.

Table 6 indicates the growth expectations, over the next 5 years, among the MENA region’s entrepreneurs. Growth expectations represent a future assessment of the expansion prospects for a business, as well as an entrepreneur’s ambitions to grow the enterprise.

The MENA region as a whole has a relatively high proportion of entrepreneurs who do not expect to create any new jobs in the next 5 years. The *2016/17 GEM Global Report* notes that this is a global phenomenon—there is very little difference, across the three phases of economic development, in terms of the proportion of entrepreneurs who do not anticipate creating any jobs in the next 5 years. The efficiency-driven economies have, on average, slightly more non-employer entrepreneurs (46%) while the factor- and innovation-driven economies are on a par at 44%.

The *GEM Global Report* argues that the relatively high levels of entrepreneurs across all development phases with no future hiring expectations indicates that there are a number of factors which have an impact on entrepreneurs’ growth ambitions.



**Table 6** Job growth expectations for early-stage entrepreneurs in MENA countries, with global comparisons

	0 jobs in 5 years	1–5 jobs in 5 years	6 or more jobs in 5 years
Egypt	55.3 <sup>a</sup>	19.3	25.4
Iran	44.4	26.9	28.7
Jordan	39.1	50.9	10.0
Lebanon	52.4	39.9	7.7
Morocco	41.5	40.8	17.7
Qatar	22.8	25.7	51.5
Saudi Arabia	85.8	8.9	5.3
Tunisia (2015)	19.0	40.9	40.1
UAE	52.9	16.4	30.7
Average (MENA)	45.9	30.0	24.1
<i>Regional averages</i>			
Africa	26.4	53.9	19.7
Asia & Oceania	45.1	32.0	22.8
Latin America & Caribbean	41.9	40.3	17.8
Europe	47.4	30.6	21.9
North America	41.0	34.0	25.0

<sup>a</sup>Read as: 55.3% of early-stage entrepreneurs in Egypt in 2016 expect to create no new jobs within the next 5 years

Sophisticated technology and communications may enable entrepreneurs, particularly in developed economies, to operate on their own, perhaps as part of a broader value network. Other factors such as types of businesses started, rigid labor regulations, poor availability of skilled/educated labor and limited access to entrepreneurial finance may deter entrepreneurs from attempting to grow their ventures. In addition, in some legal contexts business owners may choose to remain small as they are then better able to avoid the complexities (such as taxes and other legal requirements) of formalization.

Just over half of entrepreneurs in the MENA region expect to add at least one new job. An encouraging finding is that the MENA region has one of the highest proportions of medium-to-high growth entrepreneurs (i.e. those projecting to employ six or more people in the next 5 years). In both North America and the MENA region, a quarter of entrepreneurs exhibit these higher-growth aspirations.

At the individual country level, the MENA region shows divergent results in terms of job creation aspirations. Over 80% of entrepreneurs in Saudi Arabia have no future hiring expectations; in Tunisia and Qatar, on the other hand, only a fifth of entrepreneurs anticipate creating no new jobs in the next 5 years. Qatar has the highest high-growth expectations, with half of the entrepreneurs in this country expecting to create six or more new jobs in the next 5 years. Tunisia and the United Arab Emirates also have robust high-growth expectations—which may be linked to the high levels of opportunity-motivated entrepreneurship in these three countries. These job-creation aspirations must, however, be seen in the context of the MENA

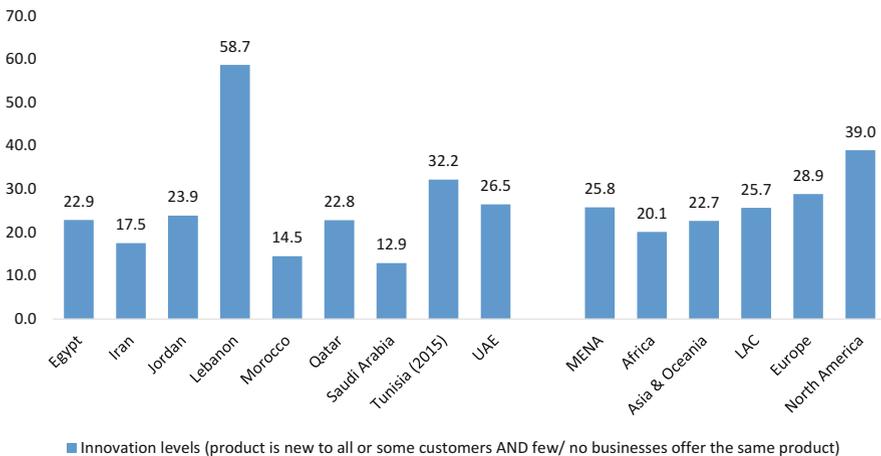
region's low established business rate—which needs be addressed if these economic benefits are to be realized.

### 3.3 Innovation

Innovation and entrepreneurship are closely connected concepts. It is argued that entrepreneurs disrupt market equilibrium by introducing new product-market combinations into a market, teaching customers to want new things and driving out less productive firms as their innovations advance the production frontier. Innovation goes beyond just creating novel products and services. To commercialize their innovations, entrepreneurs need to identify new market niches and develop creative ways to offer, deliver and promote their products. All of this requires an awareness of competitive offerings, and the ability to incorporate this knowledge into distinct products and services. Innovation capabilities are thus important to economies' ability to become competitive, particularly in higher-productivity sectors.

Innovation represents newness to a market and within an industry. GEM thus assesses the extent entrepreneurs are introducing products or services that are new to some or all customers, and that are offered by few or no competitors.

The MENA region exhibits a relatively positive level of innovation, with a quarter of early-stage entrepreneurs in the region offering products that are new to all/some customers AND offered by few/no other businesses (Fig. 2). This level of innovation is on a par with Latin America & the Caribbean, higher than for Africa and Asia & Oceania, and only marginally lower than for Europe.



**Fig. 2** Innovation levels among early-stage entrepreneurs in the MENA countries, with global comparisons

At the individual country level, Lebanon reports the highest innovation levels by a substantial margin (more than double the regional average). Lebanon has the highest TEA and established business rates in the region (double and triple the regional average, respectively)—the high levels of innovation are therefore particularly encouraging. However, the high proportion of Lebanon's TEA activity in the wholesale/retail sector, as well as the high levels of necessity-driven entrepreneurship (for both genders), must be taken into account when assessing these innovation levels.

At the other end of the scale, Saudi Arabia reports the lowest levels of innovation—only half the regional average. As already discussed under the section on industry sector, TEA activity in Saudi Arabia is heavily concentrated in the consumer services sector, particularly in wholesale/retail. Although crowded competitive spaces may stimulate entrepreneurs to come up with novel options in order to compete successfully, and potentially lead to increased efficiency in the markets, they also increase the pressure on profit margins and lead to problems with business sustainability.

Innovation in entrepreneurial businesses can also be assessed by determining the use of new technologies by the business. For businesses to become competitive, develop relationships with customers and suppliers and have easier access to business-related information, it is important that they have access to technology as well as have the capacity to use it effectively. Table 7 depicts the degree to which businesses in the MENA region incorporate new technology into their products and services.

An encouraging finding is that the MENA region has a high technology orientation. Compared to the other geographical groups, the MENA region tops the ranks, by a substantial margin, in terms of the use of both latest and new technology. Only a third of entrepreneurs in the region, on average, use no new technology.

At the individual country level, Morocco stands out with respect to use of the latest technology—almost three-quarters of entrepreneurs in this country use technology that has only been available since the previous year. A mere 5% of Moroccans use no new technology. Tunisia and Lebanon also exhibit a high technology orientation, with over 60% of entrepreneurs in these two countries having access to latest technology. Lebanon and Tunisia also report the highest innovation levels among the MENA countries (Fig. 2). Iran, on the other hand, lags conspicuously with only 4.5% of entrepreneurs using latest technology, while a substantial majority of entrepreneurs (79%) use no new technology. The lack of up to date technology negatively affects the capacity for countries to develop globally competitive networks of entrepreneurs, which in turn limits access to individuals with a broader knowledge of key market information, new technology, improved inputs and production practices.

**Table 7** Use of new technology by early-stage entrepreneurs in MENA countries, with global comparisons

	Uses latest technology (only available since last year)	Uses new technology (1–5 years old)	Uses no new technology
Egypt	22.1 <sup>a</sup>	30.9	47.0
Iran	4.5	16.6	78.8
Jordan	40.8	29.5	29.6
Lebanon	60.4	30.8	8.8
Morocco	72.0	23.0	5.0
Qatar	33.2	28.4	38.4
Saudi Arabia	15.5	40.2	44.3
Tunisia (2015)	64.0	20.4	15.6
UAE	23.4	28.4	48.2
Average (MENA)	37.3	27.6	35.1
<i>Regional averages</i>			
Africa	12.2	14.4	73.4
Asia & Oceania	17.5	24.2	58.3
Latin America & Caribbean	9.7	17.1	73.2
Europe	15.1	20.0	65.0
North America	13.4	21.5	65.2

<sup>a</sup>Read as: 22.1% of early-stage entrepreneurs in Egypt in 2016 used latest technology in their businesses

## 4 Entrepreneurs' Stories

### 4.1 Noora Bu-Helaiqua (Qatar)

Noora Bu-Helaiqua was a Qatari communications manager in one of the leading organizations in Qatar when she noticed the lack of local PR agencies. After studying the market, she concluded that there was a gap in this service. “Despite a number of pessimistic comments, I decided to take the chance and quit my job to start the agency,” Noora recalls.

She founded Qommunication in 2015 in the Qatar Business Incubation Centre (QBIC). The agency’s main target was to serve the large SME sector with public relations, marketing and social media solutions. Qommunication sought to provide the highest level of PR standards to companies whose annual turnover was between 10 and 20 million. The agency’s main services were to act as a communication department for SMEs, and to manage long/medium length campaigns to boost brand awareness, positioning and sales.



Initially, the agency remained selective of its clients, using word of mouth as its marketing tool. They quickly acquired a stake in market share due to positive recommendations and the bundle packages they offered.

Within the first months of operations Noora noticed another trend—namely social media influencers (SMI)—and quickly adopted it into the agency. “We identified and recruited a number of social media influencers in various sectors (food, travel, fashion, and technology) and helped them grow in popularity, before signing them up with endorsement deals with brands,” says Noora.

Qommunication benefited as the first mover in the market as a SMI management agency and created a unique model which served the influencer, the brands and the agency itself. It has become the preferred choice for social media influencers: its clients include Starwood hotels, Ooredoo, Vocheron Constantine, and Samsung, among others.

One of the factors which contributed greatly to the agency’s success was its quick adaptation to market needs. Noora has been shortlisted in the MEPRA awards (Middle East Public Relations Awards).

Qommunication is now in the scale-up phase, expanding outside Qatar and focusing on social media management with the goal of becoming the leading agency in that field. Noora also acts as a consultant for Qatar Development Bank, consulting SMEs on marketing needs. Qatar Development Bank has, in fact, recognized the importance of marketing for SMEs and has subsequently launched “Es teshara” marketing.

#### ***4.2 Arab Excellence and Bezeo (United Arab Emirates)***

Arab Excellence is a non-profit organization that offers youth in the MENA region inspirational empowering programs that take into consideration the unique daily

challenges they face, and provide them with opportunities to realize their full potential and excel in their respective professional fields. To do so, Arab Excellence aligns with industry leaders and role models from across the Arab world and enables them to share their personal success stories, lessons learned, and best industry practices with the region's youth. This encounter with role models from the region to whom they can relate culturally provides a tremendous amount of inspiration and empowerment to the youth, and inspires them to pursue their dream. Arab Excellence empowers youth by helping them set a concrete vision for themselves and build a concrete roadmap to achieve it. Arab Excellence also provides the region's youth with on-going mentorship and a professional network to utilize as they identify and implement their professional vision, roadmap and action-plan.



Alongside the UAEU-SIP, Arab Excellence partners with reputable companies and foundations from around the world including the J.P. Morgan Foundation and the Abraaj Group. As well as launching several of its own successful programs in the UAE, Saudi Arabia and Morocco, Arab Excellence's youth-focused training programs have also been delivered through institutions in MENA and globally including INSEAD, Stanford University, the UAEU-SIP and the Moroccan Stock Exchange (for underprivileged Moroccan students). The organization has also successfully developed and delivered programs for young Saudis at Effat University, Al Faisal University, and at the Al Ghad and Al Birr Foundation.

Hamza Chraibi, the organization's Founder and General Manager, left a career in investment banking to build Arab Excellence. He continues to grow the organization and the reach of its programming across the region, and has addressed the topic of youth empowerment at a number of regional and international events, including the United Nations Forum in China, the Bosphorus Summit in Istanbul, The OECD Annual Committee in Paris, HEC Paris, and the American University of Beirut, among others.

Today, Arab Excellence and its partner the UAEU-SIP are delighted to showcase many youth and female empowerment success stories. An inspiring example is Bezeo (<http://bezeo.ae>), a start-up co-founded by four UAE women engineers originally enrolled in the UAEU-SIP incubation program and subsequently mentored by Arab Excellence. Bezeo has developed an environmental friendly carpet, which harvests electrical energy from different movements. Excitingly, Bezeo was a finalist in a start-up movement pitch competition at GITEX 2017, and was also invited to apply to the Emirates Energy Award in 2017. Recently, Bezeo won the MENA Global Impact Challenge of Singularity University and was selected to their transformational Global Solutions Program, a 9-week immersive residential experience at their campus at NASA Research Park, California.



### ***4.3 Mai Medhat (Egypt)***

Mai Medhat is a young woman whose story went viral, and is now recognized as a role model for entrepreneurs in the Middle East and North African as well as for bringing global attention to Egypt's growing technology and entrepreneurship ecosystems. Mai is a proof that Egypt has young and talented entrepreneurs who are eager to etch their names in history.

CEO Mai Medhat and CPO Nihal Fares caught the entrepreneurial bug while studying computer engineering as undergraduates. They bonded while working

together on their graduation project, a mobile solution for traffic congestion. This enterprise did not take off, but the two decided to continue working together on other ventures. After the Revolution, they attended the first Start-up Weekend Cairo to join the movement of entrepreneurs eager to transform activism into innovation. They were reinvigorated by the event, but it did have several roadblocks—the event’s organizers struggled with logistics and planning. In 2011, the two women launched Eventtus as the first platform to ease pain points for both event organizers and attendees. Eventtus developed an instant social network platform for events, aiming to mobilize events and maximize networking opportunities for attendees by providing a single app for all the events, that would keep attendees informed about agendas, speakers and live announcements as well as increasing interactions and social buzz around events. “The idea came to my mind when I found that there was a gap between organizers of events and people attending the event. A lot of information, businesses and networking might be missed because there was no one platform that connected the two sides with each other,” says Mai.



Mai’s company has grown in the past 4 years and has succeeded in targeting big event organizers like those of the Harvard Arab Weekend in the USA, DMG events, the ArabNet and RiseUp Summit. She is currently working with Dubai Expo 2020. In no time after it launched in Egypt, Eventtus took the first steps towards expansion and opened its first office in Dubai. Since then, Eventtus has become a partner to entrepreneurship events in the Middle East. More than 800 organizers have used the application to manage more than 7500 events.

In Silicon Valley, Mai joined a panel discussion on stage at the Global Entrepreneurship Summit. The panel was moderated by Barack Obama, and the panelists were Mai, Mark Zuckerberg, and two entrepreneurs from Tanzania and Peru. “IT was an amazing experience,” says Mai. “Obama spoke directly to me about the



difficulties that are part of starting your own business, especially for women, young people and minorities. He said to me, ‘You deserve the same chance to succeed as everybody else.’”

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# The MENA Region National Entrepreneurial Framework Conditions



Ayman Ismail, Thomas Schøtt, Abbas Bazargan, Basheer Salaytah, Hamad Al Kubaisi, Majdi Hassen, Ignacio de la Vega, Nihel Chabrak, Abier Annan, Mike Herrington, and Penny Kew

## 1 The National Experts Survey

The GEM model explicitly acknowledges that particular environmental factors (social, cultural, political and economic) are influential in creating unique business and entrepreneurial contexts. Annually, each economy participating in the GEM cycle surveys at least 36 key experts or informants. The National Experts Survey (NES) is similar to other surveys that capture expert judgments to evaluate specific national conditions. For example, the World Economic Forum's *Global Competitiveness Report* and the World Bank's *Ease of Doing Business Report* use similar surveys to build their indices. However, the NES focuses only on the environmental features that are expected to have a significant impact on the entrepreneurial sector, captured in the nine Entrepreneurial Framework Conditions (EFCs) rather than on general economic factors. The nine EFCs are described in Table 1. Although the EFCs can be addressed at any stage of development, these conditions function best in economies with an underlying foundation of basic requirements and efficiency enhancers. For example, it is unlikely that government entrepreneurship programmes will be effective if the country provides inadequate health care and primary education to its population.

The NES questionnaire is standardized for all countries and was carefully designed and refined to capture informed judgments of national key informants in each country, who are specially selected on the basis of reputation and experience. Experts are asked to express their views about the most important conditions which can either foster or constrain entrepreneurial activity and development in their

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**Table 1** The GEM entrepreneurial framework conditions (EFCs)

Framework condition	Description
EFC1: Financial support	The availability of financial resources, equity, and debt, for new and growing firms, including grants and subsidies.
EFC2: Government policies	The extent to which government policies (such as taxes or regulations) are either size-neutral or encourage new and growing firms. There are two sub-divisions: 2a: the extent to which new and growing firms are prioritized in government policy generally; and 2b: the regulation of new and growing firms (taxes and bureaucracy).
EFC3: Government programs	The presence and quality of direct programs to assist new and growing firms, at all levels of government (national, regional, municipal).
EFC4: Education and training	The extent to which each level of the education and training system incorporates training in creating/ managing new, small or growing business entities. There are two sub-divisions: 4a: primary and secondary school entrepreneurship education and training; and 4b: post-school entrepreneurship education and training.
EFC5: Research and development transfer	The extent to which national research and development will lead to new commercial opportunities, and whether or not these are available for new, small and growing firms.
EFC6: Commercial and professional infrastructure	The presence of commercial, accounting and other legal services and institutions that allow or promote the emergence of small, new and growing business entities.
EFC7: Internal market openness	The extent to which commercial arrangements undergo constant change and redeployment as new and growing firms compete with and replace existing suppliers, subcontractors and consultants. There are two sub-divisions: 7a: market dynamics, i.e. the extent to which markets change dramatically from year to year; and 7b: market openness, i.e. market burdens and the extent to which new firms are free to enter existing markets.
EFC8: Access to physical infrastructure	Ease of access to available physical resources—communication, utilities, transportation, land or space—at a price that does not discriminate against new, small or growing firms.
EFC9: Cultural and social norms	The extent to which existing social and cultural norms encourage, or do not discourage, individual actions that might lead to new ways of conducting business or economic activities which might, in turn, lead to greater dispersion in personal wealth and income.

country. The experts are interviewed using both a semi-structured and structured questionnaire. The closed questionnaire consists of several statements relating to aspects of the nine Entrepreneurial Framework Conditions, and the responses are measured using a Likert scale of 1 (highly insufficient) to 9 (highly sufficient). The NES therefore provides insights into the ways in which the EFCs shape the national entrepreneurial climate. The data obtained from the respondents from each of the

**Table 2** Entrepreneurial framework conditions for MENA region

	1	2a	2b	3	4a	4b	5	6	7a	7b	8	9
Egypt	3.9	3.6	3.1	3.3	1.7	3.1	2.8	3.9	5.1	4.0	6.5	4.1
Iran	2.9	3.4	2.6	2.2	2.5	3.2	3.1	3.2	5.0	2.8	6.3	3.6
Jordan	4.1	3.6	3.4	3.7	2.2	3.0	3.8	4.8	5.3	3.8	6.3	4.2
Lebanon	5.0	3.6	3.8	3.9	4.3	5.1	3.9	5.4	4.4	3.8	3.7	6.2
Morocco	3.6	4.2	4.1	3.7	1.9	4.0	2.8	4.7	4.5	3.4	6.6	4.1
Qatar	4.5	5.5	4.7	5.4	4.6	5.8	4.3	5.2	4.5	4.0	6.6	5.4
Saudi Arabia	3.9	3.9	4.0	3.4	2.1	3.7	3.0	3.9	4.8	4.0	6.8	4.6
Tunisia (2015)	4.2	4.1	2.7	3.6	1.7	3.4	2.8	5.8	6.9	2.9	6.7	4.1
UAE	4.4	5.8	5.5	5.6	4.5	4.7	4.2	5.6	5.6	5.0	7.3	6.2
Average (MENA)	4.0	4.2	3.8	3.9	2.8	4.0	3.4	4.7	5.1	3.7	6.3	4.7
Average (GEM)	4.2	4.2	4.0	4.3	3.1	4.6	3.8	4.9	5.0	4.3	6.5	4.8

Weighted average: 1 = highly insufficient; 9 = highly sufficient

1—Entrepreneurial finance; 2a—Government policies: support and relevance; 2b—Government policies: taxes and bureaucracy; 3—Government entrepreneurship programs; 4a—Entrepreneurial education at school stage; 4b—Entrepreneurial education at post school stage; 5—R&D Transfer; 6—Commercial and legal infrastructure; 7a—Internal market dynamics; 7b—Internal market burdens or entry regulation; 8—Physical infrastructures; 9—Cultural and social norms

MENA countries was analyzed in order to determine the mean score for each category of questions (Table 2).

Entrepreneurial activity is an output of the interaction of an individual's perception of an opportunity and capacity (motivation and skills) to act upon this AND the distinct conditions of the respective environment in which the individual is located. An economy cannot increase the quantity and quality of entrepreneurs without creating an enabling environment in which entrepreneurship can flourish. Informed policy decisions which help to create a nourishing entrepreneurial environment will be of benefit to entrepreneurs in all phases of their businesses, be it young start-ups, established or repeat entrepreneurs. An important focus of the NES, therefore, is helping to identify key weaknesses in the entrepreneurial environment, in order to provide policy makers and business leaders with information that enables them to put into place precise, practical and targeted recommendations.

Table 2 indicates that on average, the experts in the MENA region rated school-level entrepreneurship education and R&D transfer as the two main areas constraining entrepreneurship in the region. The *2016/17 GEM Global Report* notes that globally, the weakest entrepreneurial framework condition (with an average value below 4) was school-level entrepreneurship education. The MENA region's low score for entrepreneurship education and training in primary and secondary schools is therefore not unusual but is part of a broader problem that transcends geography as well as stage of economic development. The MENA experts also report average ratings (below 4.0) for government policy (taxes and bureaucracy), government entrepreneurship programs, and market burdens/ entry regulations. In 10 of the 12 entrepreneurship areas assessed, the MENA experts report scores below the GEM average.

Physical infrastructure is the EFC which is ranked most positively, overall, among the MENA countries. With the exception of Lebanon (with a mean score of 3.7) the rest of the countries all rate physical infrastructure as good, with the United Arab Emirates rating it as very good (mean score above 7.0).

The country with the weakest entrepreneurial framework is Iran. Experts in Iran gave only two EFCs mean scores of above 4.0—access to physical infrastructure, and market dynamics. Five EFCs were judged as very weak, receiving mean scores of below 3.0. Iran is the only country in the region with mean scores below 3.0 for government programs and access to finance. Saudi Arabia's experts also regard the country's entrepreneurial framework conditions as generally insufficient—seven EFCs were given ratings below 4.0.

The countries with the most enabling entrepreneurial frameworks are the United Arab Emirates and Qatar—the two innovation-driven economies in the region. In both these countries, all the EFCs receive mean scores above 4.0—in the case of the UAE, seven of the EFCs receive ratings of 5.0 or higher. The United Arab Emirates and Qatar diverge strongly from the regional norm with regard to government entrepreneurship programs, with mean scores above 5.0 (all the other countries have mean scores below 4.0). Another area where a few countries diverge from the regional norm is school-level entrepreneurship education. The majority of the countries rank this EFC as very weak, with mean scores below 3.0; however, the United Arab Emirates, Qatar and Lebanon all have mean scores above 4.0. Qatar and Lebanon also rate their post-school entrepreneurship education positively, with mean scores above 5.0 for this EFC. Cultural & social norms are regarded as a factor fostering entrepreneurship in the United Arab Emirates and Lebanon, with a mean score of 6.2 in both these countries.

## **2 Country-Level Insights into the MENA Entrepreneurial Framework Conditions**

In order to facilitate a deeper understanding of entrepreneurship development within the MENA countries, GEM National Teams were asked to provide information about the entrepreneurial framework in their countries. This could include the way in which people who want to be entrepreneurial would perceive the national framework, in terms of limitations and opportunities; critical focus areas; as well as best policy practices or strategies that the government, NGOs and private sector have introduced to encourage entrepreneurship. Their insights are provided below.

### **2.1 Egypt**

Egypt has a long history of entrepreneurship, dating back decades ago, with entrepreneurs leading a movement of modernization for the economy in sectors such as finance, agri-business, arts and cultural products, tourism, manufacturing, and trade. The modern technology-driven entrepreneurship ecosystem in Egypt started around

a decade ago, with different local and international actors expanding outreach, creating support programs, advocating for reform policies, and establishing a culture for entrepreneurship and innovation. Since then, Egypt's entrepreneurship ecosystem has been growing and improving, with numerous programs and policy interventions addressing some of the major challenges and providing better entry points for entrepreneurs.

*Policy Reforms* Government bureaucracy and red tape have always been criticized as a major impediment for the growth of entrepreneurship. Over the past 2 years, several government agencies have been targeting entrepreneurship as a priority, which resulted in encouraging recent reforms. A new government agency was established to support micro, small and medium enterprises and entrepreneurs, with a mandate of providing training, easing registration, and providing support programs. The Central Bank of Egypt (CBE) mandated banks to dedicate a percentage of their loan portfolio to lending to SMEs, based on a clearly defined scale. A new licensing law was recently approved, reducing the licensing burden on MSMEs and accelerating the process. In general, reform initiatives are focusing on: access to finance, licensing and registration, education, and support programs. The effect of these new programs is not clear yet, but is likely to create a boost for entrepreneurship over the next years.

*Support Organizations* Over the past 5 years, a small number of support organizations providing outreach, awareness, acceleration and incubation services for start-ups has emerged. While their reach and focus were limited (mostly to early-stage technology start-ups in Cairo), these organizations and programs had a positive demonstration effect for other stakeholders, triggering a wave of support for building many other similar programs. Last year, several similar programs were initiated, driven by government, international donor organizations, universities and NGOs. These programs promise to provide a broader reach to other locations beyond Cairo, as well as other industries and stages of entrepreneurial development.

*Access to Finance* Start-ups and MSMEs have often identified the limited access to finance, both in the form of equity or debt, as a key constraint for their launch and growth. The top source of funding has consistently been personal funds of the entrepreneurs, or funds from family and friends. Banks have rigorous requirements for debt financing that makes them often inaccessible, especially with rampant informality within a large section of the economy. Venture funding is not traditionally known in Egypt, although is now starting to grow rapidly.

Over the past 3 years, a number of initiatives by government, donors, and financial services firms have started to target reforms in this area. As the CBE mandated an increased portfolio of lending to MSMEs, banks are developing new tools for credit rating, and building new subsidiaries specialized in venture capital and microfinance. Government and international funders are supporting a number of these initiatives to establish these sectors and create track records, new tools, and local know-how.

*Education* Entrepreneurship education (and business education in general) has been lacking, and often identified as the top priority in GEM surveys. Basic, vocational and university education provide little content on business and entrepreneurship; and teaching pedagogy does not encourage entrepreneurial behaviors through experimentation and self-learning. Improvements in entrepreneurship education are coming from two paths. First, a number of civil society-driven programs targeting entrepreneurship awareness and education have been emerging, providing energy and awareness of the sector among youth, especially within universities. Second, the Ministry of Education is starting several programs to introduce entrepreneurship and business education into the national curricula, in high schools, universities and vocational training. This process will take several years until entrepreneurship is fully embedded in the curricula, and even more until the impact of these initiatives is realized; however, it provides energy and optimism among youth, and in the market in general, with positive spillover effects into society at large.

*Infrastructure* Different sectors have basic infrastructure requirements that are considered a necessary minimum to enable this sector. Egypt has a reasonably competitive infrastructure, whether in terms of physical infrastructure (roads, ports, electricity) or digital infrastructure (telephony and Internet connectivity, access and speed). During the period 2013–2015, political turbulence caused a rapid deterioration in the infrastructure; however, significant government investments through an emergency plan managed to restore the basic infrastructure availability over the past 2 years. Today, Egypt is making significant investments in modernizing its road network and other physical facilities; however, Internet speed is always criticized as lagging, despite broad access across most geographies.

*Culture* An open culture that encourages innovation, risk-taking and experimentation is a key ingredient for an entrepreneurial culture. Traditionally, employment culture in Egypt has been highly conservative, valuing safe jobs in government or large corporations as opposed to risk taking in an entrepreneurial venture. This has recently started to change, albeit slowly, with a more connected, urbanized and internationalized youth generation that is learning and experimenting. With the decline of the government as the employer of choice, private sector employment and entrepreneurship are emerging, with media and education playing a major role in changing this conservative culture.

## **2.2 Iran**

The business environment in Iran illustrates diverse facets of the complexities and, at the same time, uncertainties faced by start-ups, early-stage businesses and even established enterprises. The Iranian economy, being in transition from a factor-based economy to an efficiency-driven economy, also comprises a wide spectrum of start-ups, knowledge-based firms and technology-based entrepreneurship, which all need institutional support.

*Access to Finance* In order to provide the necessary institutional support, the Iranian government plans to pursue specific policies to financially support entrepreneurial activities and development of knowledge-based enterprises. The Innovation and Development Fund is an outstanding example of such governmental sponsorship. This fund, which is headed by the Vice-President for Science and Technology, was created under the provisions of the 2011 Law and Executive Regulations thereof, entitled the Law Supporting the Companies and Knowledge-Based Firms and Commercialization of Innovations and Inventions. The main objective of this fund is to provide capital for the launch of knowledge-based firms. In 2015, the Innovation and Development Fund financed 877 projects for an amount totaling \$170,176,625 (circa 5,445,652,000,000 rials) with low interest rate bank loans.

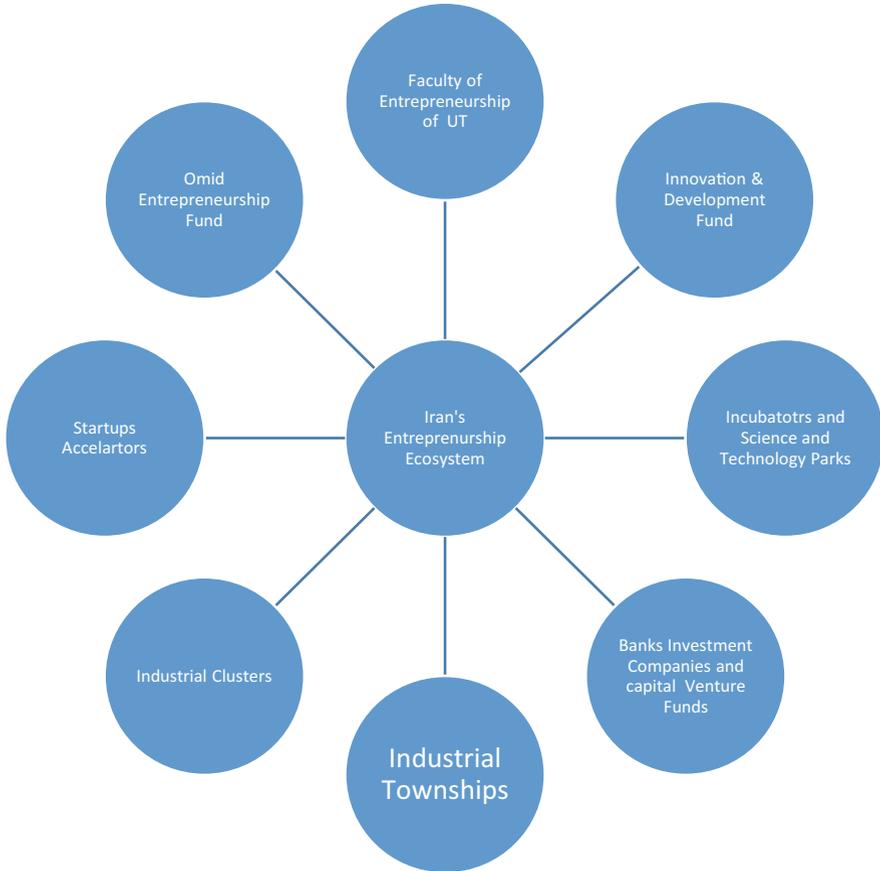
A second fund, the Omid Entrepreneurship Fund, supports SME enterprises including home-based and rural business. It provides loan facilities (at the interest rate of 4%) with the aim of creating jobs for home-based economies, self-employment and employer firms where it is critical for people to engage in their own employment. The main strategy of this second fund is to bolster micro-business through the microfinance structures. Upon consideration of the borrowers' applications, this Fund will finance each micro-business plan up to a maximum of 300 thousand dollars (Rls 1,000,000,000). The Omid Entrepreneurship Fund's policy to financially support entrepreneurs involved in micro business can be summarized as follows:

1. to support market-oriented products, with a focus on marketing orientation and funding schemes;
2. to support charity institutions with a leaning towards entrepreneurial activity and job creation;
3. to develop the micro-financial institutions, specifically with regard to the value chain, by creating local micro and product funds.

It is noteworthy that the Omid Fund has provided over 43,000,000,000 rials in loan facilities across various sectors during the past three and half years. The growth rates in sectors such as services, industry and agriculture have reached 56%, 22.7% and 34.8% respectively. Additionally, the Omid Fund has provided over Rls. 50,143 billion, which represents a 78% increase, in loans for rural entrepreneurship. These initiatives have contributed meaningfully to the business growth rate in Iran.

*Support Initiatives* In parallel with these two funds, start-up accelerators are rapidly springing up in Iran. Currently, there are roughly 58 accelerators throughout the country. A number of them, such as Avatech Accelerator and Diamond Accelerator, are based at the University of Tehran. Encouragingly, the conventional business centers and science and technology parks are also operating as supportive infrastructures for the launch of early-stage businesses or newly-established firms. By the end of 2016, about 177 incubators were operating across the country, compared to only 33 incubators in 2014. Most of these incubators are based in and affiliated to the science and technology parks in the country-wide universities (Fig. 1).





**Fig. 1** Key elements of the Iranian entrepreneurship ecosystem

*Education and Youth Entrepreneurship* In order to promote individuals' entrepreneurial behavior, it is necessary to establish training centers for the general public and, in particular, for the young potential entrepreneurs from among students and alumni. In Iran, the Faculty of Entrepreneurship was established as the first educational entity in the Middle East and North Africa (MENA Region) in 2008. This Faculty has since offered entrepreneurship education and training for over 1000 graduates at master level. The prevalence rate of entrepreneurial activities by the students and alumni has been about 22.5%.

Additionally, the Faculty of Entrepreneurship has conducted and developed extra-curricular activities in the form of lectures by successful entrepreneurs and a launch of start-ups at the University of Tehran and other universities across the country titled UT Let's Start. Through this initiative, entrepreneurship graduates are encouraged to launch new businesses as e-business; the top national entrepreneurs,

entrepreneurial leaders and Omid Entrepreneurship Fund are also persuaded to financially support the graduates with low interest rate loans to facilitate their attempts at launching start-ups.

In another initiative to stimulate youth entrepreneurship, the Faculty of Entrepreneurship has initiated and implemented a practical project named Kashef Program, in cooperation with the Ministry of Education. The main objective of the Kashef Program is to identify, measure and evaluate the talents and capabilities of high school students who will very likely become future entrepreneurs in the country. The statistical records indicate that so far, over two million high school students have received entrepreneurship training under the Kashef Program.

### 2.3 *Jordan*

In terms of the national labor force, SMEs in the public sector account for up to 4137 workers. The largest proportion are in medium-sized enterprises and account for about 82% of the total national labour force in the public sector. The largest percentage of the Jordanian labour force is concentrated in micro enterprises, which account for 55% of the total Jordanian labor in the private sector. About a quarter of the total Jordanian labor force is in the private sector, comprising small establishments concentrated in the wholesale and retail trade, manufacturing and education sectors (29%, 18% and 12% respectively).

*Women in Entrepreneurship* A key focus area in Jordan is the development and facilitation of entrepreneurship among women. Over the period 2009–2016, female entrepreneurial intention as a percent of total adult population has been decreasing, as have self-employment and business ownership among women. The established business ownership rate has dropped to 2.7% (compared to 5.3% in 2009). The Jordanian female TEA rate is the lowest compared to the Arabian countries, as only 3.3% of the female population aged 18–64 are engaged in starting a business or have recently started one. In 2016, the average female for Arabian countries was 7.4%.

The high rate of unemployment among educated women is a particular concern. 76% of unemployed women are educated, many of them possessing a university degree. These educated women report that there are no appropriate jobs or opportunities for them. They are seeking jobs in the educational sector, human health and social work activities, and public administration. Most of the job opportunities in the mentioned activities are located in the capital, Amman, with an average income between 200 and 500 JOD. These jobs are favoured by women because they provide employment benefits such as maternity leave, social insurance, and medical insurance. Employment benefits such as health care, family leave, pensions, and job protection have a significant impact on the Jordanian TEA, which will consequently reduce preferences for entrepreneurship. Educated women in governorates have fewer opportunities than those who are living in Amman. Research shows that women's choice of employment is heavily influenced by having a job in the same area of residency. With an average income of between 200 and 500 JOD and a bad

public transportation system, it is not feasible for these women to obtain a job in the capital.

Women entrepreneurs in Jordan face a number of challenges. They struggle to sustain their businesses due to four main reasons: business being non-profitable, family obligations, access to finance and government policies. Most women cannot provide collateral, and therefore are financing their businesses through personal sources such as savings, friends and family and reinvesting their earnings. Most of the women early-stage entrepreneurs are operating in consumer-oriented services and are providing no new products. In addition their exporting is limited which leads to high competition between local firms. Most businesses, therefore, close because they are non-profitable.

Networking rate for female entrepreneurs in Jordan stood at 18.3% in 2016, which is below the average rate for the Arabian countries by 15.6 percentage points. The perceived capabilities rate for women entrepreneurs is below the average of Arabian countries by 3.7 percentage points, while 42.3% of the female population aged 18–64 years old reported that fear of failure would prevent them from starting a business. It is clear that a low level of self-perception is one of the main barriers that affects starting a business for Jordanian women.

### *Recommendations*

- Increase employment benefits for SMEs and entrepreneurs.
- Promote an entrepreneurship culture among educated unemployed females.
- Implement programs which improve the entrepreneurial perceptions of aspiring women entrepreneurs.
- Provide cash support for working mothers (up to two children) to facilitate their access to childcare services up to the kindergarten level, as article 72 of the Labour Law does not apply to small and medium-sized entrepreneurs.
- Increase micro-financing and loan guarantee programs for women entrepreneurs.
- Allocate more financing for manufacturing projects (especially in both Irbid and Zarqa) in addition to enhancing female skills in related projects.
- Supporting early-stage entrepreneurs for the first three and a half years should be considered.
- Policies should be put in place in order to encourage senior entrepreneurship among women. This age group have the highest capability and ability to start their own businesses. Seniors often have the highest share of steady income among all age groups—this will improve their access to finance in addition to them having the required experience and skills.

## **2.4 Lebanon**

It is well-known that the Lebanese economy is dominated by small, family run businesses, where family loyalty transcends all forms of business imperatives. They are, after all, descendants of the Phoenicians, the greatest traders of their time and the

fathers of modern alphabet. The Phoenician entrepreneurial spirit remained strong through scores of past generations and became firmly rooted in the Lebanese minds. Currently, there is strong social and financial support for entrepreneurial endeavors, including a very effective central bank scheme that provides funding for early-stage entrepreneurs and a growing support ecosystem of incubators and accelerators.

*Culture* Enterprise is held in high esteem in social and cultural norms. As has been previously mentioned in GEM reports, 2016 was a really difficult year to do business in Lebanon, with deepening political stagnation interacting with the continuing fallout from the war in Syria creates an ominous atmosphere which undermines the business confidence that is strongly needed for early-stage entrepreneurs. However, these daunting climates do not seem to have hindered the Lebanese entrepreneurial spirit, for in the same year Lebanon ranked as the top Middle Eastern country in terms of early stage entrepreneurship (TEA), surpassing the likes of UAE, Qatar and Saudi Arabia. It is also worth noting that six out of ten people interviewed for the adult population survey saw a good opportunity to start a business. Lebanese adults already have a strong work preference for owning a business. 40% of those interviewed expected to start a business within the next 3 years, while nearly one in eight were already running a new business and had been paying wages for more than 3 months.

There are numerous Lebanese role models of successful entrepreneurs, including an increasing number of women, and a sizeable diaspora of rich Lebanese entrepreneurs abroad, many of whom are prepared to invest their time and money in Lebanon. The important role that the diaspora plays in the economic development of Lebanon is undisputed. In a report published by the World Bank, remittances from Lebanese expatriates amounted to US\$7.7 billion in 2014, accounting for 17% of total GDP.<sup>1</sup> This figure ranks Lebanon as the 16th largest recipient of remittances globally and the second highest among Arab countries.

*Access to Finance* The cornerstone for the Lebanese entrepreneurial scene was first set in 1998 when the Central Bank of Lebanon (BDL) introduced the subsidized loan program that aims at promoting entrepreneurship. By 2000 Kafalat SAL had been initiated: a financial company that assists small and medium sized enterprises (SMEs) to access commercial bank funding. By early 2013, the government of Lebanon established a funding facility through a loan by the World Bank and managed by Kafalat SAL under the name Innovation in SMEs (iSME). Kafalat's aim with iSME was to encourage the equity investment market to increase the supply of early-stage investment finance for financially viable, new and existing innovative firms. Kafalat's subsidized loans were intended to reduce the burden of financial risk on the individual and therefore promote and support the entrepreneurial spirit.

In the summer of 2013, and after seeing the potential of the knowledge economy and the impact of IT on GDP (\$6 billion by 2019<sup>2</sup>), the Lebanese Central bank

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<sup>1</sup>World Bank—Migration and Development Brief 23.

<sup>2</sup>IDAL—Sectors in Focus.

(BDL) decided to take matters into its own hands and inject \$450 million into the Lebanese knowledge economy, through Circular 331. Circular 331 is a form of equity investment that allows the conservative commercial banks to invest in start-ups directly, or in Venture Capital funds, accelerators and incubators which then invest in the start-ups on their behalf. The Central Bank guarantees 75% of the commercial bank's investment, de-risking it by mitigating the potential losses and reducing them to a mere 25%. In order to benefit from Circular 331, Lebanese entrepreneurs must register their start-up as a joint-stock company (Société Anonyme Libanaise "SAL"). This entails a minimum capital amount of LBP 30 million, or its equivalent of US\$20,000, as well as a minimum of three shareholders. By law, an SAL is obliged to have a head office and operate out of Lebanese territories. This was another mechanism deployed by BDL to increase growth and job opportunities in Lebanon.

To further bolster the ecosystem, and within the framework circular 331, BDL fully guarantees bank investments that fund support initiatives such as incubators and accelerator programs. One such program is the UK Lebanon Tech Hub (UKLTH). Inaugurated in the spring of 2015, this is an international initiative between BDL and the British Government. UKLTH aims to support the entrepreneurship and SME landscape in Lebanon, seeking to increase GDP and create new jobs and sustainable wealth. 77 different companies have passed through the Tech Hub's two previous accelerator cycles, and the currently underway venture-building program, which has contributed to the direct and indirect creation of 800 jobs. With the support of the Tech Hub, the start-ups have managed to secure \$16.5 million in funding and as of 2017, they are valued at \$206 million. In parallel with its venture building program, the UKLTH recently launched the International Research Center (IRC), a program that funds and manages applied research projects with Lebanon based universities and international partners. The projects are fully funded for a period of 3 years via British Government and circular 331 financing.

A recent report published by ArabNet collects and highlights, in numbers, the amount of capital that VCs have invested into the knowledge economy in the MENA region. Mainly due to Circular 331, Lebanon boasts a 0.2% ratio of VC investments as a percentage of GDP. This percentage is higher than that of the UK, China, Canada, UAE and Saudi Arabia. One such example is the Berytech Fund II, a \$50 million Beirut-based venture capital fund to invest in SMEs with high growth potential. The United States Agency for International Development (USAID) and Berytech also announced in April 2015 the official launch of "Insure & Match Capital" (IM Capital), a new \$15 million Investment Fund under MENA Investment Initiative. In January of 2017 Berytech launched Agrytech in collaboration with the Kingdom of Netherlands. Agrytech aims to source top start-ups in the Agri-Food sector and provide them with the adequate resources, be it technical, business or communal support.

*Support Initiatives* The Central Bank's efforts do not stop at just financing—it has also been involved in organizing BDL Accelerate for three consecutive years now. BDL Accelerate is the biggest innovation and entrepreneurship conference in the

MENA region. In 2016, BDL Accelerate gathered Steve Wozniak, co-founder of Apple; Tony Fadell, creator of the iPod, iPhone and founder of Nest; and a collation of other all-star entrepreneurs and experts under one roof with 23,300 attendees for a 3 day conference with keynote speakers, panel discussions, start-up exhibitions as well as multiple hackathons. Another such conference taking place in Lebanon is ArabNet Beirut. Even though this event has now branched out to other MENA countries, it originated in Lebanon. ArabNet Beirut 2016 highlighted digital creativity, entrepreneurship and business, attracted more than 1000 attendees and featured more than 80 speakers from across the MENA region and abroad.

It is also worth noting that the Lebanese entrepreneurial ecosystem has been exponentially growing over the past several years and now offers different business development centers that offer incubation, mentoring, infrastructure support and training for start-ups and entrepreneurs. The majority are privately operated but on some occasions funding can come from BDL or other banks.

*R&D Transfer* Lebanon is also at the forefront of the region's R&D production. Since 2011, Lebanon has been increasing its knowledge production and has recently become on par with Jordan. What is worth noting, however, is that Jordan has twice as many researchers as Lebanon. Lebanon's research is especially impactful in the fields of medical sciences and engineering-related disciplines such as computer science and telecommunications. Another notable figure is the growth in Lebanon's share in global production. There has been a 30% increase between the years 2000 and 2010, and this augments its representation to 0.347 per 1000, a remarkable number considering Lebanon's small size and limited number of researchers (1200 full-time equivalent researchers<sup>3</sup>).

*Education and Youth Entrepreneurship* Much of the workforce in Lebanon is well-educated and well-qualified, with a regular influx of fresh graduates across most disciplines. The strength of the workforce is a result of the strength and diversity of the Lebanese education system. Besides being fluent in Arabic, 54.1% of students learn French as a second language and 45.1% learn English as a second language.<sup>4</sup> Lebanon also boasts three universities that rank in the top 20 of the Arab region.<sup>5</sup>

What is worth noting is that the level of entrepreneurship is highest for the 35–44 age segments (28.2%) and is significantly much less for the 18–24 age segment (18.7%). To ensure the growth of entrepreneurship in Lebanon, policy makers must capitalize on the high rates of intent to start a business and promote entrepreneurship as an option to students. The Lebanese American University is highly aware of the importance of entrepreneurial education and has agreed to be a partner in issuing the GEM 2017 National Report. Other initiatives that bridge the gap between academia

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<sup>3</sup>Hanafi, Knowledge Production in the Arab World, 175.

<sup>4</sup>IDAL—Lebanon at a Glance.

<sup>5</sup>Futao Huang, Martin Finkelstein, *The Internationalization of the Academy* (New York: Springer 2014), p. 126.

and industry have been implemented across several universities, such as Antonine University and the American University of Beirut.

Lebanon is at the center of Europe and Asia, enabling it to be a gateway to foreign markets. We must encourage entrepreneurs to look beyond just Lebanon, and help new small businesses to develop and grow in new markets. One major drawback that Lebanon faces is the quality of the internet, and policy makers need to address this issue and provide the population with cheaper and faster internet connectivity. There needs to be more research and enterprise driven by universities, to keep the entrepreneurial spirit going.

## 2.5 Qatar

Qatar's economy is undergoing a transformation—shifting from a high dependence on hydrocarbon towards a diversified economy, with the focus firmly on growing private industry beyond the energy sector. Fostering the entrepreneurial spirit is fundamental to this shift. The Qatar National Vision 2030 (QNV 2030) aims to “transform Qatar into an advanced society capable of achieving sustainable development.” The planned development goals are divided into four central pillars: economic development, social development, human development and environmental development. Most national efforts to boost and foster entrepreneurial activity fall within the first and third pillars: economic and human development. The combination of ambitious education policies with a nationwide effort to achieve economic diversity, places entrepreneurs at the heart of Qatar's national vision.

*Institutions Fostering Entrepreneurship in Qatar* Qatar's entrepreneurship ecosystem has been stimulated through major institutions such as Qatar Development Bank (QDB), Bedaya Centre, Silatech, Nama and INJAZ which have been established to support entrepreneurs. These institutions provide a range of support services to help entrepreneurs start businesses in Qatar. QDB was founded by an Emiri Decree to expand Qatar's private sector and diversify the economy. It provides financial and non-financial support to SMEs and entrepreneurs. Institutions such as Bedaya Centre, Silatech, Nama and INJAZ are focused on encouraging and inspiring the youth of Qatar to become entrepreneurs. These institutions provide support, education and mentorship primarily to young Qatari nationals.

- Qatar Development Bank (QDB): Since its establishment in 1997, QDB has focused on accelerating growth and encouraging national projects within private sector activities in key economic areas that will generate various economic and social benefits for Qatar's economy in line with Qatar National Vision 2030. QDB seeks to help Qatari manufacturers to expand their industry, and to provide services in the economic fields through the provision of capital, guarantees and advisory services.
- Bedaya Center, a joint initiative between Qatar Development Bank and Silatech, provides Qatari youth with access to a wide range of services including career guidance, self-assessment, employability skills development, entrepreneurship,

mentoring opportunities, volunteering, practical training, networking activities, and lecturer programs. Bedaya Center organizes several basic skills training workshops which help youth start their career in the Qatari labor market, or launch their own business.

- The idea to establish Silatech was born out of a vision of Her Highness Sheikha Moza bint Nasser that supporting the future of Arab youth supports all the Arab society. Silatech supports the start-up and growth of sustainable, job-creating youth enterprises across the Arab World. The organization provided young entrepreneurs with access to finance, business development training, mentorship, and access to new markets.
- The Nama (Empowerment and Entrepreneurship) Centre is a national initiative that promotes entrepreneurship among young people and encourages them to innovate.
- INJAZ Qatar partners together with the local business community, corporate volunteers and educators to inspire and prepare young people to succeed in the global economy. INJAZ Qatar is a member of Junior Achievement Worldwide (JA), the world's largest organization dedicated to educating students about workforce readiness, entrepreneurship and financial literacy through experiential, hands-on programs. INJAZ Qatar offers programs in elementary, preparatory and high schools, as well as youth centers, colleges and universities across Qatar. With the help of its active corporate volunteer community, INJAZ has reached students from Grade 1 to university level. The corporate volunteers serve as inspiring role models for the youth, sharing their real-life work and entrepreneurship experiences and advice.

*Incubators and Economic Free Zones in Qatar* There are several incubators and free zones, including Qatar Science Technology Park (QSTP), Qatar Business Incubation Centre (QBIC), and Qatar Finance Centre (QFC) that take business ideas from concept to implementation. They also offer a range of entrepreneurship education programs.

- The QSTP Incubation Centre is a technology-focused incubation program that aims to foster local tech entrepreneurship in the State of Qatar. The program aims to accelerate the establishment and growth of promising tech start-ups through quick incorporation, collaborative co-working space, business facilitation, and support services which includes access to a network of mentors, funding program training, and prototyping facilities. The period of the incubation is 12 months—allowing the startups to focus on achieving the following objectives: develop a product/service; acquire early customers; and fund raising.
- QBIC is a unique mixed-use business incubation centre providing support services to help entrepreneurs and companies who either have an idea to start a business or want to grow an existing business. One of QBIC's flagship initiatives is LeanStart up, a 10-week entrepreneurial programme that provides real world, hands-on learning experience on how to successfully start a company. QBIC also offers a LeanScale up programme and industrial workshops which are available



to young established companies who have significant potential to grow. The programme helps business to grow through four key services: access to the marketplace (local, regional and international customers); access to human capital (recruiting talent); smart financing (provision and access to equity and debt finance); and coaching & mentoring.

- The QFC Authority manages and maintains the QFC legal and tax environment, and licenses firms to conduct business in or from the QFC. The Authority also develops relationships with the global financial community and other key institutions, both within and outside Qatar, helping to develop the country's private sector.

*Universities in Qatar That Offer Entrepreneurship Programs* Qatar University is the national university of Qatar. Qatar is also home to many branch campuses run by overseas institutions. These are clustered together at 'Education City', a large campus built as part of the Higher Supreme Council's education reforms, hosting branches of leading US and European universities. Not only is Qatar's Education City a hub for international branch campuses, it also hosts facilities such as the Qatar Science & Technology Park, and the RAND-Qatar Policy Institute. The Qatar National Research Fund also supports research conducted in the City.

The World Innovation Summit for Education (WISE) was established by the Qatar Foundation for Science, Education and Community Development in 2009 with the aim of driving innovations across the academic landscape through debate on educational issues within Qatar and beyond. Qatar University and several universities within Education City offer entrepreneurship programs.

- The Centre for Entrepreneurship (CFE) was established in September 2013 as a Qatar University initiative to support entrepreneurship at the university and community at large. CFE is working to link the academic life with business reality through training, incubation, research and consultation. Its services include delivering training programs to create awareness about the importance of entrepreneurship and to develop individuals' skills to become potential entrepreneurs.
- The AlFaisal-Carnegie Mellon Innovation Entrepreneurship Centre is aimed at fostering an entrepreneurial environment and inspiring innovation among Qatar's university students. The center was launched in the autumn of 2015 and offers courses on innovation entrepreneurship that are open to all partner universities within Education City throughout the year.
- The Entrepreneurship Centre provides extracurricular and co-curricular opportunities for students and encourages them to explore entrepreneurship, understand 'business principles' from the entrepreneur's point of view and discover their own entrepreneurial spirit.

#### *Initiatives That Encourage Entrepreneurship in Qatar*

- Al Fikra Business Plan Competition: A joint initiative to develop entrepreneurs by providing workshops that help convert innovative ideas into value added businesses. Various partners and sponsors from academia and the business community are involved in the competition as mentors and judges.

- **Enterprise Challenge:** It is an annual competition which encourages entrepreneurial spirit among the youth in Qatar, organized by Qatar Shell and Silatech. The successful teams from each of the 13 participating universities compete on an entrepreneurship computer simulation, which seeks to evaluate the teams' performance on running their business in a competitive marketplace over a 3-year period.
- **Challenge 22:** This is an innovation award launched in 2015 by the Supreme Committee for Delivery & Legacy (SC). It promotes a culture of innovation in the Middle East and attracts entrepreneurs, scientists and pioneers from across the Arab world. It showcases ideas that can contribute towards the hosting and organization of major events like the 2022 FIFA World Cup Qatar™, while building a sustainable, economically diverse future for the region.
- **Innovation Day:** This event is dedicated to presenting cutting-edge technologies that are taking place in Qatar. The event is part of a wider national effort to contribute to Qatar's economic diversity as part of achieving the QNV2030 economic diversification goal. The event targets students' creativity, critical thinking and problem-solving skills, all within the focus of 'innovation'.

There have been several government initiatives which have placed entrepreneurship and SMEs at the top of Qatar's strategic priorities. Some of these initiatives have been implemented following the blockade. A summary of the initiatives is provided below:

- Qatar Development Bank (QDB) organized a forum titled '*Buy Local Products*' on July 11, which brought together 70 Qatari companies from five key sectors, along with 250 local buyers, to encourage small and medium enterprises to expand their local business in sectors such as steel and iron, plastics, wood, aluminum and copper, and general building materials. A second forum was held on July 25, to showcase products and complement the nation's renewed objective to localize the country's supply chain and increase self-reliance.
- A memorandum of understanding (MoU) was signed between QDB and Public Works Authority (Ashghal) to launch the 'Ta'heel' initiative for SMEs. The new approach gives factories an opportunity to participate in the implementation of Ashghal's programs and projects, through enlistment of Qatari manufacturers in the authority's approved supply chain, in addition to accrediting local industrial products.
- To support the local market demand for fresh produce, Hassad Food, Qatar's premier investor in food and agri-business sectors, launched an initiative titled 'Iktefa', which targets unproductive local farms, to encourage their production through purchasing farmers' yearly production from fresh vegetables and fruits, following clear commercial terms, then selling them in the local market. More than 80% of registered local farms have been identified as being unproductive. The initiative aims to increase the role of the local farms by efficiently utilizing its commercial operations to support the local market demand for fresh produce.

- ‘Own your Factory in Qatar in 72 hours Project’ is a government initiative aimed at fast-tracking the establishment of more manufacturing companies and factories in Qatar. The initiative attracted over 9000 applications over a period of 1 month. Aside from licensing, the project guarantees qualified investors with land readiness and immediate access to visas, including readiness of industrial infrastructure such as water, electricity, gas, and roads, as well as priority for purchases with local manufacturers.
- Single Window System: Implemented in 2016, this represents one of the key government initiatives launched to develop Qatar’s business environment, stimulate real participation of the private sector, encourage domestic and foreign investments and channel them towards sectors with added value to the national economy. The initiative streamlines the application process for new businesses, which reduces the administration burden.
- Ramadan Markets: These are organized during Ramadan to encourage individual and family entrepreneurs to develop their skills in marketing and promotion of local products.

## 2.6 *Saudi Arabia*

Saudi Arabia is a country that still sits atop the largest share of the world’s identified oil reserves. But the government has long been aware that the oil cannot last forever so, the Kingdom needs to face a transformation that is inextricably tied to the country’s ability to promote and support entrepreneurial activity.

*Beyond Oil* The year 2016, Saudi Arabia’s Vision 2030 was announced as a transformation blueprint for achieving the Kingdom’s ambitious long-term goals. This plan, is based on three main themes: (1) a vibrant society; (2) a thriving economy; and (3) an ambitious nation. Social transformations are going to happen relatively quickly because the country’s population is young in average and thus, more easily adaptable to a global scenario. The second theme states the need to leverage opportunities and structures so entrepreneurs and SMEs can design modern entrepreneurial ecosystems that create economic value and spaces to share talent and innovations. Vision 2030 also underscores SMEs as agents that create jobs, support innovation and boost exports that foster economic growth. The third theme: ambition, refers to the need for awareness on the part of the population and government, that being the country that occupies the position 25th out of 144 countries in the Global Competitiveness Report ranking, it is still transitioning from “factor-driven” to “efficiency-driven”. Ending with this contradiction is the main aspiration of modernizing the context where SMEs and entrepreneurs develop their activities.

*Entrepreneurship and SME Policy* The Saudi Arabia's SME authority is reviewing laws and regulations to improve the easiness of doing businesses and start new ones. It also plans to remove obstacles and facilitate access to funding. The Kingdom's entrepreneurial framework shows several insufficient conditions that must be improved to enable youth and entrepreneurs to market their ideas and products. Modern spaces for entrepreneurs need the establishment of additional new business incubators, specialized training institutions and venture capital funds. All this is starting already to go. Its development will take some time, but is becoming a reality right now. The SME policy contemplates also, giving support to SMEs in marketing and exporting their products and services as well as enabling national entities to collaborate with relevant stakeholders. All these efforts, along with other measures taken by the government, will have a strong and positive impact that will be reflected in the middle term.

## **2.7 Tunisia**

In Tunisia, most entrepreneurs are motivated by necessity, rather than opportunities. Individuals that become entrepreneurs as a result of seeing opportunity, targeting a market segment or bringing innovation to the market cannot exceed 18–25% of entrepreneurs in Tunisia. The majority become entrepreneurs only to ensure stable income, which is the main reason for the high percentage of entrepreneurs whose ventures fail within after 2 years of being established. The entrepreneurship culture does not help to develop sustainable entrepreneurship, or entrepreneurs that create difference.

Although there are various services and products related to training and support for entrepreneurs, these are particularly lacking for entrepreneurs at the start-up stage. Tunisia is still struggling in terms of supporting start-up entrepreneurs, especially in the western and southern areas of the country.

There are also problems in the funding systems in place to support entrepreneurs. It is very difficult for entrepreneurs to access high levels of funding. The funding system is not well established enough to cover the whole of Tunisia—for many start-up entrepreneurs it therefore becomes very expensive and time-consuming to get to banks and institutions, often with no guarantee that their applications will be successful. Moreover for small projects, for example co-operatives such as small agriculture groups, it is almost impossible to obtain finance it from banks or financial institutions. A further constraint is that the legal system in Tunisia does not allow for specific types of funding such as crowdfunding, which may be a solution for funding project with new value propositions.

## 2.8 *United Arab Emirates*

The UAE has grown rapidly from an economy dependent on fishing and a declining pearl industry to one of the Middle East's most important economic hubs. It is now one of the wealthiest countries on a per capita basis with a GDP estimated in 2016 at US\$375 billion and a real GDP growth rate of around 2.3%.<sup>6</sup> The UAE is noted for its open economy with a high per capita income (US\$67,700 of GDP per capita in 2016),<sup>7</sup> a highly developed welfare system, one of the lowest rates of unemployment in the Middle East (3.6%), its modern infrastructure, the international events it hosts, its status as a trade, tourism and transport hub, and its sizable annual trade surplus. In terms of its support for entrepreneurship, the UAE has been active on many fronts. There has been encouraging progress with entrepreneurial and SME policy, support for innovation, the financing of entrepreneurship, and the supporting entrepreneurial services.

*Entrepreneurship and SME Policy* In 2010, the UAE Vision 2021 "United in Ambition and Determination" was launched with the goal of making the UAE among the best countries in the world in which to live, work, and do business. As part of Vision 2021, the UAE government specifically recognized that entrepreneurship plays a key role in driving economic development. In particular, the Vision aimed to make the UAE among the best countries in the world for entrepreneurship by both encouraging UAE nationals to be the driving force of economic development through small, medium enterprises (SMEs), and by serving as a magnet for entrepreneurs from throughout the region and the world who would like to start or scale businesses.

Federal Law No. 2 of 2014 on SMEs (the "SME Law") came into force in June 2014, specifically introducing interventions to support the development of locally owned SMEs in the UAE. One important aspect to this law is the unified definition of a SME (in Cabinet Resolution No. 22 of 2016), standardizing their identification and hence presumably standing with existing UAE legislation, as well as an SME Council to promote UAE SMEs. Another aspect of the law establishes a "National Program for SMEs" that gives registered SMEs various benefits, such as reduced licensing fees, simpler business procedures, and expertise, technical support and training. The SME Law also exempts SMEs from customs tax for equipment, raw materials, and goods for production purposes, as well as the obligation to pay bank guarantees for each new worker. This law also mandates federal government entities to source 10% of their procurement requirements from SMEs, as well as obliging firms in which the government holds more than a 25% stake to give at least 5% of their contracts to SMEs. Furthermore, the Emirates Development Bank (EDB) must ensure that at least 10% of its loans are directed to SMEs. Encouragingly this law has also created a trend for other SME supportive initiatives. For instance, in 2016, Expo

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<sup>6</sup><http://pubdocs.worldbank.org/en/398801475460803726/UAE-MEM-Fall-2016-ENG.pdf>

<sup>7</sup><https://www.cia.gov/library/publications/the-world-factbook/geos/ae.html>

2020 Dubai underscored its commitment to SMEs through its pledge to allocate 20% of its total direct and indirect spend, representing more than AED5 billion (US\$1.36 billion) in contracts, to local and international SMEs.<sup>8</sup> Other regulations reflect the strong commitment of the UAE government to provide entrepreneurs with a friendly regulatory environment. For instance, Federal Law No. 4 of 2012 (the Competition Law) that prohibits certain anti-competitive practices, gives advantages to SMEs through exemptions.

Because of these business friendly policies and regulations, the World Bank Group's 2016 'Ease of Doing Business Rankings' positions the UAE 26th globally and as the highest ranked country in MENA region. According to the report, it takes just 4.5 procedures and 8.5 days to open a company in the UAE.<sup>9</sup> However, in the words of the World Bank's *Doing Business 2016* report, the UAE's 'lack of a modern restructuring law' is the biggest barrier to doing business in the country. Although the UAE government had been formally considering amendments to the insolvency regime since 2009, it was only in 2016 that the Federal Decree Law on Bankruptcy (No. 9 of 2016) was issued and came into force. Its most important provisions represent a step forward for the UAE's insolvency regime, notably including the removal of the criminal offence of bankruptcy by default, criminal involvement in matters relating to bounced cheques, and a new threshold and requirement for creditor-initiated insolvency proceedings. Previously, the difficulty in liquidating companies, and the fact that individuals could face criminal action if they defaulted on debt, had led expatriates to sometimes to flee the country instead of facing imprisonment.<sup>10</sup> Perhaps as a consequence, the *GEM UAE 2016 Report* exhibits evidence of non-Emirati expats having less inclination towards undertaking entrepreneurial activity and having bigger issues than Emiratis in transforming intentions into real business setups. Similarly, in the 2016 GEM APS, 54.3% of the adult population stated that they have been constrained from starting a business due to a 'fear of failure'. Of this proportion, 80.5% are expats, which might explain why the rate of nascent activity for expats is low (0.9%) compared to the TEA of 4.2% for the UAE adult population in 2016. It is hoped that these changes to insolvency law will be conducive to the risk-taking that is so important for entrepreneurship and SME development.

The taxation system in the UAE is also favorable for entrepreneurs. The UAE does not levy income tax on individuals and it offers companies a relatively low-tax operating environment. Corporate taxes are levied only on oil companies and foreign banks. There are significant advantages to businesses registered within the 44 UAE free zones, 27 of which are in Dubai.<sup>11</sup> In these free zones, companies are exempted

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<sup>8</sup><http://www.usuaebusiness.org/u-s-u-a-e-business-council-hosts-expo-2020-dubai-officials-in-new-york-city/>

<sup>9</sup><http://www.doingbusiness.org/~media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB17-Full-Report.pdf>

<sup>10</sup>[http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE\\_EE\\_digital.pdf](http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE_EE_digital.pdf)

<sup>11</sup><http://www.uaefreezones.com>

from corporate tax for a certain time (which can be extended), as well as exempted from import duties on goods brought into a trade zone. Besides the taxation advantages, companies in a UAE free zone can also circumvent the regulation mandating that UAE nationals own at least 51% of a UAE registered company. Despite these advantages, the free zones still restrict the ability of companies to operate in the UAE proper.<sup>12</sup>

Finally, the UAE is considering levying Value Added Tax (VAT) from January 2018, with the rate likely to be 5% with certain exemptions, such as healthcare and staple food items, payable monthly.<sup>13</sup> Although businesses are expected to be VAT registered and will need to complete and submit VAT returns to the government on a regular basis, it has been suggested that they might not be required to register and report on VAT, with the intention to prevent additional costs disproportionate to their business size.<sup>14</sup>

*Driving Entrepreneurial Innovation* The UAE government has also embraced innovation as a national priority. 2015 was the Year of Innovation, during which a National Strategy for Innovation was announced. The National Strategy for Innovation is aimed at embedding a culture of innovation amongst individuals, companies and governments in seven key innovation sectors, specifically renewable energy, transportation, education, health, water, technology, and space.<sup>15</sup> To turn this strategy into reality, an AED300 billion Emirates Science, Technology and Innovation Higher Policy budget was established to foster sustainable innovation based on science and technology in an attempt to build a true knowledge-based economy. Of this amount, AED200 billion was dedicated to alternative energy, AED40 billion to aviation research, AED20 billion to the space industry, AED31 billion to science research, and AED12 billion to innovation incubator and academic research centers.<sup>16</sup> In an initiative of the Federal Government, the Ministry of Finance launched the Sheikh Mohammed bin Rashid Al Maktoum Fund to Finance Innovation, worth AED2 billion, to support resident individuals and companies (of all sizes) registered in the UAE, provided that they offer unique and innovative ideas—whether they be technologies, products, services and processes.<sup>17</sup>

From this auspicious start, many significant initiatives have followed, mainly from the Emirate of Dubai. In 2016, Dubai Future Foundation was launched to play a pivotal role in shaping the future of Dubai. This, along with the Dubai Future Agenda, which acts as a roadmap for the Foundation, has the medium and long-term goals of shaping strategic sectors in cooperation with government and private

<sup>12</sup>[http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE\\_EE\\_digital.pdf](http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE_EE_digital.pdf)

<sup>13</sup><https://government.ae/en/information-and-services/finance-and-investment/taxation>

<sup>14</sup><https://www.clydeco.com/insight/article/vat-is-your-business-prepared>

<sup>15</sup><http://www.uaeinnovates.gov.ae/docs/default-source/pdfs/national-innovation-strategy-en.pdf?sfvrsn=2>

<sup>16</sup>[http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE\\_EE\\_digital.pdf](http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE_EE_digital.pdf)

<sup>17</sup><https://www.mof.gov.ae/En/About/programsProjects/Pages/MohamedBinRashidInnovationBox.aspx>

sector entities. Among its major initiatives, a AED500 million “Museum of the Future” was to become a unique incubator for futuristic innovations and designs.<sup>18</sup> To pull the future forward faster, the Dubai Future Accelerators program aims to connect the world’s most innovative companies with leading figures in the Dubai government with the goal of creating breakthrough solutions for the world’s most exciting opportunities and pressing challenges.<sup>19</sup> Another strategic project is Dubai 3D Printing Strategy which aims to exploit 3D technology for the service of humanity, and promote the status of the UAE and Dubai as a leading hub of 3D printing technology by the year 2030.<sup>20</sup>

*Funding Entrepreneurial Activity* In the past, what held many entrepreneurial ventures back was access to financing, but entrepreneurial funding in the UAE is evolving rapidly, with capital now raised from government funds, angel investors, venture capital firms, private equity and SME-friendly banks. Government SME development agencies and funds have also been established to specifically cater to Emirati entrepreneurs and SMEs. For instance, in 2003 the Dubai SME was first established, followed in 2007 by Khalifa Fund for Enterprise Development in Abu Dhabi, and in 2009 by the Ruwad Establishment in the Emirate of Sharjah. Nationally, the ICT Fund was launched in 2008 by Telecommunications Regulatory Authority to drive rapid, progressive and realistic developments within the ICT sector in the UAE.

The UAE has a munificent environment for start-ups to attract angel investment. Driving this environment are the estimated 480,000 high net worth individuals with a combined wealth of \$2.5 trillion that live in the Middle East, mostly concentrated in the UAE, Saudi Arabia, and Kuwait.<sup>21</sup> Of note is MENA Venture Investments, one of the most prominent angel funds in the region and in the UAE, given a high profile through its association with Fadi Ghandour, CEO of Wamda Capital and founder of Aramex, and Arif Naqvi, the founder and Group Chief Executive of Abraaj. Also particularly of note are Womena<sup>22</sup> and WAIN,<sup>23</sup> two prominent angel networks dedicated to supporting both women entrepreneurs and investors in the region.<sup>24</sup>

The UAE is also a large source of venture capital (VC) funding. Between 2013 and 2016, the number of tech investors in MENA has grown exponentially,<sup>25</sup> with 30 funding institutions established in 2016 alone. Of these, 40% have headquarters in the UAE, and overall, 33% of tech investors in MENA operate from the UAE.

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<sup>18</sup><http://motf.ae>

<sup>19</sup><http://www.dubaifuture.gov.ae/our-initiatives/dubai-future-accelerators/>

<sup>20</sup><http://www.dubaifuture.gov.ae/our-initiatives/dubai-3d-printing-strategy/>

<sup>21</sup><https://www.bcg.com/publications/2016/financial-institutions-consumer-insight-global-wealth-2016.aspx>

<sup>22</sup><http://womena.co>

<sup>23</sup><https://womensangelinvestornetwork.wordpress.com>

<sup>24</sup>[http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE\\_EE\\_digital.pdf](http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE_EE_digital.pdf)

<sup>25</sup><https://intelligence.arabnet.me/>



During the same period, more than \$750 million was invested in more than 450 tech start-up deals in the MENA region.<sup>26</sup> Of these investments, the vast majority, both in number (137) and value (\$286 million), occurred in the UAE.<sup>27</sup> In 2016, the UAE outranked all other MENA countries in transactions, with 41% of the deals (78 deals)—much higher than the next highest country Lebanon (18%). The 70% jump in value of total dollars invested (US\$918 million for the MENA region, including US\$799 million for the UAE in 2016) is largely explained by two mega-rounds, raised by Careem (\$350 million raised) and [Souq.com](#) (\$275 million raised) in 2016. Among the UAE based funds, notable mentions are MBC Ventures, the VC arm of the largest private media company in the MENA region,<sup>28</sup> BECO Capital,<sup>29</sup> Wamda Capital,<sup>30</sup> and Abraaj Group,<sup>31</sup> a leading investor in growth markets with \$10 billion in assets under management.<sup>32</sup>

Access to credit has always been limited for SMEs in the UAE, highlighted by a survey of SMEs by Dubai SME in 2013. In this survey, only 23% of survey respondents stated they had accessed bank finance in the last 5 years.<sup>33</sup> According to the OECD 2016 report on entrepreneurship and SMEs in Abu Dhabi, commercial lending currently accounts for a small proportion of bank lending in the UAE (4% of vs 9.3% for the MENA average). Although some commercial banks have established SME units, such as Mashreq Bank, Emirates NBD, National Bank of Abu Dhabi (NBAD) and First Gulf Bank (FGB), loan conditions for SMEs remain relatively unfavorable in international comparative terms and banks remain cautious about lending to SMEs. For instance, their rejection rates are in the range of 50–70%, which are much higher than the OECD range of 10–20%.<sup>34</sup>

*Entrepreneurial Support Services* The UAE has also considerable support services, including co-working spaces, incubators and accelerators that help entrepreneurial activity flourish.

Co-working spaces offer start-ups a relatively inexpensive office space and the benefit of being with like-minded individuals. The only Google-partnered Tech Hub in the MENA region, AstroLabs, serves as a Launchpad for the highest potential tech start-ups in Dubai. Created by the co-founders of Namshi, AstroLabs features a Google-supported mobile device development lab, a training facility and academy, meeting rooms, and other supporting infrastructure and services. Through a

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<sup>26</sup>Ibid.

<sup>27</sup>[http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE\\_EE\\_digital.pdf](http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE_EE_digital.pdf)

<sup>28</sup><http://www.mbc.net/en/corporate/ventures/about>

<sup>29</sup><http://becocapital.com>

<sup>30</sup><http://wamdacapital.com>

<sup>31</sup><https://www.abraaj.com>

<sup>32</sup>[http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE\\_EE\\_digital.pdf](http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE_EE_digital.pdf)

<sup>33</sup>[http://www.sme.ae/StudiesAndResearchDocument/SME\\_Report\\_English.pdf](http://www.sme.ae/StudiesAndResearchDocument/SME_Report_English.pdf)

<sup>34</sup><https://www.oecd.org/countries/unitedarabemirates/AbuDhabi-Ecosystem-Final-Web.pdf>

partnership with the DMCC-Government of Dubai, it also offers a full free zone licence at Dubai Multi Commodities Centre, with no upfront costs.<sup>35</sup>

The incubators in UAE provide entrepreneurs with office space, business advice, and seed funding. One of the newest incubators is the Washington, D.C.-headquartered 1776 Dubai. Established in late 2016, 1776 Dubai is the first international technology incubator to set up as a direct presence in the MENA region. Partnering with the Dubai Foundation of the Future, 1776 Dubai will be central to creating a dynamic community of start-ups, institutions and government leaders focused on advancing transformative technological change in crucial industries tackling society's most important needs.<sup>36</sup>

Accelerators help existing start-ups grow through physical space, funding, training, mentorship and networking opportunities, and are booming in the UAE. Among them, Flat6Labs Abu Dhabi enjoys the support of media free zone Twofour54. Twofour54 is a global hub for digital innovation that supports a generation of entrepreneurs from the UAE and abroad to launch digital businesses in Abu Dhabi and scale to regional and global markets.<sup>37</sup>

Entrepreneurs in the UAE also have the opportunity to connect, network and to be showcased in a plethora of events, exhibitions, competitions and platforms. For instance, in 2016 the UAE hosted the 'largest tech and interactive gathering in the MENA region' (STEP Conference), the 'premier conference for digital businesses in the Middle East' (ArabNet Digital Summit), the 'biggest innovation conference in the region' (Global Innovation Summit), and the 'largest regional IT exhibition' (GITEX Technology Week).<sup>38</sup> Helping start-ups connect with investors, mentors and service providers, MAGNiTT is also a valuable source of information about the MENA start-up ecosystem.<sup>39</sup>

In 2016 UAE University, the university of the future, launched its Science and Innovation Park (UAEU-SIP) to support the shift of the UAE economy towards a knowledge-economy, reflecting the vision of the UAE leadership of a transformation of the role and function of universities so that they help create conditions for sustainable economic growth. As the new key player in the entrepreneurship and innovation ecosystem in the UAE, rather than following the traditional role of teaching, the emphasis is now on the 'entrepreneurial university'. Using the helices model, where the main actors of innovation-generating processes (industry, university, government, and, at a later stage, civil society) interact within defined structures called tribes, the transfer of research and innovation resulting from university labs is accelerated to create local growth. Acting a safe innovation test bed, facilitating higher levels of knowledge creation, absorption and dissemination, enabling cross

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<sup>35</sup><http://astrolabs.com>

<sup>36</sup><https://www.1776.vc/dubai/>

<sup>37</sup><http://www.flat6labs.com/location/abudhabi/>

<sup>38</sup>[http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE\\_EE\\_digital.pdf](http://www.investuae.com/wp-content/uploads/2017/03/Invest-UAE_EE_digital.pdf)

<sup>39</sup><https://www.magnitt.com>

funding, and giving and sharing between researchers, students, businesses, government agencies, global nomad entrepreneurs and innovators, the goal of the UAEU-SIP ‘oasis of minds’ is to unlock unfair advantages to the benefit of its tribes. The resulting habitat helps the tribes engage in social and needs-driven innovation and address the region’s 100 million challenges. With an ambition of large scale new quality of growth based on inclusiveness and wellbeing, the UAEU-SIP is currently developing the following major tribes: Water Tribe; Genomics Tribe; Space Tribe; Well-being Tribe and the 100 Million Stars Tribe.

### **3 Entrepreneurs’ Stories**

#### ***3.1 Reem Alsowayegh (Saudi Arabia)***

Reem Alsowayegh graduated from King Saud University in Riyadh with a Bachelor of Physical Therapy. She was then hired by Abdul Latif Jameel Rehabilitation Centre, mainly working on adult stroke patients. “While I was working on my duties, there was a mother with her child suffering from severe respiratory problems. Both were crying. I got into one of the private rooms and started crying myself. The question came out loud: what could I do for this child?” she recalls. That same day, Reem decided she wanted to focus her practice on children. She then accepted a position at a Jeddah based school for special needs children and worked there for 8 years.

She rapidly spotted a clear problem in the practice: children were having physiotherapy only once a week and were checked every 6 months in the government hospitals, which in Reem’s opinion was not adequate. As a result, most of the children were not improving at all. Willing to start her own practice, one that could have a real impact on the lives of children in the Kingdom with special rehabilitation needs, she resigned and started specialized training in innovative techniques such as the Therasuit and other breakthrough techniques.

While continuing her involvement with the mothers of special need children, she was approached by some of them with an eye-opener question: Why don’t you open your own center to help so many children and families in need? AdvanceRehab was born.

Once Reem completed the training programs and became the only professional therapist certified in the Kingdom for certain advanced new treatments, she opened her first center in a small room in a friend’s kindergarten. “I rented a room there and started working by myself,” she says. “It was October 2008 and my dream of really making a contribution to society while working on my passion was starting to come true.” Many families’ children began using her intensive therapies and the Therasuit treatment. She also started hiring some therapists, as her initial business model had a large bottleneck: her own capacity.

During the next couple of years Reem experienced serious problems in getting the business licensed in the Kingdom. She needed a special license from the Ministry of

Health that proved quite difficult to obtain, even if a doctor in one of the largest local hospitals helped her. After persistent efforts, and the building of an extension that consumed her savings, she finally got an initial license from the MoH—only to find out that the owner of the villa from which she was operating wanted the villa back. With almost no money in the Bank, Reem got some family support and started all over again from a new location, obtaining once again the initial license.

Things were looking promising businesswise, although the process to obtain the specific business license that would allow Reem to fully advertise all the company's services and concentrate on growing the business was not that encouraging. After obtaining the initial license, it took her 5 years to get the final business license. "I felt as if I was in a vicious cycle," she recalls. "I found out that I could not obtain the final license until I got an intermediate one, the Baladiya. In order to get this one, I had to hire a broker well-connected to the Ministry of Health who, for a nice sum, promised to speed up the process using his connections." To make things more complicated, the previous license was connected to Reem's ex-husband, who supposedly could deal with the procedures and the broker in an easier and more effective manner. When Reem got divorced, 2 years after initiating the process, she had to move the center's initial license into her name again and re-start the process for the third time.

Finally, after having to temporarily close the clinic for not having a license, the nightmare ended 5 years after she had started the process. Reem says of this difficult period, "I was furious. I felt that all the time and money that I was wasting on getting my license was have a huge impact on my business. I couldn't market my business because I did not have the license and it was taking way too much time. At the same time, and with almost no business, I still had to pay the salaries and rent. This business was my life passion, but I am not a rich person and did not have the financial support to be in a legal limbo for so long."

Now, with the business up and running and fully licensed, Reem could devote more time to improving the offerings and reaching out for additional customers. She soon realized that she was barely prepared, from a managerial perspective, to go beyond basic management of a small-scale business. She was a physiotherapist by training. She found out about Qotuf, a well-known Jeddah business accelerator, and applied for AdvanceRehab to become part of one of the entrepreneur intakes. She realized that Qotuf could be a great help in transforming the existing AdvanceRehab business model to avoid the current lack of scale in their planned growth. However, when Reem met with Qotuf manager, Mohammed Nabolssi, she discovered that Qotuf would only accept knowledge-economy, internet-based businesses. As a result, Reem accelerated a project she already had in mind—to go online with a completely different business model. She applied under iRehab to Qotuf and was accepted.

"Qotuf turned out to be a great experience as well as an eye-opener for me," recalls Reem. Even though she was taking an EMBA from the American University in Cairo, she found the five-day boot camp and the 3 month period of working, networking and mentoring extremely useful in designing the launch of her new online service called iRehab. Reem also had the opportunity to reach out to Aramco for investment support. I wouldn't have had the opportunity by myself of accessing

Aramco,” she says. “Qotuf brought them to me together with other potential investors. The mentoring program at Qotuf was also very helpful. I had the opportunity of working out the marketing details of iRehab with Marwan Qutub, a fantastic marketing expert, and also had access to Mohammed Fitahi, an experienced and well-known Saudi entrepreneur and Babson College alumni.”

While attending the Qotuf program, Reem was also involved in working and growing the on-site Advanced Rehab. The center provided physical therapy and speech therapy services for children with special needs through one-on-one sessions. Sessions were either 35 or 60 min long, depending on the treatment, and required a certified therapist to conduct them, limiting the scalability of the business. From the revenue perspective, services were normally bundled into a monthly fee of 8–20 sessions, depending on the treatment. But the unfriendly regulations for entrepreneurs in Saudi Arabia were still making things difficult.

Because of her precarious financial situation during the period she struggled to obtain her license, Reem was not able to hire more expensive Saudi therapists, and had relied on hiring immigrant therapists in order to grow the business. Of course, these therapist could not be sponsored by Reem, nor by AdvanceRehab. The Government was closing the gap on illegal immigration, which could bring additional problems to the already troubled venture.

While on the Qotuf program, Reem had the time and resources to start designing her new venture, iRehab, with the objective of diversifying from AdvanceRehab, getting into the online space and solving some of the issues that were preventing her growth. iRehab was then born as an online community therapy platform (website and application) that connects parents with licensed therapists to help them understand their child’s developmental delay through online conferencing, live chat, and e-mails.

“iRehab was designed to give parents all the tools they need in giving their child better care and therapy. I wanted to ensure parents get an better understanding of how to help their child develop, which exercises are needed and which specific therapy tools and resources are required,” says Reem.

According to the business plan that Reem put together while at Qotuf, her main revenue stream would be achieved from different sources: parents and caretakers for special needs who would be subscribing on a monthly basis to the website where they can follow the child’s lessons, exercises and progress reports, among other services; therapists joining the platform through membership and profit sharing; advertisements; and partnering with insurance companies such as Bupa to increase database and revenue, and enhance the business model.

Reem expects iRehab to be profitable by year one, with over SAR 200 K in gross profits, and to reach SAR 4000 K by year 5—achieving a healthy gross margin of around 1/3 of its revenues by the end of the five projected years of operations.

### 3.2 *Fadhel Abidi (Tunisia)*

Fadhel Abidi, 40 years old, studied Accounting at university, and after he graduated worked in the private sector for 16 years. Five years ago he decided to start his own business. “I had noticed that diabetic people in Tunisia had a problem in that they are not able to find sweets and cakes that are suitable for their needs,” he says.

For Fadhel it was a challenge to convince the bank to grant him funding, as he had very little experience relating to the technical aspects of his project. In addition, the project cost was 670,000 TND, which is regarded as high for small projects in the Tunisian funding ecosystem.



“I started to collect a technical team and developed my knowledge about the production process,” he recalls. He managed to provide the banks with the guarantees they required, in case his venture proved unsustainable, and eventually got the bank confirmation for credit. Even after this confirmation, however, the bank was not flexible. The funds were only made available in segments, and each time new processes had to be followed.

Despite these administration obstacles, that harmed his productivity rate and are still ongoing, the United Food Company that Fadhel established has managed to not only survive but, thanks to this entrepreneur’s vision and determination, is providing jobs for seven employees.

### 3.3 *Sara Al Madani (United Arab Emirates)*

One UAE entrepreneurial success story is that of Her Excellency Sara Al Madani.<sup>40</sup> Al Madani ventured into the UAE business world when she was 15, originally founding a fashion label focused on the abaya (a traditional robe-like dress). At the time, few women dared to enter the “man’s world” of business in the UAE.

From this bold start, Sara Al Madani Fashion Design, originally branded as Rouge Couture, has become well known for its unconventional designs, and soon expanded across the UAE. She also runs a creative consultancy, Social Fish, and acts as the brand ambassador for Nivea and Natura Bissé in the Middle East. Recently, she has diversified into the hospitality industry, with the opening of a British restaurant Shabarbush, in Dubai.

Building upon her success, she travels throughout the MENA region and beyond to inspire women to pursue their dreams. As she states: “Women don’t need empowering; they are already strong. They just need inspiring—someone to help them find their passions, then let them go and watch wonders happen.”



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<sup>40</sup>The honorific Her Excellency was earned when she joined the Sharjah Chamber of Commerce & Industry at the invitation of Sheikh Sultan Al Qasimi, ruler of the UAE emirate of Sharjah, in recognition of her success.

# Policy Implications and Recommendations



**Ayman Ismail, Thomas Schøtt, Abbas Bazargan, Basheer Salaytah, Hamad Al Kubaisi, Majdi Hassen, Ignacio de la Vega, Nihel Chabrak, Abier Annan, Mike Herrington, and Penny Kew**

Most of the developing countries in the MENA region face still face a number of social, political and economic challenges. The countries in the MENA region range in economic development from factor-driven (Iran) to efficiency-driven (Egypt, Jordan, Lebanon, Saudi Arabia and Tunisia) to innovation-driven (Qatar and the UAE) but almost all face problems with job creation, low education and skills levels (especially among women), gender inequality and innovation technologies. These problems exist mainly in the underdeveloped SME sector, as many of the larger organizations have achieved international status and a high degree of competitiveness. Unemployment rates, especially among women and the youth, remain unacceptably high, especially in areas outside of the public sectors. The private sector is not providing the employment that should be expected.

Given the challenges that the region faces, it is difficult to propose a ‘one solution for all’ approach. Although they do share some common attributes there are significant cross-country differences with respect to motivational attitudes towards entrepreneurship, the aspirations of the population and their entrepreneurial rates. This suggests that each country has its own specific challenges and these should be addressed separately in the individual country reports. However, there are a few commonalities and improving these inhibiting factors could have a significant effect on the overall rate of entrepreneurial activity in the region.

1. **Education:** Over the years GEM has shown that people’s education is related to their pursuit of entrepreneurial endeavors. In most countries, the more education a person has, the more likely the person is to become an entrepreneur, and the more likely the business is to survive, mature, innovate, grow and perform well.

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Entrepreneurial intentions are influenced by several factors, one of which is perceived capabilities. The higher the level of perceived capability the more likely the person is to start a business. The correct education plays a significant role in this. Entrepreneurial education should be introduced into all schools and universities so that the youth develop skills necessary to start their own businesses instead of becoming reliant on finding a job. Women in the MENA region tend to be disadvantaged from the start and do not receive the correct type of training. Entrepreneurship training should be introduced at all levels, starting when the young first attend school.

2. **Regulatory environment:** Government should reform the regulatory environment in order to make it easier for new businesses to register and operate. Reducing the amount of bureaucracy and red tape, thus making it quicker and easier to start a new business, will have a significant effect on the levels of entrepreneurship—as was the case with Chile, Argentina and Israel. Information required by SMEs should be readily available and easily accessible to all potential entrepreneurs. Information such as business registration, HR legislation insurance etc. would be useful.
3. **Government agencies:** To increase the number of innovative early-stage entrepreneurs, there is a need for more knowledge absorption and assimilation. This will naturally lead to an increased knowledge creation and transfer, a condition to have an increased proportion of innovative entrepreneurs who are more likely to innovate “vertically”. Previous studies show that innovative early-stage entrepreneurs are less likely to have a necessity motive to start their business. Yet, the level of education of those involved in entrepreneurial ventures is crucial and the enhancement of individual characteristics becomes increasingly critical. With higher levels of education and higher access to new technologies, entrepreneurs become more innovative to compete successfully. Consequently, clusters related to universities should be established to attract and strengthen linkages between academia and industry and among foreign and domestic knowledge-intensive firms. Universities should become more entrepreneurial by developing programs to support inventors to take their ideas to market. Governmental agencies and programs aimed at intellectual property commercialization should be improved. Finally, these clusters and business hubs with centralised resources will help reduce the cost of basic services and other professional, commercial and legal services borne by technology start-ups, which might also increase their competitiveness. These collaborative platforms also offer them more protected and safe environment to innovate so they can create new niches with less competition.
4. **Entrepreneurial mindset:** The entrepreneurial mindset in many parts of the MENA region is a big challenge. People are used to live with certain stereotypes: having a job is very important, and preferably it should be in the public sector. So, in a region which will experience the 100 million youth unemployment challenge in the next decade, a shift in mind-set is required. Governments should be focused on creating conditions for inclusiveness by helping people transform the resources they have into capabilities for life time achievements they value. People in the MENA region should understand this as the only condition for attaining

real freedom and dignity. Another problem is that many people do not want to start small. There is a kind of hubris that is opposite to the entrepreneurial process itself that requires one to start lean and small.

5. **Access to finance:** While the ease of access to finance for early stage start-ups varies among the MENA countries, it has been a common challenge in the region. Early stage start-ups in knowledge and technology fields (i.e., ones that do not have physical assets to use as a collateral for bank loans) usually struggle to secure equity investments. More initiatives are needed to expand the culture and vehicles for venture investments, such as angel investment networks and venture capital funds.
6. **Women participation:** Although cultural attitudes towards women in the region have started to change in the last few years, it is not enough and not taking place rapidly enough. More entrepreneurship programs should be introduced which are specifically geared towards women, with specific emphasis on their needs and challenges. Mentoring programs, incubators and training programs would go a long way towards encouraging women to enter into entrepreneurship.
7. **Entrepreneurial culture:** Changing the culture is a long-term venture; however, there are specific initiatives that can be implemented in the short term to encourage a pro-entrepreneurship culture. Media plays a key role in promoting role models. More content highlighting the stories of entrepreneurs, and introducing their narrative in the different media channels, including traditional media (TV, radio, newspapers) and digital media. Introducing entrepreneurship education in all levels of education has a substantial and rapid impact. Additionally, including entrepreneurship in the public government narrative as a mean for economic growth.

**Part II**  
**Entrepreneurship Education and Training**  
**in MENA**

# Entrepreneurship Education and Research in Iran: The Faculty of Entrepreneurship of University of Tehran



Mohammad Reza Zali, Mahshid Tootoonchy, Jahangir Yadollahi Farsi, and Nezameddin Faghih

**Abstract** Entrepreneurship is widely associated with prosperity and economic growth by providing employment opportunities, promoting efficiency by applying new technologies and addressing environmental changes. To encourage entrepreneurial intention and success, the entrepreneurship education aims at providing knowledge, enhancing skills and motivating the students in different contexts. The entrepreneurship education can be offered at two levels of schools and universities. The school level entrepreneurship programs increases the long-term possibility of creating a new business. In order to enhance the entrepreneurial competencies, universities need to contribute not only to the research and teaching but also to the commercialization of technology. The commercialization and technology entrepreneurship curriculum can help the graduate students to recognize the opportunity of launching their own new business start-ups. This chapter reviews the growth of entrepreneurship education in Iran and specifically in the University of Tehran. The current educational programs are explained and the new directions at entrepreneurship education such as techno-preneurship and professional master of entrepreneurship at the faculty of entrepreneurship, University of Tehran are discussed.

**Keywords** Entrepreneurship education · Entrepreneurship research · The faculty of entrepreneurship

## 1 Introduction

Entrepreneurship is a dynamic process of transformation, implementation of new ideas and creative solution (Kuratko 2003). Entrepreneurship education is a response to the fast changing, and complex environment to equip people with entrepreneurial competencies (Gibb 2002). Entrepreneurship education motivates job creation

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(Hindle 2007; Jones and Iredale 2010; Kuratko 2005; Lackeus 2015; Purzer et al. 2016), economic growth (Gorman et al. 1997; Kuratko 2005; Wong et al. 2005) and globalization and innovation (Henry et al. 2005a, b; Jones and Iredale 2010).

Universities are changing their role to be able to challenge the socio-economic dynamics (Nieuwenhuizen et al. 2016); therefore, it is expected that adoption of entrepreneurial approach and commercialization of research outputs is the right solution (Goldstein 2010) to adapt to the dynamics of environment. This shift to the role of universities is known as the “entrepreneurial turn” (Goldstein 2010) or the “third mission” (Nelles and Vorley 2010).

Entrepreneurship can be taught (Purzer et al. 2016; Standish-Kuon and Rice 2002) and Entrepreneurship education facilitates the transfer of technology (Lackeus and Williams Middleton 2015). First, the literature on entrepreneurship education will be reviewed. Second, entrepreneurship in Iran and specifically in the University of Tehran as the pioneer university in providing minors, courses and experimental modules will be introduced. Then, the entrepreneurial approach and ecosystem in the University of Tehran will be analyzed. Finally, the new direction of entrepreneurship education in the University of Tehran (techno-preneurship) will be explained.

## 2 Entrepreneurship Education and Research in World

Entrepreneurship education is conceptualized as a learning process (Cope 2005; Kakouris and Georgiadis 2016), a cognitive process of knowledge transfer (Baron 2004; Mitchell et al. 2007), a high-level learning process (Rae and Carswell 2000) or a meta-cognitive (Kakouris 2015).

Both entrepreneurial courses and pedagogies (Fayolle 2013; Pittaway and Cope 2007) and real-life entrepreneurship learning (Cope 2005; Politis 2005) have been practiced. The content of entrepreneurial education varies in different programs because each discipline has a unique perspective to entrepreneurship (Henry et al. 2005a). Examining 38 entrepreneurship programs, Streeter et al. (2002) confirm that entrepreneurship programs move toward multi-disciplinary trend aim at featuring specific content. Thompson et al. (2010) propose a conceptual model and state that knowledge or experienced based learning of entrepreneurship is associated with different entrepreneurship programs like lectures, case studies, simulation and role play and new venture-based learning. Goldstein (2010) argues that modern universities aim to change their missions from the “Ivory Tower” and the “Land-grant” to the “Triple Helix” or Entrepreneurial University model. Morris and Kuratko (2014) propose different structural forms for entrepreneurship education, namely: General Entrepreneurship Programs, Entrepreneurship Centre (or Institute), Department of Management And Entrepreneurship, Department of Entrepreneurship, School of Entrepreneurship.

There are various approaches to entrepreneurial education (Antal et al. 2014; Neck and Greene 2011). In the United States, a variety of minors, majors, certificate programs and experiential learning have been offered because of the dynamic



**Fig. 1** The five Cs framework adopted from Morris and Kuratko (2014)

economic environment (Duval-Couetil et al. 2016). Universities should pay attention to entrepreneurship research, education and cooperation with entrepreneurs (Kuratko 2005).

To empower the students and transform the institution, Morris and Kuratko (2014) propose the five Cs framework to let the entrepreneurship grow and sustain. Figure 1 represents this framework in short.

Nieuwenhuizen et al. (2016) identify and compare the best practices of entrepreneurship education in the United States, Canada, China & Singapore, Europe & United Kingdom and Africa; this study concludes that at undergraduate level a generic and specialized module is preferred while at postgraduate level, universities prefer a greater degree of specialization and interdisciplinary programs. Galloway and Brown (2002) argue that development of entrepreneurship university education facilities creation of high growth ventures.

In the next sub-section, the trend of entrepreneurship education in Iran will be explained.

### 3 Entrepreneurship Education in Iran

The entrepreneurship development plan was implemented in 2003 as a part of the Third National Development Plan in 12 Iranian Universities. The plan supported entrepreneurship centers, science and technology parks, entrepreneurship courses in universities and promotion of entrepreneurial spirit (Karimi et al. 2010). During the Fourth National Development Plan, entrepreneurship education was more supported. Now (in 2017) around 121 universities have established entrepreneurial centers across the country.<sup>1</sup>

Table 1 represents the development plans duration and their effects on entrepreneurship education.

Former studies of entrepreneurship education in Iran focused on the effects of entrepreneurship education programs on entrepreneurial intentions of students (Karimi et al. 2012), trends and challenges of entrepreneurship education (Karimi et al. 2010), and removal of barriers to entrepreneurship education courses offered in Agricultural Applied-Scientific Education Centers (Rahmanian Koushaki et al. 2012).

<sup>1</sup>From <http://karad.irost.org/kcenters.php>

**Table 1** Iran's development plans

Plans	Effect on entrepreneurship education
The Third Development Plan (2000–2004)	Implementation of KARAD in 2003 at 12 universities (allocation of budget to education, job creation, support of entrepreneurship centers and technology parks)
The Fourth Development Plan (2005–2009)	Entrepreneurship development through education, promotion, and direct and indirect support initiatives
The Fifth Development Plan (2010–2015)	Financial support of the private sector to develop and expand business, entrepreneurship, technical, professional, and practical training
The Sixth Development Plan (2016–2021)	Developing new technology and supporting the knowledge-based companies by providing financial support for universities and institutions of higher education. Developing internship programs (according to article 17 of the Sixth Development Plan)

## 4 Research Method

Following Honig (2004), this research takes the equilibrium perspective to study the trend of entrepreneurial education in the University of Tehran. The equilibrium perspective is a dynamic process of interaction with the environment, assimilating new knowledge and applying this new knowledge to increase the level of sophistication.

This study achieves methodological fit within intermediate theory (Edmondson and McManus 2007). Therefore, a case study design is the proper method of collecting data. In case studies both types of qualitative and quantitative data are applied; the evidence may be retrieved from a combination of verbal reports, archival records, observations and/or quantitative data (Yin 1981). As recommended by Yin (1981, p. 60) “narrative-writing” helps a researcher to integrate evidence from various sources of data. Therefore, different informants within the Faculty of Entrepreneurship have been chosen to record their stories of entrepreneurship education in Iran and specifically University of Tehran. The archival records of the University of Tehran have been investigated accordingly. As the national development plans are initiated and are still guiding the development and progression of the Faculty of Entrepreneurship, the development plans have been reviewed as well.

## 5 University of Tehran as the Pioneer of Entrepreneurship Education and Research in Iran

The University of Tehran as pioneer in the field of entrepreneurship education, established the Entrepreneurship Center in 2001. Table 2 represents the timeline of entrepreneurial top activities in the University of Tehran since early 1980s.

**Table 2** Time line of University of Tehran

2001	Entrepreneurship Centre was established at Pardis Technology Park (PTP)	2002	Entrepreneurship Centre was established at UT Entrepreneurship as major of Business management was established at Business department of the Faculty of Management of UT	2003	Entrepreneurship department was established at the Faculty of Management of UT Establishment of Master program in Entrepreneurship at the Faculty of Management of UT	2007	Faculty of Entrepreneurship in UT and also, GEM Iran office was established in this new Faculty of Entrepreneurship	2008	Entrepreneurship e-Learning Centre was established and online Master's degree programs started	2009	Publication of the Journal of Global Entrepreneurship Research and Entrepreneurship Development at the Faculty of Entrepreneurship
2010	UNESCO Chair in Entrepreneurship of the Faculty of Entrepreneurship	2011	PhD in Entrepreneurship at the Faculty of Entrepreneurship was offered in 13 majors	2013	Publication of the Journal of Global Entrepreneurship research at the Faculty of Entrepreneurship by Springer	2014	Collaboration with UMU, Samson, Turkey about how to become an Entrepreneurial University	2016	Collaboration with UMU, Samson, Turkey about how to become an Entrepreneurial University	2017	Toward minor in Techno-preneurship, minor in Entrepreneurship and pitch panel with collaboration of college of Engineering and other faculties of UT and professional master of entrepreneurship



## **6 Entrepreneurship Education at the Faculty of Entrepreneurship, University of Tehran**

Founded in 2007, the Faculty of Entrepreneurship offers extensive curricula in entrepreneurship. The Faculty of Entrepreneurship has four departments of Entrepreneurship Development, New Venture/ Business Creation, Corporate Entrepreneurship, and Technological Entrepreneurship. The Faculty of Entrepreneurship is also offering E-learning education for more than 700 students.

### ***6.1 Formal and Certificate Program of Entrepreneurship***

The Faculty of Entrepreneurship, as a graduate school, is offering both master and PhD programs as well as DBA and MBA courses. The details of these courses are explained in the next sub-sections.

#### **6.1.1 Academic Master Program of Entrepreneurship**

The Academic Master's degree program in Entrepreneurship includes the majors of New Venture/Business Creation, Technology-based Entrepreneurship, Public Sector Entrepreneurship, Development Entrepreneurship, Entrepreneurship Education and Extension, Tourism Entrepreneurship; Agricultural Services Entrepreneurship, Corporate Entrepreneurship, Information Technology-Based Entrepreneurship, International Entrepreneurship, and Electronic Business.

#### **6.1.2 PhD Program of Entrepreneurship**

The PhD program includes some general courses followed by specialized courses for each of the four majors of Business Creation/Venture, Corporate/Organizational Entrepreneurship, Development Entrepreneurship, and Technology-based Entrepreneurship. The general courses are: Research Methods in Entrepreneurship, Philosophy of Entrepreneurship theories, Philosophy of Management Theories, Philosophy of Organizational Behavior Theories, Philosophy of Islamic Values in Management and Entrepreneurship, Entrepreneurial Opportunities.

## **6.2 Certificate Program of Entrepreneurship**

### **6.2.1 MBA of Entrepreneurship**

Besides the formal courses in different majors of entrepreneurship master's degree, some specialized courses for MBA (Master of Business Administration) in entrepreneurship like Venture Capital, Product and Financial Marketing, Process Management and Implementation of Entrepreneurship Projects, and Quality Management are offered for owners/managers. Since 2011, around 995 students have been graduated from MBA of entrepreneurship.

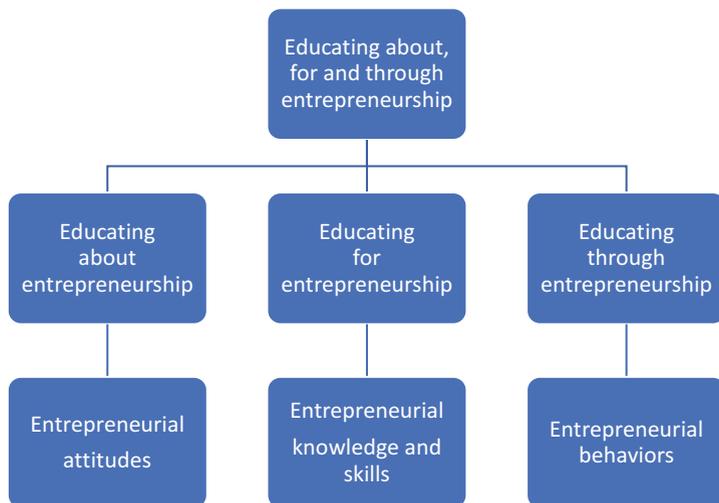
### **6.2.2 DBA of Entrepreneurship**

DBA in entrepreneurship school is a 2-year course targeting business owners, leaders of organizations, management consultants, trainers of management and entrepreneurship, MBA graduates and young entrepreneurs. The main courses in DBA program are: Business Models, Marketing Strategy, Learning Organization, Capital Management, Business Innovation, Business Intelligence, Business Sustainability, Leadership, Future Studies, Business Strategy, Business Research Method, and Business Networks.

The DBA course is designed to increase management and business knowledge and skills of the participants, increase decision-making ability of leaders and enhance understanding of the concepts and practical skills in the business world. All students hold a master degree; some hold PhDs before starting the DBA course. The DBA course had 332 graduates since 2014.

## **7 Approaches of Entrepreneurship Education in the Faculty of Entrepreneurship, University of Tehran**

The structure of universities has faced two transitions. (1) The first transition from a teaching to research universities, called the first academic revolution. (2) The second transition besides teaching and research institutes to universities with economic missions, called the second academic revolution (Etzkowitz et al. 2008). Overall, the best approach to entrepreneurship education is considering the students' need to understand the complexities and nature of entrepreneurial acts (Tracey and Phillips 2007). Another series of research categorizes the education objectives into education "for", "about" and "through" entrepreneurship (Kirby 2004; Mwasalwiba 2010) (Fig. 2).



**Fig. 2** Approaches to entrepreneurship education

Adopting a theoretical approach teaching “about” entrepreneurship, focuses on entrepreneurial attitudes and aims at giving an overall understanding of entrepreneurship. With an occupationally oriented perspective, teaching “for” entrepreneurship aims at transferring the required knowledge and skills to the promising entrepreneurs. Finally, teaching “through” entrepreneurship, takes a process-based approach to let the students experience the learning process (Lackéus 2015). Kirby (2004) suggests that entrepreneurship education needs to underscore educating “for” entrepreneurship more than educating “about” entrepreneurship. Entrepreneurship is not limited to new venture creation or small business management, but about creativity and change (Kirby 2004); therefore, educational institutions need to change their learning processes to help the students develop both systematic (left-brain analytical skills) and unconventional (right-brain entrepreneurial capabilities) thinking.

Entrepreneurship education needs to move toward a new approach to stimulate entrepreneurial activities in practice. Educating about entrepreneurship is to aim at obtaining a general understanding of entrepreneurship. Educating in entrepreneurship aims at making the students become more innovative in their existing workplace and taking more responsibilities. Therefore, educating “through” entrepreneurship as a new approach emphasis on wider definitions of entrepreneurship while education for and about are designed for higher level students. Educating through entrepreneurship helps the students to achieve business understanding and relevant competencies. Taking this three-dimensional perspective, University of Tehran tends to design the programs to educate the students about, for and through entrepreneurship. Educating for entrepreneurship aims to stimulate the entrepreneurial activities to help the entrepreneurship students to start an innovative business.

## **8 Entrepreneurial Ecosystem of the Faculty of Entrepreneurship, University of Tehran**

The Faculty of Entrepreneurship is the pioneer of executing entrepreneurial events. The following events are the recent activities of the faculty:

- Iranian Entrepreneurial Leaders Festival: recognition and glorification of the top leaders
- Entrepreneurship Commit-Up: letting the two generations of the leaders and young entrepreneurs share their experiences
- The UT Let-Start Weekend program: prepares people to overcome their fear of venturing

Whoever is interested to share their ideas or invest for a start-up is invited to participate in the events. The events help the whole ecosystem to transfer knowledge and spirit of entrepreneurship. The Faculty of Entrepreneurship is the hub to connect different elements of an entrepreneurial ecosystem. The following activities have been carried out in recent years.

### ***8.1 Entrepreneurial Leaders Network as Entrepreneurship Advisors***

The Entrepreneurship Leaders' Festival is held every 2 years in Iran. Only five countries in the world are running such festivals. England and United States are the pioneers and after Iran, India and Canada also run the similar festival.

The goal of this festival is appreciation of the entrepreneurship leaders of different industries. The conditions that apply to selection of these leaders are:

- The company should be international: more than 25% of its products should be exported
- Having business relationship with at least three countries
- Engagement in social responsibilities
- The company size should be over 1000 employees

The Faculty has established a network of guest speakers within the entrepreneurship leaders. The guest speakers are invited to talk about their experiences, share their stories and provide consultancy advice to the students.

### ***8.2 Superior Entrepreneurs as Entrepreneurship Advisors***

The Ministry of Labor and Social Welfare introduces the superior entrepreneurs each year. The superior entrepreneurs are invited to attend the Sunday evening sessions

regularly to give advice to whoever tends to start a business. The superior entrepreneurs also financially support the students with innovative ideas.

### ***8.3 Entrepreneurial Students as Entrepreneurship Advisors***

To have a role model in order to launch a new venture is an important factor in an entrepreneurial process. The entrepreneurial students are the students who are running start-ups. These students are invited to share their experiences and give advice to other students in the faculty.

### ***8.4 Providing Seed Money to Students by Omid Entrepreneurship Fund***

The Omid Entrepreneurship Fund has signed a cooperation agreement with the Faculty of Entrepreneurship. Due to this agreement, a loan is given to the students who present an interesting business plan to create a venture. The business plans are pitched in a pitch panel session; the representative of Omid Entrepreneurship Fund awards the winners.

## **9 Entrepreneurship Research at the Faculty of Entrepreneurship, University of Tehran**

The Faculty of Entrepreneurship has been supporting several research programs on various knowledge areas of entrepreneurship such as new ventures and entrepreneurial opportunities, corporate entrepreneurship, Global Entrepreneurship Monitor (GEM), entrepreneurial ecosystem and business accelerators, entrepreneurship education and promotion, technological entrepreneurship, social entrepreneurship and women entrepreneurship. Table 3 specifically includes the research using GEM data.

After the first report of Global Entrepreneurship Monitor (GEM<sup>2</sup>) in 1999, different waves of research based on GEM' data started. Figure 3 shows the progression of the four research waves.

Iran is the pioneer to start the fourth wave of research in the MENA Region (Middle East and North Africa). GEM data has been used in several research programs from 2001. The Special Issue of the "International Journal of Business and Globalization" ("Networks around Entrepreneurs in the Middle East and North

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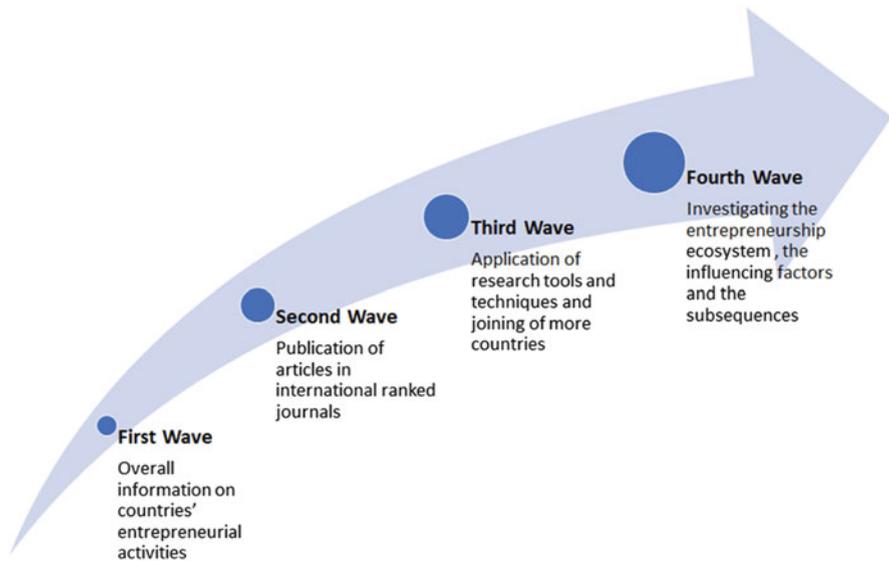
<sup>2</sup><http://www.gemconsortium.org/>

**Table 3** The theses using the GEM data

Title of the thesis	Method	Year
Explaining the individual and social factors affecting entrepreneurial intent in countries based on 2008 GEM survey data	Quantitative–Descriptive	2011
Entrepreneurial activity at the national level affected by institutional situation (global study based on GEM data)	Quantitative	2011
The effect of entrepreneurial competencies on generation companies in Iran and Denmark based on GEM data	Quantitative	2012
The impact of entrepreneurial activities on economic growth in selected countries of the global entrepreneurship watch organization (GEM)	Quantitative	2011
The impact of social networking on entrepreneurial competency based on GEM 2010 data	Mixed method	2011
Influence of social network, inclination to innovation, and entrepreneurial opportunity recognition of entrepreneurs based on GEM 2010 data in Iran	Mixed method	2011
Investigating the effect of inter-corporate collaboration on the innovation of Iranian secured businesses (based on GEM 2011 data)	Quantitative	2012
The impact of social networking and family support on the performance of new businesses in Iran and Denmark (using GEM 2011 data)	Mixed method	2011
The effect of organizational entrepreneurship on innovation in Iranian businesses based on GEM data	Quantitative	2012
The effect of organizational roles on business performance in selected countries based on GEM 2011 data	Quantitative	2013
The effect of psychological empowerment on the role of organizational entrepreneurship in small and medium businesses based on the data of 2011 GEM of Iran and Denmark	Quantitative	2013
Analysis of the impact of entrepreneurial social competencies and norms on entrepreneurial motivation based on 2012 GEM data of Iran	Quantitative	2013
The effect of national culture on entrepreneurial motivation in selected Asian countries based on GEM 2011 data	Quantitative	2015

Africa: Composition, Causes and Consequences, Vol, 11, No, 4”) specially focused on the MENA region. Table 4 lists the papers published in this special issue.

In order to get support from various sources and obtain more knowledge, entrepreneurs develop a strong entrepreneurial network, called the entrepreneurial ecosystem (Stangler and Bell-Masterson 2015). Etzkowitz et al. (2008, p. 681) argue that there is a global transition to ‘entrepreneurial universities’ or ‘innovative ecosystems’ which play a significant role in the knowledge based economy. The entrepreneurial ecosystem has a significant role in leveraging the education resources (e.g. internships, funding etc.) which affects the growth of start-ups (Duval-Couetil et al. 2016; Neck et al. 2004).



**Fig. 3** Four waves of entrepreneurship research of GEM based data

**Table 4** List of papers published in the special issue of IJBG

Title	Author
Composition of networks around entrepreneurs: cross-national comparisons in the Middle East and North Africa	Constance Van Hone; Lotfi Belkacem; Taha Ahmed Al Fusail
The effect of national culture on entrepreneurs' networks: a comparison of the MENA region and Denmark	Hadia FakhreDin; Hazbo Skoko; Maryam Cheraghi
Are entrepreneurial networks shaped by firms' organizational characteristics? A cross country comparison of the MENA region	Yousef Daoud
Entrepreneurs' gender, age and education affecting their networks in private and public spheres: Denmark, Middle East and North Africa	Shayegheh Ashourizadeh; Thomas Schøtt
How individual competencies shape the entrepreneur's social network structure: evidence from the MENA region	Sarfraz A. Mian; Hala W. Hattab
Promoting innovation in the MENA region: the role of social norms and individual factors in entrepreneurial networks	Mohammad Reza Zali; Bettina Lynda Bastian; Shahid Qureshi
Firms' exports promoted by entrepreneurs' networking: MENA and Denmark	Mahdokht Sedaghat; Mohamed Derrabi
Effects of entrepreneurs' networking with national values on job growth expectations: a two-level analysis for the MENA region and Denmark	Tareq Sadeq; Zakia Setti

## **10 Roles of the Faculty of Entrepreneurship Inside and Outside of the University**

Besides designing different courses and programs and supervision of research in entrepreneurship, the faculty is actively participating in designed social activities. Two case studies are described below:

### ***10.1 Case Study 1: KASHEF Plan, Entrepreneurship Promotion in Iran***

In order to recognize and enhance the entrepreneurial efficacy among high school students, the Faculty of Entrepreneurship is running the “KASHEF” Plan country wide. With 15 agents in different provinces and over 40 entrepreneurial markets, the Faculty of Entrepreneurship is expanding their free educational services to direct the next generation of young entrepreneurs.

The 9–15 year old talented students are selected. The reason behind the age range is that it normally takes 3 years on average for an entrepreneurial intention to form and let the entrepreneur to start their business. The students are first courage to get a loan from their parents. The real entrepreneurial stories are told in a childish manner to let the young entrepreneurs imagine the success path. In the next step, the students are led to make a handcraft, design a software, etc. and try to sell their product in the entrepreneurial markets. The students are also thought to calculate their little business margin and the tax. Different relevant activities like preparing the balance sheet, tax declaration, market research forms are also taught to the students during this plan. As a part of their social responsibilities, the young entrepreneurs are also encouraged to donate to their selected foundation.

The next plan is co-operating with the Ministry of Education to prepare the high school students to develop their business model and start their own business. The KASHEF plan is being supported by the “High Council of Employment”.

### ***10.2 Case Study 2: Advanced VLSI Lab***

The advanced VLSI Lab has conducted academic research in order to create knowledge at international level. The lab has been established to carry out the applied research, design and manufacture various products and provide specialized engineering services at national level. Beside the product development, the lab has an active role in compilation of national standards.

The VLSI lab approach is establishing a link between university and industry to empower the students, business development and entrepreneurship for the Advancement of Science and Technology and the national growth. The VLSI lab is an



entrepreneurial lab which is managed entrepreneurially. In fact, the School of Electrical and Computer Engineering and the Faculty of Entrepreneurship are collaborating to help VLSI lab to commercialize technological research and prototypes. The Minor in Techno-preneurship has been designed to help the engineering students and graduates to start their own technological businesses or commercialize their inventions.

### ***10.3 Match-Making and Knowledge Commercialization by Entrepreneurship Research***

Knowledge commercialization is the transformation of knowledge into products, processes, and new ventures which contributes to the economic growth (Mueller 2006); therefore, entrepreneurial universities are the means of knowledge flow because knowledge is created in firms or universities before exploitation.

The Faculty of Entrepreneurship is acting as the match maker in order to configure an effective network between entrepreneurs and investors. In playing the new role of matchmaking, the Faculty of Entrepreneurship has conducted some events inside and outside of the country such as organizing business forums between Iranian and Malaysian, Iraqi, Russian and Chinese entrepreneurs and investors.

## **11 New Direction of Entrepreneurship Education and Research of University of Tehran; Minors and Professional Master in Entrepreneurship**

Overall, entrepreneurship education is an innovative continuum of creativity (Duval-Couetil and Dyrenfurth 2012). The innovative education of entrepreneurship is connected to the technology-oriented programs and engineering (Duval-Couetil et al. 2016) and provides a framework to address “the engineering problems in a social context” (Nichols and Armstrong 2003, p. 137).

The entrepreneurship education is offered as courses and programs specialized for engineering students or as multi-disciplinary courses (Kuratko 2003). Standish-Kuon and Rice (2002) categorize the engineering or technology entrepreneurship programs into three forms:

1. Business schools offering formal curriculums through cooperation with the engineering faculties
2. Engineering schools offering the business schools’ curriculums
3. Multi-disciplinary programs offering the engineering entrepreneurship curriculum with active cooperation of the business and the engineering school

**Table 5** Comparison of entrepreneurial engineering modules in three case studies

Case study	Structure of modules	Details	Requirements
National University of Singapore (NUS)	Minor in Techno-preneurship in two groups	<ul style="list-style-type: none"> <li>– Group A (Entrepreneurial Marketing, Technological Innovation, New Product Development, New Venture Creation, New Venture Consulting Practicum)</li> <li>– Group B (Management &amp; Organization or its equivalent, Financial Accounting or its equivalent, Managerial Economics or Introduction to Economic Analysis or Principles of Economics)</li> </ul>	Selection of four modules from Group A and two modules from Group B
Purdue University	Minor in Engineering Entrepreneurship	<ul style="list-style-type: none"> <li>– Required (Engineering Entrepreneurship I &amp; II)</li> <li>– Electives (From Laboratory to Marketplace, Bioengineering Case Studies, Drug Discovery &amp; Development, Intellectual Property and Business Law for Engineers, Engineering Negotiations, Engineering Entrepreneurship Lab, Foundations of Leadership, Special Topics in Human Systems Engineering, Venture Capital and the Finance of Innovation, Venture Capital and Entrepreneurial Management)</li> </ul>	Six courses for a Minor in Engineering Entrepreneurship
University of Waterloo	<ul style="list-style-type: none"> <li>– Minor in entrepreneurship</li> <li>– Entrepreneurship Option in Engineering</li> </ul>	<ul style="list-style-type: none"> <li>– Three core courses (Foundations of Entrepreneurial Practice, Entrepreneurial Strategy, Essentials of Entrepreneurial Planning and Execution)</li> <li>– Five electives (Foundations of Venture Creation, Customer Experience Design, Growing Early Stage Ventures, Capstone Entrepreneurship Planning and Execution, Advanced Topics in Entrepreneurship, Entrepreneurship for Social Impact, Sales Fundamentals, Leadership)</li> </ul>	Eight courses and one experiential milestone

Table 5 represents the entrepreneurial engineering modules in three universities.

Duval-Couetil et al. (2016) examine the effects of different entrepreneurial education programs and experimental activities on students’ perception of knowledge and skills. The findings reveal that a great number of entrepreneurial courses are associated with higher perception of knowledge, skills and self-efficacy. The multi-disciplinary programs show to have a greater effect on the students’ general perceptions.

The engineering entrepreneurship prepare the students to recognize the opportunities related to the products, technologies and solutions, development of technologies for commercialization and funding of ventures (Shartrand and Weilerstein 2011). Duval-Couetil et al.’s (2012) survey within three institutions with established entrepreneurship programs for senior engineering students shows that 69% of

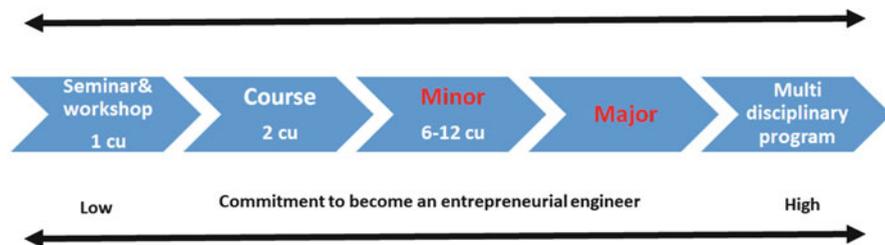


Fig. 4 Models of entrepreneurship education programs

students felt that entrepreneurship education positively affects their career prospects. Purzer et al. (2016) also argue the necessity of entrepreneurship education within engineering courses to help the graduate students to outperform their competitors, implement solutions to major technological problems and cope with economic crises. An entrepreneurial engineer organizes the risk of an engineering business (Nichols and Armstrong 2003; Purzer et al. 2016). Figure 4 shows the models of Engineering Entrepreneurship Education.

The relevance of entrepreneurship education for engineering students have been highlighted in former research (Cristina 2016; Karim 2016; Kriewall and Mekemson 2010; Luryi et al. 2007; Nieuwenhuizen et al. 2016; Streeter et al. 2002). In addition, the effects of entrepreneurship education on students' start-ups (Ochs et al. 2006) and the positive effects of technology entrepreneurship courses on career path of young engineers (Mancenido 2008) have been investigated.

The results of GEM research program revealed that entrepreneurship education increases the entrepreneurial intention and activity. According to GEM program results, there is 20% gap between the innovative entrepreneurial activities between Iran and the United States (GEM website 2016). This gap can be filled by techno-preneurship education.

### Minor in Entrepreneurship for Engineering Students and Professional Master in Entrepreneurship

In fact, education programs depend on strategic plan of universities. Following the third strategic plan, the University of Tehran has three strategic objectives: (1) to become an entrepreneurial university, (2) internationalization and (3) to enhance University's social and ethical responsibilities.

In order to help the university to reach its strategic objectives (especially the shared vision of entrepreneurial university during the next 5 years), Faculty of Entrepreneurship aims at implementing the entrepreneurship minor at the University of Tehran (Table 6). As Zali and Razavi (2013) research shows the entrepreneurial ideas of engineering students are more technology-driven while the social science students have more market-driven ideas. Therefore, the content of courses, minors of entrepreneurship should be specific for various groups. Table 7 shows the main units of the proposed Techno-preneurship minor by the Faculty of Entrepreneurship.

**Table 6** Techno-preneurship courses in University of Tehran

	Long term goals	Specific goals	Course duration/ modules	Main modules
Minor in techno-preneurship	<ul style="list-style-type: none"> <li>- Developing creative, intelligent, and skillful human resources in setting up a technology business</li> <li>- Strengthening university education in the path to the creation and development of new technology businesses in the private sector</li> <li>- Eliminating graduates' unemployment problem by teaching entrepreneurship skills to engineering students and graduates</li> </ul>	<ul style="list-style-type: none"> <li>- Training of Techno-preneurs to gain</li> <li>- The knowledge of developing product technology and business start-ups</li> <li>- The ability of establishing business start-up</li> </ul>	<ul style="list-style-type: none"> <li>- Both under-graduate and post-graduate engineering students can attend the courses at the same time</li> <li>- Six modules in the form of 12-15 units for master's degree</li> <li>- 15-18 modules for bachelor's degree</li> </ul>	<ul style="list-style-type: none"> <li>- Techno-preneurship</li> <li>- Product design</li> <li>- Design and engineering of techno-preneurship</li> <li>- Strategic management of techno-preneurship</li> <li>- Commercialization and product development</li> <li>- Marketing and internationalization of techno-preneurship</li> </ul>

**Table 7** The main units of the proposed techno-preneurship minor

Unit name	Hours	Unit name	Hours
Techno-preneurship	32	Strategic management of entrepreneurship, innovation and technology	32
Product Design	32	Product commercialization and development	32
Technological business and engineering design	32	Marketing and internationalization of technological business	32

Basically, master's programs can be professional or academic (please refer to Table 8 for comparison). Both programs prepare students for jobs as working professionals. Programs of academic master's degree allow students to obtain an education in a specialized field of study. Most of these degree programs take about 2 years of study with a thesis. However, recent master's degrees tend to be more business or career-oriented.

As Table 8 shows, the professional master's degree has just three semesters and is a graduate degree designed to allow students to pursue advanced training in entrepreneurship while simultaneously developing business and entrepreneurship skills through internship or new business start-up. The Faculty of Entrepreneurship is currently involved in designing and implementing Professional Masters degrees of entrepreneurship at the University of Tehran.

**Table 8** Comparison of Academic and Professional master program

Factors	Academic master	Professional master
Orientation	Science	Practical
Number of semesters	4	3
Thesis	Yes	No
Internship	No	Yes
Start up	No	Yes

## 12 Conclusion and Suggestion

The Faculty of Entrepreneurship of the University of Tehran is a pioneer in entrepreneurship education. Various entrepreneurship programs, minors and majors in the faculty bring the entrepreneurial efforts together across the university through social gatherings and lectures. A range of diverse formal and certified programs help the keen individuals to choose a desired program along with their educational needs. The scholars come from different disciplines and educational backgrounds like management, engineering, and social science. Some of the scholars are start-ups founders. Beside the formal education programs, the faculty focuses on recognition of entrepreneurial opportunities, link the funders and young entrepreneurs, run different entrepreneurial forums and seminars, International Conferences on Entrepreneurship (ICE), festivals to honor entrepreneurial leaders and educate the talented high school students as prospective entrepreneurs. Linking the “OMID” Foundation to the young entrepreneurs with interesting business ideas let the young talent receive proper financial support. The students can also get entrepreneurship advice from Iran entrepreneurial leaders and entrepreneurs’ network.

Taking a new direction in entrepreneurship education, a minor specifically for engineering students has been designed. The goal of this minor is enabling the engineering scholars to set international goals and commercialize their technological products.

Overall, the Faculty of Entrepreneurship takes a long-term visionary perspective to entrepreneurship education, educate the scholars, facilitate entrepreneurial activities and adopt academic and experimental knowledge.

### 12.1 Contribution

The Faculty of entrepreneurship of the University of Tehran as the first school of entrepreneurship in MENA Region, aligns all its activities to the country’s development plans and specifically to the entrepreneurship development. In order to reach the visions and goals, the Faculty of Entrepreneurship strives to:

First, develop the educational courses based on KARAD goals.

Second, develop the business management course in business department.

On the road to establishment of the Faculty of Entrepreneurship, the depth and variety of research and education in Iran have been expanded. The effects of the entrepreneurship education on a number of start-ups have been significant

## ***12.2 Limitations and Future Research***

Although, entrepreneurship education is very effective in training young entrepreneurs, the need for evaluation programs has been highlighted in recent literature (Pittaway et al. 2009; Welsh et al. 2016). As recommended by former research (Fayolle 2013; Kakouris and Georgiadis 2016), long-term evaluation of the effects of entrepreneurship education on success of entrepreneurial activities shall be considered. In addition, accepting failure of entrepreneurial activities (Welsh et al. 2016) is a part of the nature of entrepreneurship. Future research may investigate the effects of failures on entrepreneurial intentions.

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# University Students' Entrepreneurial Intentions: Does Education Make a Difference?



Afsaneh Bagheri

**Abstract** Recently critical questions have been raised about the impact of entrepreneurship education on developing entrepreneurial qualities and intentions of university students. The main purpose of this study is to explore the impact of entrepreneurship education on entrepreneurial intentions of students using the theory of planned behaviour and social cognitive theory. The sample consisted of 348 Master students (171 with and 177 without entrepreneurship education) from the Faculty of Entrepreneurship, Faculty of Foreign Languages and Literature and School of Electrical and Computer Engineering, University of Tehran, Iran. The data were collected using validated questionnaires. As hypothesized, the findings indicate that entrepreneurship education significantly improves entrepreneurial intentions of the students so that students who have undertaken entrepreneurship education have higher entrepreneurial attitude, entrepreneurial self-efficacy and intentions to become an entrepreneur than the students who have not undertaken entrepreneurship education. Furthermore, entrepreneurship education enhances students' entrepreneurial intentions through significantly improving both their entrepreneurial attitude and entrepreneurial self-efficacy. Implications of the findings for entrepreneurship education and improvement of research standards at universities are discussed.

## 1 Introduction

The main focus of governments' policies on entrepreneurship education all over the world suggests the importance of developing entrepreneurial capabilities in students (Entrialgo and Iglesias 2016; Hannon 2006; Heinonen 2007; Holmgren et al. 2005; Sánchez 2013). This considerable attention given to entrepreneurship education also reflects the dramatically critical influences of entrepreneurs and entrepreneurial activities on individual development as well as socioeconomic growth of both

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developed and developing countries (Heinonen 2007; Heinonen and Poikkijoki 2006; Hynes and Richardson 2007; Liñán et al. 2011; Matlay 2006; Watchravesringkan et al. 2013). Entrepreneurship education has been considered as a means to achieve the goals of a knowledge-based economy and a struggle to cope with certain economic and social problems such as the growing number of unemployed graduates specifically in developing countries including Iran (Molaei et al. 2014; Ertuna and Gurel 2011; Firdaus et al. 2009; Mastura and Abdul Rashid 2008). As a result, a growing number of public and private universities are providing students with different entrepreneurship education and training programs (Busenitz et al. 2003; Fayolle et al. 2006; Heinonen 2007; Mueller and Thomas 2000; Sánchez 2013). These programs aim to improve students' intentions to pursue an entrepreneurial career by improving their self-efficacy, attitude, creativity, innovativeness, leadership, and other skills required for creating and managing a new venture (BarNir et al. 2011; Chen et al. 1998; Fayolle et al. 2006; Karimi et al. 2016; Karlsson and Moberg 2013; Liñán et al. 2011; Louw et al. 2003; Wilson et al. 2007).

Despite the growing interest in entrepreneurship and the wide expansion of entrepreneurship education all over the world, critical questions have been raised about the real impact of entrepreneurship education programs on students' entrepreneurial intentions and attitudes (Fayolle and Gailly 2015; Karimi et al. 2016). Furthermore, there is limited understanding on how education affects students' intentions to select entrepreneurship as their future career path (Anderson and Jack 2008; Entrialgo and Iglesias 2016; Fuchs et al. 2008; Hannon 2006; Liñán et al. 2011; Watchravesringkan et al. 2013). Through a comprehensive review of the literature published from 1997 to 2011, Rideout and Gray (2013) concluded that research into the effect of entrepreneurship education programs on developing students' entrepreneurial competencies and intentions is at the very early stages of development and insufficient empirical evidence exists that show the effectiveness of the programs in creating more successful entrepreneurs. The results of Fayolle's (2013) systematic analysis of the published literature from 2006 to 2012 also revealed that most of the studies (49, 22.27% of 220) found a strong and significant impact of entrepreneurship education on students' entrepreneurial intentions. Through a meta-analysis of 73 papers examining the relationship between entrepreneurship education and entrepreneurial intentions, Bae et al. (2014) suggested a significant but small association between entrepreneurship education and entrepreneurial intentions of students. Moreover, entrepreneurship education had stronger impact on students' entrepreneurial intentions than business education. However, when the authors controlled for the participants' entrepreneurial intentions before their engagement in entrepreneurship education in their regression model, entrepreneurship education had not a significant impact on students' entrepreneurial intentions.

Furthermore, research findings on the impact of education on students' entrepreneurial intentions are contradictory. The majority of the prior studies provided empirical evidence for the positive influence of education on students' entrepreneurial intentions and skills (e.g., Anderson and Jack 2008; Morris et al. 2013; Pittaway and Cope 2007; Sánchez 2013; Zhao et al. 2005) and consequently their real

involvement in establishing their own venture (Karlsson and Moberg 2013). More specifically in Iran, studies provided empirical evidence for the significant impact of entrepreneurship education on students' entrepreneurial intentions (e.g., Arasti et al. 2011; Baghersad et al. 2013; Keshavarz 2014), attitudes toward entrepreneurship and entrepreneurial self-efficacy (e.g., Gheyasi 2016; Jafarimoghadam and Etemadi 2009; Karimi et al. 2016). While, recent research showed a small (Bae et al. 2014), insignificant and even negative effect of entrepreneurship education on students' entrepreneurial motivation and skills (Oosterbeek et al. 2010; Souitaris et al. 2007). This is because these studies mostly examined the direct impact of education on students' entrepreneurial intentions (Liñán et al. 2011). While more recent studies suggest that entrepreneurship education plays an indirect role in the relationship between students' entrepreneurial intentions and its antecedents (Entrialgo and Iglesias 2016; Ertuna and Gurel 2011; Watchravesringkan et al. 2013). Therefore, researchers called for further investigations into the moderating effect of entrepreneurship education on the relationship between personal capabilities and the entrepreneurial outcomes for students (Bae et al. 2014; Fayolle 2013).

In response, the main purpose of this study is to develop and test a model for the impact of entrepreneurship education on the relationship between the factors that shape students' entrepreneurial intentions using the theory of planned behaviour (Ajzen 1991) and the social cognitive theory (Bandura 1997). The findings highly contribute to the literature on the mechanism through which entrepreneurship education influences students' entrepreneurial intentions (Entrialgo and Iglesias 2016; Ertuna and Gurel 2011; Watchravesringkan et al. 2013). This study also advances our understanding of the direct and indirect effects of entrepreneurship education on students' entrepreneurial intentions and its antecedents. The first section of this chapter presents the conceptual and theoretical foundations of the study which constructs the basis for the hypotheses and the research model. The second section describes the methodology and the empirical analysis performed. The third part presents the findings. Subsequently, the findings are discussed in light of their implications for entrepreneurship education and research. Finally, the chapter ends by explaining the limitations, agendas for future research along with a conclusion section.

## 2 Theories and Hypotheses

The last four decades have seen the development of various theories and models to describe the factors that motivate and drive individuals to pursue an entrepreneurial career (Fayolle et al. 2014; Trevelyan 2011). The theory of planned behaviour (Ajzen 1991) and the social cognitive theory (Bandura 1997) have predominantly been used as reliable frameworks to examine students' entrepreneurial intentions and particularly the impact of education on improving entrepreneurial intentions among students (e.g., Entrialgo and Iglesias 2016; Fayolle et al. 2006; Karimi et al. 2016; Karlsson and Moberg 2013; Kickul et al. 2009; Pittaway and Cope 2007; Tyszka

et al. 2011; Zellweger et al. 2011). Research has shown the power of the theories specifically when integrated into a model to explain the factors that affect students' decision to become an entrepreneur (Guerrero et al. 2008; Liñán et al. 2011; Liñán 2008). Following previous studies, this research incorporated the theory of planned behaviour and the social cognitive theory (self-efficacy) to investigate the effect of education on the relationship between students' entrepreneurial self-efficacy, attitudes and intentions. The following sections review the most relevant literature on the impact of education on the relationship between entrepreneurial self-efficacy, attitudes toward entrepreneurship and entrepreneurial intentions and propose the hypotheses and the model to be tested in this study.

## ***2.1 Entrepreneurship Education, Self-Efficacy and Entrepreneurial Intentions***

Social cognitive theory self-efficacy is one of the main concepts of the social cognitive theory (Bandura 1997). Bandura (2012, p. 11) describes human behaviour as "a product of the interplay of intrapersonal influences, the behaviour individuals engage in, and the environmental forces that impinge upon them". In other words, human involvement in a particular behaviour originates from others' reflection, the nature of the behaviour and various factors in their environment. The interactions among these factors in couple with expectations from the outcomes of the behaviour shape one's beliefs in their ability to successfully complete a specific behaviour in a certain situation (Bandura 1999). Self-efficacy influences human behaviour in several ways. First, self-efficacy beliefs highly affect the selection of an action even though there are other alternatives (Bandura 1997). Second, self-efficacy influences the amount of efforts expended to perform the action and finally, the perseverance in dealing with difficulties and challenges of performing the action successfully (Bandura 1997; Dwyer and Cummings 2001). Therefore, perceptions of self-efficacy not only affect the current performance of a specific task but also the future task accomplishments (Bandura 2000). Bandura (2012) attributes this influential impact of self-efficacy to the direct and indirect relationships of the variable with other processes and factors that drive human behaviours such as goal setting, outcome expectations and perceptions toward facilitators and impediments in the environment. On the influence of self-efficacy beliefs on the selection of a career in the presence of other choices, Bandura (2012) argues that individuals mostly choose the career in which they are highly efficacious.

Self-efficacy is first conceptualized in entrepreneurship domain by Scherer et al. (1989). In the last three decades, the concept has been extensively used to explain students' entrepreneurial motivation, intentions, and behaviour (e.g., Chen et al. 1998; DePillis and Reardon 2007; Kickul et al. 2009; Liñán et al. 2011; Zellweger et al. 2011; Zhao et al. 2005). Entrepreneurial self-efficacy is defined as individuals' beliefs in their capacities to successfully perform the required tasks and roles in the

process of a new venture creation and management and their expectations toward the consequences of the venture (BarNir et al. 2011; Chen et al. 1998; Kickul et al. 2009; McGee et al. 2009). In general, self-efficacy affects the successful performance of a planned and intentional behaviour such as the decision to create a new venture (Bandura 2012; Elfving et al. 2009). It indicates individuals' degree of confidence in their competencies and skills to successfully accomplish an intended task in a specific situation. Scholars believe that perceived self-efficacy motivates and regulates one's actions through directing his/her choice of the action, the efforts he/she puts to perform the actions, and his/her persistence in the face of the challenges and difficulties to successfully execute the actions (Bandura 1997; 2012). Perceptions of self-efficacy take shape through a cognitive process through which individuals evaluate their abilities and the required tasks for a new venture creation as well as their expectations of the personal and societal outcomes of entrepreneurial activities (Bandura 2012; Mauer et al. 2009). This evaluation highly motivates and directs individuals' thoughts, efforts and behaviour particularly when they choose to carry out a challenging and novel task such as creating a new venture (Bandura 2012).

Self-efficacy highly improves one's intention to become an entrepreneur and successful performance of entrepreneurial tasks in several ways. First, perceptions of self-efficacy enable an individual to set entrepreneurship as his/her career goal (Carsrud et al. 2009). Second, self-efficacy beliefs enable the individual to plan to achieve the goal by regulating his/her thoughts and actions and perceive more facilitators than impediments in the environment (Bandura 2012). Furthermore, self-efficacy influences entrepreneurial intentions by improving individuals' perceived abilities to control the process of entrepreneurship (Carr and Sequeira 2007). Therefore, entrepreneurial self-efficacy and perceived control over behaviour (the theory of planned behaviour, Ajzen 1991) were employed interchangeably in research into entrepreneurial intentions (Liñán 2008). Entrepreneurial self-efficacy also enhances one's motivation and commitment to entrepreneurial behaviour (Elfving et al. 2009). Therefore, the motivation, intention, and commitment to establish individuals' own venture will not take form if they perceive their ability and skills as not sufficient for performing the challenging tasks in the process of entrepreneurship (Mauer et al. 2009).

A robust body of literature found entrepreneurial self-efficacy as the key personal trait that determines one's selection into entrepreneurship, endeavours to start a new venture, and persistence in the face of challenges and crisis throughout the entrepreneurship process (Barbosa et al. 2007; Chen et al. 1998; DePhillis and Reardon 2007; Liñán et al. 2011; McGee et al. 2009). Notably, for students, entrepreneurial self-efficacy has been examined in order to design more effective pedagogical strategies and methods to improve their perceptions of entrepreneurial self-efficacy (Mauer et al. 2009) and direct them to develop the knowledge and skills required for the entrepreneurship process (Bandura 2012; Chen et al. 1998). Previous research has shown both the direct (Chen et al. 1998; Liñán et al. 2011; Zhao et al. 2005) and indirect (Lope Pihie and Bagheri 2013) effects of entrepreneurial self-efficacy on students' entrepreneurial intentions.

Four sources of information have been highlighted as the factors that construct one's sense of self-efficacy (Bandura 1997). These factors are: mastery experience, vicarious learning (role modelling), social persuasion, and physiological status. Various entrepreneurship education and training programs (e.g., business plan development, running small businesses, case studies, and guest speakers) have been designed based on these sources of self-efficacy in order to develop students' sense of abilities to perform specific tasks required for establishing and running their own businesses (Heinonen 2007; Wilson et al. 2007). Educators believe that students' involvement in these programs helps them evaluate their capabilities to execute entrepreneurial tasks and decide whether or not to establish their own venture (Fayolle et al. 2006; Zhao et al. 2005). Previous research has supported the significant impact of entrepreneurship education on entrepreneurial self-efficacy and consequently entrepreneurial intentions of students (Fayolle et al. 2006; Kickul et al. 2009; Wilson et al. 2007; Zhao et al. 2005). More recent research has also found the influential role that specific entrepreneurship education plays in developing students' entrepreneurial self-efficacy (Morris et al. 2013). Using an experimental research design, Karlsson and Moberg (2013) concluded that entrepreneurship education significantly improves students' self-efficacy in performing the tasks required for the process of establishing a new venture including searching, planning, marshalling, people implementation and financial implementation. Karimi et al. (2016) examined the influence of elective and compulsory entrepreneurship education on university students' entrepreneurial intentions in Iran. The authors found a significant association between both types of entrepreneurship education and students' perceived control over entrepreneurial behaviour (self-efficacy). However, the findings of the study revealed an insignificant impact of compulsory entrepreneurship education on students' entrepreneurial intentions. Few studies have also examined how students' involvement in entrepreneurship education, their entrepreneurial self-efficacy and attitude toward entrepreneurship interact to construct their entrepreneurial intentions (Mauer et al. 2009). Bandura (2012) has recently highlighted attitudes toward behaviour as one of the mechanisms through which self-efficacy affects behaviour. Therefore, we proposed and tested the following hypotheses:

**H1** Entrepreneurship education has a significant positive impact on students' entrepreneurial intentions.

**H2** Entrepreneurship education significantly improves students' entrepreneurial intentions through entrepreneurial self-efficacy.

## ***2.2 Entrepreneurship Education, Attitudes Toward Entrepreneurship and Entrepreneurial Intentions***

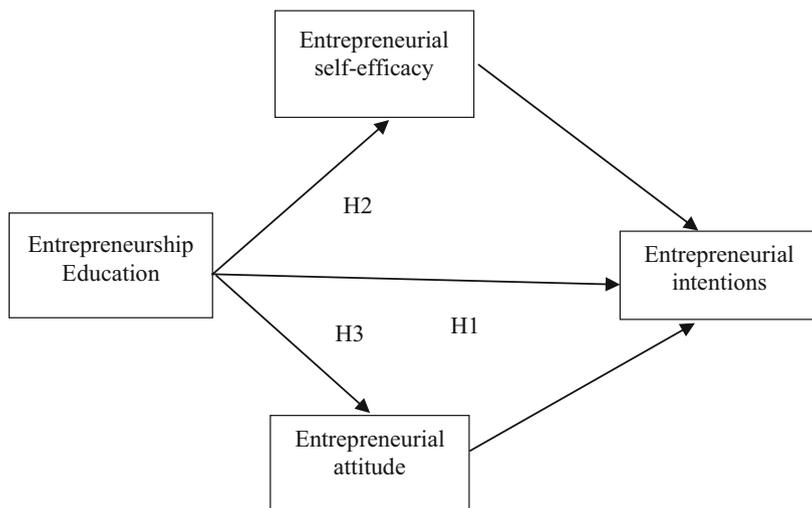
Attitude toward a specific behaviour is one of the main factors in the theory of planned behaviour (Ajzen 1991) that shape individuals' intended behaviour such as

the decision to become an entrepreneur. Carsrud et al. (2009) emphasize that individuals' positive attitudes toward entrepreneurship highly affect their intentions to become an entrepreneur. Students' attitude toward entrepreneurship has been defined as their awareness of the importance of entrepreneurship and indicates the desirability or undesirability of creating a new venture and its consequences for them (Liñán et al. 2011; Liñán 2008). Research findings highlighted students' attitudes toward entrepreneurship as a significant factor that influences their entrepreneurial career selection (Barber 2015; Peterman and Kennedy 2003). For example, using a sample of 216 university students, Harris and Gibson (2008) found that most of the university students have entrepreneurial attitudes. Liñán et al. (2011) examined the relationship between entrepreneurial attitudes, self-efficacy, knowledge and entrepreneurial intentions of final year Spanish university students. The findings confirmed the direct relationship between attitudes toward entrepreneurship and students' entrepreneurial intentions. Ferreira et al. (2012) also found that secondary school students' personal attitudes toward entrepreneurship significantly affect their intentions to become entrepreneurs. The findings of Sánchez's (2013) study revealed that entrepreneurship education significantly promotes secondary school students' attitudes toward entrepreneurship. Using a sample of university students in Denmark, Karlsson and Moberg (2013) provided empirical evidence for the influential impact of entrepreneurship education on enhancing students' attitudes toward entrepreneurship.

In addition to directly affecting entrepreneurial intentions, attitude toward entrepreneurship carries the impact of other variables on entrepreneurial intentions (Entrialgo and Iglesias 2016). The findings of a recent studies revealed the mediating role of attitudes toward entrepreneurship by carrying the effect of personal values in shaping entrepreneurial intentions of students (Entrialgo and Iglesias 2016; Watchravesringkan et al. 2013). Liñán (2008) also found that attitude toward entrepreneurship significantly moderates the relationship between university students' perceived entrepreneurial skills and their entrepreneurial career intentions.

While the impact of education on improving students' entrepreneurial self-efficacy and intentions has been established in the literature (e.g., Morris et al. 2013; Zhao et al. 2005), there is little knowledge on the relationship between education, students' attitudes toward entrepreneurship and their intentions to pursue an entrepreneurial career (Duval-Couetil 2013; Entrialgo and Iglesias 2016; Fayolle et al. 2006; Souitaris et al. 2007). Anderson and Jack (2008) highlighted the influential role that education plays in improving students' awareness of and attitudes toward entrepreneurship. Recently, Entrialgo and Iglesias (2016) found a significant influence of entrepreneurial education on entrepreneurial intentions of university students by improving the relationship between subjective norms and entrepreneurial attitude. Therefore, we proposed and tested the following hypothesis:

**H3** Entrepreneurship education significantly improves students' entrepreneurial intentions through their entrepreneurial attitudes.



**Fig. 1** Hypothesized model for the impact of entrepreneurship education on students' entrepreneurial self-efficacy, attitudes and intentions

Figure 1 presents the conceptual framework for this study that depicts the hypothesized effects of entrepreneurship education on entrepreneurial self-efficacy, entrepreneurial attitudes and entrepreneurial intentions. The framework integrates the theory of planned behaviour and self-efficacy to describe how education affects students' entrepreneurial intentions. As the framework indicates, entrepreneurship education influences entrepreneurial intentions both directly and indirectly through entrepreneurial self-efficacy and entrepreneurial attitudes.

### 3 Method

#### 3.1 Participants

The students from three faculties of the University of Tehran, which is one of the largest public universities in Iran, were selected as the participants in this study. To explore the moderating impact of education on constructing students' entrepreneurial capabilities and intentions and to avoid biases of the findings toward entrepreneurship education (Matlay 2005), both students with and without entrepreneurship education were included in this study. The students with education were selected from the Faculty of Entrepreneurship which is the first faculty in the Middle East and North Africa that specifically focuses on entrepreneurship education and involves students with different entrepreneurial activities to improve their entrepreneurial capabilities and intentions. The faculty only accepts Master's and PhD students. A group of 171 Master's students from different specializations of the faculty



**Table 1** Sample demographics (*n* = 348)

Demographic characteristics	With entrepreneurship education		Without entrepreneurship education	
	n = 171	Percent	n = 177	Percent
<b>Gender</b>				
Male	66	38.6	87	49.2
Female	105	61.4	90	50.8
<b>Age</b>				
20–25	7	4.1	5	2.9
26–30	59	33.5	52	29.4
31–35	56	32.7	41	23.2
36–40	32	18.8	50	28.3
>40	17	10.1	29	16.2
<b>Business experience</b>				
Yes	79	46.2	43	24.3
No	90	52.6	132	74.6

participated in this study. The students who did not undertake entrepreneurship education were selected from the Faculty of Foreign Languages and Literature and School of Electrical and Computer Engineering. These faculties were selected to ensure the students from both Humanities and Science fields of studies are included in this research. Of these faculties, a sample of 177 Master’s students was involved in this study. Previous studies have also used a sample of university students to examine the relationship between entrepreneurial capabilities and intentions (e.g., Barber 2015; BarNir et al. 2011; Karlsson and Moberg 2013; Verheul et al. 2012; Watchravesringkan et al. 2013).

Table 1 demonstrates the demographic information of the students. As the table shows, the number of students with and without entrepreneurship education was approximately equal (171 and 177 respectively). Regarding the gender, the majority of the students were female (105, 61.4% with and 90, 50.8% without entrepreneurship education). Most of the students from the Faculty of Entrepreneurship who have undertaken entrepreneurship education aged between 26 and 36 years (115, 66.2%). The students from other two faculties who have not undertaken entrepreneurship education aged between 26 and 40 years (143, 80.9%). The majority of both students with and without entrepreneurship education had no business experience (90, 52.6%, 132, 74.6 respectively).

### 3.2 Measures

We used validated scales to measure the constructs in this study including, entrepreneurial self-efficacy, entrepreneurial attitude and entrepreneurial intentions. In addition, the students were asked to provide their demographic information

including: gender, age and education background and whether they had a business experience.

### **Entrepreneurial Self-Efficacy**

Students' ESE was measured using the entrepreneurial self-efficacy scale developed by Scherer et al. (1989). Entrepreneurial self-efficacy has been considered as the strongest indicator of students' perceived confidence in their abilities to perform entrepreneurial tasks and roles (Carr and Sequeira 2007; Zhao et al. 2005). Building on previous studies (Chen et al. 1998; Karlsson and Moberg 2013; McGee et al. 2009; Wilson et al. 2007), entrepreneurial self-efficacy was measured using a multi-item scale in order to better assess students' beliefs in their skills to perform the tasks required to manage a business. The self-efficacy skills scale consists of five items including marketing (perceived capabilities to successfully perform marketing tasks of the business), accounting (perceived abilities to successfully perform monetary tasks of the business), human resources (perceived capabilities to successfully recruit competitive staff and allocate their tasks), production (perceived abilities to manage the process of production) and organizational management tasks (perceived capabilities to successfully perform tasks related to planning, organizing and controlling). An example of the items is "I can successfully complete the necessary marketing tasks related to owning a business (consider selling, selecting a location, advertising and customer service)". A five-point Likert scale was used to measure this variable anchoring from 1 (strongly disagree) to 5 (strongly agree). This study also found the scale highly reliable to measure students' entrepreneurial self-efficacy ( $\alpha = 0.84$ ).

### **Entrepreneurial Attitude**

Students' attitudes towards establishing their own businesses were measured using five items of the Entrepreneurial Intention Questionnaire developed by Liñán (2008). These items measure the attractiveness, satisfaction, and advantages of being an entrepreneur for students. An example of the items is "Being an entrepreneur would give me great satisfaction". A five-point Likert scale was also used to measure this variable anchoring from 1 (strongly disagree) to 5 (strongly agree). This questionnaire was also reliable to assess students' entrepreneurial attitudes ( $\alpha = 0.79$ ).

### **Entrepreneurial Intentions**

Students' entrepreneurial intentions were measured using six items from the Entrepreneurial Intention Questionnaire (Liñán 2008). The items measure students' desire, determination, efforts and goals to become an entrepreneur. An example of the items is "My professional goal is to be an entrepreneur". Liñán's (2008) findings indicated that the questionnaire was highly valid and reliable to measure entrepreneurial intentions and its components among university students in Spain (all of the constructs scored a Cronbach's alpha higher than 0.80). The findings of this study also confirmed high reliability of the questionnaire ( $\alpha = 0.81$ ). The students were asked to indicate the extent to which they agreed or disagreed with each item based on a five point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

### **Control Variables**

The findings of prior studies showed the influential impact of age, gender and business experience on students' entrepreneurial capabilities and intentions (Bagheri and Lope Pihie 2014; Gupta et al. 2008, 2009; Wilson et al. 2007). Therefore, students' age, gender and business experience were controlled in this study.

### **3.3 Data Collection**

Participation in this research was voluntary. All of the questionnaires administered were completed anonymously and the students were ensured that their responses will be confidential. Data collection was conducted during the academic year of 2016–2017. From the 453 questionnaires administered, 348 were used in the final analysis with 76.8% response rate.

### **3.4 Data Analysis**

To test the validity of the relationship between the constructs in the research measurement model, Structural Equation Modelling (SEM) and AMOS Version 20 was employed (Hair et al. 2010; Schreiber et al. 2006). Previous researchers have also used SEM to examine entrepreneurial self-efficacy, attitudes and intentions (Watchravesringkan et al. 2013; Liñán and Chen 2009; Liñán 2008; Guerrero et al. 2008; Zhao et al. 2005). The structure and loadings of the observed variables to each of the three constructs in the measurement model (entrepreneurial self-efficacy, entrepreneurial attitude and entrepreneurial intention) were assessed by performing Confirmatory Factor Analysis (CFA) for each construct. Subsequently, we included all of the constructs and the related items in one measurement model. Then, the hypothesized relationships among the variables in the conceptual model (Fig. 1) was tested using the regression analysis.

## **4 Results**

In this section, the results for model fit indices for measurement and structural models as well as hypothesized moderating role of entrepreneurship education in the relationship between entrepreneurial self-efficacy, entrepreneurial attitudes and entrepreneurial intentions are presented.

#### 4.1 Assessment of Instrument Validity

Confirmatory Factor Analysis (CFA) was performed for the three constructs in this study including entrepreneurial intention, self-efficacy and attitude in order to test factor loadings and model fit indices for each construct. The results indicate that all of the items describing the constructs had higher loadings than the 0.50 threshold to their constructs (Hair et al. 2010). Table 2 presents the statistics obtained for the scale constructs and items. Analysis of the measurement model developed with all constructs in this research indicated that the model fits the data well because  $\chi^2/DF$  was less than 3, all of the goodness of fit indices were higher than 0.90 and RMSEA was less than the 0.05 threshold (Byrne 2010) [ $\chi^2/df = 2.68$ ; Goodness of Fit Index (GFI = 0.91); Incremental Fit Index (IFI = 0.91); Comparative Fit Index (CFI = 0.95); Tucker-Lewis index (TLI = 0.90); and root-mean square error of approximation (RMSEA = 0.049)]. The Cronbach's  $\alpha$  for each construct in the model also showed high reliability of the scale ( $>0.70$ ). The composite reliability indices (CR) obtained for the constructs were also greater than the 0.7 threshold which confirms the high reliability of the constructs (Hair et al. 2010).

In particular, entrepreneurial self-efficacy is explained by five factors including students' perceived abilities in marketing, accounting, human resources, production and organizational management tasks (Cronbach's  $\alpha = 0.84$ ). Entrepreneurial attitude is best described by five factors which include attractiveness of entrepreneurship as a career, passion and willingness to start a business, satisfaction of becoming an entrepreneur and advantages of entrepreneurship for students. The Cronbach's  $\alpha$  obtained for this section was 0.79. Finally, five items on the students' tendency to do anything to become an entrepreneur, their willingness to put in effort to establish their own business and their seriousness and determination to create a new business venture best explained the students' entrepreneurial intentions (Cronbach's  $\alpha = 0.81$ ).

The Average Variance Extracted (AVE) indicated the convergent validity (the portion of the construct variance explained by its items) of the constructs in the measurement model (Kline 2010). Specifically, all of the constructs scored higher than the 0.50 threshold (Table 2) indicating that the majority of the variance in each construct is explained by its items (Hair et al. 2010). Discriminant validity of the constructs was also measured by Maximum Shared Squared Variance (MSV) and Average Shared Squared Variance (ASV) (Hair et al. 2010; Kline 2010). Analysis of the indices obtained in this study showed that the ASV and MSV scores for ESE were less than the AVE. This finding indicates that all of the items have the highest loadings to their own constructs.

Table 3 presents the means, standard deviations and correlations among the variables in the model. As the table shows the students with entrepreneurship education scored higher means in all of the constructs under this investigation including entrepreneurial attitude, self-efficacy and intention and these constructs have significant correlations.

**Table 2** Validity and reliability statistics for the constructs in the scale

Constructs	Items	Mean	SD	Factor loadings	Cronbach's $\alpha$	CR	AVE	MSV	ASV
Entrepreneurial self-efficacy	Marketing	3.48	0.89	0.73	0.80	0.84	0.52	0.43	0.37
	Accounting	3.27	0.91	0.56					
	Personnel	3.50	0.87	0.77					
	Production	3.38	0.87	0.77					
	Organization	3.46	0.85	0.78					
Entrepreneurial Attitudes (EATT)	EATT1	3.64	0.98	0.76	0.79	0.75	0.53	0.45	0.40
	EATT2	3.50	0.79	0.54					
	EATT3	3.54	0.84	0.86					
	EATT4	3.34	0.84	0.73					
	EATT5	3.08	0.91	0.56					
Entrepreneurial intentions (EINT)	EINT1	3.38	0.92	0.80	0.81	0.82	0.57	0.51	0.48
	EINT2	3.55	0.82	0.68					
	EINT3	3.68	0.90	0.65					
	EINT4	3.50	0.84	0.66					
	EINT5	3.40	0.98	0.67					
	EINT6	3.29	0.82	0.53					

**Table 3** Means, standard deviations and correlations among the study variables

	Variables	Mean	SD	With education		Without education		1	2	3
				Mean	SD	Mean	SD			
1	Entrepreneurial attitude	3.05	0.58	3.28	0.64	2.84	0.41	1		
2	Entrepreneurial self-efficacy	3.41	0.70	3.62	0.53	3.20	0.77	0.64**	1	
3	Entrepreneurial intentions	3.30	0.50	3.44	0.44	3.17	0.52	0.65**	0.73**	1

\* $p < 0.05$ , \*\* $p < 0.01$

## 4.2 Test of Hypotheses

To test the model proposed in this study, the direct impact of entrepreneurial self-efficacy, attitude and education were examined. The results indicated significant direct effect of the variables on entrepreneurial intentions of both students with and without entrepreneurship education. More specially, entrepreneurial self-efficacy significantly improves students' entrepreneurial intentions ( $\beta = 0.57$ ,  $p < 0.001$ ). Importantly, this effect was also significantly positive when students' age, gender, business experience and education were controlled ( $\beta = 0.56$ ,  $p < 0.001$ ). In accordance with previous studies (Bagheri and Lope Pihie 2014; Barbosa et al. 2007; DePillis and Reardon 2007; McGee et al. 2009), these findings highlight the impactful influence of entrepreneurial self-efficacy on students' intentions to become an entrepreneur. This study also found a significant positive and direct relationship between entrepreneurial attitude and students' entrepreneurial intentions ( $\beta = 0.65$ ,  $p < 0.001$ ). Furthermore, when the demographic variables were controlled the relationship was also significant and positive ( $\beta = 0.57$ ,  $p < 0.001$ ). The direct associations between entrepreneurship education and entrepreneurial self-efficacy ( $\beta = 0.27$ ,  $p < 0.001$ ) and entrepreneurial attitude were also significant and positive ( $\beta = 0.39$ ,  $p < 0.01$ ).

Hypothesis 1 predicts that entrepreneurship education has a significant positive impact on students' entrepreneurial intentions. The finding indicates that entrepreneurship education significantly and positively influences students' entrepreneurial intentions ( $\beta = 0.45$ ,  $p < 0.001$ ). Based on hypothesis 2, entrepreneurship education significantly improves students' entrepreneurial intentions through entrepreneurial self-efficacy. As Table 4 shows, this hypothesis was confirmed and entrepreneurship education was significantly associated with students' entrepreneurial intentions by improving their entrepreneurial self-efficacy ( $\beta = 1.29$ ,  $p < 0.001$ ).

This analysis also tested hypothesis 3 on the significant impact of entrepreneurship education on students' entrepreneurial intentions by improving their entrepreneurial attitude. As Table 5 presents, entrepreneurship education has a significant influence on entrepreneurial intentions of students by enhancing their entrepreneurial attitude ( $\beta = 0.45$ ,  $p < 0.001$ ).

**Table 4** Standardized coefficients for the impact of entrepreneurship education on entrepreneurial intentions and self-efficacy

Variables	Model 1	Model 2	Model 3	Model 4
Control variables				
Age	-0.004	0.044	0.049	0.031
Gender	0.031	0.013	-0.033	-0.013
Entrepreneurship experience	1.075**	0.041	0.005	0.008
Entrepreneurship education	-	0.457***	0.316***	0.908***
Entrepreneurial self-efficacy	-	-	0.479***	0.416***
Education × entrepreneurial self-efficacy	-	-	-	1.294***
R <sup>2</sup>	0.021	0.209	0.419	0.545
ΔR <sup>2</sup>	-	0.188	0.210	0.126

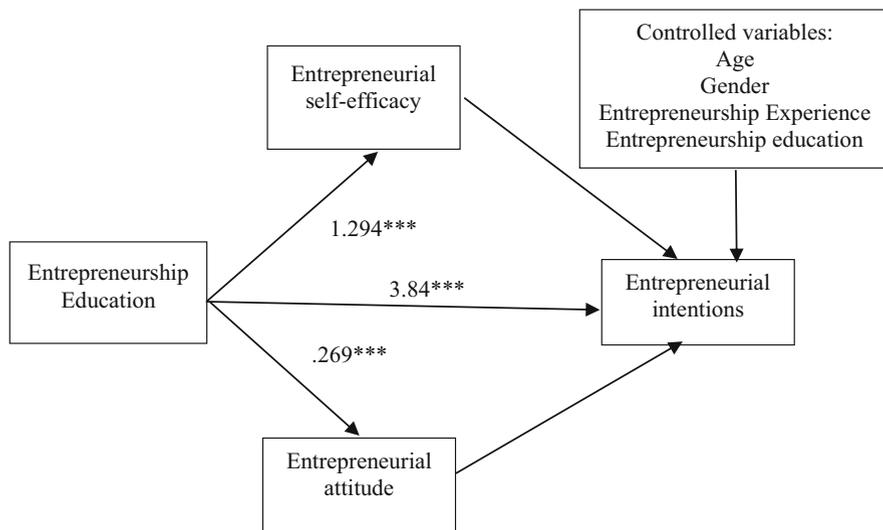
\*\**p* < 0.01, \*\*\**p* < 0.001

**Table 5** Standardized coefficients for the impact of entrepreneurship education on entrepreneurial intentions and attitude

Variables	Model 1	Model 2	Model 3	Model 4
Control variables				
Age	-0.004	0.044	-0.023	-0.023
Gender	0.031	0.013	0.002	0.002
Entrepreneurship experience	1.075**	0.041	0.046	0.046
Entrepreneurship education	-	0.457***	0.242***	0.242***
Entrepreneurial attitude	-	-	0.566***	0.242***
Education × entrepreneurial attitude	-	-	-	0.269***
R <sup>2</sup>	0.021	0.209	0.483	0.493
ΔR <sup>2</sup>	-	0.188	0.274	0.000

\*\**p* < 0.01, \*\*\**p* < 0.001

Finally, this study examined the simultaneous impact of entrepreneurship education on entrepreneurial self-efficacy and attitude of students and consequently their entrepreneurial intentions including the variables in a model (Fig. 2). Interestingly, the impact of entrepreneurship education on entrepreneurial intentions highly improved when the interactions between entrepreneurship education and entrepreneurial self-efficacy and entrepreneurship education and entrepreneurial attitude ( $\beta = 3.84, p < 0.01$ ) were included in the model. More specifically, entrepreneurship education improves students' entrepreneurial intentions by enhancing their entrepreneurial self-efficacy ( $\beta = 0.22, p < 0.001$ ). Entrepreneurship education also significantly improves students' entrepreneurial attitude. The R square for the model also indicates that the model fits the data well ( $R^2 = 0.61$ ). Of the demographic variables controlled in this study (age, gender and entrepreneurship experience), only entrepreneurship experience significantly influences students' entrepreneurial intentions ( $\beta = 1.07, p < 0.01$ ).



**Fig. 2** Results on the impact of entrepreneurship education on students' entrepreneurial self-efficacy, attitudes and intentions

## 5 Discussion

The wide expansion of entrepreneurship education and training programs specifically at universities have raised many questions about effectiveness of the programs in developing favourable attitudes toward and competencies in choosing entrepreneurship as their future career among students (Fayolle and Gailly 2015; Fuchs et al. 2008; Pittaway et al. 2009; Karlsson and Moberg 2013; Sánchez 2013). In addition, previous research failed to find a significant direct (Oosterbeek et al. 2010) and strong (Bae et al. 2014) relationship between entrepreneurship education and students' motivation, skills and intentions to become an entrepreneur. This study contributes to the validity and efficacy of entrepreneurship education by highlighting both significant direct and indirect influence of such education on constructing students' entrepreneurial intentions, self-efficacy and attitudes. The findings of this study also suggest entrepreneurial self-efficacy and entrepreneurial attitude as two mechanisms through which entrepreneurship education affects students' entrepreneurial intentions (Entrialgo and Iglesias 2016; Fayolle et al. 2006; Sánchez 2013; Zhao et al. 2005). Analysis of the data also supported the hypothesised impact of education on the relationship between entrepreneurial self-efficacy and students' entrepreneurial intentions. This is sharply in contrast with the studies that could not find a significant association between entrepreneurship education and students' entrepreneurial skills and intentions (Liñán et al. 2011; Oosterbeek et al. 2010; Souitaris et al. 2007). Specifically, our findings imply that entrepreneurial self-efficacy of students who received entrepreneurship education had a higher impact on their entrepreneurial intentions than students without entrepreneurship education.



With a higher efficacy on their entrepreneurial skills, students with entrepreneurship education are more likely to set entrepreneurship as their career goal, make plans to establish their own businesses and are more capable of performing entrepreneurial tasks (Carsrud et al. 2009; Karlsson and Moberg 2013; Elfving et al. 2009; Chen et al. 1998). Therefore, educators may need to provide students with entrepreneurship education programs and learning opportunities that improve their perceived self-efficacy in performing the tasks required for the entrepreneurship process by emphasizing more experiential and social interactive learning (Heinonen and Poikkijoki 2006; Man and Yu 2007; Morris et al. 2013; Pittaway and Cope 2007).

Furthermore, the findings of this study revealed the role of education in influencing students' entrepreneurial intentions by improving their attitudes toward entrepreneurship such that entrepreneurial attitudes of students who had received entrepreneurship education had a significant higher impact on their intentions to become an entrepreneur than their counterparts without such education. This confirms previous research findings on the impact of entrepreneurship education on improving students' entrepreneurial attitudes (Entrialgo and Iglesias 2016; Karlsson and Moberg 2013; Sánchez 2013), and consequently their entrepreneurial intentions. It also expands prior research on the relationship between entrepreneurial attitudes and intentions (Entrialgo and Iglesias 2016; Harris and Gibson 2008; Liñán 2008) by exploring the effects of education on improving students' attitudes. This finding suggests the necessity to develop more attractive, enjoyable and inspiring entrepreneurship education programs rather than the traditional methods of entrepreneurship teaching and learning in order to promote favourable attitudes toward establishing their own business among students and thereby enhance their entrepreneurial intentions (Ferreira et al. 2012; Hannon 2006; Hynes and Richardson 2007; Morris et al. 2013; Liñán et al. 2011). To do so, educators can highlight the advantages of entrepreneurship for personal development as well as the socio-economic growth of the country (Heinonen 2007; Heinonen and Poikkijoki 2006; Hynes and Richardson 2007; Liñán et al. 2011). Educators may also need to explore more effective entrepreneurship teaching and learning methods in order to promote positive attitudes toward entrepreneurship among students (Ferreira et al. 2012).

In particular, analysis of the data confirmed the critical role that both entrepreneurial self-efficacy and attitude play in shaping students' entrepreneurial intentions (Liñán et al. 2011; Liñán 2008). Karlsson and Moberg (2013) emphasise that "These two factors are central aspects for understanding the future behaviour of entrepreneurship students" (p. 7). Therefore, students' efficacy in performing entrepreneurial tasks and their attitudes toward entrepreneurship greatly determine their intentions to establish their own business and their ultimate engagement in entrepreneurial activities (Verheul et al. 2012). Due to the strong associations between entrepreneurial self-efficacy and attitude (Bandura 2012; Zhao et al. 2005) and the significant impact of entrepreneurship education on both students' entrepreneurial self-efficacy and attitude emerging from this study, entrepreneurship educators should focus on improving these two key factors if they are to create more competent entrepreneurs out of university students. Finally, this study confirmed the significant influence of entrepreneurship experience on students' entrepreneurial intentions. This finding

highlights the importance of experiential teaching methods that involve students in the learning opportunities to experience the process of establishing their own new business (Anderson and Jack 2008; Pittaway and Cope 2007; Wilson et al. 2007).

## 6 Conclusion

Based on the findings of this study, it can be concluded that entrepreneurship education improves students' entrepreneurial intentions in several ways. The programs not only provide the appropriate environment that create a desirable attitude toward entrepreneurship in students but develop students' entrepreneurial self-efficacy by engaging them in empirical learning activities (Heinonen and Poikkijoki 2006; Man and Yu 2007; Morris et al. 2013; Pittaway and Cope 2007).

This study provides several contributions to the literature and research on entrepreneurial intentions and entrepreneurship education. First, it supports the influential roles that entrepreneurship education can play in improving students' entrepreneurial self-efficacy, attitude and intentions. The model for the relationship among the variables emerging from this study explains the construction of students' entrepreneurial intentions as dynamic interactions between personal and environmental factors. These interactive effects that have been mostly overlooked by entrepreneurship researchers and educators can be considered in the research into the factors that affect students' entrepreneurial intentions as well as providing them with more effective entrepreneurship education (Liñán et al. 2011). Second, it identified the potential mechanisms for the influence of entrepreneurship education on a range of personal and socially constructed factors that shape students' entrepreneurial intentions. Third, this study confirmed the appropriateness of the theory of planned behaviour (Ajzen 1991) and self-efficacy (Bandura 1997) in explaining the relationship between entrepreneurship education and the factors that shape students' entrepreneurial intentions which has been criticised for lacking robust theoretical foundations (Fayolle 2013).

This study also provides contributions to entrepreneurship education particularly in Iran by highlighting entrepreneurship education, entrepreneurial self-efficacy and attitudes toward entrepreneurship as the influential factors that construct students' entrepreneurial intentions (Arasti et al. 2011; Baghersad et al. 2013; Gheyasi 2016; Jafarimoghadam and Etemadi 2009; Keshavarz 2014). The findings of this study also confirmed the significant impact of entrepreneurship education on university students' attitude toward entrepreneurship and entrepreneurial self-efficacy specifically in Iran (Karimi et al. 2016). Educators can use the model emerging from this study in order to provide university students with more effective entrepreneurship education and training programs. By including both students with and without entrepreneurship education, this study also makes great contributions to the literature on the role that education plays in developing students' entrepreneurial capabilities and intentions (Karimi et al. 2016; Karlsson and Moberg 2013; Matlay 2005). Particularly, the findings of this study contributes to one of the first empirical

evidence for the effectiveness of entrepreneurship education programs offered by the Faculty of Entrepreneurship in developing students' entrepreneurial attitude, self-efficacy in managing their own business and ultimately their entrepreneurial intentions. Conducting a comparative analysis, this study also explains the differences between the students of this faculty and two of other faculties of the University of Tehran in their intentions to become an entrepreneur, entrepreneurial attitude and self-efficacy. Furthermore, the findings of this study confirmed the validity and reliability of the EIQ (Liñán 2008) in measuring university students' attitudes toward entrepreneurship and their entrepreneurial intentions in the context of higher education in Iran as was supported in Malaysia (Bagheri and Lope Pihie 2014). Future researchers can use the EIQ to measure students' entrepreneurial intentions and its antecedents.

### **6.1 Limitations and Future Research**

This study has some limitations that suggest agendas for future research. First, this research attempted to examine the impact of education on the factors that shape students' intentions to choose entrepreneurship as their career. Therefore, only students were selected as the participants of this study. Although, students have often been used as the sample for examining entrepreneurial attitudes and self-efficacy and intentions (BarNir et al. 2011; Entrialgo and Iglesias 2016; Karimi et al. 2016; Karlsson and Moberg 2013; Liñán et al. 2011; Liñán 2008; Molaei et al. 2014; Zellweger et al. 2011; Zhao et al. 2005) the findings are constrained in terms of generalization to explain real entrepreneurs' entrepreneurial intentions. Future research might examine the interactions among the factors that shape entrepreneurial intentions and the effect of education on the relationships among these factors with a sample of nascent and real entrepreneurs to better explain entrepreneurial intentions and behaviour. Second, this study only focused on the effect of education on two of the most influential factors in shaping students' entrepreneurial intentions which are: entrepreneurial self-efficacy and attitudes toward entrepreneurship (Liñán et al. 2011; Liñán 2008). Since a combination of cognitive (Fayolle et al. 2014; Molaei et al. 2014), personal and social factors construct students' entrepreneurial intentions (BarNir et al. 2011; Liñán 2008) and education may affect other factors than those examined in this study, future studies should investigate the interactions among factors such as creativity (Zampetakis 2008; Zampetakis and Moustakis 2006), family business background (Carr and Sequeira 2007; Ertuna and Gurel 2011), subjective and social norms (Entrialgo and Iglesias 2016; Liñán 2008) and students' intentions to pursue an entrepreneurial career path. Further investigations can also be undertaken to explore the aspects of the entrepreneurship education that have the most influential impact on enhancing students' entrepreneurial self-efficacy and attitudes.

Third, this study only included Master students from three faculties of University of Tehran. Further investigations can explore the relationships emerging from this

study using undergraduate and PhD students from public and private universities. This research also measured students' entrepreneurial intentions using a self-report questionnaire rather than their actual behaviour in establishing their own venture. Although individuals' intentions have a direct effect on their actual involvement in entrepreneurship (Verheul et al. 2012), this measure does not allow drawing any conclusions if students will take action and establish their own businesses (Krueger et al. 2000; Liñán et al. 2005). It will be enlightening for future longitudinal studies to examine whether students with high entrepreneurial intentions will launch their own venture after graduation. Future comparative studies can also be conducted across countries to include the differences between countries regarding their entrepreneurship education programs and activities. Further investigations can also be undertaken to explore if the reinforcing effects of education on the relationship between entrepreneurial intentions and its antecedents change at different education levels. Furthermore, this study used a cross-sectional research design to investigate the role that entrepreneurship education plays in shaping students' entrepreneurial intentions. Future studies can also use more reliable designs such as a quasi-experimental method in order to better explore the effects of entrepreneurship education and assist policy makers and educators to provide students with more effective entrepreneurship education and training programs (Rideout and Gray 2013). Finally, another possible limitation of this study is that the present entrepreneurial self-efficacy findings are highly related to students' perceived skills in running an established business. These managerial skills may not fully describe the tasks required for the process of establishing a new venture (Mauer et al. 2009; McGee et al. 2009). It would be valuable to examine the impact of education on improving students' entrepreneurial self-efficacy by a process-oriented instrument in order to better explain their capacity to perform the tasks needed for the process of entrepreneurship (Karlsson and Moberg 2013; McGee et al. 2009). Research into the development of effective teaching and learning methods to improve students' entrepreneurial self-efficacy and attitude also provides great contributions to entrepreneurship education.

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# Integrated Approach as a Way of Overcoming Entrepreneurship Education Challenges in Elementary Schools in MENA Countries: Evidence from Iran



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**Abstract** Since entrepreneurship and its outcomes, especially in the private sector, lead to a considerable increase in quantity and quality of businesses and new products in society, it is considered as the key to solving economic and social problems. Due to the social and cultural achievements of society, the benefits of non-economic entrepreneurship (social entrepreneurship), have really increased which per se implies that improvement of entrepreneurial mind and culture becomes crucially important. Entrepreneurship education in both formal and informal educational systems is one of the most effective ways to institutionalize entrepreneurship. However, due to its wide range of purposes, the philosophy and importance of entrepreneurship education in the community could be complicated and challenging. In this regard, one must develop the concept for education and training in the community, along with other planned activities. In any case, there are a number of challenges and obstacles in designing and executing these programs in MENA countries like Iran. In this study, via qualitative research, the authors identified and investigated these obstacles and then provided guidelines for tackling the challenges. The key determinants in this study were curriculum development researchers and entrepreneurship education experts. In the end, findings showed that in order to promote entrepreneurial knowledge, skills and attitude in elementary school students, we could integrate entrepreneurship concepts in courses like mathematics, sciences, social sciences, Persian language, work and technology.

**Keywords** Entrepreneurship · Elementary education · Educational system · Integrated curriculum · MENA · Iran

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## 1 Introduction

In recent decades, entrepreneurship has been of great interest among the researchers and policy makers as an emerging scientific field. During these years, there has been extensive research on entrepreneurship in many countries and parts of them were to introduce and educate this concept. An entrepreneur is a person who starts a new venture, taking the initiative and risk associated with it and does so by creating something innovative to provide value to society. Entrepreneurs are the main drivers of economic growth and social development (Holt 1992; Hatten 1997). Many studies have been developed about the factors which influence making the decision to start a business (Littunen 2000; de Pillis and Reardon 2007) and subsequently, the question arises; whether these factors can be taught and learned (Henry et al. 2005; Klein and Bullock 2006; Kantor 2013). Or what makes a person accept all the psychological, social and financial risks associated with starting entrepreneurial activities. Related studies show that entrepreneurs have certain personality traits that distinguish them from non-entrepreneurs. As an example, McClelland (1961) has identified three indicators for entrepreneurs: competitiveness, personal responsibility for results, and innovation. On the other hand, studies show that entrepreneurship is an *educable* skill, and creativity and innovation can be encouraged (Fayolle 2005). By studying entrepreneurial traits, we can figure out creation and enhancement of such traits at an early age is possible. Children are, by nature, curious about the world around them. Providing opportunities for them to inquire and explore will, therefore, engage their interest. In fact, entrepreneurship education can build and strengthen personality traits that lead one to become an entrepreneur such as self-efficiency, need for achievement, risk-taking, and creativity (Rosendahl Huber et al. 2012). For this purpose, entrepreneurship education programs are conducted at different levels in many countries (EACEA European Commission 2012). Entrepreneurship education has been started by teaching entrepreneurship knowledge at university; however, most of the entrepreneurial traits are related to attitudes and skills that are shaped in early childhood. The best age to learn the basics of entrepreneurship and to create entrepreneurial traits is childhood and adolescence because children in their early years have specific physical, mental, emotional, psychological and social traits and their attitudes are shaped generally in this period and learning entrepreneurship skills in middle childhood (9–11 years old) is more effective (Cunha and Schennach 2010). As a recent experience, a sub-program named “My first enterprise: Entrepreneurship by playing” was designed in Mexican education system in order to promote entrepreneurship in elementary schools and the results show that it led to the creation of 1327 mini companies from 2009 to 2014 and the role of teachers is of great importance to influence the entrepreneurial knowledge and skills of students (Cárcamo-Solís et al. 2017).

Developing entrepreneurship can be a separate module in the curriculum, or can be integrated into the usual subjects of the curriculum and indirectly lead students to become entrepreneurs. According to recent researches, the best and effective

learning method for childhood is integrated curriculum (Vars and Beane 2000; Audet and Jordan 2005).

For the reasons mentioned, considering entrepreneurship education for children is essential, but often neglected in the educational system. Integration of entrepreneurship education in school curricula would enrich the learning experiences of students, increase the possibility of creating new businesses by students, improve job skills and business management abilities, enhance communication between schools and industry, and give an opportunity for testing the content and teaching methods of entrepreneurship education. And although the ideal time for learning the basics of entrepreneurship and developing a positive attitude towards entrepreneurship is childhood and adolescence, there is a lack of entrepreneurship education in primary schools, especially in developing countries (Gasse 1985; Filion 1994). In order to expand entrepreneurship in elementary schools, we should consider school books, because school books are one of the most useful educational resources that both teachers and students use on a daily basis. However, organizing the material and content of the curriculum is one of the most critical stages of curriculum development not only because it improves the educational performance but also because the achievement of important goals of the plan depends on it. Studies have further shown that different kinds of integrated methods have more effectiveness and efficiency than the subject-centered curriculum (discipline) and educational goals are reached better by this approach (Drake and Burns 2004). Therefore, educating creativity and entrepreneurship in childhood and adolescence, both in the family and at schools, is vital. In an integrated approach, instead of seeing entrepreneurship as a specific topic, it is considered a part of a longitudinal, transverse and interdisciplinary program. Fortunately, in most countries, entrepreneurship is taught as parts of the social sciences, which may include history, geography, government, and politics or civics as well as other related areas such as community studies (EACEA European Commission 2012).

Entrepreneurship education in Iran goes back to 1990; therefore, when compared with higher education, one can say it is older and more experienced. However, only in one major, named Working Knowledge, an optional entrepreneurship course was planned for students and the curriculum preparation, including textbooks and teacher training, was designed with this one course only. Today after more than two decades of experiences in the educational system it is required that educational system as one of the most important and coherent institutions contain a comprehensive, unified, and consonant entrepreneurship education program at all levels (Azizi et al. 2008).

Due to the necessity and importance of entrepreneurship education at all academic levels, different countries have attempted to teach entrepreneurship through formal programs in the educational system and so Iran has initiated the subject two decades ago in high schools and college entrepreneurship courses. According to the nature of entrepreneurship, presenting the content and methods of the subject in different periods of education, especially in primary school, is a challenge arising from lack of experience. So how to face and overcome the challenges of entrepreneurship education is a critical issue.

In this study based on Bloom's taxonomy, we classify learning objectives of entrepreneurship into three main areas: the cognitive domain (knowledge), the psychomotor domain (skill), the affective domain (attitudes). Then according to Heinonen and Poikkijoki model (2006), these areas are broken down into various concepts which are considered as learning outcomes:

1. Knowledge: knowledge of career opportunities and world of work; economic and financial literacy; knowledge of business organization and process
2. Skill: communication, presentation, and planning skill as well as teamwork; practical exploration of entrepreneurial opportunities
3. Attitude: self-awareness and self-confidence; taking the initiative and risk-taking, critical thinking, creativity, and problem-solving finally, using the interdisciplinary approach of Drake and Burns (2004), which is one of the integration methods for organizing curriculum; we identify the content and teaching methods for integrating with current disciplines in primary schools.

## **2 The Status of Entrepreneurship Education in Iran**

### ***2.1 Primary School Level***

In Iran the subject of entrepreneurship was mentioned in the National Curriculum Document as "the field of education and learning of work and technology" which aims at acquisition of practical skills for an efficient and productive life; attainment of related competencies to technology and related fields, especially information and communication technology for technological education and healthy life in cyberspace; and preparation to enter occupations in different economic sectors of social life. However, no specific integrated research has been conducted on the development of entrepreneurship curriculum. In fact, achieving economic growth requires entrepreneurial citizens, and achieving entrepreneurial citizens lie in the education and proper infrastructure which are originated in primary education. On the other hand, aiming at entrepreneurship education for enhancing children's creativity, entrepreneurial attitude and modified thinking, will require that the curriculum include these goals as an integrated subject and the content of existing textbooks encourage traits such as self-esteem, creativity, problem-solving, innovation, and communication in children. We already are aware that integrated approach in modern educational planning acts more efficiently. Also, given a large number of courses at this level of education, there is no need to add a new course as entrepreneurship. In addition, in spite of the emphasis of National Curriculum and the Evolution of Education Document and the goals of the primary level education, conditions of teaching entrepreneurship subjects in this period are not clear. Seeing the importance of entrepreneurship, mentioned in the National Curriculum and the Evolution of Education Document, and also regarding the fact that entrepreneurship education in primary schools has just recently been proposed, entrepreneurship

curriculum should be developed quite scientifically in this area. Otherwise, it will face many problems in practice.

Already at primary level education—first to sixth grade—entrepreneurship is not directly addressed and only in the sixth-grade curriculum, there is a course called “work and technology” which has some subjects related to business and entrepreneurship.

## ***2.2 High School Level***

The education system of high school is divided into the first three years of secondary school education (first, second and third) and second three years (fourth, fifth, sixth) and after the first three years of secondary school, students are allowed to choose their future educational discipline. Henceforth, the second high school education system is structured in the following fields: (1) Technical and Vocational, (2) Work and knowledge, (3) Theoretical [(a) Mathematics, (b) Natural, (c) The humanities, (d) Religious studies]. In the first period a book called “work and technology” is taught. In the second-period entrepreneurship course is presented (Ahmadpour Dariani and Azizi 2007).

## ***2.3 Higher Education***

Entrepreneurship education in universities has started in Iran since 2000 by KARAD program. Development of entrepreneurship at universities (KARAD) is a program which was carried out as a part of the Third Plan of Development (2000–2004) in 13 state universities by the Ministry of Science, Research and Technology of Iran. Creating entrepreneurial culture and mindset, building supportive and welfare institutions such as entrepreneurship center, sciences and technology incubators, and interface facilities were the main objectives of this program. In the Fourth Plan of Development (2005–2009) however, there was more direct and indirect support for expanding entrepreneurship. In recent years, business and entrepreneurship are presented at most of the universities at graduate and post graduate levels. We also have faculty of entrepreneurship on university of Tehran. In addition, other academic programs have also some optional courses related to entrepreneurship. Nevertheless, the greatest challenge of higher education is that the number of universities has unusually increased in Iran and this has led to a reduction of the quality in both the old educational system and the new entrepreneurial system.

## ***2.4 Investment and Entrepreneurship Funds***

In U.S.A., top training centers belong to the private sector or are sponsored by the private sector. Nonetheless in most countries, such as Iran, a majority of school and university budget is funded by the government. Unfortunately, in Iran, most public investments start long after the apparent need has emerged and end long before the results appear. To access the funds scattered in different types of organizations throughout the country, students and graduates must pass a complex bureaucratic path which by itself leads to an increase in the price of fundraising. Banks that can provide capital for small businesses make applicants face a long and complicated process and graduates cannot provide the necessary documents to receive loans. In addition, the interest rates on loans are immoderately high.

## ***2.5 Rules and Regulations***

According to the 2017 World Bank Report, Iran was ranked 121st among the 183 countries on the Ease of Doing Business. This indicates that the process of doing business is governed by strict rules. One of the most basic reasons for such a rank is having a system of bureaucracy with too many laws and regulations. Bureaucracy in Iran is a complicated process with endless stages. In Iran, governmental intervention in the market and existence of parallel regulatory bodies have led to a high risk of doing business. Planners in this area consist of the Ministry of Science and Technology, Ministry of Education, Ministry of Labor and Social Affairs, Parliament, Ministry of Industry, and other organizations. Consequently, increased layers of responsibility reduce transparency, raise management's doubts and put pressure on them.

## ***2.6 Gaps Between World of Business and Education***

The education system comprises three functions: knowledge production (research), transfer of knowledge (education), and distribution of knowledge (services). Iran's educational system is based on knowledge transfer; and according to law of budget allocating to research (half percent of the total country's GDP) the importance of research or services has been marginalized. A simple glance at the situation indicates that universities and the business environment operate in two distinct worlds. One (Business) is seeking for survival and the other (university) concerns a long-term plan for transfer of knowledge. Lack of cooperation between these two parts makes higher education neglect the changing business and society's needs.

## **2.7 *Unemployment***

Ministry of Education officials in Iran are unfamiliar with the industry and service sectors and therefore are not able to design and offer courses tailored to job opportunities in the labor market. The main cause of unemployment among graduates is incompatibility of disciplines with labor market needs. But the impacts of external factors outside the educational environments are also hugely effective. These external factors may include lack of entrepreneurial culture, lack of private sector development, lack of jobs, an organizational defect in the labor market, and employment discrimination against women who constitute more than half of Iranian students.

## **2.8 *Entrepreneurial Culture***

As an example of the culture of eastern societies, Iranian culture is also pluralist and the form of collective identity like the form of family, for instance, is widely accepted in Iranian culture. General population tends to do ordinary jobs and seek government employment. On the contrary, the developed countries' cultures encourage individualism along with teamwork and investment in ideas that are likely to be more successful.

## **3 *Methodology***

In this study, qualitative data were collected by semi-structured interviews. In the interviews, the interviewees were asked about integrating entrepreneurship education content in lessons of elementary education including mathematics, Persian language, sciences, social studies, thinking and research, work and technology. The target population consisted of three groups: (1) Curriculum planning experts, (2) Entrepreneurship Teaching experts, and (3) Pedagogical experts. Therefore, the number of interviews conducted on 14 participants, helped the adequacy of the data and theoretical saturation. The method of analysis in this research was open and axial coding process was based on the reaction, comments and opinions and written records of interviews. These concepts formed the study statements. Then, in coded statements, that are pivotal related around an axis formed categories. Each sub-category was one of the aspects of the conceptual model. These dimensions are the same "syllabus" involved in the interview-based on research design that gives the hybrid concept. These dimensions include size and content of entrepreneurship education that sub-dimensions explain.

## 4 Findings

The model of developing curriculum of entrepreneurship in primary education with integrated approach are displayed in Table 1. The components of the model are knowledge, skills and entrepreneurial attitude, as well as courses in primary schools (including 6 lessons: math, Persian language, science, social studies, thinking and research, and work and technology) have been integrated. Data from the interviews were clustered for each content of lessons and emerged suitable teaching methods indirectly to make the concepts to be taught. The results for the matrix entrepreneurship education were integrated into the curriculum at elementary levels.

For instance, the introduction of money to the children and doing the mathematical operations with the concept of money can make the students familiar with and attract them to the world of business. Or in the course of Persian language describing different kinds of jobs and businesses can make students think of different businesses and formation of them. This could be performed by telling and writing stories and proverb contest about different kinds of jobs.

As shown in Table 1, entrepreneurship education materials in the course of work and technology are identified as a prelude to new technologies as well as educational content. Discussing new methods and solutions to the problems relating to job opportunities are crucial too. To improve financial literacy skills, investigating the economy and the world's richest companies, producing domestic food such as popcorn or fruit juice, marketing and providing services or goods in order to sell products to parents of students and exhibiting are identified as the content of entrepreneurship education.

Visiting the exhibitions and local shops and talking about their jobs, creating groups and teams that share a common interest to set up business relationship, working with programs and software for planning, imagination and ideation of products and technologies could be considered along with the content of entrepreneurship education to strengthen self-awareness and self-confidence in the students' attitude.

## 5 Conclusion and Discussion

The purpose of education together with developing entrepreneurial skills in primary schools is enabling students to be creative, innovative, future planners and communicative. Having this purpose in mind, at the end of the course, students are expected to be able to provide new ideas for various problems and communicate effectively with others. In this regard, in the mathematics, course problems that can be solved in different ways have been assigned to students' groups. After teaching new topics the following tasks were to be solved by group brainstorming instead of teacher delivering.



**Table 1** Integrated entrepreneurship content and teaching methods at elementary schools

Educational objectives		Entrepreneurial skills (communication, presentation, planning, team work practical exploration of entrepreneurial opportunities)			Entrepreneurial attitude (self-awareness, self-confidence; taking the initiative, risk taking, critical thinking, creativity, and problem-solving)	
Courses	Content	Teaching methods	Content	Teaching methods	Content	Teaching methods
Mathematics	The definition of money Value of money in the community Basic economic concepts such as price, cost, revenue, and profit tax on math problems	Discussion about ways to solve financial problems Calculate the class as a group about the price of the product, costs, income, and profit	Mathematical and financial issues are solved in several different ways	Forming a group to solve difficult mathematical problems Problem-solving or group brainstorming	Definition of risk How to calculate risk	Group problem solving Intelligence test.
Persian language	Define the types of jobs Define the types of businesses	Storytelling Proverb competition Story writing	Fostering imagination through writing future career or business Complete Story How to write a business letter	Business story demonstration Strengthening exercises and improvisation in rehearsal	Poetry about business Entrepreneurs biography	Playing different job roles in group activities Watching cartoons Writing stories
Sciences	The benefits of plants The benefits of animals	Case Study Individual research	Creates living and solve problems in a creative way at odds with the issues	Talks about the evolution of products	Stages of fruit ripening Organic evolution	Video Playback Visiting museums Visiting the farms
Social studies	• History of new jobs Old jobs and businesses	• Play demos about various business	Risks and achievements of entrepreneurs in start-up businesses	• Provide posters and advertisements about the products	Social and profit entrepreneurs for community	Case study about entrepreneurs

(continued)

**Table 1** (continued)

Educational objectives		Entrepreneurial knowledge (career opportunities and world of work economic and financial literacy business organization and process)		Entrepreneurial skills (communication, presentation, planning, team work practical exploration of entrepreneurial opportunities)		Entrepreneurial attitude (self-awareness, self-confidence; taking the initiative, risk taking, critical thinking, creativity, and problem-solving)	
Courses	Content	Teaching methods	Content	Teaching methods	Content	Teaching methods	Content
Thinking and research	<ul style="list-style-type: none"> <li>Why people are doing business</li> <li>Reasons of various businesses emerging</li> <li>Reasons of jobs</li> </ul>	<ul style="list-style-type: none"> <li>Discuss the lifestyle of people</li> <li>List the duties of employees of a business</li> </ul>	<ul style="list-style-type: none"> <li>Methods of effective communication with classmates</li> <li>Procedures for project planning in schools</li> </ul>	<ul style="list-style-type: none"> <li>Finding ideas for solving business issues</li> <li>Brainstorming for new products or service ideas</li> </ul>	<ul style="list-style-type: none"> <li>Understanding the causes of failure or success</li> <li>Understanding the traits of entrepreneurs</li> </ul>	<ul style="list-style-type: none"> <li>Invite entrepreneurs</li> <li>Invited speaker</li> </ul>	<ul style="list-style-type: none"> <li>Invite entrepreneurs</li> <li>Invited speaker</li> </ul>
Work and technology	<ul style="list-style-type: none"> <li>History of new technologies</li> <li>Emerging technologies</li> </ul>	<ul style="list-style-type: none"> <li>Talk about new solutions to existing problems</li> <li>The ability to use business software applications</li> </ul>	<ul style="list-style-type: none"> <li>Create a mobile app</li> <li>How to use e-mail</li> <li>Launch weblog for economic news and business school students</li> </ul>	<ul style="list-style-type: none"> <li>Understanding technologies</li> <li>Business related software</li> </ul>	<ul style="list-style-type: none"> <li>Exhibition of new technologies such as Elecomp</li> <li>Formation of business groups with shared interests to set up a temporary business</li> </ul>	<ul style="list-style-type: none"> <li>Design a Logo for Business</li> <li>Design business cards</li> <li>Video Playback</li> </ul>	<ul style="list-style-type: none"> <li>Design a Logo for Business</li> <li>Design business cards</li> <li>Video Playback</li> </ul>

Given that the purpose of teaching entrepreneurship in elementary schools is becoming familiar with the world of economy and business and job opportunities, in mathematics, course concepts such as money, value of money in the community, economic concepts that require mathematical calculations such as price, cost, revenue, tax, profit can be used to achieve higher financial skills and prepare children for the financial transactions and better calculation in their daily tasks. Also, effective teaching methods are discussed about methods of financing and solving practical financial problems in class. Furthermore, development of the ability to calculate the cost price, cost, revenue, and profit are discovered.

In the Persian language course, students can become familiar with a variety of business and types of jobs, stories and proverbs and stories about work and its value to society.

Talking about history of new jobs in the social studies course can be useful. In order to achieve this objective, role playing methods of businesses and jobs can be used. Discussing the lifestyle of entrepreneurs and listing the tasks that a business staff should be familiar with could be important too. Students should also know about the ideals of certain prominent individuals as well as creation of businesses and jobs. Technology in history lessons and evolution of technology and its impact on the economy should also be discovered. Solutions for business problems by using computational software should be provided and discussed.

The risks and gains of business entrepreneurs in the start-up phase could be integrated into the content of social studies courses. Also presenting posters about the products or services will boost students' creativity.

In the Persian language, the students' creative capacities and communication skills will be strengthened by writing stories about their future career or explaining their favorite business and completing the incomplete stories about entrepreneurs and practicing principles of writing official letters. By using business games and business poetries as well as improvising plays, students can plan their activities and gain innovation in different sectors.

Also in science class, the ways which animals are used to solve their problems could be explained through innovative methods. Also the evolution of plants and animals on the Earth and turning them into products to meet the diverse needs of humans will be discussed.

In thinking and research courses, methods of effective communication with others will be taught to students. They must practice these methods to gain skill in connection with their fellow classmates. Furthermore, planning methods for carrying out different projects will be explained to them. Exhibitions to sell products will be held in schools and then the ways of problem solving will be investigated and used by the students' own ideas. Brainstorming sessions are one of the best methods that can be used to provide new goods or services in the annual exhibition booths.

In the work and technology course, students can learn how technology works and how innovative mobile applications are designed and how technology is used to earn income. How to use Email to send and receive messages could be taught in this course as well. Launching weblogs and websites for breaking economic and business news to school students as well as other interested parties could be weighty. In

this regard exhibition of new technologies such as Elecomp can also be useful. It is important that students, who only have certain business interests, develop different role skills in various groups.

The aim of strengthening entrepreneurial insights in primary school students is boosting confidence and risk-taking power. Consequently, attitude is linked with knowledge and skills and is even more complex than the two. The definition of risk and how to calculate risk in financial transactions and solving intelligence issues in mathematics, as well as playing different roles in group activities and showing related cartoons in Persian lessons can partially reinforce this attitude in them. Moreover, the role and value of entrepreneurs in society, economy, family, and entrepreneurs' talks with students in social studies course could be helpful. And in the course of work and technology, logo designing and printing business cards can be an effective way to promote an entrepreneurial attitude.

Research in the field of entrepreneurship education is novel and at a very elementary stage. Different countries are developing and expanding programs to promote entrepreneurial traits in students. Review of past research shows that many researchers believe that entrepreneurship should be entered in the educational system. In fact, entering the themes of entrepreneurship in textbooks can fertilize the seeds of motivation for entrepreneurship in children. According to the European Commission, incorporating some entrepreneurship concepts in some European countries in experimental education in schools has been started. But implications of practical and organized research showing entrepreneurial curriculums suitable for each education level have not been clearly detected (Eurydice 2016). Accordingly, for the development of entrepreneurship in elementary schools, some functional implications are represented. For example, the Mexican experiment shows that the persons who participated in entrepreneurship sub-programs showed significant changes in their attitudes towards entrepreneurship. Also, the aim of this research is to find out the contents and methods to improve entrepreneurial traits based on the expert's viewpoint.

## 6 Practical Implications

According to the findings of this research, the following implications are recommended:

1. Developing entrepreneurship and formulating a general policy of entrepreneurship education programs in the education system with the potential of local and regional business specifics should be the key driving factor of the Ministry of Education at all levels, especially in primary schools. Certainly, in all subjects, including geography, sociology, chemistry, physics, and mathematics, entrepreneurship content could be implemented.
2. In order to execute the entrepreneurial policies all education officials and executive staff especially teachers should be familiar with the role and importance of entrepreneurship education in the community.

3. In preparing more attractive contents for children, development of entrepreneurship materials in the form of multimedia, electronic, games and cartoons is necessary.
4. Entrepreneurship programs should be held in schools by inviting former students who work as entrepreneurs in society and transferring their experiences to the current students and putting such invitation process on a regular basis.
5. Special entrepreneurial training courses should be set up for students who want to become entrepreneurs.
6. Students' learning by doing and engaging in entrepreneurship education courses definitely should be practical and activity-based rather than teacher-centered.
7. All stakeholders like teachers and business leaders should participate in curriculum planning of integrated entrepreneurship, preparing educational materials, and designing learning activities, teaching-learning strategies, and evaluation approaches.

## **7 Recommendations for Further Research**

1. According to the findings, this study clearly affirms that an approach to combining entrepreneurship education and curriculum development is the best possible approach. However, the use of integrated methods for organizing curriculum in terms of education levels (from primary school to university level) and different types of integration are subjects that require further study.
2. Methods of learning and teaching in an integrated approach in primary schools are extremely important and need adequate attention and scientific research.
3. It should be pointed out that the objective of entrepreneurship education is not only business start-ups and entrepreneurial profit for entrepreneurs, but also entrepreneurship is affecting life in all dimensions, with social, organizational and individual applications. Thus Students as future employees, managers, executives, and entrepreneurs of the country, if familiar with the issues, will be most effective in deciding about their lives and careers for themselves.
4. There are different kinds of integration methods such as multidisciplinary and transdisciplinary approaches. Further integration methods could be used for identifying the learning concepts and methods.
5. Students could be addressed in researches for finding out about methods which will lead to fostering entrepreneurial traits.
6. Entrepreneurship education could be considered as a separate module in the education system and providing concepts is of a significant importance.
7. As the researches indicate children learn much from their family environment. It is important to understand whether teaching entrepreneurship to parents could influence the attitudes and skills of children.
8. Distinctive kinds of researches could be implemented on the children who are in their early childhood in order to identify whether learning concepts are more important and effective or learning methods.

9. Further research is required to determine the degree of effectiveness and efficiency of each concept and method of the current research with a quantitative approach.

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# Spiritual Intelligence and Social Entrepreneurial Intentions Among Students: The Mediating Role of Entrepreneurial Passion



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**Abstract** It is well known that social entrepreneurs have distinct beliefs, purposes, and perspectives. They have conviction in their own particular beliefs and in how those beliefs are formed. However, little research has been done to date that clarifies the exceptional beliefs of social entrepreneurs. Spirituality gives people a transcendental perspective. Furthermore, spiritual intelligence brings about a deeper understanding of life, heightened values, a strong sense of purpose and a high level of motivation. Despite the importance of a person's orientation in terms of beliefs, little research has been done to evaluate the role of spiritual intelligence as a driving force for social entrepreneurship. Therefore, the present research is done to evaluate the relationship between spiritual intelligence and social entrepreneurial intention according to the mediating role of entrepreneurial passion. For this purpose, the descriptive-correlation method is used and 384 questionnaires are distributed among local undergraduate students of management and industrial engineering at universities in the city of Mashhad in Iran. Structural equation modeling with partial least squares is applied for data analysis. Results show that spiritual intelligence is a

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predictor of social entrepreneurial intention through the mediating role of entrepreneurial passion. However, of the two types of entrepreneurial passion tested in this research, the passion for founding is determined as a stronger mediator for this relationship compared to the passion for inventing. Results also show that spiritual intelligence had a direct effect on social entrepreneurial intention. In addition to this, results confirm effects of both types of entrepreneurial passion on social entrepreneurial intention. However, the passion for founding has a much stronger effect on social entrepreneurial intention than does the passion for inventing. Finally, practical implications and future research are discussed.

**Keywords** Spiritual intelligence · Entrepreneurial passion · Passion for inventing · Passion for founding · Social entrepreneurial intention · Social entrepreneurship

## 1 Introduction

Schumpeter (1934), in his economic development theory, reports that a community's movement toward development requires highly energetic leaders who do not easily accept facts and who are strongly motivated to adopt new ideas. He calls such people entrepreneurs and maintains that such people express a strong passion for conducting affairs successfully and that their most important feature is that of placing themselves in situations where they can be effective. Shane et al. (2003) mention the category of selfish love among entrepreneurs and a passion for the process of creation and making an organization profitable. This is in response to the question; what causes maintenance of entrepreneurs' long-term efforts to follow-up on opportunities? Passion includes a positive tendency to entrepreneurial activities that can lead to perceptions of related purposes, entrepreneurial behavior and entrepreneurial effectiveness (Yitshaki and Kropp 2016). Entrepreneurial passion seems to be an important motivator of an entrepreneur as it fosters a sense of trust in investors; especially when a product or environment is subject to ambiguity and change (Cardon et al. 2009). Despite the importance of passion for entrepreneurship, this has not been clarified by research to determine values and inspirational factors that encourage entrepreneurs to tolerate and accept unavoidable and high levels of uncertainty associated with the entrepreneurial activity (Judge and Douglas 2013).

Mashhad is one of the most visited religious cities in the world (Zabeth 1999). Because of holding pilgrimage sites including Imam Reza shrine within itself (Davidson and Gitlitz 2002), Mashhad has become not only a hub of tourism in Iran (Aminian 2012) but also of spirituality (Shahshahani 2009). Accordingly, the Islamic Educational, Scientific, and Cultural Organization (ISESCO) chose Mashhad as "cultural capital of the Muslim world" in Asia for 2017 (Press TV 2017). Hence, religion and spirituality play strong roles in the cultural and psychological contexts of Mashhad.

According to the Theory of Planned Behavior (Ajzen 1991), beliefs demonstrate the information we have about the world, and they form the cognitive basis for many of our responses to aspects of that world. Accordingly, beliefs establish the basis for our attitudes and intentions (Ajzen 1991). Traditionally, studies on effective and



driving factors of entrepreneurial activities have focused on economic growth and wealth creation (Balog et al. 2014) and have ignored the role of spirituality (Kauanui et al. 2008, 2010). Nowadays, the effect of spirituality and religion in the field of entrepreneurship has begun to attract research attention (Balog et al. 2014) and some research has been done to evaluate spirituality on various aspects of entrepreneurship (Jackson and Konz 2006; Kauanui et al. 2005, 2008, 2010; Pio 2010; Nandram 2016). Balog et al. (2014) express that spirituality and religion had suitable potential as entrepreneurial measures of factors for the desire for self-fulfillment and meaning that are included in most definitions of spirituality and that have often been identified as a person's main drive to start up an independent business. Also, other research has expressed that more spirituality causes more intense passion in certain cases (Kauanui et al. 2010). Based on this, this issue can be raised by this question: can spiritual intelligence have a positive effect on entrepreneurial passion? Despite some research on the effect of spiritual and religious values on entrepreneurial motivation and attitudes towards entrepreneurship (Balog et al. 2014), very little research has been done to evaluate and test interrelation of these two concepts.

Research in the field of entrepreneurship is still investigating an explanation for reasons that some people have a tendency to start up a business and others lack this inclination (Holtzsch 2014). Identifying factors for entrepreneurial intention by evaluating roles and models for importance, mental plans and criteria and cognitive traits and patterns can clarify the process of acting on this intention (Fayolle and Liñán 2014). In addition, it can provide a clearer perception of the issue of how automatic processes are responsible for decision making in humans. Some entrepreneurs have expressed that their motivation to start a business was to help others and to serve society, customers and other stakeholders in a company rather than personal financial gain (Balog et al. 2014). Social entrepreneurs are an obvious example of this attitude. Social entrepreneurs have a social purpose as the main goal rather than ambition for personal financial profit (Shaw and Carter 2007). According to Ungvári-Zrínyi (2014), spirituality is one of the factors which inspires entrepreneurs and causes them to think and move beyond mere material interests. In addition to this, Krueger (2007, 2009) suggested that research on entrepreneurial intention could be developed through an attempt to provide a better understanding of the deep beliefs and assumptions that form intentions. So, this raises a question: does spiritual intelligence have a positive and significant effect on people's intention for social entrepreneurship? Despite some research in the field of spirituality and entrepreneurship, little has been done to evaluate and test the relationship between spiritual intelligence and social entrepreneurial intention. Some studies have stated that entrepreneurial passion is one factor that can lead to entrepreneurial intention (Nasiru et al. 2014; Moses et al. 2016; Biraglia and Kadile 2017). So the present research was done to investigate whether or not spiritual intelligence has an effect on social entrepreneurial intention through the mediating role of entrepreneurial passion. Accordingly, because of the importance that spirituality can play in the stimulation of entrepreneurial passion and subsequently social entrepreneurial intention, the contribution of this research is to examine the effect of spiritual intelligence on social entrepreneurial intention with the mediating role of entrepreneurial passion among

local undergraduate students in the fields of management and industrial engineering in universities in the City of Mashhad, Iran.

## 2 Literature Review and Research Hypotheses

### 2.1 *Spiritual Intelligence*

Spirituality is one of the three main philosophical perspectives of the ultimate nature of reality. As the first of these, spirituality is a theistic perspective; it concedes to the existence of a superior or immortal soul. The second perspective is atheism that denies belief in God or any type of soul or deity. According to this perspective, matters are the only truth of reality. The third perspective is agnosticism; wherein there is no clear evidence for the existence of God or any immortal souls and therefore, questions of existence cannot be answered (Nandram 2016). Spirituality is regarded as a set of capabilities and abilities that make humans capable of solving problems and reaching everyday goals in life (Emmons 2000). Spirituality is the search among individuals or groups for a sacred sense of purpose (Kauanui et al. 2010). Spirituality refers to how a person gives meaning to his life through an ultimate state and in response to deep consideration of the world (Emmons 2000). Some researchers have presented spirituality as a type of consciousness (e.g., Mayer 2000) and others refer to spirituality as a type of intelligence (e.g., Emmons 2000; King and DeCicco 2009). Spiritual intelligence is a set of mental-adaptive capacities based on immaterial and transcendental aspects of reality (King and DeCicco 2009). A review of various definitions of spiritual intelligence shows that having meaning and purpose in life is a common factor in most of these definitions. Having spiritual intelligence helps a person to reach a deeper cognitive understanding of events and experiences and the connections between them (Vaughan 2002). Transcendental concerns are manifest in a person's efforts to fulfill their purpose and to create a deep connection between spirituality and purpose in life (Zohar 2012). In fact, one function of spirituality is the creation of a transcendental perspective of the purposes that a person aspires to fulfill in their in life. Transcendental concerns give form and orientation to a person's life and make connections between motivation, spirituality, and intelligence (Emmons 2000).

Emmons (2000) presents five components of spiritual intelligence:

(1) Capacity for transcendence; (2) Ability to enter into higher spiritual state of consciousness; (3) Ability to invest in everyday activities, events and relationships with a sense of the sacred; (4) Ability to utilize spiritual resources to solve problems in life; (5) Capacity to engage in virtuous behavior, such as showing forgiveness, expressing gratitude, demonstrating humility and displaying compassion.

King and DeCicco (2009) in a newer and similar conceptualization counted four main abilities or capacities for spiritual intelligence: (1) Critical Existential Thinking—a capacity of critical reflection of the nature of being, reality, the world, space time and other existential and metaphysical topics, as well as the capacity to reflect

on non-existential topics related to a person's being; (2) Personal Meaning Making—the ability to extract meaning and a personal sense of purpose from all material and mental experiences such as the capacity to create and to find direction or purpose in life; (3) Transcendental Awareness—capacity to recognize transcendental aspects of the self, others and the world during normal states of consciousness, associated with the capacity to recognize relationships; (4) Conscious State Expansion—ability to enter heightened state of consciousness.

## 2.2 *Entrepreneurial Passion*

Generally, passion is defined as a person's strong tendency to favored activities that they regard as important (Murnieks et al. 2011). Passion can strengthen motivation and provide a balanced and purposeful life (Curran et al. 2015). Passion is necessary to reach higher levels of operation and to cope with change (Ismail et al. 2016). However, the concept of passion as a positive tendency has not always had consensus as sometimes it has been used to describe forceful and compulsive activities, a negative feeling or excessive insistence. According to these two perspectives, two types of passion can be identified, harmonious passion and obsessive passion. The main differentiation between these two perspectives is that of how people's inner actions are changed according to their identity (Curran et al. 2015).

Harmonious passion is under a person's control such that they can select freely when to involve it. This type of passion is associated with effective profitability and cognitive consequences such as positive feelings, satisfaction with an activity and mental health. In contrast to harmonious passion; obsessive passion is not controlled by a person. If a person with obsessive passion can't follow an activity there may be consequences such as psychological distress or negative perceptions such as an inability to concentrate, as well as negative consequences such as feelings of guilt (Ho and Pollack 2014). Of course, it should be considered that both types of passion have the potential to be highly energizing (Curran et al. 2015). This binary model of passion has seven main elements. These refer to an initial definition of passion and to philosophical ideas that have formed the conceptual principles: (1) Passion is related to a particular activity and not to everything. (2) Passion consists of a deep love and interest in an activity. (3) Passion is only apparent in those activities that are valuable and meaningful for a person. (4) Passion is a motivator. (5) Passion appears when an activity becomes natural and contributes to a person's identity. (6) Passion has high-level psychological energy, effort, and assiduity. (7) Passion takes a dual form and can have compatible or incompatible consequences (Vallerand 2015).

Recently, entrepreneurial research has focused on the concept of entrepreneurial passion (Moses et al. 2016). As entrepreneurship is a risky and time-consuming process, it needs initiatives; there is a widely held belief that entrepreneurs have a deep passion for success. This deep passion makes them creative and grants the necessary diligence to conduct activities, overcome major challenges and to cope with the ups and downs that exist at beginning of each new investment (Lucas et al. 2016). In addition, passion helps to identify informational patterns in order to

discover and utilize hopeful opportunities (Cardon et al. 2013). Passion has a strong effect on creativity, stability, and attraction to entrepreneurial activity. Passion includes conscious, intense, positive and achievable emotions, which are understood through participation in entrepreneurial activities (Cardon 2008).

In addition to the two-type division mentioned in Vallerand et al. (2003), according to harmonious and obsessive types of passion, another division for entrepreneurial passion was introduced by Cardon et al. (2013). This type of passion was framed according to three categories; inventing, founding and developing:

- Passion for inventing: this type of passion is related to activities associated with evaluating an environment for new markets, grabbing opportunities to develop new products or services and involvement with new initiatives (Cardon et al. 2013). People with a passion for inventing are insistent on following new ideas; this leads to the discovery of opportunities that others are unable to identify (Lu et al. 2016). In other words, a passion for inventing shows enthusiasm for activities related to identification, innovation, and evaluation of new opportunities (Breugst et al. 2012; Collewaert et al. 2016). A tendency to provide new solutions for a market is often a driving force for entrepreneurs. People with a passion for inventing, actively seek opportunities, enjoy providing new ideas for products and services and have the desire to invent new solutions for important needs and problems (Cardon et al. 2013).
- Passion for founding: many entrepreneurs are stimulated by a tendency to found a new business (Nasiru et al. 2014). Entrepreneurs, with a passion for founding new companies, often use various methods to obtain and integrate the necessary resources to start up a business (Lu et al. 2016). The concept of passion for founding is evident among entrepreneurs in their interest in activities related to founding a business for commercialization and exploitation of opportunities (Breugst et al. 2012). A passion for founding is related to activities related to collecting the required financial, human, and social resources to start a new business (Cardon et al. 2013). In other words, this type of passion determines how an entrepreneur overcomes the key challenges of founding a new business such as mobilizing financial resources, employing personnel and targeting customers (Collewaert et al. 2016). Entrepreneurs with a passion for founding projects often enjoy the process of starting up a business. For example, some entrepreneurs who have a strong passion for founding projects have started up many businesses during their lifetime; these people can be called habitual entrepreneurs<sup>1</sup> (Cardon et al. 2013).
- Passion for developing: this type of passion is related to growth and development of a business after the founding stage. A tendency to found isn't the motivation for many entrepreneurs; it is more likely that they have a conscious motivation to develop business (Cardon et al. 2013). These people have positive feelings about

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<sup>1</sup>Habitual entrepreneurs are entrepreneurs who have ownership (or a part of ownership) of more than one independent business during their life; whether this ownership to be in a unique time (Serial entrepreneurs) or in various time periods and discontinuously (Portfolio entrepreneurs) (Ucbasaran et al. 2008).

themselves when involved in activities such as finding new customers, developing markets and optimizing organizational processes (which are useful for the success of an organization in the long-term) (Breugst et al. 2012). Also, they often present different strategies of organizational management to their peers. Thus they rely on different managerial methods and make connections with key stakeholders in order to promote the continuous development of an organization. Entrepreneurs, with a passion for developing, enjoy activities such as increasing sales, employing new personnel or finding foreign investors (Cardon et al. 2013).

### ***2.3 Spiritual Intelligence and Entrepreneurial Passion***

Spirituality links all attitudes and motivations of a person in a significant and mutually acceptable way. Spirituality gives life a sense of meaning (Ungvári-Zrínyi 2014). Specifically, spirituality gives meaning to a person's economic and entrepreneurial activities and this convergence provides a deeper meaning. Judge and Douglas (2013) in a five-year study on entrepreneurs reported that faith and value orientation of entrepreneurs can be effective on operation of the process of creating a business through passion, an entrepreneur's motivation and emotional tolerance.

Also, Kauanui et al. (2010) expressed that if people have a spiritual connection with their work then they experience more passion and that strengthens belief in the importance of their work. They found that this passion was elevated by meaningfulness and valuable communication. Therefore the first hypothesis of the research is as follows.

**H1** Spiritual intelligence has positive and significant effects on entrepreneurial passion.

### ***2.4 Social Entrepreneurship***

Although the concept of social entrepreneurship has been more prevalent in recent decades, it has different meanings for different people. Social entrepreneurs are very innovative people. Like other entrepreneurs, they enjoy competition and learn from their mistakes as well as those of others, they don't avoid taking risks or subjecting themselves to environmental factors that could determine success or failure (Steinerowski et al. 2008). Social entrepreneurs have strong beliefs about social issues. They have long-standing and practical ideas about how to change and improve the world. This practical perspective, together with a set of values and emotional tendencies, leads to the creation of positive changes in the world (Waddock 2009). Social entrepreneurs are often identified by features such as inner motivation, determination and a passion for conducting affairs that they believe in (Neck et al. 2009). Although they work long hours, entrepreneurs are not motivated by purely material gain. Social entrepreneurs are concerned about the effect of their activities on other people. Also, in developing a business, they

consider the effect that they are having on other smaller groups. They proceed to work in unfamiliar environments and accept all risks in order to meet society's needs (Steinerowski et al. 2008).

## 2.5 *Social Entrepreneurial Intention*

The intention is the driving factor for entrepreneurial activity (Hindle et al. 2009). Intentionality is a state of mind that draws a person's attention (and consequently experience and actions) toward a specified purpose. A person's intentions cause him to hold certain values and to strive to uphold those values despite various barriers. This process requires endurance, perseverance, and courage (Bird 1988). Many researchers have stated that the concept of entrepreneurial intention can lead to entrepreneurial behavior and is a good predictor of such behavior (Turker and Selçuk 2009). Entrepreneurial intention well aware of how to make a new business together with a tendency for planning for this work in the future (Nabi et al. 2010). The entrepreneurial intention is an important concept in the field of entrepreneurship; it has received much research attention from the 1990s until now (Fayolle and Liñán 2014). Evolution of theoretical literature on entrepreneurial intention is the result of the successful integration of social psychology and cognitive psychology theories related to the field of entrepreneurship (Nabi et al. 2010).

There are various models for entrepreneurial intention; they have many similarities and some differences. In a review of these models for entrepreneurial intention researchers such as Nabi et al. (2010) and Fayolle and Liñán (2014) conclude that the most important among such models are those of Shapero (1982), Bird (1988), Ajzen (1991) and Lüthje and Franke (2003). An explanation of each of these models is given below.

Shapero's model of the Entrepreneurial Event (SEE) (1982) suggests that entrepreneurial intention depends on perceived feasibility (personal capability) and perceived desirability (attractiveness) to start up a business; together with a tendency to act (tendency to put a decision into operation) when presented with an opportunity (Shapero 1982). In other words, the model expressed that a positive view of entrepreneurial feasibility, desire, and a propensity to act on the matter leads to entrepreneurial intention and consequently, entrepreneurial activities (Hindle et al. 2009).

Ajzen's Theory of Planned Behavior (TPB) (1991) focused on attitude as the best factor for predicting intention. This theory applies three factors to predict entrepreneurial intention: attitude toward behavior, social norms and perceived behavioral control. Attitude toward the behavior and perceived behavioral control are equivalent to Shapero's (1982) perceived desirability and perceived feasibility, respectively (Lüthje and Franke 2003).

The main difference between Ajzen's model (1991) and Shapero's model (1982) relates to the axes of a propensity to act and role of social norms such that Ajzen's model (1991) implies the role of perceived social pressure in actualizing or not

actualizing entrepreneurial behavior (Nabi et al. 2010). These social factors can include a person's important points of reference and behavior patterns, entrepreneurial climate or environment (Fretschner 2014). The two mentioned models have been integrated or developed by some researchers such as Krueger (1993), Krueger and Brazeal (1994), Kolvereid (1996), Krueger (2000), Elfving et al. (2009), and Liñán et al. (2013).

Krueger (1993) tested and confirmed Shapero's model (1982) using path analysis. Furthermore, his research found that prior experience related to entrepreneurship had an indirect effect on entrepreneurial intention through perceived feasibility and perceived desirability. His research showed that perceived feasibility had a considerable relationship with the extent of prior entrepreneurial experience. Also, he found that perceived desirability had a relationship with positive prior experience of entrepreneurial activity.

Krueger and Brazeal (1994) suggested that perceived desirability included social norms and attitudes and that perceived feasibility originated from self-efficacy. They expressed that these two factors provided the necessary belief and validity in a person and that this belief provided a tendency and willingness to act. It was reported that this potential leads to entrepreneurial intention.

Kolvereid (1996) tested and strongly confirmed Ajzen's model (1991) done on undergraduate students in the field of business in Norway. It was found that criteria such as gender, previous experience of self-employment and family background affected entrepreneurial intention in students through attitude, mental health and perceived behavioral control.

Elfving et al. (2009) developed a contextual model of entrepreneurial intention by considering Shapero's model (1982). In this model, the role of self-efficacy and motivation was emphasized in fostering entrepreneurial intention. They expressed that self-efficacy can affect motivation, the creation of superior and entrepreneurial purpose and perceived entrepreneurial feasibility. Motivation is often acquired by a momentary insight or a sudden event and it creates a superior and transcendental sense of purpose in a person. Eventually, perceived entrepreneurial desirability and feasibility, superior and transcendental purpose and evaluation of the opportunities caused by entrepreneurial purpose produce entrepreneurial intention.

It seems that Liñán et al. (2013) gave the most development in Ajzen's model (1991). This cross-cultural research on university graduates in Spain and the United Kingdom found that that values of person's relatives affected a person's level of entrepreneurial skills, environmental entrepreneurial knowledge, and his/her personal attitude. However, social and cultural values of a society were effective in entrepreneurial skills, mental norms and perceived behavioral control; also environmental entrepreneurial knowledge had an effect on perceived behavioral control. Eventually, mental norm leads to entrepreneurial intention in a person indirectly and through his/her personal attitude and perceived behavioral control.

Empirical evidence has confirmed the utility of the models of Shapero (1982) and Ajzen (1991) in the field of entrepreneurship. However, Bird's model (1988) has not been validated empirically in the literature. Bird (1988) begins with an explanation of intentionality in his research and then continues to address the process of

entrepreneurial intention. He expressed two categories of thinking (rational analytical cause-effect thinking and intuitive holistic contextual thinking). These categories of thought relate to social, political and economic contexts on the one hand and personality, capability and a person's experiences on the other. Results and outcomes of these two categories of thinking can eventually lead to intention and then action. In explaining the process of intention, he expressed that it begins with attention to needs, values, demands, habits, and specified beliefs that cause tension and then a focus on a strategy that results in a certain position.

Model of Lüthje and Franke (2003) expresses that attitude to entrepreneurship is related to a combination of personal characteristics. Then these attitudes, together with perceived contextual factors (barriers and supportive structures), affect a student's level of tension in starting a business. This model provides a wide framework to evaluate antecedents and prerequisites for entrepreneurial intention through an emphasis on the role of government plans for fostering a corporate culture and enabling the growth of small businesses.

Relatively few studies have been done on social entrepreneurial intention. One of these models for social entrepreneurial intention is that of Mair and Noboa (2006) that reports on internal factors effective in social entrepreneurial intention. They developed models of Shapero (1982) and Ajzen (1991) and expressed that an intention that leads to social entrepreneurship develops from perceived desirability, which is under the effect of empathy and moral judgment and perceived feasibility, which in turn is affected by enablers such as self-directed activity, self-efficacy, direction from others and social support.

Hockerts (2017) developed the model of Mair and Noboa (2006) by adding two variables; prior experience and social issues. By testing the model of Mair and Noboa (2006), it was found that prior experience is a predictor for social entrepreneurial intention through its effect on empathy, moral obligation, self-efficacy and perceived social support.

## ***2.6 Entrepreneurial Passion and Social Entrepreneurial Intention***

According to the models of entrepreneurial intention and related research, it can be said that the research to date has concentrated mainly on entrepreneurial self-efficacy as the driving factor for entrepreneurial intention (Boyd and Vozikis 1994; Díaz-García and Jiménez-Moreno 2010; Owoseni 2014; Hassan and Bakri 2016); whereas Biraglia and Kadile (2017) reports that entrepreneurial passion not only affects entrepreneurial self-efficacy but that it also has a strong effect on entrepreneurial intention directly. Nasiru et al. (2014) found, in their research on university students in Nigeria, that passion for founding a business had a positive effect on entrepreneurial intention. However, the effect of passion for inventing on entrepreneurial intention was not confirmed in their research. Moses et al. (2016) designed a model



in which entrepreneurial intention had a moderating role in the relationship between entrepreneurial intention and the three variables of attitude toward the behavior, perceived behavioral control, and self-efficacy. They report that entrepreneurship training was affected by three variables: attitude to the behavior, perceived behavioral control and self-efficacy. After that, to reach entrepreneurial intention, entrepreneurial passion had the role of moderating between those three variables and entrepreneurial intention.

Nasiru et al. (2015) found, in a research on 595 students at federal universities in Nigeria, that a passion for inventing, a passion for founding, support from the university for entrepreneurial activity and perceived creativity had a positive and significant effect on entrepreneurial intention, but the hypothesis of the effect of entrepreneurship training on entrepreneurial intention was rejected in that research. Hence, according to the focus of this research on social entrepreneurial intention, the second hypothesis of the research is presented as follows:

**H2** Entrepreneurial passion has a positive and significant effect on social entrepreneurial intention.

## ***2.7 Spiritual Intelligence and Social Entrepreneurial Intention***

Social entrepreneurs have deep and well-rooted beliefs (Barendsen and Gardner 2004). As experience has an important role in the formation of social entrepreneurial intention (Drennan et al. 2005) and as social entrepreneurs have distinctive personal experiences (Nga and Shamuganathan 2010), these beliefs have been formed early and have been based on experiences. However, social entrepreneurs are extraordinary in the beliefs they hold and how these beliefs are emanated. They are exceptional and extraordinary in terms of having a distinct set of beliefs and effective ways to overcome barriers (Barendsen and Gardner 2004).

In recent decades, some people and organizations have invested in social entrepreneurship as a strategy to conduct their spiritual mission (Alderson 2011). It is common and usual that some managers and entrepreneurs have attributed their success to spirituality, experience, and intuition (Nandram 2016). However, there is a gap in the academic research on the relationship between spiritual intelligence and social entrepreneurial intention. Despite this, it has been mentioned in the literature that people with a tendency to social entrepreneurship have distinguished beliefs but these beliefs have not been explained clearly to date.

Spirituality includes morality, culture and religion (Ungvári-Zrínyi 2014) and Mair and Noboa (2006) acknowledged in their research that moral judgment had an effect on social entrepreneurial intention through an effect on perceived desirability. Also, Hockerts (2017) understood that moral obligation is a predictor of social entrepreneurial intention. Ungvári-Zrínyi (2014) stated that spirituality, through making sense of a person's actions, indicates whether or not a person's purpose

and actions are acceptable to the society he/she lives in. According to Chin et al. (2012), spiritual intelligence and emotional intelligence encourage and improve an entrepreneur’s performance. They have also stated that higher levels of spiritual and emotional intelligence create more successes for entrepreneurs in terms of creativity and innovation. This leads to the third hypothesis of the research, presented as follows:

**H3** Spiritual intelligence has positive and significant effects on social entrepreneurial intention.

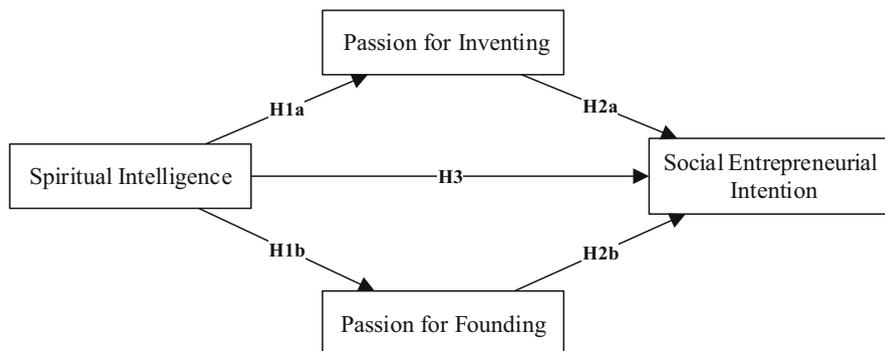
### 2.8 The Conceptual Framework

According to the research hypotheses, the conceptual framework of the research can be drawn as follows. Because entrepreneurial passion, prepared by Cardon et al. (2013), is a formative construct and not reflective, and according to the statistical population of this research that constituted local undergraduate students, most of whom had not started up a business, only two types of passion were used to evaluate entrepreneurial passion; passion for inventing and passion for founding; examination of passion for developing has been ignored (Fig. 1).

## 3 Research Method

### 3.1 Sample

This research was practical in terms of its purpose and data was collected by a descriptive-correlational method according to development of practical knowledge



**Fig. 1** Hypothesized model

**Table 1** Demographics of samples of the research

		Frequency	Percent
Gender	Female	196	51.04
	Male	188	48.96
Marital status	Single	323	84.11
	Married	61	15.89
Age (year)	18 & 19	237	61.72
	20 & 21	127	33.07
	22 to up	20	5.21
Field of study	Management	228	59.38
	Industrial engineering	156	40.62
Employment status	Unemployed	352	91.67
	Employee/worker	17	4.43
	Business owner	15	3.9

in the field of entrepreneurship and spirituality. The statistical population of this research constituted undergraduate students in the fields of industrial engineering and management from all universities in Mashhad City (including governmental, quasi-governmental and non-governmental universities) in Iran. Using the Cochran formula for unlimited population, 384 people were selected as the sample using the method of simple random sampling. Demographic features of samples of the research are observable in Table 1.

### 3.2 *Measures*

A questionnaire was used to collect data for the research and it had two parts: the first part related to demographics and the second part included measuring variables of the research and embedded options were by type on the five-point Likert scale. Items related to measuring variables of spiritual intelligence were based on Self-Report Inventory (SISI) of King and DeCicco (2009); the variable of entrepreneurial passion and the two types (passion for founding and inventing) was based on the measure of Cardon et al. (2013) and measuring the variable of social entrepreneurial intention was researcher-made by adjusting the entrepreneurial intention measure of Liñán and Chen (2009).

### 3.3 *Factor Analysis and Validity Test*

The structural equation modeling method with a partial least squares and Smart PLS 3 software (professional version) was used to analyze data. Reliability of data was evaluated by Cronbach's alpha and composite reliability (higher being of

Cronbach's alpha and composite reliability of 0.70 for the main construct of the research confirmed reliability of research). Furthermore, convergent validity (minimum acceptable value for the mean of extracted variance was determined at 0.4 and used to evaluate validity).

Various indexes have been used to evaluate fitting the model to the partial least squares approach, these are as follows:

- Standardized root mean square residual (SRMR): according to the opinion of Chin et al. (2014), values lower than 0.08 were determined acceptable for this index.
- Bentler-Bonnet index (NFI): values higher than 0.9 are acceptable for this index (Bentler and Bonett 1980)
- The goodness-of-fit index (GOF): Wetzels et al. (2009) introduced three values; 0.10, 0.25 and 0.36 as weak, medium and strong, respectively, for the model fit index.
- $R^2$  index: shows the effect that exogenous variable(s) has on the endogenous variable. For  $R^2$  criterion, three values of 0.19, 0.33 and 0.67 have been expressed as criteria for weak, medium and strong values of  $R^2$ , respectively (Chin 1998).

Table 2 shows results for evaluation of reliability and convergent validity of the measure and in general, it shows a measure of the model's fit to the research. It was found that values of Cronbach's alpha, composite reliability and average variance extracted (AVE) were in the range of acceptable so reliability and convergent validity of the research tool were confirmed. Also, all values of standard factor loads were higher than 0.5 and values of T coefficient were higher than 1.96, this shows the favorable fit of the measuring model (some items were removed because of low T values).

Generally, values of the model-fitting index in Table 3 indicate acceptable fit of the model to the research. It is observed that value of Bentler-Bonnet index was obtained at 0.972 (higher than 0.9). Also indexes of SRMR and GOF obtained values of 0.052 (lower than 0.08) and 0.48 (higher than 0.36), respectively and confirmed that the model was a suitable fit to the research.  $R^2$  value was determined at 0.599 for social entrepreneurial intention construct, indicating a relatively strong effect of exogenous variables on this construct. However, values of  $R^2$  related to variables of passion for inventing and passion for founding indicate a medium effect of spiritual intelligence on these two variables.

### 3.4 Findings

Table 4 shows values of average and standard deviation of variables of the research and value of correlation among variables of the research. Table 4 shows correlations of values of spiritual intelligence with the passion for inventing and passion for founding; these were determined medium at 0.528 and 0.463, respectively. However, spiritual intelligence had a higher correlation with the passion for inventing in

**Table 2** Factor analysis, Cronbach’s alpha, composite reliability and AVE values

Variable	Item	Factor load	T	Cronbach’s alpha	Composite reliability	AVE
Spiritual intelligence (SI)	CET1	0.694	30.805	0.860	0.886	0.541
	CET2	0.677	32.718			
	CSE1	0.606	22.575			
	CSE2	0.708	32.603			
	CSE3	0.625	22.797			
	CSE4	0.656	24.493			
	PMM1	0.589	16.136			
	PMM2	0.672	25.658			
	TA1	0.615	20.529			
	TA2	0.639	23.169			
	TA3	0.583	16.475			
Passion for inventing (PI)	PI1	0.743	33.316	0.840	0.888	0.616
	PI2	0.845	66.817			
	PI3	0.829	61.469			
	PI4	0.848	68.318			
	PI5	0.639	23.836			
Passion for founding (PF)	PF1	0.847	69.631	0.862	0.906	0.707
	PF2	0.809	43.647			
	PF3	0.832	60.049			
	PF4	0.874	99.137			
Social entrepreneurial intention (SEI)	SEI1	0.771	37.233	0.884	0.912	0.633
	SEI2	0.810	44.790			
	SEI3	0.793	41.772			
	SEI4	0.774	40.598			
	SEI5	0.837	62.966			
	SEI6	0.788	49.756			

**Table 3** Model fitting indexes

Variable	R <sup>2</sup>	GOF	SRMR	NFI
Spiritual intelligence (SI)	–	0.48	0.052	0.972
Passion for inventing (PI)	0.279			
Passion for founding (PF)	0.214			
Social entrepreneurial intention (SEI)	0.599			

comparison with the passion for founding. In addition, passion for founding and social entrepreneurial intention had high correlation (0.753) and passion for inventing and social entrepreneurial intention had a relative medium correlation (0.428). Also, the value of correlation of spiritual intelligence and social entrepreneurial intention was determined at 0.501.

Results of hypotheses test of the research are shown in Table 5 and Fig. 2. Table 5 shows that all the research hypotheses were confirmed. Although the mediating role

**Table 4** Descriptive statistics and correlations

Variable	Mean	SD	1	2	3	4	5	6	7
1. Age	19.47	1.42	–						
2. Gender <sup>a</sup>	1.49	0.50	0.15**						
3. Marital status <sup>b</sup>	1.16	0.36	0.20**	–0.14**					
4. Field of study <sup>c</sup>	1.41	0.49	0.2**	0.1*	0.003				
5. SI	3.08	1.16	0.027	0.008	0.017	0.04			
6. PI	3.40	1.10	–0.003	0.12*	0.002	0.087	0.53**		
7. PF	3.35	1.14	–0.058	–0.052	–0.037	–0.071	0.46**	0.73**	
8. SEI	3.15	1.09	–0.024	0.023	–0.039	–0.034	0.50**	0.43**	0.75**

SI spiritual intelligence, PI passion for inventing, PF passion for founding, SEI social entrepreneurial intention

\* $p < 0.05$ ; \*\* $p < 0.01$

<sup>a</sup>1 = female, 2 = male

<sup>b</sup>1 = single, 2 = married

<sup>c</sup>1 = management, 2 = industrial engineering

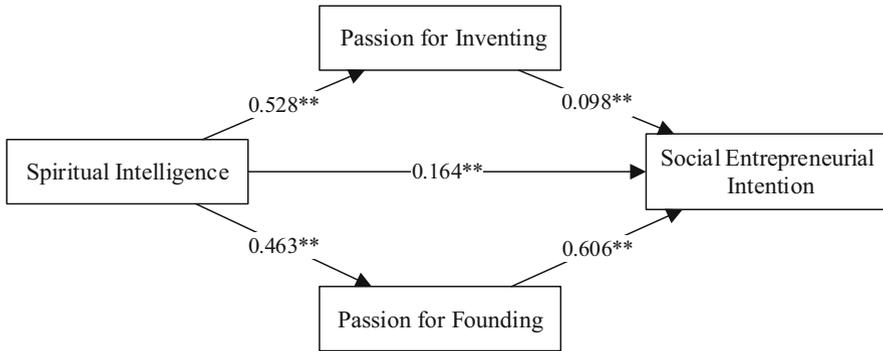
**Table 5** Hypotheses test

Hypothesis	Path coefficient	T statistic	Result
SI → SEI	0.164**	4.229	✓Positive
SI → PI → SEI	0.052**	(15.550) (2.783)	✓Positive
SI → PF → SEI	0.28**	(12.695) (16.979)	✓Positive
SI → PI	0.528**	15.550	✓Positive
SI → PF	0.463**	12.695	✓Positive
PI → SEI	0.098**	2.783	✓Positive
PF → SEI	0.606**	16.979	✓Positive

SI spiritual intelligence, PI passion for inventing, PF passion for founding, SEI social entrepreneurial intention

\*\* $p < 0.01$

of passion for inventing and passion for founding in the relationship between spiritual intelligence and social entrepreneurial intention was confirmed, passion for founding was determined as a stronger mediator than the passion for inventing in this relationship and the mediating role of passion for inventing was found to be weak. The value of effect of spiritual intelligence on the passion for inventing was determined higher than the passion for founding. However, passion for founding had a much stronger effect on social entrepreneurial intention compared with the passion for inventing. Although the direct effect of spiritual intelligence on social entrepreneurial intention was confirmed statistically, the intensity of this effect was low.



**Fig. 2** Final model

Although all hypotheses are confirmed based on T values, other methods including Sobel’s (1982) test, the VAF<sup>2</sup> statistic (Iacobucci and Duhachek 2003), and the method of Preacher and Hayes (2004, 2008) are also used for mediation analysis. As will be seen below, Z-values are 1.374 and 9.876 for the mediating roles of “passion for inventing” and “passion for founding”, respectively. It shows that only the mediating role of “passion for founding” is significant (1.96 < 9.876).

$$Z - value_{PI} = \frac{0.528 \times 0.098}{\sqrt{(0.528^2 \times 0.071^2) + (0.098^2 \times 0.03^2) + (0.03^2 \times 0.71^2)}} = 1.374$$

$$Z - value_{PF} = \frac{0.463 \times 0.606}{\sqrt{(0.463^2 \times 0.0231^2) + (0.606^2 \times 0.0434^2) + (0.0231^2 \times 0.0434^2)}} = 9.876$$

As shown below, the values of VAF are equal to 0.24 and 0.631 for the mediating role of “passion for inventing” and “passion for founding”, respectively. Hence, passion for founding is stronger mediator than passion for inventing.

$$VAF_{PI} = \frac{0.528 \times 0.098}{(0.528 \times 0.098) + 0.164} = 0.24$$

$$VAF_{PF} = \frac{0.463 \times 0.606}{(0.463 \times 0.606) + 0.164} = 0.631$$

According to Preacher and Hayes (2004, 2008), the results of mediation analysis is observable in Table 6.

<sup>2</sup>Variance accounted for.

**Table 6** Results of Preacher and Hayes Mediation Analysis

Hypothesis	c*	b**	a***	c'	Result
SI → PI → SEI	0.164	0.098	0.528	0.112	Partial mediation ( $c' < c$ )
SI → PF → SEI	0.164	0.606	0.463	0.136	Partial mediation ( $c' < c$ )

SI spiritual intelligence, PI passion for inventing, PF passion for founding, SEI social entrepreneurial intention

\*Path coefficient for SI->SEI relationship

\*\*Path coefficients for PI/PF->SEI relationships

\*\*\*Path coefficients for SI->PI/PF relationships

Table 6 shows that the relationship between spiritual intelligence and social entrepreneurial intention is significant in the first step (c). Accordingly, the first condition for mediation analysis is confirmed. In the second and third steps (b & a), the relationships of two types of entrepreneurial passion with spiritual intelligence and social entrepreneurial intention are also significant. Therefore, the second and third conditions for mediation analysis are also verified. As “passion for inventing” and “passion for founding” play the mediating roles in the fourth step, path coefficients (0.164) will decrease to 0.112 and 0.136, respectively [ $c' = c - (a \times b)$ ]. This result shows that two types of entrepreneurial passions play partial mediating roles between spiritual intelligence and social entrepreneurial intention. However, passion for founding is a stronger mediator in this relationship.

## 4 Conclusion and Suggestions

Due to the important role of spirituality and religion in the psychological and cultural contexts of Mashhad, the present research was conducted to clarify the relationship between spiritual intelligence and social entrepreneurial intention according to the mediating role of entrepreneurial passion among local undergraduate students in industrial engineering and management at universities in the city of Mashhad in Iran. Results showed that both types of entrepreneurial passion had mediating roles in the relationship between a student’s spiritual intelligence and social entrepreneurial intention. However, passion for founding was a stronger mediator in this relationship compared to the passion for inventing. Results also showed that spiritual intelligence had a positive and significant effect on the passion for inventing and passion for founding. However, its effect on the passion for inventing was slightly higher. The findings of this research also showed that both types of entrepreneurial passion had positive and significant effects on social entrepreneurial intention. This result is in line with reports of Biraglia and Kadile (2017), Nasiru et al. (2015) and Moses et al. (2016) but contrasts with some of the findings reported in Nasiru et al. (2014) in which the effect of passion for inventing on entrepreneurial intention was rejected. However, in the present research, despite statistical confirmation of the effect of passion for inventing on social entrepreneurial intention, this effect was weak and passion for founding had a stronger effect on social entrepreneurial intention. This



finding confirms the viewpoint of Cardon et al. (2013) who expressed that the role of passion for founding was more prominent than the other two types of entrepreneurial passion. In addition, the direct effect of spiritual intelligence on social entrepreneurial intention was also confirmed in the present research. This result is in line with the viewpoint of Chin et al. (2012) and compatible with models of social entrepreneurial intention of Mair and Noboa (2006) and Hockerts (2017). Furthermore, results of the present research were consistent and compatible with all studies that have considered the role of internal factors in the formation of entrepreneurial intention. Lüthje and Franke (2003), Bird (1988) and Owoseni (2014) are examples of such studies. Lüthje and Franke (2003), by explaining the process of entrepreneurial decision-making, emphasized that internal factors such as interest in risk-taking, need for independence, and internal control can lead to a positive attitude, self-employment and entrepreneurial intention, as well as the effects of external factors. Owoseni (2014) found in his research that internal factors such as self-efficacy and motivation to succeed had a positive effect on entrepreneurial intention.

According to the positive effect of spiritual intelligence on entrepreneurial passion and students' social entrepreneurial intention in this paper, it is suggested that spirituality and concepts of theism are promoted among students and that provisions are made for the required training and that awareness of spirituality should be promoted. Training courses should be conducted to introduce students to spiritual intelligence and methods of strengthening such attitudes are practical suggestions to follow up on this research.

It is suggested that the social entrepreneurial intention model of Mair and Noboa (2006) and Hockerts (2017) is developed by adding the variables of entrepreneurial passion and spiritual intelligence and that the new model is then tested. According to the type of statistical population of this research and the lack of measurement of passion for developing, it is suggested that relationships of the research are tested in larger and different statistical populations such as social entrepreneurs and habitual entrepreneurs by examining the mediating role of three types of entrepreneurial passion. According to the results of the research and confirmation of hypotheses of the research, it is suggested that the role of spirituality is studied in the context of entrepreneurship by concentrating on examples of various spiritual ideologies such as Islam, Christianity, and Buddhism.

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# Entrepreneurship Education and Training in Saudi Arabia



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**Abstract** The paper aims (1) to trace the present status of Entrepreneurship Education and Training (EET) in Saudi Arabia and (2) to assess the design of the Entrepreneurship training programs offered by public and private institutes, and Entrepreneurship education programs offered at universities in Saudi Arabia. The design of the EET programs is evaluated in line with the Azim and Al-Kahtani's EET Model (Journal of Economics and Sustainable Development 6(22):112–127, 2015). Data were collected from the academic instructors and trainers of EET programs through a structured questionnaire based on the Model. It is observed that there are a number of initiatives from the public and private sectors in Saudi Arabia in the form of training, counseling, funding, incubation and other advisory and material supports to the potential as well as nascent entrepreneurs. However, it is observed that no formal course on entrepreneurship is offered either in secondary schools or in technical institutes. Most of the Saudi universities offer an entrepreneurship course for business students only. Moreover, such courses are usually optional rather than mandatory. The study reveals that the facilitators of the programs have less conviction to see their participants as potential entrepreneurs. As far as the contents and approaches of EET programs are concerned, it is found that the interactive and experiential activities like games, competition, role-plays, and creative exercises are relatively less used in EET programs which reduce the efficacy of the program to develop the much-needed psychosocial abilities in the participants. The paper concludes with a number of recommendations regarding overall improvement of EET in Saudi Arabia. The uniqueness of the paper lies with its pioneering attempt to provide a bird's eye view of overall EET efforts in Saudi Arabia and evaluation of such efforts in terms of contents, approaches of delivery and facilitator characteristics.

**Keywords** Entrepreneurship Education and Training (EET) · Saudi Arabia · Start-up

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## 1 Introduction

Addressing unemployment is a key challenge to every government. Saudi Arabia, the largest economy of the MENA region is not an exception. Despite its richness in oil and gas resources, it is struggling with youth unemployment. According to the figures of the General Authority of Statistics (GAS), the rate of unemployment among Saudis in the third quarter of the last year (2016) was 12.1%. Saudi Arabia recently adopted vision 2030, where it sets its target to reduce unemployment to 9% by 2020 and 6% by 2030. In fact, there are two major avenues to address unemployment, (1) creating jobs in the existing job market, and (2) entrepreneurship. As far as entrepreneurship is concerned, Saudi Arabia is a fertile ground for breeding entrepreneurs. According to a report of Jeddah Chamber (2016), there are approximately 1.97 million SMEs in Saudi Arabia, which constitute almost 90% of registered businesses and 60% of the total employment. Nearly, 85% of these SMEs are sole proprietor enterprises. The adult population survey (2016) of Global Entrepreneurship Monitor (GEM) observed that 81.3% respondents in Saudi Arabia consider entrepreneurship as a desirable career option and 78.7% feel that successful entrepreneurs have high status and respect in the society. Saudi adults also show high levels of self-perception about entrepreneurship, as 81.5% believe that there is a good opportunity to start new businesses following the next 6 months. Moreover, according to the World Bank's 'Ease of Doing Business Report' Saudi Arabia has ranked 49 in 2015, second within the MENA region, after the UAE. All this implies that Saudi Arabia has potential to develop entrepreneurial activity. However, the entrepreneurial activities are not taking place according to the potential. Regarding Total Early-stage Entrepreneurial Activity (TEA) measured by GEM, Saudi Arabia scored 11.4%, lowest among the participating countries from MENA region except for Jordan while the Established Business ownership rate was observed to be only 2.3%, one of the lowest among the participating nations in the region. The GEM's National Expert Survey (2016) identified government policies, financial support, cultural and social norms, entrepreneurial education and training, commercial infrastructure, and political, institutional, and social contexts as the primary constraints for entrepreneurship in Saudi Arabia. In fact, school level and post school entrepreneurship education and training are observed to be the least taken care of element among the constituents of the entrepreneurial ecosystem in the country. Thus it implies that Saudi Arabia should pay particular attention to entrepreneurship education and training as a vital force to stimulate entrepreneurship in the country.

It is believed that EET contributes to promoting employable skills for individuals, expanding the experiences, developing the readiness for work, enhancing creativity and innovation that lead to self-employment and job creation for unemployed youth (UNESCO and StratREAL Foundation 2013). A good number of studies found that entrepreneurship education programs have a positive impact on entrepreneurial intention (Guerrero et al. 2008; Krueger 2009; Linan and Chen 2009; Iakovleva et al. 2011; Muller 2011), perceived attractiveness and feasibility of a new venture (Fayolle et al. 2006; Muller 2011; Zhang et al. 2014) and on the cognition of

personal self-efficacy, pro-activeness, and the inclination toward risk (Sanchez 2013). Other studies underlined that attending an EET has a direct and positive relation with the participants' intention to start a business after graduating from the program (Dickson et al. 2008; Pittaway and Cope 2007; Souitaris et al. 2007). A survey of young entrepreneurs of G 20 countries (including Saudi Arabia) revealed that 66% of the youth ask for training to learn entrepreneurial skills (YE 2014). It indicates that there is a likely demand for training and education related to entrepreneurship. Keeping this significance in mind, the present paper aims to trace the existing entrepreneurship training and education efforts in Saudi Arabia. The objectives of the paper are (1) to trace the current status of Entrepreneurship Education and Training (EET) in Saudi Arabia and (2) to assess the design of the Entrepreneurship training programs offered by government and private institutes and Entrepreneurship education programs offered as an academic program at higher educational institutes in Saudi Arabia.

## 2 Entrepreneurship Education and Training (EET): Snapshot of Literature

EET is acknowledged as an established field of study, drawing increased attention from both the policy makers and the students (Mwasalwiba 2010). Even though there are multiplicities of definitions, EET reflects the process of transmitting specific knowledge, mindsets, and skills pertaining entrepreneurship. It is usually meant for providing the students with entrepreneurial zeal and acumen to start own business. However, it also helps to develop employable skills.

EET programs can be classified into two distinct categories: *education programs* and *training programs*. Although both programs aim to stimulate entrepreneurship, they differ from one another by their variety of program objectives or outcomes. Academic entrepreneurship education (EE) programs focus on imparting knowledge and skills *about or for the purpose of* entrepreneurship while Entrepreneurship training (ET) programs encourage the participants to start or operate an enterprise (Valerio et al. 2014; Volkmann et al. 2009). Again, in line with the target audiences, Entrepreneurship education program may be targeted to the secondary school students or higher education students. Similarly, entrepreneurship training programs may target different audiences like potential or practicing entrepreneurs. Potential entrepreneurs may be necessity driven (unemployed vulnerable, unskilled underprivileged individuals) or innovation led opportunistic (educated aspiring individuals) potential entrepreneurs (Valerio et al. 2014).

The effectiveness of an EET program depends primarily on program design including the contents, teacher quality, teaching approaches and support services. The researchers have spotlighted the contents of an EET program from a very specific area of a business plan to a broad range of socio-emotional attributes, and business management skills. The mode of delivery of the educator/trainer in EET is



also crucial. McLuhan's (1967) famous argument that the 'medium is the message' emphasizes the importance of learning methods about the content. Some authors, such as Davies and Gibb (1991) consider the traditional dyadic approach of teaching as 'inappropriate' in the teaching of entrepreneurship. They emphasize more on interactive approach where the learners will be responsible for their learning through action, experience, and communication. Godtfredsen (1997) has remarked that the "teaching" methodology used in the EET classroom should resemble that of an art school where students are encouraged to develop their creativity. Another vital area of concern regarding EET is the role of the teacher/trainer in the program. It is s/he who brings about attitudinal and behavioral modification in the participants required to progress through the odds in the journey of venture creation. Teacher's motivation, skill, experience, and values are all essential ingredients for program success (Azim and Al-Kahtani 2014). Moreover, conversion of a business plan into a real life start-up often requires many support services right from issue-specific counseling, to funding and incubation in the initial stage of venture creation.

The exponential growth in EET in the last few decades stimulates research in the outcomes of specific EET programs. However, as venture creation, the ultimate outcome of an EET program depends on a wide variety of personal and environmental factors (Lüthje and Franke 2003) along with obscurity in determining causality (Wyckham 1989). Venture creation cannot possibly be measured during or immediately after the intervention since the venture-creation process usually takes time. Moreover, the more delayed the measurement, the harder it is to isolate the role played by a single factor such as training as a cause of venture creation (Hytti and Kuopusjärvi 2004). Therefore, it requires longitudinal and experimental methods of study on a matching control group, which adds to its intricacy. That is why most of the evaluations on the outcomes of EET programs are either methodologically weak (Glaub and Frese 2011), or look for entrepreneurial intention or skill development as the outcome rather than venture creation. Despite this, there are constant efforts from the researchers to study the outcomes of the EET programs.

Pedrini et al. (2016) in the context of Ghana found that EEs strongly and positively affect some physiological characteristics, skills, and knowledge of participants, which are antecedents of entrepreneurial intentions. Palalić et al. (2016) observed that the university students attending entrepreneurship courses had higher entrepreneurial desire compared to the students not exposed to such courses. Nakkula et al. (2004) in their study of Network for Teaching Entrepreneurship (NFTE) in the United States observed that entrepreneurial behavior increased for NFTE students compared to the control group. However, the results for the locus of control and the values-in-action scales (originality, curiosity, industriousness, and hopefulness) were not significant. The evaluation of INJAZ Junior Achievement program in secondary schools in 8 Arab countries including Saudi Arabia by Reimers et al. (2012) found participants in the Junior Achievement programs had medium levels of knowledge of basic entrepreneurial concepts. They had high and positive aspirations, high self-efficacy and greater interest in business creation. Elert et al. (2013) evaluated the Junior Achievement Company Program (JACP) among the upper secondary Swedish students. Participation significantly increased the

likelihood of starting a new business. However, there was no significant effect on firm survival due to JACP participation.

Charney and Libecap (2003) studied BEP, the McGuire Entrepreneurship Program among the Business undergraduate and graduate students at the University of Arizona, United States. They observed a significant positive relationship between entrepreneurship education and new venture creation. Entrepreneurship education is also found to have contributed to the growth of firms, average annual income of the graduates and enhanced transfer of technology. Kolvereid and Moen's (1997) study of Bodo Graduate School of Business, Norway observed education as an antecedent to entrepreneurship where they found a major in entrepreneurship was positively associated with entrepreneurial intentions and new firm formation. Zhang et al. (2012) in the context of China found a positive and significant correlation between entrepreneurship education and business knowledge, entrepreneurial ability, and psychological disposition.

McKenzie and Woodruff (2012) reviewed 20 studies about the evaluation of entrepreneurship training programs and observed that business training provided stronger evidence of helping potential owners in launching new business more quickly and that practitioners tended to put into practice what they learned in training. The meta-analysis by Martin et al. (2013) included 42 evaluation studies of EET. They found a stronger relationship between entrepreneurship outcomes and academic-focused EET interventions than the training-focused EET interventions. Even though most of the outcome studies come up with either a positive or insignificant results of EET interventions, some studies present contradictory results as well. One such study is by Oosterbeek et al. (2010) who analyzed the impact of a leading entrepreneurship education program on college students' entrepreneurship skills and motivation in Netherland. The study found an insignificant effect of the program on entrepreneurial skills and the effect on the intention to become an entrepreneur is even negative. However, a well- thought- out entrepreneurship curriculum is expected to develop both hard and soft skills required for the employment market, not just for business creation. Turner and Mulholland (2017) in their pursuit of better enterprise education framework reveal that the students' engagement to the program as well as project management, creative thinking, communication skills and confidence were enhanced by the activity of real-world business challenges embedded within the curriculum.

### **3 Entrepreneurship Stimulating Initiatives in Saudi Arabia**

Government and private sector initiatives for stimulating entrepreneurship in Saudi Arabia are overwhelming. In addition to increased effort of deregulation to ease the business startup process, government generously invests in training, mentoring, funding as well as incubation facilities to potential entrepreneurs. The recently established Small and Medium Enterprises Authority in Saudi Arabia is another step forward in this regard. Besides, some private sector initiatives are supporting

and developing enthusiastic individuals to prepare them with the essential knowledge and skills. They, in some cases, in partnership with corporate businesses and venture capitalists, also provide seed capital and working space for the nascent entrepreneurs. A few such initiatives are briefly outlined below.

1. **Badir Project** of King Abdul Aziz City for Science and Technology (KACST) is a Technology Incubator Program launched in 2007. The word ‘Badir’ means ‘to initiate.’ It is a national program aimed at accelerating the growth of technology-based entrepreneurship in cooperation with governmental entities, the private sector, and universities. It offers comprehensive support to the budding entrepreneurs right from feasibility study to funding and operating. Presently it provides a number of incubators throughout the country such as
  - (a) Information and Communication Technology Incubator, Riyadh (2008, 81 Projects)
  - (b) Advanced Manufacturing Technology Incubator (2010, 28 Projects)
  - (c) Biotechnology Incubator (2010, 16 Projects)
  - (d) Taif Incubator (2015, 4 Projects)
  - (e) Universities Incubator, Sattam bin Abdul Aziz University, Al-Kharj (2012).
2. **Namaa AlMunawara** is the executive arm of the Madinah endowment which came into being as a strategic partnership between the Madinah state and the Islamic development bank. Its goal is to drive sustainable economic development in the region by focusing on SMEs through their wide-range of initiatives, events, and programs. It offers a One-Stop-Shop in providing a full range of administrative and consultancy services required by the entrepreneurs under one roof.
3. **National Entrepreneurship Institute—Riyadah** is a national non-profit organization jointly established by the Ministry of Energy, Industry & Mineral Resources and the Technical and Vocational Training Corporation. It offers a broad range of services including awareness, training, consulting, mentoring, very small loans, helping businesses hoping to secure funding, and help businesses obtain licenses.
4. **The Saudi Industrial Development Fund (SDIF)** is a government financial institution, established in 1974 (1394H), to finance, and support the development of the private industrial sector by providing medium- and long-term loans for setting up new factories, as well as expansion, upgradation, and modernization of the existing ones. It also offers consultancy services to the local industrial projects in the administrative, financial, technical and marketing fields.
5. **Small and Medium Enterprises (SMEs) Loan Guarantee Program (KAFALH)** is an initiative of SDIF which started in 2006 in collaboration with different banks to facilitate SMEs to receive loans from the banks.
6. **Saudi Credit and Savings Bank** was established by the government in 1391 H (1971) to provide interest-free social loans (marriage, family loan) to the citizens of Saudi Arabia. Later it started financing SMEs based on preferential financing scheme. The projects with creative and non-traditional business ideas, projects

in remote & underdeveloped areas, and projects that achieve the highest rate of Saudization (employing Saudi nationals instead of expatriates) receive the highest preference. The bank offers loans, ranging from USD 80,000 to USD 2 million (Jeddah Chamber 2016).

7. **The Centennial Fund**, established in July 2004, is an independent, non-profit foundation concerned with funding youth projects. The Fund provides partial or complete funding in the form of interest-free loan “Al-qard Al hasan”, and the value of the loan ranges between 50,000 to 5 million Saudi riyals. In association with its partners, the fund offers training, mentoring, and technological support to the budding entrepreneurs.
8. **The Prince Sultan bin Abdul Aziz Fund** was founded in 2007 in Dammam to Support Women’s Small Enterprises. The fund provides aspiring women entrepreneurs with technical and financial assistance. It offers a 10-day training course called “Intilakati” (My Launch), to the would-be entrepreneurs.
9. The **25 Chambers of Commerce and Industry** in Saudi Arabia have numerous programs to encourage innovation and entrepreneurship in the Kingdom. Each chamber has opened support centers for men and women, providing new entrepreneurs with consultation, training, financial advice and assistance in identifying investment opportunities. The Women’s Section in the Riyadh Chamber of Commerce, along with the Khadijah bint Khuwailid Businesswomen’s Center in Jeddah, have become the most influential women’s institutions for entrepreneurship and finance in the Arabian Gulf region. The three largest chambers—Riyadh, Jeddah and the Eastern Province—host yearly entrepreneurship forums and have established Small and Medium Enterprises (SME) Development Centers (U.S.-Arab Tradeline, spring 2010, p. 7).
10. **Bab Al-Rizq Jameel (BRJ)** is an initiative of the Abdul Latif Jameel Community Services Programs (ALJCSP). It assists the young aspiring Saudis to become self-employed or to start their own business. It operates throughout the country with many branches. The diversified programs offered by BRJ include recruitment service, employment training, direct employment, taxi and truck ownership, micro-project financing, SME financing, work-from-home and franchise programs. Its “productive household” program provides support for women to set up their cottage industries making different handmade items with the help of interest-free loans of up to SR 5000 (\$1870). BJR works in partnership with Islamic Development Bank (IDB) and Injaz-Saudi program (school-based entrepreneurship education program) to promote and support entrepreneurship in Saudi Arabia.
11. **Aramco Entrepreneurship Center (Wa’ed)** is the entrepreneurship arm of Saudi Aramco offering access to a wealth of resources and expertise that are valuable to Saudi entrepreneurs. Wa’ed was established in 2012 as a business incubator. However, now, it offers a wide variety of training programs as well as easy loans and venture capital funding and partnering with the nascent entrepreneurs.
12. **Flat 6 Labs Jeddah** is a private business accelerator program launched in 2013 to assist and encourage entrepreneurs throughout the critical initial steps of

development. The target for the accelerator program is to graduate 15 satisfactory and scalable startup businesses each year. It screens the entrepreneurship teams based on their potentials, and the selected teams receive seed-funding (50,000–80,000 SAR), strategic mentorship, office space, a multitude of perks and services from partners (over \$300,000+), and entrepreneurship-focused business training and workshops.

#### 4 Entrepreneurship Education and Training in Saudi Arabia

Saudi Arabian education system, as in most other countries, is branched into General education and technical education. Students have to undergo a general 6-year elementary and 3-year intermediate education before they enter into specific area of education. Secondary education comprises 1-year general curriculum and 2-year in any of the three branches viz. administrative and social sciences, natural sciences and Sharia (religious) and Arabic studies. The vocational education is imparted in three major areas viz. industrial, commercial and agriculture for intermediate school graduates. Graduates from vocational institutes and the general secondary curriculum may study in technical colleges for another 4-years. Students for universities are recruited from the graduates in secondary schools. At present, there are 28 government and 10 private universities, 65 vocational and technical colleges in Saudi Arabia. An investigation into the curriculum reveals that there is no course on entrepreneurship offered either in general school curriculum or vocational or technical institutes. However, a regional initiative, INJAZ Al-Arab (INJAZ) is found to operate its entrepreneurship education program in Saudi schools. INJAZ is a non-profit organization that promotes youth education and training in the Arab World under three pillars: workforce readiness, financial literacy, and entrepreneurship. At present, it works in Algeria, Bahrain, Egypt, Kuwait, Lebanon, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Tunisia, the United Arab Emirates, Yemen, and Pakistan. It offers a broad base of entrepreneurship training opportunities aimed at developing basic business skills to start and run own businesses. It also facilitates obtaining soft skills essential for career development. In cooperation with its corporate volunteers, INJAZ organizes annual *regional company of the year competition* and enables young entrepreneurs to build their businesses with mentors, seed funds, and incubation provided by various corporations. According to the annual report (2014–2015), a total of 1,23,047 students, in partnership with 932 schools and 9 universities were served by INJAZ AL-ARAB. (<http://www.injazarab.org/wp-content/uploads/2015/12/2015-AR-SCREEN-DPS-DEC20153.pdf>)

Entrepreneurship as an academic course is found to be offered only at the universities. However, this course is part of the curriculum merely for the students of Business school in general and the department of business administration, management or human resources management, in particular. Only one private university is found to have a separate academic department with concentration on

entrepreneurship. However, many universities have established centers to promote, train, and facilitate innovation and venture creation for its students and staffs. A few such initiatives are outlined below:

- 1. Innovation & Economic Development Department, KAUST:** King Abdullah University of Science and Technology (KAUST) is, perhaps, the most magnanimous innovation and research hub in the entire Middle East. In line with its pledge to contribute to the economic development, in addition to its state-of-the-art research facilities, it has introduced entrepreneurship program under the Innovation & Economic Development department. The program strives to build a strong culture of entrepreneurship and to create new knowledge-based businesses in the Kingdom through its new venture school, startup accelerators and innovation fund. It offers various entrepreneurship teaching and learning opportunities to students, faculty, staff, as well as external visitors and industry partners. The department also helps entrepreneurs to protect their inventions, create business propositions, develop business plans and get funding for their ideas. The KAUST Innovation Fund aims to make venture capital investments in high-tech startups from seed (less than \$200,000) to early-stage (up to \$2 million) and becomes a long-term strategic partner of these ventures. The KAUST Entrepreneurship Center was named as one of four High Impact Programs. In addition, Forbes Middle East's 'Entrepreneurs Shaping Saudi Arabia's Future 2015 Conference, held in Riyadh on December 15, listed six KAUST-related companies among the top 100 innovative startups.
- 2. Entrepreneurship Institute, Umm Al Qura University:** Established in 2012, the Entrepreneurship Institute started acting as an umbrella organization for promoting entrepreneurship and innovation in the region. So far, it has taken some bold initiatives, such as IEFForum, IEYouth, AccMakk, IESummer and more. IEFForum and IEYouth plays the role of knowledge exchange forums for people interested in entrepreneurship and innovation in and around Makkah where the scientists, researchers, policy makers, and entrepreneurs exchange their views related to entrepreneurship and its development in Saudi Arabia. IESummer is a program focusing on the brightest of inventors and entrepreneurs from Umm Al Qura University. Under the auspices of the program, the potential teams of students are sent abroad for 2 weeks to learn best practices and facilitate transfer of knowledge from centers of excellence to Saudi Arabia. Three key summer programs were run in 3 consecutive years starting from 2012 in the United Kingdom, Japan, and the United States. The programs included intensive workshops on the main topics of innovation and entrepreneurship as well as visits to key entrepreneurship and innovation entities (centers, accelerators, incubators, etc...). The AccMakk (Accelerate Makkah) business accelerator is another initiative of the Institute to nurture the potential student entrepreneurs.
- 3. King Salman's Institute for Entrepreneurship, King Saud University:** King Salman Institute for Entrepreneurship runs a variety of academic and training programs aiming to spread the awareness of entrepreneurship and develop the necessary skills and knowledge in individuals to help them establish their

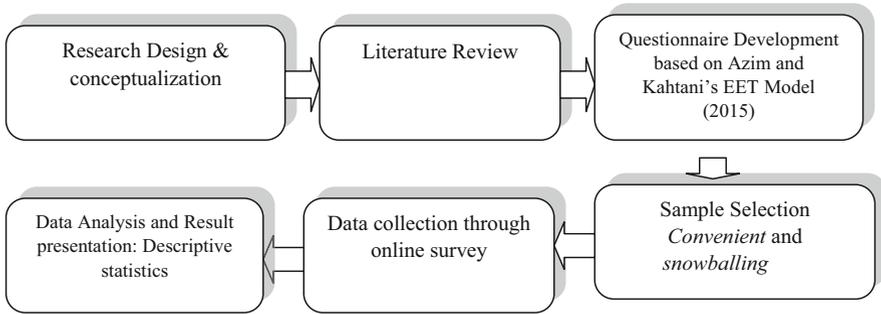
businesses successfully. Furthermore, the institute focuses on scientific research while offering a variety of business consulting services. It also hosts a business incubator to help entrepreneurs turn their ideas into reality.

4. **Entrepreneurship Institute, King Fahd University of Petroleum and Minerals:** It is a very vibrant institute which houses three different centers: The Center for Entrepreneurship Education, the Center for Business Incubators, and the Center for Entrepreneurship Studies. The Institute is taking a holistic approach to develop appropriate training and academic programs including teachers' training in entrepreneurship, conduct scientific research in the area, and support potential entrepreneurs so that they can launch their businesses. Furthermore, it is offering a 1-year scholarship, named "The 2030 Entrepreneurs" in the hope of nurturing entrepreneurs through donations obtained from key business individuals and organizations.
5. **Business Support and Development Center at Princess Nourah Bint Abdurrahman University:** It is a national project for the enablement of innovative commercial businesses in the Kingdom of Saudi Arabia. The center focuses primarily on supporting leading female-owned commercial businesses and marketing the research results of innovators by providing them with the services and facilitates that guarantee the success of their promising projects. The center has been established based on an integrated system that primarily works as a link between the university and the industry.
6. **Prince Mohammad Bin Salman College (MBSC)** of Business and Entrepreneurship is a recently established private, higher education institution located at King Abdullah Economic City. It is a partnership initiative between Emaar The Economic City, Babson Global (a wholly-owned subsidiary of Babson College, USA), and Lockheed Martin. It follows Babson College's unique approach to entrepreneurial education focusing on hands-on experiential learning rather than passive classroom lectures.

## 5 Empirical Study of Program Design of Entrepreneurship Education and Training in Saudi Arabia

### 5.1 Methodology

The study aims to assess the program design of entrepreneurship education offered by universities as well as training programs offered through different government and private initiatives in Saudi Arabia. Data were collected from the instructors of the EET programs through a structured questionnaire based on Azim and Al-Kahtani's EET Model (2015). Academic staff members from business departments from various private and public universities were contacted through their e-mails and invited to participate in the survey. Curriculums of all graduate and undergraduate programs of all the departments were scanned to ensure that at least one course related to entrepreneurship is offered. Therefore, data collection was



**Fig. 1** Research stages of the study

limited by the availability of information and email addresses on universities’ websites. For trainers, a questionnaire was sent to their email addresses based on personal acquaintances and snowballing. A total of 115 faculty members and 25 trainers were served with the questionnaire. 32 faculty members and 18 trainers responded correctly. Figure 1 depicts the schematic view of the research stages:

Specification of Azim and Al-Kahtani’s EET Model (2015): The model provides a recipe with the most crucial ingredients of an entrepreneurship development program in terms of traits, skills and knowledge contents (what are to be taught?) as well as approaches to teaching (how to teach?) and the essential features of the facilitators (Who should teach?). Following is the Diagram of the Model (Fig. 2):

## 5.2 Results and Discussion

Among the respondents for entrepreneurship education, 86.7% belong to government universities, and 13.3% belong to private universities while among trainers, 28.6% belong to government institutes and 71.4% work in private sector. Regarding gender, 53.3% respondents identified themselves as male and 46.7% as female faculty members. Among the trainers, 85.7% are male and 14.3% female. The course is offered with different titles, such as, ‘Entrepreneurship’, ‘Entrepreneurship Development’, ‘Entrepreneurship and Small Business Management’, ‘Entrepreneurship in Business’, ‘Entrepreneurship and Innovation’ etc. 46.7% respondents mentioned that entrepreneurship course is mandatory in their department or faculty while 53.3% cited it as an optional course. This indicates that the entrepreneurship course does not receive enough attention and credence even in the business administration department or business faculty.





Fig. 2 Entrepreneurship education and training model by Azim and Al-Kahtani’s EET model (2015)

### 5.2.1 Objectives of the Courses

An attempt is made to know about the objectives with which the instructors offer the course. The inquiry includes three types of objectives of an EET program (not mutually exclusive) identified by Gibb (1999): (1) to inform about entrepreneurship, (2) to prepare student to be entrepreneurial, and (3) to prepare students to become entrepreneur. Ideally, every instructor of EET should have all three objectives. The result of the survey is shown in Table 1. Most of the educators and trainers of EET aim to prepare the participants to become entrepreneurs followed by ‘to be entrepreneurial’ and ‘to let them know about entrepreneurship.’ It implies that all the instructors, particularly trainers, do not even think that their course is meant for preparing the participants to be entrepreneurs, which is sharply against the spirit of such program. Less emphasis on the second objective, also indicates that the instructors do not pay enough attention to develop soft skills among the participants that may enhance their employability.

**Table 1** Objectives of the EET program

Objectives	Education	Training
To let the participants know about entrepreneurship	46.7%	42.9%
To prepare the participants to be entrepreneurial	46.7%	57.1%
To prepare the participants to become entrepreneur (start their own business in future)	86.7%	71.4%

**Table 2** Facilitator’s characteristics of EET programs

Facilitator’s characteristics	Education	Training
Have training/education on entrepreneurship	77%	71.4%
Have practical business experience	60%	71.4%
Have research on entrepreneurship	33.3%	14.3%
believe that entrepreneurship is a viable career option for the participants	100%	100%

**5.2.2 Facilitator’s Characteristics**

Regarding facilitator’s characteristics, most of the educators and trainers are found to have attended either an academic course or training program on entrepreneurship. An acceptable number of the respondents from both categories is observed to have practical business experience. However, as far as the research is concerned, the respondents scored very poorly (Table 2). In fact, research on issues related to entrepreneurship, small business, innovation and other areas of entrepreneurship ecosystem keep the educators/trainers updated about the recent developments. It also helps them to explore the country-specific issues in relevant areas. One very positive finding is that all the educators and trainers perceive entrepreneurship as a viable career opportunity for the participants. Such perception facilitates implanting positive attitude towards entrepreneurship and brings enthusiasm to the participants.

**5.2.3 Teaching Approaches**

The survey reveals that the educators and trainers use multiple approaches with different intensity in their teaching/training instead of mono method of lecturing only (Table 3). It implies that unlike the traditional teachers who only know the ‘right’ answers, the educators/trainers of EET programs in Saudi Arabia consider themselves as facilitators. However, relatively less use of games, competition, role-plays, exposure to the successful entrepreneurs and creative exercises by the facilitators indicates that the programs are not imparted up to the ideal level. As mentioned by Godtfredsen (1997, p. 19), entrepreneurship is an art, and therefore, the teaching methodology used in the classroom should resemble that of an art school where students should be encouraged to develop their creativity. Kirby (2004, p. 515) emphasized the notion of creativity for entrepreneurs and suggested the approaches to nurturing the right side of the brain that takes care of the body’s

**Table 3** Teaching approaches

Teaching approaches	Education	Training
Lecture	100%	100%
Group discussion	93.3%	100%
Case study	86.7%	100%
Successful entrepreneurs as guest speakers	66.7%	83.3%
Exercise to nurture creativity	66.7%	77.3%
Games and competitions	53.3%	66.7%
Role play	53.3%	50%

**Table 4** Content of the EET program: knowledge segment

Topics	Education	Training
Entrepreneurship concept, theories, etc.	100	100
How to prepare a business plan	100	83.3
How to conduct market research	93.3	66.7
Government support services	93.3	66.7
Institutional sources of fund	93.3	83.3
Government incentives for novice entrepreneurs	86.7	66.7
Private support services	86.7	83.3
Franchising as a business startup avenue	66.7	50
Government regulations (related to starting a business)	66.7	50
Buyout (acquisition) as a business startup avenue	66.7	50

emotional, intuitive and spatial functions which are at the heart of the creative process. Breen (1999) believes that entrepreneurship education should be learner driven and the educators should pay more attention to the use of role models, community and business links, hands-on activities, and learning under conditions of uncertainty.

#### 5.2.4 Content of the EET Program: Knowledge Segment

An inquiry into the knowledge and information disseminated by the educators and trainers in EET programs shows that the educators pay greater attention to theoretical aspects of entrepreneurship, business plan preparation, market research, government support services, and institutional sources of fund while the trainers emphasize theoretical aspects of entrepreneurship, business plan development, institutional sources of capital, and private support services (Table 4). Certainly, there is a strong emphasis on active approach of learning in entrepreneurship education. However, it should not necessarily be at the expense of theory. Thus, Fiet (2000) advocates that those involved in teaching entrepreneurship should increase the theoretical content of their courses to develop the cognitive skills necessary to make better entrepreneurial decisions.

The most important aspect of entrepreneurship education/training is to prepare the participants to start new businesses, which require exposure to the reality, comprehension of overall business environment and coming up with a feasible business idea. To this end, given the short duration of the course, Timmons et al. (1987) suggest that business plan is the key measure of active experiential learning. Therefore, each EET program must incorporate this in its contents. In this regard, the trainers of Saudi Arabia have to improve their content with essential incorporation of business plan development in their program. Other than Greenfield investment, franchising and acquisition of existing businesses are two major avenues of getting involved in entrepreneurship. However, it is observed that the educators and trainers of EET programs in Saudi Arabia pay less attention to these avenues.

**5.2.5 Content of the EET Program: Trait Segment**

In the survey, an attempt was made to identify if the educators/trainers of EET programs in Saudi Arabia pay attention to develop the most sought after traits among the participants. It is revealed that most of the educators pay attention to vision and self-confidence followed by creativity and innovation, need for achievement, desire for independence, risk taking and internal locus of control. The trainers are found to pay more concerted attention to the traits than the educators do, and all the trainers mention that they aim to develop self-confidence, creativity, and innovation, need for achievement, desire for independence, and risk taking (Table 5). In fact, traits are the psychosocial characteristics of an individual, which determine his/her mental ability and influence innovative and entrepreneurial behavior patterns. Even though it is believed that traits are mostly biologically determined by the inheritance, or are developed at the early stage of life through socialization process, proper training and different student-centered approaches to teaching like role play, games and competition, creative exercise, exposure to role model etc. may develop these characteristics, at least, to some extent (Azim and Al-Kahtani 2015).

Almost 20% educators and trainers are found not to consider the internal locus of control in their EET program. However, different studies support the link between internal locus of control and entrepreneurship (Ho and Koh 1992; Robinson et al. 1991). In fact, this particular trait warrants particular attention in a predominantly Muslim society. Muslims are usually attributed with external locus of control

**Table 5** Content of the EET program: trait segment

Traits	Education	Training
Vision	93.3	83.3
Self-confidence	93.3	100
Creativity and innovation	86.7	100
Need for achievement motivation	86.7	100
Desire for independence	86.7	100
Risk taking	80	100
Internal locus of control	80	83.3

because of their belief in fate. But it needs interpretation and accurate comprehension. Islam has never discouraged people to work or encouraged them in any way to wait for fortune. Rather, as mentioned by Azim (2008), “The values and spirit of Islam can be of much help in instilling the qualities of dynamism in its followers.” The verses of Holy Quran and the sayings of Prophet (PBUH) are illustrative in this regard:

Do not forget your share of the world (Al-Quran 28:77).

There is nothing for *man* except what *he strives* for (Al-Quran 53:39).

The honest, trustworthy merchant will be with the Prophets, siddeeqs and martyrs (Al-Tirmidhi 1209).

Based on the above, EET programs in Saudi Arabia should have enough discussion on internal locus of control so that the participants get the right comprehension of the Islamic view of fate.

### 5.2.6 Content of the EET Program: Skill Segment

Entrepreneurs are not mere thinkers. They are doers. With a portfolio of skills, they overcome the odds and convert their dreams into reality. Therefore, an EET program should be viewed as a skill-building workshop for the participants. In this study, eight critical skills are surveyed, and it is found that both educators and trainers try to develop all the major traits in their participants (Table 6). In fact, it is the approaches to teaching that determine the effective development of these essential skills. Mere lectures and written exams are not sufficed to develop these skills rather it requires more interaction and an active approach to learning like game and competition, role play, market survey, case analysis and presentation, creative exercise, etc.

### 5.2.7 Wrap-Around Services

Wrap-around services are aspects of a program that complement the main content and curriculum (Valerio et al. 2014). These may include a broad range of services

**Table 6** Content of the EET program: skill segment

	Education	Training
Communication skill	100	100
Decision making skill	100	100
Opportunity recognition skill	100	100
Organizing skill	100	66.7
Negotiating skill	93.3	100
Networking skill	93.3	100
Leadership skill	93.3	83.3
Time management skill	93.3	83.3
Stress management skill	80	66.7

**Table 7** Wrap-around services provided by training organizations

Wrap-around services	Percentage
Consulting	100
Mentoring	75
Pitching in front of investors	37.5
Working space	25
Shared resources among students (design/legal advice/development/etc...)	25
Help with obtaining a loan	25
Assist in securing appropriate location	12.5

like consulting, mentoring, facilitating access to financing, incubation, offering shared resources, etc. An inquiry into such facilities for the trainees in Saudi Arabia reveals that training organizations mainly provide intangible advisory services like consulting, mentoring and networking while a few organizations offer more tangible and material services like a working space, shared resources, assisting in securing loan, etc. (Table 7). Lacking in these services is likely to reduce the effectiveness of the program to boost start-ups by the participants.

## 6 Conclusion and Recommendation

This paper offers a brief outline of entrepreneurship initiatives as well as education and training programs in Saudi Arabia. It is observed that there are a number of initiatives from the government and private sector in Saudi Arabia in the form of training, counseling, funding, incubation and other advisory and material supports to the potential as well as nascent entrepreneurs. With regard to entrepreneurship education in Saudi Arabia, the study observes rather a bleak picture. No formal course on entrepreneurship is offered either in secondary schools or in technical institutes. Most of the Saudi universities offer an entrepreneurship course within the curriculum of either the business faculty or the department of business administration/management/Human resources management, but such courses are usually optional rather than mandatory. However, a few universities are also found to have separate centers for entrepreneurship that provide training, counseling and other support services to aspiring students from any faculty and the academic and non-academic staff members.

The survey of faculty members and trainers of EET programs in Saudi Arabia reveals that the facilitators of the programs have less conviction to see their participants as potential entrepreneurs. Regarding a facilitator’s characteristics, most of the educators and trainers have participated in entrepreneurship education/training program before. Most of them have practical business experience, and perceive entrepreneurship as a viable career opportunity for their participants. The educators and trainers of EET programs are reported to use multiple approaches. Most of the educators and trainers have claimed to have included important lessons to

disseminate appropriate knowledge and information regarding entrepreneurship in the course. They also attempt to develop the right set of traits and skills in their participants. However, relatively less use of interactive and experiential activities like games, competition, role-plays, and creative exercises pour doubt on the efficacy of the program to develop the much-needed psychosocial abilities in the participants.

Given the scenario of entrepreneurship development in Saudi Arabia the following recommendations may be of use for promoting entrepreneurship in general as well as helping improve the standards and effectiveness of entrepreneurship education and training programs in particular.

**The Spirit of Entrepreneurship Should Be Spread Throughout the Whole Education System** Entrepreneurship development in a country requires a culture that nurtures creativity, supports risk-taking and props up dignity of work. Education is the primary vehicle to develop and establish these values in the society. Therefore, the whole education system should be imbued with the spirit of entrepreneurship. The teaching approaches, evaluation system and overall environment of the educational institutes should be fine-tuned in a way so that the students from the early stage of their education get accustomed to thinking independently, act proactively, learn to question the status quo and demonstrate creative ingenuity.

**Entrepreneurship Education Should Be Introduced in Schools and Vocational Institutes** To provide orientation to the entrepreneurship as an alternative career option, an introductory course on entrepreneurship should be launched for the students in schools and vocational institutes. The course is likely to create a favorable impression about entrepreneurship and motivate the students to develop the soft skills required to opt for this career. Moreover, the school drop-outs will be benefited by the course as they will learn the basics of getting involved in business. On the same line of reasoning, the students of vocational institutes may find such a course instrumental in coming up with technological start-ups.

**Entrepreneurship Education Should Be Introduced to All Disciplines Within Universities** So far it is observed that entrepreneurship courses are offered at universities as mandatory or optional courses for business students only. Such restriction does not make sense. Entrepreneurship is an alternative career option for students of all disciplines. The students of applied sciences and technology like engineering, agriculture, veterinary science, applied chemistry, applied physics, etc. are more likely to benefit from a missing link through this course as it will facilitate commercialization of their innovations and creative ideas generated through research. Therefore, the entrepreneurship course should be made at least an optional course for the students of all disciplines at the Universities.

**An Entrepreneurship Development Center Should Be Established in Each Higher Educational Institute** A few universities in Saudi Arabia are found to have stand-alone institutes to train and support aspiring entrepreneurs. It offers an excellent opportunity for the students from multiple disciplines, and university staff of the university to learn about entrepreneurship and prepare for it. Such institutes

should be established in all universities around the country so that the students of diverse regions are benefitted. However, the establishment of entrepreneurship centers or supporting programs in itself is not enough to drive the entrepreneurship spirit throughout the university. University top management needs to ensure that proper funding to such centers exist to ensure that they operate, train, and offer all possible support services to students and staffmembers.

**More State-of-the-Art Approaches Should Be Used** As entrepreneurship is a practical course, the method of conducting this course is crucial for its effectiveness. In fact, to inculcate traits, and develop the abilities and skills for entrepreneurship, students should be involved in the learning process as much as possible. Therefore, the use of case studies, role plays/simulations, games and competitions, exercises to nurture creativity, etc. are very useful. Therefore, the teachers should not view this course as just another course in the curriculum and stick to lecture methods only in teaching entrepreneurship. They should consider it as a different, practical course that warrants different approaches to instruction.

**Teachers' Training for Entrepreneurship Educators/Trainers** Entrepreneurship is a relatively new arrival in the curriculum of the universities in Saudi Arabia. Training in this area is not very timeworn practice either. In addition, EET programs require proactive mindsets of the facilitators to offer this program successfully. Also, there are pedagogical differences between this course and other courses in the curriculum. So there should be arrangement for teachers' training for EET programs. Entrepreneurship Institute of King Fahd University of Petroleum and Minerals are found to have such program. However, to make it available to other parts of the country, there should be such arrangement in other regions. Also, a teacher manual should be prepared as a guide for the teachers of EET programs.

**An Arrangement of Annual Business Plan Competition** Business Plan embraces the whole process of starting and running a business. It gives a comprehensive idea about the business. Therefore, the more the students will be encouraged to write real-life business plans the better will be their understanding of the business process. To this end, each institute may arrange a business plan competition every year for different levels of students. Similar competition can also be organized at national level as well. This culture will create enthusiasm among the students of different levels. The successful or award winning plans may be supported with financial and other assistance from the government or private organizations/banks etc.

**Exposure to the Entrepreneurs** A role model acts as the catalyst for being involved in any adventurous activity. It increases the self-efficacy of the individual. Having an interaction with a live entrepreneur, the participants learn a lot from his/her experience and can grasp the fine points of the journey. Thus, each EET should invite at least one successful entrepreneur to share his/her experience with the participants.

**There Should Be Arrangement for Follow-Up and Guidance** To make the Entrepreneurship Training programs worthwhile, the training institutes and the entrepreneurship centers of the Universities should maintain a database of their



participants and arrange to follow up sessions for the trainees from time to time and provide guidance in getting involved in the business. It should develop a network of contacts with different private and public support organizations to offer total support for starting ventures by the trainees.

**There Should Be an Arrangement for Wrap-Around Services for Aspiring Entrepreneurs** The most cases, the aspiration, and enthusiasm of the participants to start their business dry up because of lack of financial assistance or other support services. Therefore, the entrepreneurship training programs should have an arrangement for advisory services like consulting, mentoring, and networking as well as the material services, like incubation facilities, shared resources, assistance in securing loan, assistance to take part in a national and international exhibition, etc.

In fact, entrepreneurship development in a country is not an isolated issue. It is very much intertwined to many other economic, infrastructural and socio-cultural factors. To develop entrepreneurship in a country, providing mere training or education is not sufficient. An actual attempt to promote entrepreneurship in a country must address all related factors and improve the overall entrepreneurship ecosystem.

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# Perceptions Towards Entrepreneurship and Intention to Become Entrepreneurs: The Case of Sultan Qaboos University Female Undergraduate Students



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**Abstract** This chapter reports the results of a study conducted on Sultan Qaboos University (SQU) female undergraduate students' intentions on becoming entrepreneurs and their perceptions towards entrepreneurship. This study employed predictive modelling to understand and predict the start of own business by female students in a developing country like Oman. The key research question addressed in this chapter is: What factors influence Sultan Qaboos University's female students towards entrepreneurship? Using a questionnaire survey, data were collected from 200 undergraduate female students at the College of Economics and Political Science in 2015. The findings suggest that, while the general perceptions on factors that influence the entrepreneurial aspirations of female SQU undergraduate students are positive, a small portion of these students still hold ambivalent views towards entrepreneurship. This research has important implications for researchers, practitioners, policy makers and entrepreneurship educators.

**Keywords** Entrepreneurship intent · Role models · Perceptions · SQU undergraduate students

## 1 Introduction

In a new global economy, entrepreneurship has become important as it contributes to employment, output, and to the size of the overall economy. Youth unemployment rates are a real concern in The Middle East. The lack of jobs in The Middle East has been quoted as cause of political and social instability. In addition, youth unemployment rates in the Middle East and North Africa (MENA) Region are the highest

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in the world, (Khaleej Times 2004). More than half of the region's populations are less than 25 years old, and 27.2% of them are unemployed. The World Economic Forum Report (2014) refers to this issue as a "youth liability". Oman is one of the MENA Region where youth represents the highest per cent of the country's population. It is therefore important for Oman to inspire entrepreneurship in order to create innovation, economic productivity and jobs, and expand the economy.

This study tries to assess (SQU) female undergraduate students' intentions to become entrepreneurs and their perceptions towards entrepreneurship. The growing groups of female business graduates who have the potential (in theory) of starting their own businesses have been unrecognised in research. This Chapter tries to fill this research gap. The Chapter focuses on female students for the following reasons. First, studies such as Hisrich and Brush (1985) have confirmed that the woman entrepreneur is not an 'average' woman and that she has problems not encountered by her male peers (Scott 1986, p. 37). These impediments have resulted in women entrepreneurs being 'under-resourced, under-experienced, under-protected and under-productive' (Marcucci 2001, p. 3). Thus, to contribute to the existing body of knowledge, there is a need to understand the various perceptions of female students towards entrepreneurship and their intentions to become entrepreneurs.

Secondly, students are mostly young and governments have acted as protective role models for teachers and parents, so that everyone acts to overprotect, overly support and arrange easy and secure outcomes for Arab youth (The World Economic Forum Report 2014). Moreover, as noted by GUESSS (2008, p. 1) a significant amount of innovative power and entrepreneurial competences are embedded within students and can later lead to successful start-ups. Finally, women represent a minority of entrepreneurs and policy makers must be informed of this situation (Rametse and Huq 2013).

The protective, parental role that MENA governments have created systems and institutions that work against entrepreneurship. The young are groomed to take on government positions that are well-paid and require little personal accountability. Government subsidies make unemployment often preferable to low-paying positions. The educational system is not geared to create independent thinking, critical or creative thinking, or teach problem-solving, management skills and other functional skills needed in the private sector. (The World Economic Forum report 2014). This creates a sense of entitlement amongst the Arab youth, along with dependence, lack of motivation and responsibility, and little desire to take risks.

Oman is no exception, where the serious problem of the lack of employment opportunities has increased in the past couple of years. For instance, the waiting period for jobs ranges between 3 and 5 years for young Omanis after graduation (Al-Lawati 2016). The emergence of this problem can be traced to two key reasons. Firstly, the increased number of graduates who are looking for meaningful employment, which is a direct result of the better access to higher education that the Sultanate of Oman has promoted over the past number of years (Al-Lawati 2016). Secondly, the serious economic problems that Oman is currently experiencing resulted from low oil prices, the main source of income for the country. The low-oil-price crisis creates not only youth unemployment but unemployment for adults.

According to Erlich (2015), this state of Oman's economy provoked some private companies to force their drilling workers to seek other livelihoods and find alternative jobs.

These unemployment problems prompted a call for the diversification of the sources of national income away from oil and gas. The Sultanate developed "Vision 2040" for Oman's Economy. The Vision aims to make the Sultanate a diversified economy by utilising its rich, highly talented, and capable human capital predicated on the development of an innovative culture which is commendable.

Sultan Qaboos University as a premier public institution is dedicated to producing high quality graduates, knowledgeable and skilled in various disciplines offered by nine colleges. Entrepreneurship is considered by researchers as the fourth pillar of economic development, and some even argue, that perhaps entrepreneurship is the only important pillar of economic development in the highly technological twenty-first century. It is hoped that with the country's vision, the issue of "youth liability" will become "youth advantage" for Oman. Hence the key research question addressed in this paper is: What factors influence Sultan Qaboos University's female students towards entrepreneurship?

The rest of the chapter is structured as follows: Sect. 2 sets the country context for Omanis with a focus on the development of entrepreneurship. Section 3 briefly discusses economy of Oman. Section 4 reviews the literature, whereas Sect. 5 focuses the theoretical framework adopted in this study. Finally, Sects. 6 and 7 present the results and conclusions respectively.

## 2 Development of Entrepreneurship in Oman

As a result of the over-dependence on oil, Oman's economic development has been unbalanced. The consequences have been, and continue to be, high and growing levels of unemployment and over-dependence on imports of goods and services. Entrepreneurship education and training represent a special area of innovative new approaches and initiatives in the world and it is even more important in the Arab world. Hence, entrepreneurship and entrepreneurship education in institutions of higher education have received increased attention in Oman with the hope of alleviating acute unemployment rates and overdependence on imports.

The government of Oman has taken steps in the promotion of entrepreneurship education at the national level. Efforts to promote entrepreneurship in the country take different forms such as research, expenditure, curriculum development, teacher training and collaboration with Non-Government Organizations (NGOs). Various pilot projects and national, regional or international programmes have been implemented to promote entrepreneurship and to provide entrepreneurship education especially among students, young people generally and the unemployed (Al-Ghassani 2010).

The Government of Oman recognised the role of privatization and liberalization of its policies in accelerating the rate of economic growth. The government encouraged men and women equally to participate in the process of economic development

of the Sultanate “Vision 2020” which emphasises the industrial development of small and medium enterprises (Al-Ghassani 2010).

Many initiatives have been launched nationally to encourage young people to take up independent business options. The SANAD programme, which has been a successful programme all over Oman, promotes the launch of youth business ventures through the provision of loans and expertise to recent graduates. It was started in October 2001 under the Ministry of Manpower with the objective of helping to promote and foster the development of small-scale enterprises in Oman. The program supports individual initiatives for all who are willing to undertake self-employment, through the available mechanisms of training, rehabilitation, funding and technical and administrative follow-up. It is targeted especially for the unemployed youths. The SANAD Incubators Programme helps young entrepreneurs from technical colleges start their own enterprises through monetary and technical support. These young entrepreneurs are expected to build their own businesses with a head start in the business world. The Government has created SANAD offices in each governorate and region that provides technical and administrative support to the beneficiaries (Khan and AL-Moharby 2007).

The Know About Business (KAB) programme is a global package being offered under the aegis of the International Labour Organization (ILO) to empower the young to acquire skills that will help them earn a livelihood. The main focus of KAB is the training of entrepreneurs in management skills for developing an entrepreneurial attitude through entrepreneurship education. The programme seeks to develop the entrepreneurial skills of young people and educate them not only to establish their own businesses at some time in the future, but also to work productively in small and medium enterprises (SMEs) (International Labour Organization 2012). In Oman, this program is being implemented in vocational training centres and colleges of technology.

The “Intilaaqah” program is part of the Shell group worldwide initiative, LiveWIRE. This program helps the young entrepreneurs by providing them the right kind of training, counselling and consultancy services which enable them to start their own businesses. The objective of the training program is to develop the candidate’s ability to conceptualize the business environment by enabling him or her to acquire necessary skills to run small businesses professionally as cited in Intilaaqah (2016).

The colleges of technology have also adopted programmes for newly recruited teachers and lecturers focusing on entrepreneurship education in addition to other areas. After recruitment, these teachers are sent abroad for a Master’s Degree. They spend a few months working in industry to gain industrial experience and to acquire entrepreneurship skills, followed by a few months of training within the college to learn modern teaching techniques and methods of transferring knowledge and skills to students. In addition to the above initiatives, the government introduced a mandatory entrepreneurship course in all government and private colleges and universities Mohammed al Sami (2014).

In terms of financial support for the prospective entrepreneurs, Oman’s government has adopted certain steps in promoting entrepreneurship education. These

include the availability of Oman Development Bank loans, 'incubator' facilities, equity funding by the Youth Fund, and micro-business development facilities offered through the SANAD programme. Oman Development Bank (ODB) promotes entrepreneurship among the youth by providing them with soft loans and reducing bureaucracy (Central Bank of Oman 2015).

Under the SANAD programme, an amount of 5000 Rial Omani (around \$13,000) is provided as a loan. ODB disburses the loan amount after approval and recovers it as per the Fund regulations. The period of the loan settlement is 7 years including 1 year as a grace period starting from the date of granting the loan. The fund charges an interest rate of 2% per annum to cover the administrative cost of the loan. The Fund for Development of Youth provides financial and management assistance to young people wishing to embark on business in the private sector. The fund was established with a grant of RO (Rial Omani), 1 million granted by His Majesty and the fund has accumulated RO 5.36 million as equity from private companies. The policy of this fund is to invest in the equity of the small and medium sized projects and to render administrative, financial and technical support. The entrepreneur has the flexibility to buy back the equity in his or her enterprise by paying back to the fund after an exit period of 5 years (Central Bank of Oman 2015).

### 3 Economy of Oman

The Sultanate of Oman registered a robust overall real economic growth of 5%, in the previous decade prior to the marked drop in oil prices. Prudent fiscal measures ensured high fiscal buffers and the public debt to GDP ratio stood at 5% at end-December 2014. On the external front, gross foreign exchange reserves exceeded 6 months of import according to the Central Bank of Oman's Annual Report (Central Bank of Oman 2015).

The Vision 2020 and successive Five-Year Development Plans pursued the strategy of economic diversification, a greater role for the private sector, an improved business climate for attracting foreign direct investment etc. (Central Bank of Oman 2015). During the previous 10-year period, the share of the non-hydrocarbon sector had increased from 16% to 41% of merchandise exports, while the share of non-oil revenue in public revenue had grown from 14% to 22% (Central Bank of Oman 2015). Over the years, the government of Oman implemented sound macroeconomic policies resulting in strong growth, moderate inflation and a stable financial system.

The sharp decline in the oil price since mid-2014 and the renewed dip in oil price from the end of 2015 to January 2016 have turned the fiscal and external balances into sizeable deficits in 2015 (Central Bank of Oman 2015). In order to contain fiscal metrics within manageable limits, the authorities have implemented fiscal adjustments through spending cuts, augmenting non-oil revenues and undertaking subsidy reforms. An expectation of low oil prices to continue would warrant contingency plans of further spending restraint and revenue measures including expanding non-oil revenue, prioritizing capital expenditure, reducing current expenditure and



enhancing user fees (Central Bank of Oman 2015). On the other hand, gains from a quick recovery in international oil prices would be an opportunity for greater fiscal savings facilitating the restoration of fiscal sustainability in the medium term. With a view to enhancing non-hydrocarbon revenue, additional fiscal measures have been planned. Corporate income tax is expected to be raised from 12% to 15% in 2017 and VAT to be introduced in 2018 (Central Bank of Oman 2015).

The Ninth Five Year Development Plan (2016–2020) seeks to achieve higher economic growth through focused investment in five sectors namely, manufacturing, logistics, tourism, fisheries and mining. It is intended that the private sector would play a significant role in the expansion of activity in these sectors. The government and the Central Bank of Oman have instituted policies and programs to support entrepreneurship and the SME sector (Central Bank of Oman 2015).

## 4 Literature Review

### 4.1 *Benefits of Entrepreneurship*

Entrepreneurship is a difficult concept to define in clear terms. In common usage, the word ‘entrepreneurship’ is linked to enterprise creation, but the term has a wider application (Martins 2007). Some researchers (Li et al. 2012) believe that entrepreneurship can be used more specifically to identify individuals who stimulate economic progress by finding new and better ways of doing things. Blackman and Hindle (2007) have enhanced Klyver’s (2005) model that describes Davidsson (2004) classification of the two principals ‘schools’ of definitional emphasis in the entrepreneurship literature: (1) “the emergence perspective”, and (2) “the opportunity perspective”. The “emergence perspective” emphasises the dynamics of new organization creation whether or not the venture includes innovation “the development of new means-ends relationships as a core component” (Blackman and Hindle 2007). The ‘opportunity perspective’ suggests that entrepreneurial opportunities involve the discovery and evaluation of new relationships between means and ends, irrespective of whether this involves the creation of a new venture or not. Entrepreneurship, in this perspective, is defined as “the discovery, evaluation and exploitation of opportunities whatever the organizational mode of pursuit” (Shane and Venkataraman 2000). These two perspectives are illustrated in Table 1.

The empirical work performed for this paper does not, as it were, ‘take sides’ in the debate regarding definitions. The philosophical stance adopted in this paper is inclusive and eclectic enough to take a broad view of entrepreneurship i.e. any activity that could be classified in any of quadrants A, B and C (Table 1).

The European Union Green Paper on Entrepreneurship (European Commission 2003) set out a range of benefits that can be associated with entrepreneurship. These benefits include contributing to economic growth by job creation and growth; fostering social and economic cohesion particularly in less developed regions; being crucial to competitiveness and productivity improvements; unlocking personal

**Table 1** Two main perspectives of entrepreneurship research

		Principal action focus	
		Creation of new means and ends relationships	Maximising existing means and ends relationships
Organizational context	New organizations	(A) Innovation oriented venture creation	(B) Non-innovation oriented venture creation
	Existing settings	(C) Innovation oriented venturing in existing contexts (e.g. corporate venturing; licensing via markets etc.)	(D) Traditional management

Sources: Klyver (2005), Blackman and Hindle (2007)

potential and satisfying a range of social interests, by making wealth, jobs and diversity of choice available for citizens. Thus, through entrepreneurship, the call is made for nations to have new ways of doing things; to be innovative and creative; to have the willingness to take calculated risks—in terms of time, equity or career; to recognise opportunities and evaluate them and to possess many other essential ingredients of entrepreneurship. Encouraging entrepreneurship therefore is viewed as a central key to creating jobs and to improving competitiveness, social integration and economic growth, especially in developing countries and this can only be done though changing their mindsets through entrepreneurial education and training which is relevant to their situations.

Entrepreneurship education poses a definitional problem. Literature abounds (Blenker et al. 2006) that indicates that there is no common agreement over what constitutes entrepreneurship education or how it is taught (Kirby 2007). The nature of entrepreneurship education is made even more complicated by the fact that there is not much clarity about what the outputs are designed to be. The lack of clarity about the intended outputs leads to significant diversity surrounding the inputs (Pittaway and Cope 2007). As Kroy (2005) notes, approaches to entrepreneurship education are likely to vary between continents and between countries as well as according to the target group. Oman, like most countries, gives priority to supporting entrepreneurship through education and training of existing and prospective entrepreneurs.

It is important for Oman to diversify its economy (Al-Shanfari 2012) affirms that “Oman’s main export has been oil, which is still the backbone of the economy and constitutes around 80% of total government revenue”, and the fact that “Oman has less than 20 years of oil reserves left” (AL-Shanfari 2012) calls for Oman to benefit from the advantages that entrepreneurship brings. Low oil prices in Oman have led to acute youth unemployment. In its 2004 Human Development Report, the United Nations Commission on the Private Sector and Development asserted that alleviation of youth unemployment requires a strong private sector. The private sector is seen as the source of growth, jobs and opportunities for the unemployed and the poor. Accordingly, there is a clear need for an economic climate that encourages private-sector investment and thus economic growth, as in the UN Human Development Report (2014).

Entrepreneurship is essential to promote and achieve economic growth, development and the creation of wealth and employment (Nieman 2001). Entrepreneurship is defined as the process by which opportunities to create future goods and services are discovered, evaluated and exploited (Shane and Venkataraman 2000), thus, to focus on developing entrepreneurship in Oman is important for several reasons.

First, entrepreneurship drives innovation and technical change, and therefore generates economic growth (Schumpeter 1934). Second, entrepreneurial action is the process through which supply and demand are equilibrated (Kirzner 1997). Third, entrepreneurship is an important process by which new knowledge is converted into products and services (Shane and Venkataraman 2000). Fourth, entrepreneurship has become an important vocation and we need to understand its role in the development of human and intellectual capital (Zahra and Dess 2001). According to Fayolle (2000, p. 2) countries with a high level of entrepreneurial activity are those which have the most developed and complete entrepreneurial teaching and training programs. Therefore, teaching entrepreneurial skills represents one powerful means of achieving economic development (Fayolle 2000).

Many initiatives have been designed to foster entrepreneurship development in Oman; they aim to inspire, encourage, and prepare Omani youth to succeed in a global economy. Hence, the number of young Omanis prepared to start entrepreneurial ventures is expected to increase. However, despite all these initiatives and incentives, many Omani youth still hesitate to start their own businesses. For instance, in the year 2003, fewer than 2 in 100 young Omanis started a new business, compared to 1 in 10 in the US" (Al-Shanfari 2012).

## 5 Influential Motivators of Entrepreneurial Aspirations

In order to encourage entrepreneurship, we must ask ourselves "what shapes career aspirations toward self employment" (Scott and Twomey 1988). These researchers believe that the motivation is a significant factor in the start-up and success of the business. They conducted one of the earliest studies on university students entrepreneurial intentions by studying the intentions of the university students in the United States. They found that only 24.8% of US university students aspired to become entrepreneurs. The results of their study indicated that, students whose parents owned businesses showed the highest preferences for self employment. Thus, parents must have acted as role models.

A study which was conducted by Bhandar (2006) in India administered a 62 item questionnaire on university students on their career intentions. The results indicated that 92.35% of the respondents had the intention to venture into entrepreneurship activities upon university completion. The fact that Indians are generally believed to be good business people may explain the high positive result of students aspiring to become entrepreneurs upon completion of their studies. The cooperativeness of Indians is conducive to entrepreneurial success and thus, this is bound to motivate students to venture into businesses.

Researchers in the area of career theory continuously identify role models as an influential determinant of a student's career choice. The presence of entrepreneurial role models had been identified as one of the most significant socio-cultural factors to play a role in entrepreneurship (Fornahl 2003). Earlier studies stem from the social learning theory (Bandura 1977) and the cognitive developmental theory (Kohlberg 1966), that assume that children imitate adults, in particular, parents who are regarded as role models (Dryler 1998). Shapero (1985) assert that role models influence entrepreneurial intentions.

In their study of factors influencing the entrepreneurial engagement Thurik et al. (2010) concluded that having at least one self-employed parent increased the odds of being engaged in entrepreneurial activity. This concurs with Scott and Twomey's study on predisposing factors. Rametse (2013) researched into the attitudes of women students' and barriers to business ownership in Botswana. Her results confirmed that a majority of the women aspired to start their businesses when they completed their studies. The study indicated that women students' involvement in their family members' businesses influenced their desire to start their businesses thus confirming Scott and Twomey's findings about predisposing factors in particular, the importance of parents as role models.

Since Scott and Twomey's work, a number of other studies have been conducted and have highlighted a steady increase in the percentage of students aspiring to become entrepreneurs. Another study conducted by Moi et al. (2011) also suggested that the number of role models (family, friends or colleagues) was positively related to entrepreneurial intention.

Ferreira et al. (2017) sought to identify attitudes and intentions of university students towards starting their own businesses. The objective of their study was to identify the students' intentions toward entrepreneurship, their personal characteristics and future plans. They found that most of the students did not want to undertake entrepreneurial activities immediately after graduation but postponed it to a distant future. Perhaps this could have been because students wanted to gain hands-on work experience before starting their own businesses. Lack of initial capital could also have contributed to students' decisions to defer entrepreneurial activities to a distant future.

Scott and Twomey (1988) indicated that "predisposing" (background, personality, perception); "triggering" (situational) factors and having a business idea acted both independently and together to shape students' career aspirations. While predisposing factors are long-term, triggering factors are situational and short-term in nature and they include "the effects of looking for work, career advice received and the prospects of unemployment" (Scott and Twomey 1988).

There is a paucity of literature on the intentions of female university students' with regard to entrepreneurship in the Gulf Community Countries (GCC) and Middle Eastern and North African (MENA) countries. Hatten and Ruhland (1995) and Kent (1990) examined the entrepreneurial knowledge, preferences and perceived barriers among business students in the Middle East. Other studies were conducted by Gallant et al. (2010). Hossan et al. (2013) studied entrepreneurial knowledge and preferences of female businesses students in Abu Dhabi and their

study found that students had greater interest in starting new ventures but did not know where to get help regarding starting their new businesses.

In Oman, the attitudes of Omani college students towards entrepreneurship were assessed by Segumpan and Zahari (2012). Their research also attempted to determine any significant differences in respondents' attitudes when grouped by gender. Sixty one (61) university students who were enrolled on the International Business course took part in the study. In relation to differences in entrepreneurship attitudes by gender, their study found that male students had higher entrepreneurial orientation than their female colleagues. However, all in all, their findings indicated positive attitudes by Omani students towards entrepreneurship.

In another Omani study, Thresi and Hamadi (2012) assessed the entrepreneurial intentions of Sohar University students. Their study tested for the presence and strength of four traits associated with entrepreneurship; the need for achievement, autonomy, risk-taking and self confidence. Their results indicated a high number of students who intended to engage in entrepreneurial activities upon university completion.

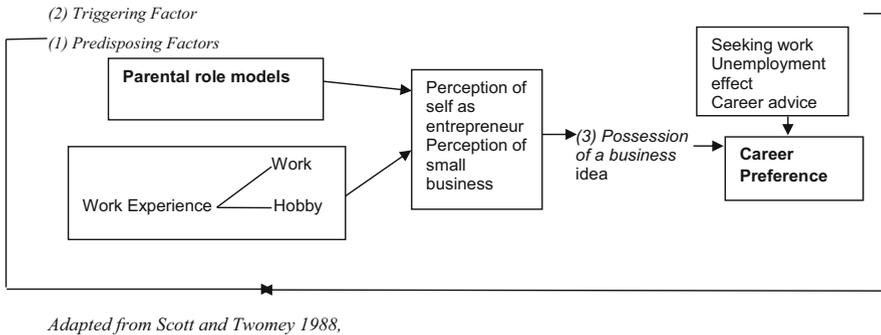
Both the Omani studies indicate students' positive attitudes towards entrepreneurial activities. This could be due to the influence of many government and non-governmental programs that are aimed at encouraging youth entrepreneurship in Oman.

No study has been conducted in Oman regarding role models and family background as influential motivators of entrepreneurial aspirations of female students in higher education.

## 6 Theoretical Framework

The analysis of this research is predominantly based on the Scott and Twomey (1988) model, which describes factors that influence students' career aspirations (see Fig. 1). This framework has been chosen because its conceptual dimensions are widely covered by the literature (Scott and Twomey 1988; Orhan and Scott 2001; Rametse and Huq 2014) and meet the research objectives of our study. These factors are represented by three broad variables comprising of predisposing factors, triggering factors and possessing a business idea (Scott and Twomey 1988). Scott and Twomey (1988) explain predisposing factors as background/personality/perception factors that develop over several years or more. For this study, these include family background, in particular small business owners within the immediate or broader family as role models. However, it should be noted that our paper discusses only the predisposing factor of parental role models and career preferences.

Other broad variables, which are situational and short-term, are triggering factors. These are the reasons why the students are interested in setting up businesses. These include "the effects of looking for work, career advice received, and the prospect of unemployment" (Scott and Twomey 1988, p. 6). Another factor that may influence women students to start their businesses is possession of a business idea, which may



**Fig. 1** Main factors influencing career aspirations

be instigated by both predisposing and triggering factors. Thus, these factors may generate a business idea, leading on to setting up a business as an ultimate career preference. Thus, possession of a business idea alone may “pull” women students into entrepreneurship.

## 7 Research Methodology

This research attempts to answer the above stated question: *What factors influence female students at Sultan Qaboos University towards entrepreneurship?*

### 7.1 Participants

Data was collected between January and March, 2015, from a sample of 210 undergraduate female students from the College of Economics and Political Science at Sultan Qaboos University in Oman. Out of the 210 participants, 200 respondents remained in the sample after eliminating the unusable questionnaires.

### 7.2 Measurement/Instruments

Building upon Rametse and Huq (2015), we adapted and developed a survey questionnaire, titled, Female Students Entrepreneurial Motivations Questionnaire (FSEMQ), for the purpose of this study.

This instrument was piloted on five female students and five academics for their comments and suggestions, and to determine its validity. Problematic questions were identified and refined. Semi structured survey questionnaires were used as they are

cost effective and more reliable. Additionally, questionnaires can be distributed to a large sample of people to get their different attitudes and views at once and they are suitable for gathering data quickly and in a short time. The main disadvantage was lack of in-depth answers from respondents. When designing a questionnaire, sub-questions were formulated to address the research question and the hypotheses to be evaluated.

The self-administered questionnaire—FSEMQ was divided into four sections. The questions were devised based on the adapted theoretical framework. The first section of the questionnaire required respondents to provide their personal details and family background including parents' occupations; if respondents were involved in a business or had any business experience and whether they had a relative who was an entrepreneur. This information was needed to investigate how demographic factors affected students' perceptions towards entrepreneurship.

The second section required students to provide information on their prospective career options upon university completion. They were required to rank their options with a measurement scale of a Five-point Likert-scale, with 1 = Very unattractive and 5 = Very attractive. In this section, respondents were further asked to rank the amount of influence they got (from family, friends, university teachers, and the media) towards their career choices. With 1 = No influence and 5 Strong influence.

The third section was designed to investigate participants' attitudes towards entrepreneurship, their intentions as well as their experience of business ownership. Questions related to women attitudes towards entrepreneurship as their career options were also included. Questionnaires contained several open-ended questions with the last section of the questionnaire requesting for respondents' general views on barriers preventing women to partake in entrepreneurship ventures in Oman. Responses were appropriately coded for analysis using a Statistical Package for the Social Sciences (SPSS).

### **7.3 Procedure**

On the basis of the pilot, the FSEMQ was distributed randomly to the undergraduate female students ( $N = 210$ ) in 2015, generating 200 responses. The purpose was to identify the factors that motivate students in their aspirations to start businesses. Data was collected after ethics clearance by Sultan Qaboos University.

### **7.4 Statistical Procedure**

The Statistical Package for Social Sciences (SPSS) 23.0 was used for the survey to compute descriptive statements and some cross-tabulations. In addition to using SPSS 23.0, Artificial Neural Network (ANN) was used to predict female students' interest in starting their own businesses.

## 7.5 Artificial Neural Network

Artificial Neural Network (ANN) is gaining importance in business research as it can handle data without normality conditions and can capture linear as well as non-linear relationship among decision variables. ANN is considered one of the most advanced statistical techniques. ANN can be defined as “a massively parallel distributed processor made up of simple processing units, which have a neural propensity for storing experimental knowledge and making it available for use” (Haykin 2001). The functioning of artificial neural network is similar to the human brain in the sense of knowledge gathering through learning. ANN is made up of three layers namely input layers, hidden layers, and output layer. These layers are connected through synaptic weights for adjusting using recursive learning process (Leong et al. 2013). There are two ways of learning in artificial neural networks namely supervised learning and unsupervised learning. ANN has been employed in various domains of businesses such as insurance, operations management, retail, marketing, telecommunications, eLearning, banking and finance sector (Smith and Gupta 2000). The performance of ANN has been proved to perform better than other advanced statistical models such as multiple linear regression, discriminant analysis, logistic regression, structural equation modelling and others. The “black box” approach of neural network model is one of its shortcomings and it cannot be used to test research hypotheses it can be done with regression based statistical models.

## 8 Results

### 8.1 The Respondents' Profile

Table 2 presents a distribution of personal details. A majority of female students (99.3%) were in the age range 18–25 years. Around 99% are single. A majority (55%) were from a nuclear family set-up. Around 50.8% and 49.2% had a level of

**Table 2** Profile of respondents

Variables	Sample
Age	n = 145 (99.3%), ranged from 18 to 25 years n = 1 (0.7%), ranged from 26 to 30 years
Marital status	n = 145 (99.3%), single; n = 9 (6.9%), married
Type of family set-up	n = 68 (55.6%), = nuclear family; n = 55 (44.4%), = joint family
Level of studies	n = 67 (50.8%), = Junior (<2 years); n = 65 (49.2%), = Senior (>2 years)
Education qualification	n = 74 (51.7) Bachelor; n = 44 (30.8) Diploma; n = 12 (8.4) Basic education; n = 11 (7.7) Post basic education; n = 2 (1.4) Masters
Monthly income (bread winner)	n = 92 (65.7%) <5000 OMR; n = 37 (26.4%) 5001–20,000 OMR; n = 9 (6.4%) 20,001–35,000 OMR; n = 2 (1.4%) >35,000 OMR



**Table 3** Type of business interest

Industry	n (%)
Retail	8 (12.9)
Service	31 (50)
Manufacturing	10 (16.1)
Others	13 (20.9)

studies of junior and senior respectively. Regarding qualifications, 51.7 % studied for Bachelor’s Degree and 30.8% for a Diploma. A majority (65.7%) were from the lower level of income (less than OMR 5000).

As shown in Table 3, respondents were largely interested in service business (50%). Thus, it seems female students in Oman are more attracted to service industry.

### 8.2 Family Background

In an effort to investigate how demographic factors affected students’ perceptions towards entrepreneurship, we further requested information from female students on their family background. These included parents’ occupations, whether respondents were involved in a business or had any business experience and whether they had a relative who was an entrepreneur.

Table 4 shows that around 82% of respondents’ fathers were employed, 13.8% were in business and 4% were farmers. A majority of the participants’ mothers (26%) had no education as compared to their fathers (11.6%). However, many

**Table 4** Parents’ employment status and their level of education

Variables	N	%
Father’s occupation		
Farmer	4	4.0
Business	14	13.8
Job	83	82.2
Father’s education		
No education	16	11.6
Basic	37	26.8
Post basic	25	18.1
Diploma	16	11.6
Bachelors	28	20.3
Masters	15	10.9
Mother’s education		
No education	36	26.1
Basic	52	37.7
Post basic	14	10.1
Diploma	19	13.8
Bachelors	16	11.6

participants’ mothers (37.7%) had basic education, while 26% reported that their fathers had basic education. Additionally, a majority of female students (20%) reported that their fathers had a Bachelors degree. Around 11% said their mothers had a Bachelor Degree. Thus, female students’ fathers were more educated than their mothers.

### 8.3 Predisposing and Triggering Factors

#### 8.3.1 Involvement in Business

Table 5 shows 75% of the participant’s families were already involved in business broken down as follows—parents (39.3%), uncles (21.4%), siblings (18.8%) and at least one spouse (1%). Few of the participants (14.3%) were themselves already involved in business. This suggests that they wanted to concentrate on their studies in an effort to earn more money in government and the private sector. Moreover, as indicated earlier on in this paper, this may support the assertion that in Oman, young people are groomed to take on government positions that are well-paid and require little personal accountability, hence the low level of involvement in business.

#### 8.3.2 Employment Preference

Respondents were requested to indicate their employment preference upon graduation. Table 6 shows that most female students found it very attractive to work for a large business in the private sector (48.3%) or a government organization (41.3%). Only 28.2% want to start their own businesses, and had little interest in the sectors of

**Table 5** Distribution of family involvements in business

Variables	n	%
Does/did any of your family members operate own business?		
Yes	112	74.7
If yes,		
Parents	44	39.3
Siblings	21	18.8
Uncles/aunts	24	21.4
Cousins	15	13.4
Grand parents	5	4.5
Spouse	1	0.9
In-laws	2	1.8
Are/were you involved in the business in any way?		
Yes	17	14.3
No	102	85.7

**Table 6** Distribution of participant's employment preference after the graduation

Variables	Attractive				
	Very attractive n (%)	Attractive n (%)	Undecided n (%)	Unattractive n (%)	Very unattractive n (%)
Govt. organization	50 (41.3)	40 (33.1)	16 (13.2)	10 (8.3)	5 (4.1)
Private sector, large business	57 (48.3)	32 (27.1)	18 (15.3)	6 (5.1)	5 (4.2)
Private sector, small business	6 (12.8)	15 (12.8)	49 (41.9)	30 (25.6)	17 (14.5)
Own business	33 (28.2)	29 (24.8)	30 (25.6)	11 (9.4)	14 (12.0)
Joint family business	20 (17.5)	28 (24.6)	20 (17.5)	29 (25.4)	17 (14.9)

**Table 7** Factors influencing to choose the preference of employment

Variables	Influence				
	Strong n (%)	Moderate n (%)	Undecided n (%)	Somewhat n (%)	No n (%)
Parents	60 (49.6)	34 (28.6)	21 (17.6)	2 (1.7)	2 (1.7)
Siblings	17 (16.7)	32 (31.4)	26 (25.5)	15 (14.7)	12 (11.8)
Friends	18 (15.1)	29 (24.4)	43 (36.1)	18 (15.1)	11 (9.2)
The media	21 (17.9)	38 (32.5)	28 (23.9)	20 (17.1)	10 (8.5)
University (courses, teachers)	30 (27.5)	37 (33.9)	31 (28.4)	8 (7.3)	3 (2.0)
Work experience	40 (41.7)	27 (28.1)	18 (18.8)	7 (7.3)	4 (4.2)
Relatives	7 (10.1)	14 (20.3)	23 (33.3)	18 (26.1)	7 (10.1)
Spouse	9 (20.5)	5 (11.4)	13 (29.5)	8 (18.2)	9 (20.5)

small private business (12.8%) and joint family businesses (17.5%). The female students were attracted to work for large private companies due to the well-known factor of security in terms of resources and high remuneration. (Rametse and Huq 2015) This issue had earlier been confirmed by Huq and Moyeen (1999) who showed that working for large private sector organizations is associated with status, attractive salary and prestige. As confirmed by Rametse and Huq (2015) working for government organizations was less appealing for female students, probably due to bureaucratic red tape in the public sector.

Participants were requested to indicate the level of influence they think parents, siblings, friends, the media, university, work experience, relative and spouses had on their choice of preferred employment. Table 7 shows parents (49.6%), work experience (41.7%), spouse (20.5%) strongly influence the choice of preferred employment while there is only a moderate influence from the University (33.9%), media (32.5%), siblings (31.4%). Also, there is moderate influence from friends (36%) and relatives 26.1%. This high figure for the influence of parents supports the social learning and the cognitive developmental literature that the family is one of the most influential contexts of socialisation in childhood and adolescence (Kohlberg 1966; Bandura 1977; Dryler 1998).

**Table 8** Perception towards business ownership

Variables	n	%
How did/do you want to set-up the business		
By myself	52	63.4
With friends	30	36.6
If you are to start your own business would your friends support your decision?		
Yes	86	84.3
No	16	15.7
Did you try/Are you trying to set up the business?		
Yes	19	22.9
No	64	77.1
It has been found that women often face additional problems before setting up business		
Yes	31	34.8
No	58	65.2

Table 8 shows that most of female students prefer to start businesses by themselves (63.4%) when compared to starting with their friends (36.6%), hoping their friends (84.3%) will support them. Some of the 23% of participants tried/are trying to start a business, and 35% of them agree that women are facing additional problems. Starting businesses by themselves support the view by Rametse and Huq (2015) that women students’ see themselves as well-educated and confident enough to succeed in venture creation.

**8.3.3 The Importance of Role Models**

Participants believe parents (48.9%), friends/peers (23.3%), siblings (23.1%), media (22.1%) will contribute strong influence while starting their own business. Only 7% were influenced by other relatives (See Table 9). Ranking parents high amongst others, in influencing female students to start their own enterprises confirms the significance of socialization and parental role models (Dryler 1998). Additionally,

**Table 9** Distribution of the family members influences while starting the business

Variables	Influence				
	Strong n (%)	Moderate n (%)	Undecided n (%)	Somewhat n (%)	No n (%)
Parents	45 (48.9)	23 (25.0)	12 (13.0)	5 (5.4)	7 (7.6)
Siblings	18 (23.1)	21 (26.9)	20 (25.6)	9 (11.5)	10 (12.8)
Friends/peers	21 (23.3)	35 (38.9)	21 (23.3)	6 (6.7)	7 (7.8)
The media	19 (22.1)	24 (27.9)	28 (32.6)	7 (8.1)	8 (9.3)
University (courses, teachers)	16 (18.6)	29 (33.7)	21 (24.4)	9 (10.5)	11 (12.8)
Relatives	7 (4.7)	17 (11.3)	24 (35.8)	10 (14.9)	9 (13.4)
Spouse	5 (13.5)	4 (10.8)	10 (27.0)	11 (29.7)	7 (18.9)

studies (for example, Scott and Twomey 1988) have confirmed that students whose parents owned businesses were more motivated to start their own businesses.

### 8.3.4 Artificial Neural Network Analysis

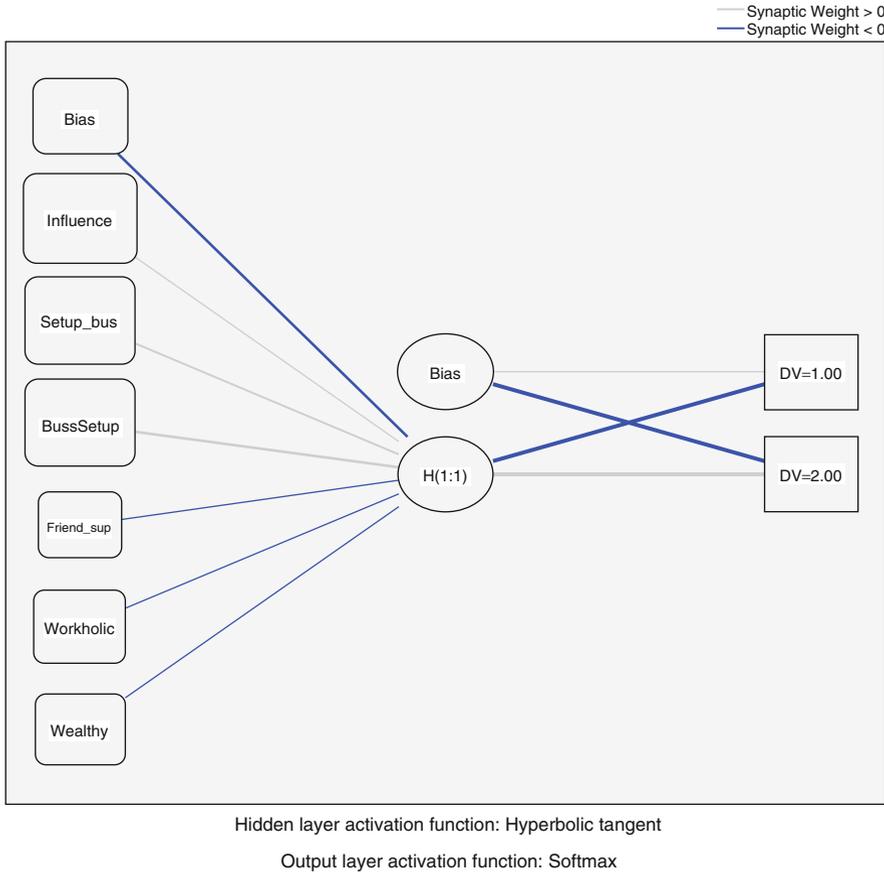
The back propagation neural network was employed to analyze data using IBM SPSS 23.0. The back propagation involves the weighted inputs to be added and processed by activation function and transferred to the next layers of neurons (Chong 2013). The activation function used in this model was hyperbolic tangent trigonometric function. This neural model is commonly used in business research because of its ease of use and effectiveness in predicting outcome variables using predictors. In this model, predictors namely influence, setup business, bussSetup, workholic, wealthy, friend-sup and outcome variable chosen was “interest to start own business”. In Fig. 1,  $DV = 1$  represents the value of dependent variable “Yes” whereas  $DV = 2$  represents “No”. A three layer namely input layer, hidden layer, and output layer is shown in Fig. 2. The neural network model is mapping input onto output the learning process (Chong 2013). The key objective of learning process is to minimize the difference between actual value of outcome variable and its predicted value.

### 8.3.5 Validation of Neural Network Model

The artificial neural network model was trained using the multilayer perceptron training algorithm. In order to minimize over-fitting and simplification of the neural network model, cross validation was performed. The cross validation was employed using 1–10 hidden nodes. In the neural network model, there were six predictors, one hidden layer, and one outcome variable with two possible outcomes “Yes” and “No”. The prediction accuracy of the neural network model was determined with the help of Root Mean Squared Error (RMSE). In the tenfold cross validations, 80% of the data points were used to train the proposed neural network models whereas 20% data points were used to validate the same. The average RMSE for the training the neural network model was 0.092 with standard deviation 0.004 and for the testing the neural network model was 0.086 with standard deviation 0.007. These descriptive statistics of RMSE support the reliability of the proposed neural network model in this research. The results of this research were compared with the results of multiple linear regression for benchmarking purpose. The RMSE value of linear regression was 0.269. Hence, performance of the neural network model was better than multiple linear regression.

### 8.3.6 Sensitivity Analysis

The sensitivity analysis was performed to rank the importance of the predictors influencing the interest of female participants towards starting their own business



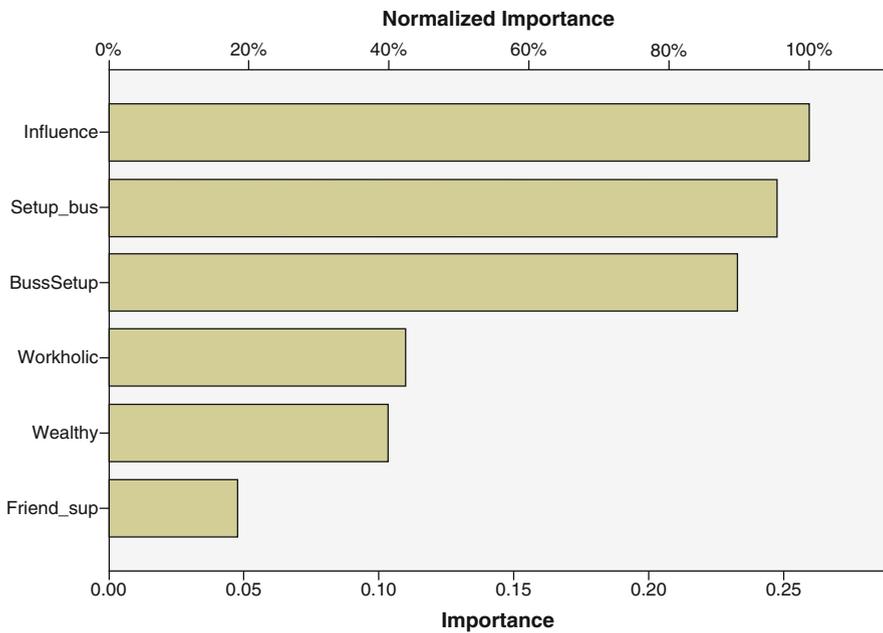
**Fig. 2** Artificial neural network model

(see Table 10). The importance of predictors shows how the predicted values by the neural network model influence the different values of the outcome variable (Chong 2013).

The normalized importance of the predictors was computed by dividing the importance values by the highest value of the importance and finally multiplied by 100 to get the importance in terms of percentage for easy understanding. The normalized importance of the predictors is also shown in Fig. 3. Table 10 summarizes the importance of all the predictors for all 10 neural networks. On the basis of the artificial neural network models results, it is concluded that the most important predictor of “Interest to start own business” was “influence” which is defined as the “Business-ownership made you think of having your own business” followed by “How did/do you want to set-up the business?”, “Trying to set up the business?”, “Business-owner means “all work and no play”.”, “Business owners earn a lot of money.”, and “Friend supports your decision to start business?”

**Table 10** Predictor importance

Predictors importance		
Predictors	Importance	Normalized importance (%)
Business-ownership made you think of having your own business	0.259	100.0
How did/do you want to set-up the business?	0.247	95.4
Trying to set up the business?	0.233	89.7
Friend supports your decision to start business?	0.048	18.3
Business-owner means “all work and no play”	0.110	42.3
Business owners earn a lot of money	0.103	39.8



**Fig. 3** Normalized importance

## 9 Conclusions and Implications

This study has attempted to answer the following research question:

*What factors influence Sultan Qaboos University’ female students towards entrepreneurship?* Findings of this study suggest that while the general perceptions toward business start-up are positive among female undergraduate students, a small portion of them still hold ambivalent views towards starting their businesses. Although a majority of female students’ families were already involved in business,

this did not influence many of them to be involved in business. Female students ranked the influence of their parents high in terms of their aspirations to start their own businesses when they graduate. A majority of female students also aspired to work for private large organisations. The influence is attributable to prestige, job security, more resources and higher salary. However, due to a fear of bureaucratic red-tape, the public sector is less appealing than the private sector for female students. Female students also aspire to start their businesses by themselves, suggesting the high confidence they have due to their higher level of education.

Findings of this study suggest that female students are indecisive about their aspirations for venture creation upon their graduation. Thus, in Oman, entrepreneurship courses should be developed both at early stage of high school and university level (Rametse and Huq 2015). Capstone courses, industry engagement relating to entrepreneurship, role models and the use of the Activator need to be seriously considered by universities in their curriculum development to prepare the student to undertake entrepreneurial activities when they graduate. The Activator will enable female students to be empowered through collaboration, advice and knowledge in the creation and development of their entrepreneurship ideas.

This study employed predictive modelling to understand and to predict starting up of businesses by female students in developing country like Oman. The predictive modelling is being preferred over traditional statistical models like regression models and structural equation models because it has power to detect non-linear relationship among decision variables in addition to detecting linear relationship among decision variables. On employing predictive modelling in this chapter, it was revealed that the key factors influencing female students to start a business were the “Business-ownership made you think of having your own business” These findings show that Omani students are willing to start their own businesses. However; there is a lack of information about how to set up a business among female students. It is imperative that female students should be given training and opportunities during their school as well as college days. In recent times, it has been observed that leadership in Oman is working towards empowerment of women in general. This chapter will be useful to researchers, academics, and decision makers to develop suitable strategies to prepare appropriate platforms for budding female entrepreneurs in Oman.

The limitation of this study was lack of soliciting qualitative information to substantiate the quantitative data obtained, as well as triggering factors, which encompass the socio-cultural factors confronting women in Omani. This is particularly important for a country with such a rich culture. Thus, a focus group discussion with the same group of female students is suggested.

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# A Journey Towards Entrepreneurial Support in Pakistan: IBA's Center for Entrepreneurial Development (CED)



Shahid Qureshi and Sarfraz Mian

**Abstract** Entrepreneurship is a key to the economic development of a country as it leads to innovation and job creation. Pakistan with its factor-driven economy and a population of around 200 million, with a heavy youth bulge (60% of population less than 30 years of age), thousands of jobs need to be created every year. The rural youth have a tendency to move to main cities to pursue careers in often low paid and semi-skilled jobs. The Centre for Entrepreneurial Development (CED) at the Institute of Business Administration (IBA) Karachi was established in 2010 to play a key role in promoting entrepreneurship in the country. The objective was to train the urban and rural youth to pursue agriculture, technology and other low cost business opportunities in their own villages, towns and cities to spur innovation and growth. Starting from a single room CED now has a dedicated three story building and has helped hundreds of youth to develop an entrepreneurial mindset and start their businesses. The case describes the emergence of CED as a premier center and discusses the various challenges and issues as they arose during the journey. It provides valuable lessons and has implications for policy makers and university administrators confronted with similar situations.

**Keywords** Entrepreneurship · Effectuation principles · Poverty alleviation · Social entrepreneurship

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## 1 Introduction

Pakistan is endowed with a large population base approaching 200 million inhabitants. Interestingly more than 60% of this population is below 30 years of age. The rapid rise in population has created many challenges for the country as both the government and private sector feels helpless to provide job opportunities to this great youth bulge. Unemployment and purposelessness have created a great number of social and economic issues. At this juncture, the country needs to work on a national strategy to promote the entrepreneurial mindset in the country and facilitate the youth to proceed for new venture creation activities as it is happening in other countries such as US, Korea, China, Iran, Turkey and India etc. These countries are investing a lot of resources in the development of their entrepreneurial ecosystems. Many universities in these nations have developed entrepreneurial centers to help their university faculty and students to innovate, commercialize, and to work on new startup opportunities. These centers offer a wide array of services from teaching entrepreneurship, providing incubation facilities, mentorship, networking, soft loans, and a host of other support services. In many cases these centers have invested millions of dollars on research commercialization and new venture creation.

Pakistan has more than 200 universities and hundreds of polytechnics offering degrees and diplomas to thousands of students every year (Qureshi et al. 2016). If every major university or institute sets up an entrepreneurial center, it is hoped that thousands of students all across the country can be prepared to pursue entrepreneurial opportunities. This requires a lot of investment in infrastructure, staffing and launching support programs. The Higher Education Commission (HEC) of the country has given many grants to several major universities to start centers of research, innovation and commercialization programs. However the impact is far less than what is expected. One of the reasons for this setback is the lack of the entrepreneurial mindset in the university administration and their faculty. All of these efforts are generally based on the causation model where we start with a big vision, gather the means required to start a venture and then proceed. This journey never starts unless the required means are gathered. The entrepreneurial mindset is in contrast to the above. Successful entrepreneurs start with the means they have (who they are, what they know and whom they know) and then take a small step to pursue a small goal. As they keep on taking small steps, the ability to develop a larger vision is developed (Sarasvathy 2001). Moreover these entrepreneurs leverage any surprises during this journey and work in collaborative manner. They keep on taking smaller steps in a quick fashion which eventually develop into bigger goals. Sarasvathy (2006) has emphasized that the effectual mindset leads to phenomenal results in a new venture creation and the availability of resources does not matter.

The subject case study describes the process of setting up an entrepreneurial center at IBA Karachi. Initially it was decided to pursue a casual path by the university administration. A vision was developed and a leading foreign consultant was hired to develop a grand vision and strategy along with the means required to achieve this vision. The consultant report estimated that around 7.5 million was

required to achieve the vision of setting up a viable entrepreneurial center. The university approached various donors. One international donor agreed with the proposal and committed to the program but later backed out of the commitment. This was a big setback as IBA had been working on this proposal for a couple of years. The founders had no option left but to pursue the effectual approach. The case study describes the journey and explains how the events unfolded and a full-fledged entrepreneurial center came into being with a small amount of resources. It is hoped that other universities in similar situations will learn from this experience and follow the effectual approach in developing their centers.

## 2 Organized Support for Entrepreneurship in the Region

The entrepreneurial center phenomena surfaced in the 1970s, when the University of Southern California launched graduate and undergraduate programs with concentration on entrepreneurship (Katz 2003). These small activities later led to the development of entrepreneurial centers in universities. These centers played an important role in promoting entrepreneurship throughout the university. Bert Twaalfhoven reports the role of entrepreneurial centers (three US, four Europe, and one Russia) which are acting as a hub in promoting entrepreneurship in their universities. These role models were then emulated at other places throughout the world. Morris et al. (2013) describe the key learnings of building world class entrepreneurship programs in universities.

Audretsch (2012) points out that the creation of patents, startups and spinoff ventures is not the real role of the university, and rather the university has to play an important role in developing entrepreneurial mindset, thinking, actions and institutions. Guerrero et al. (2016) describe the role of entrepreneurial universities as drivers of innovation and entrepreneurial activities. Audretsch and Keilbach (2004) introduced a new factor, entrepreneurial activity which contributes as a conduit to knowledge spillovers, healthy competition, and diversity. These activities further lead to the creation of institutions which facilitate these entrepreneurial activities and serve as the driving force for economic growth (Audretsch 2007).

The entrepreneurial centers as an institution are playing a focal role in promoting entrepreneurship in many parts of the world including South Asia. Once such pioneering center i.e. Centre for Innovation, Incubation and Entrepreneurship (CIIE) was developed at IIM in India and is playing an important role in promoting entrepreneurship throughout the country.

This phenomena also started taking place in Pakistan during the 2010s as many universities decided to create entrepreneurial centers in Pakistan. Qureshi et al. (2016) conducted an exploratory study of entrepreneurial centers in Pakistan. According to the study some of the leading entrepreneurial centers in Pakistan are working at IBA Karachi, IBA Sukkur, Lahore University of Management Sciences (LUMS), Baluchistan University of Information Technology and Management Sciences (BITUMS) Quetta, University of Engineering and Technology Peshawar

among others. However the large amount of funding required for the infrastructure and other resources is an impediment to start and launch these entrepreneurial centers. This case study depicts the entrepreneurial journey of launching an entrepreneurial center in a resource parsimonious manner using bootstrapping, creative and innovative approaches.

### 3 The CED Case Study

It was a sunny and shining morning of Sept 2016, in Karachi. The program director of the Center for Entrepreneurial Development (CED) was preparing his slides for presentation to the CED advisory board along with his team members. The annual advisory board meeting was scheduled to take place in a week. As he was discussing the contents of the presentation with the CED team, he stuck upon a 10 year old document. The 150 page document was a proposal made by J E. Austin Associates (an international consulting firm) to set up an Entrepreneurial Center at IBA Karachi. The consultants had requested for an amount of US\$7.5 million to be submitted to a foreign donor in March 2010 to help build and grow the CED in the next 5 years. As he went through the various pages he stuck at a page where the consultants had written the goals for the next 5 years for CED. The document described as follows:

In 5 years the CED will be having a total of 44 employees and will be contributing in the following ways.

- CED would be affiliated with Babson College, USA
- CED Would be part of the GEM global entrepreneurship monitor consortium
- CED would have a dedicated three story building for the entrepreneurial center
- CED would establish provincial centers in various parts of the country
- CED would train more than 1200 people by year 5
- CED would conduct an international conference in entrepreneurship
- CED would have sent faculty to Babson College for training and invite faculty from Babson

As the team looked at the 5 year goals, they went into a mood of jubilation. The team members simultaneously shouted “Thanks God, we have achieved not only all of these objectives but went much beyond”. See Table 1 for the comparison of the two strategies.

### 4 The Beginning: A Big Dream

In response to a shrinking job market and thousands of jobless young people, the management of IBA, decided to open a center for entrepreneurial development to promote entrepreneurship in the country. It was decided by the top management to hire some consultants to help in the creation of an entrepreneurial center. In 2006, a

**Table 1** Comparison of two strategies

Strategy 1: Big Bang US\$7.5 million	Strategy 2: Start small with what you can do with the least amount
Collaboration with Babson College	Collaboration with Babson college on a short duration basis
Faculty training from Babson College	Faculty training from Babson for shorter duration
Team size of 38 employees and 6 faculty	Team size of 15. Mostly contract-based and visiting faculty
Outreach programs women entrepreneurship, technology and agricultural entrepreneurship	Outreach programs to be started on an experiment basis (by 2016 300 women entrepreneurs trained, 2000 youth trained)
Training of 1300 people in 5 years	More than 10,000 people trained in 6 years all over Pakistan
One international conference	Three international conferences and symposia conducted
One cycle of global entrepreneurship monitoring research	Three cycles of global entrepreneurship monitoring research conducted

feasibility study to set up a center for entrepreneurial development was conducted by J.E Austin Associates. The feasibility study proposed to raise around US\$10 million for the construction of a state of the art infrastructure and the operational expenditures for the next 5 years. It was projected that the center will be self-sustainable by the fifth year. In the meanwhile a director for the center was hired. Despite many hopes and efforts the hope to raise this huge amount faded as some of the international donors declined to provide financial assistance. The feasibility and the proposed plan lay dormant for a few years. The IBA Dean also approached Babson College through one of IBAs alumni who was working as faculty member at Babson College to get support. This further led to an MOU to train IBA faculty to teach entrepreneurship and lay the foundation of an Entrepreneurial center.

## 5 Small Steps

In the fall of 2010, Mr. K who had recently finished his PhD in entrepreneurship from the Technical University of Berlin and was working as faculty member had a chance meeting with the Pakistani ambassador in Germany. During the meeting the ambassador persuaded Mr. K to join IBA and contribute in the development of the entrepreneurial center. The ambassador was a close friend of the then IBA Dean and was helping him to find international faculty for IBA.

After a series of interviews and discussions, Mr. K joined as an Associate Director of the center to look after the academic side. As the funding had been declined it was decided to take small steps and keep things moving. As a first step it was decided to start teaching entrepreneurship in the BBA program. The international exposure of Mr. K and his passion to teach helped him to develop a lot of



interest in the students. One full time and some visiting faculty started offering entrepreneurship courses and started inviting guest speakers in the classes. The students were given assignments to interview an entrepreneur. The interview assignments were used to write small case studies on entrepreneurship and invite guest speakers to interact with students. In a short period of two semesters the center had more than 50 mini case studies and a list of guest speakers.

In the year 2011, IBA was able to raise a huge amount for the construction of the dedicated CED building with the generous support of AMAN foundation (PKR 200 million i.e. US\$2.4 million) and an amount of US\$360,000 was allocated for training of faculty from Babson College. The construction of the building started in the year 2012 and in the meanwhile six faculty members from various departments were selected for training at Babson. Upon their return a BBA in Entrepreneurship was initiated. The first batch of the BBA entrepreneurship was started with the induction of around 25 students in 2012. Three to four courses in entrepreneurship were offered. The FME (Foundation for Management and Entrepreneurship) course offered in the first year was mandatory and the students had to start a small functional business with an interest free loan up to US\$1000 from CED. The students were asked to develop a business plan in a group of 6–8 and then apply for funding from CED. Most of the businesses failed in the beginning, thus the CED management changed the policy of giving loans and proposed the change in the structure of the FME course. This idea came from studying the effectuation theory of entrepreneurship. According to effectuation theory the successful entrepreneurs start with their means i.e. who they are, what they know and whom they know instead of borrowing resources. According to the new model the students were asked to come up with an idea based on their bird in hand and then to develop a team on their own and then to start executing the business with the resources the team had. This model had a very positive impact and almost all of the teams started making some money from their business ideas. As the time passed on the CED team's observations had to indigenize the Babson learnings. This indigenization process led to the development of an indigenous Entrepreneurship teaching model called Entrepreneurship Plus model. The entrepreneurship plus model based on developing a strong faith and spiritual orientation (Neubert 2013). Qureshi posits that a spiritual orientation leads to strong entrepreneurial orientation and helps launch ventures which are environmentally, socially and ethically sustainable.

The CED building was completed in 2013. The center which started from a single room in 2010, eventually expanded into a full fledged building by 2013. The three story building, three big seminar rooms, small class rooms, a space for incubation, cafeteria and a lounge. The small steps taken in the past 2 years had grown big enough to ensure space utilization.

## 6 Providing Incubation Support

An interesting development in the CED took place when the Director General of the provincial government's Sind Board of Investment (SBI) requested the CED to issue a certificate in entrepreneurship for the unemployed urban and rural youth of Pakistan. A 6 month program called EDP (Entrepreneurship Development Program) was designed. The government was willing to offer soft loans for startups as well. The program was eventually approved and around 120 students were trained in a year. In the first few weeks the focus of the course was on developing the entrepreneurial mindset. Initially the material and resources from Babson College were used to teach the various aspects of entrepreneurship. However after a few months the team discovered that they needed more indigenous material to make the curriculum relevant and easy to learn.

The search for local and indigenous material led the team to find local case studies and invite guest speakers from business and industry Segments. The faculty also looked at the various models being used in other developing countries. The application of the use of the effectuation theory in the BBA, FME course had shown positive results, therefore the faculty decided to use it in the EDP course.

The introduction of the effectuation theory led to the creation of many small startups with the least amount of money. This gave a lot of motivation to the CED team and the faculty from the Computers Science and Accounting started taking interests in the program. Effectuation theory proved to be powerful in terms of developing an action oriented mindset in the students. The faculty noticed a marked difference in the enthusiasm among entrepreneurship students when compared to the regular BBA/MBA students.

As more and more students underwent this training many of them started with small ventures within their affordable loss and without asking for any loans or financial support. That was a great discovery. Soon some of them asked for an incubation space. A few rooms were made available for a minimal rent of US\$50 for a month. Around five companies were incubated and as the word spread many others came. A small hatchery was added where each company got a table. In the meanwhile, a Business Accelerator program was started to help the new businesses grow. Some of the incubatees joined the Accelerator and got access to the mentors who helped them grow. One of the students from the very first batch of the BBA program started a small courier company with US\$100. The fledgling company started with one table and was initially offering courier delivery services in the city. They had one borrowed motorcycle and one rider. The business started growing and expanded into a large company offering services throughout the country.

## **7 CED Goes International**

During his third year the same student went to the Babson College under a student exchange program. With a fire in his belly he was advised by the CED team to deliver his best in the summer program and build networks. He performed well in his studies and was able to connect some of the Babson faculty to the CED team. A couple of these faculties later visited CED and volunteered to help the Center.

Gradually, CED started becoming visible throughout the country and many local universities started contacting for training on how to start an entrepreneurial center and to learn the entrepreneurship pedagogy. With the support of a British Council grant the CED team conducted two national workshops on teaching entrepreneurship in Karachi and Islamabad. International faculty from the UK visited IBA and jointly conducted workshop with IBA faculty. This practice was continued on a yearly basis and more than 1000 local faculty members have gone through this training.

## **8 CED's Flagship Women Entrepreneurship Program**

By the beginning of 2013, the World Bank approached CED to start a program on women entrepreneurship to help women to start and grow businesses. After looking into the success of the EDP program, CED was selected as the implementation partner of the Women X program. Almost 300 women who had already started small ventures were selected to undergo a 4 month rigorous training program on the weekends. Seven batches of women entrepreneurs underwent this training from 2013 to 2016. As all of the women participants had already gained hands-on experience, they brought a lot of experience in the class and the networking and mentoring opportunity at the CED provided them a great learning opportunity. This program became a feather in the crown as it won the prestigious Outstanding Specialty Entrepreneurship Award at the annual USASBE (United States Association for Small Business and Entrepreneurship) conference in Philadelphia in January, 2017. The Outstanding Specialty Entrepreneurship Program Award is given to a college or university that has developed and still offers a high quality and innovative program the purpose of which is to educate and train future generations of entrepreneurs in a niche or specialty area. This award is given each year for an exemplary program that reflects innovation, quality, comprehensiveness, sustainability, depth of support, and impact. IBA Karachi representing Pakistan was competing with international universities in the quest for this award.

## 9 Other Related Initiatives

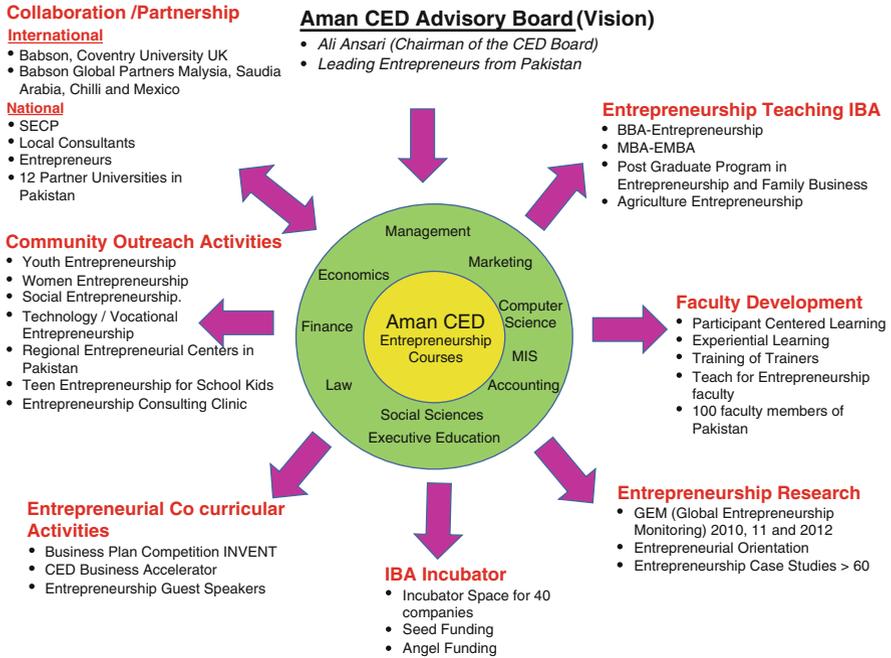
Another chance of meeting with the vice chancellor of the neighboring engineering university in 2014 led to the start of the technology entrepreneurship program. NED University of Engineering and Technology is one of the largest universities of Karachi. A certificate course on technology entrepreneurship with a very subsidized fee of Pakistani rupee 5000 was offered to the NED students. The purpose was to inculcate the entrepreneurial mindset in the students and enable them to start small ventures and try to commercialize their final year projects. This program enhanced the CED program offerings and helped to bring the technical universities closer. This program has become a regular feature and engineering students from all over the city attend this certificate program. Many students develop prototypes and start small businesses.

Another initiative called Kids Entrepreneurship was introduced in 2014. During summer vacations the high school students were offered a 4 week course to help the young kids to help their family businesses along with their studies. Later on this became a regular feature of the CED.

From 2011 to 2014, CED conducted national level business plan competitions to promote entrepreneurship in the country. This used to be a 6-month long activity which culminated in a final event where the top 50 ideas were presented in front of experts and angel investors. This activity made Entrepreneurship a buzz word in the country. The CED team conducted dozens of workshops throughout the country. After three rounds of the national level business plan competition, the CED team decided to use the effectuation theory and changed the structure of the competition. The entry was based on a viable product/service and some sales/customers. This process filtered the non-serious participants and made the competition more credible and useful.

By the end of year 2013, the CED had around 30 student companies in the incubator, another 10–15 availed virtual incubation support and dozens more students had started small ventures in their homes and localities. In January 2014 CED was selected in the top three best entrepreneurial centers category in the USASBE 2014 conference. This brought more visibility to the program and brought CED on the international map.

In 2015 and 2016 CED faculty members attended the Academy of Management (AOM) annual conferences and presented their own Entrepreneurship Plus model which had worked well at IBA. This brought more visibility to CED and helped in networking. Based on these networks the CED was able to make new friends and invite them to Pakistan. Many others showed interest and later visited and participated in various programs of the CED. In 2016 two international workshops were conducted. The first one was held in Karachi and was sponsored by the World Bank. Key note speakers came from the US, Europe and Pakistan and more than 200 local faculty members attended the workshop and benefitted on how to teach entrepreneurship. A similar international workshop was conducted in August in Islamabad which was sponsored by the National ICT R&D fund. More than 300 international



**Fig 1** Various activities being carried out at IBA CED

and national faculty members underwent a 2-day workshop on entrepreneurship teaching and mindset development. At the same time the first international summer school was conducted at IBA. More than 60 participants and faculty came from all over the world to attend this 20 days summer school. This school was conducted in four cities i.e. Karachi, Islamabad, Abbottabad and Lahore enabling the participants to experience the Pakistani landscape and meet various Pakistani entrepreneurs. Two of these visiting international professors taught three entrepreneurship courses at CED.

Another initiative undertaken in 2016 was to start the ITVP (IBA Technology Ventures Program) which is designed for “C” and Java programmers to enable them to set up small companies.

This journey is still going on. A committed team of over a dozen IBA faculty and staff is working 6 days a week in various programs. The CED has an advisory board which facilitates them in the visioning process. The portfolio of programs has made CED as a melting pot where people from agriculture, technology, service sector, IT and of various ages and gender interact. This interaction is very unique and leads to new opportunities. Figure 1 describes the various activities being carried out at AMAN CED.

## 10 Spreading the Message and Sharing It with Others

IBA has helped over dozens of Pakistani universities to setup entrepreneurial programs including incubation facilities throughout the country, for this purpose CED offers 2–3 day to 2-week long courses on and off site. Like other initiatives, this also started small and then later grew into a larger program. More than a dozen workshops have been conducted in this regard since 2010.

Another interesting event was the selection of IBA CED by the Sri Lankan Chamber of Commerce as a consultant to help them build an entrepreneurial center in Colombo. As a first step, the CED team conducted a 2-day workshop in Colombo. The mentoring process is going on till to date.

The details of all of these activities are available at the CED website. <http://ced.iba.edu.pk/>.

## 11 Salient Features of the Programmatic Elements at CED

- Several entrepreneurship courses have been developed and taught over the last 16 years
- National business plan competition is an ongoing activity and so far 6000 participants have benefitted
- Largest pool of foreign trained entrepreneurship faculty in the region at the CED
- Training more than 1000 faculty members across Pakistan in Entrepreneurship
- First BBA Entrepreneurship program in the country
- First Kids Entrepreneurship program in the country
- First Agricultural Entrepreneurship Program in the country
- Developing a new Entrepreneurship Teaching Model called (E+ Model)
- Approaching 100 case studies and research papers on Entrepreneurship. These are being used in teaching
- Largest Entrepreneurship research activity in the country i.e. GEM research for three consecutive years
- First program on Entrepreneurship for Engineers
- New program called ITVP has started
- More than 10,000 people have benefited from the CED programs in the past 10 years
- CED has expanded internationally and is now active in Sri Lanka

## 12 Research Initiatives

In 2011 the CED launched the GEM (Global Entrepreneurship Monitoring) project which was repeated in 2012 and 2013. The project was initiated with the help of a Professor of Pakistani origin working at the State University of New York. That project brought CED into the International limelight. The center faculty was also engaged in the Iran–Pakistan, Turkey women entrepreneurship study, and the MENA Networking research activity.

In addition the faculty started writing local case studies which became a part of the curriculum of the various courses. A repository of about 100 case studies is available and is being used in teaching at various places.

## 13 Conclusion

The sequence of events and as they are unfolded in the case study lead to the conclusions that entrepreneurial mindset is the most important aspect of pursuing any entrepreneurial venture. The development of CED was a new venture creation activity with the following lessons:

- Start with who you are, what you know and whom you know. Do not try to copy someone else. Focus on your bird in hand and keep on developing it. This can be as simple as inviting entrepreneurs as guest speakers in the class, offering a course in entrepreneurship, labelling a room as an entrepreneurial center/incubator.
- The founding teams needs to be engaged in teaching entrepreneurship in the effectual way. The more they teach, the more they will embrace it and the more they will be able to convince the young participants.
- Take small steps based on the affordable loss principle. This will give courage and initiative. These small failures provide valuable lessons and you keep on improving based on these learnings.
- Be flexible in terms of your goals and leverage the surprises as they come in your way and consider them an opportunity.
- Collaborative mindset is the best way to proceed. Engage other people and work with an altruistic mindset of giving others. You will soon find self-selected partners ready to work with you.
- Team building is important. The golden principle is treating others as you like to be treated. Help them grow intellectually, emotionally and spiritually. The more you give the more you get in return.
- Believe in sharing of knowledge and learnings and more knowledge and wisdom return to you.

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**Part III**  
**Entrepreneurship Research in MENA**

# A Taxonomic Study of Innovation in the MENA Region Economies: Reflections on Entrepreneurism in Egypt and Qatar



Amir Forouharfar, Mahshid Sazegar, Victoria Hill, and Nezameddin Faghih

**Abstract** The research goal of this paper is to study the impact of innovation in an economy. This has an effect not only on the economy in general, but particularly on entrepreneurship. To narrow the focus of the study, the Middle East and North Africa (MENA) region was chosen and two countries were selected: Egypt, which is mainly in North Africa but partially in West Asia; and Qatar, which is in the most eastern portion of the Arabian Peninsula. Egypt is the most populated country in MENA, while Qatar has one of the smallest populations. Numerical taxonomy was applied to secondary data from *Global Innovation Index (GII)* for 2008–2017 for Egypt, Qatar and Switzerland, which was chosen as the benchmark country. Egypt has an efficiency-driven economy while Qatar and Switzerland have innovation-driven economies. Data from these three countries formed the compound distance matrices (i.e. primary data) of the research; the *GII*'s annual country reports were used to specify the innovation distances within all three countries (i.e. secondary data). The results of the paper demonstrated that while emulating Switzerland's innovation success remains a long-term goal for many countries, Qatar is far more innovative than Egypt.

**Keywords** Innovation · Entrepreneur · Entrepreneurial · Innovation-driven vs. efficiency-driven · MENA · Egypt · Qatar · Numerical taxonomy

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## 1 Introduction

“Innovation performance is a crucial determinant of competitiveness and national progress” (OECD 2009). Today, economic growth and increased competitiveness is determined by a nation’s ability to translate innovation into successful entrepreneurship.

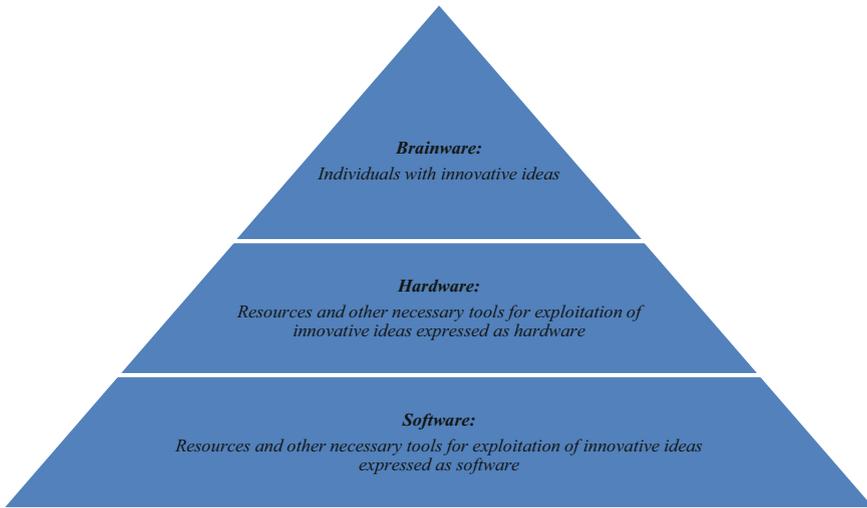
The Middle East and North Africa region (MENA) faces a plethora of economic challenges: The entire region suffers from the world’s highest rates of youth (15–24 years old) unemployment, at roughly 29.6% (ILO 2017a). Egypt suffers from extremely high rates of youth unemployment at 34.6% (WB 2017); and even “...when working, 43% of young workers are wage labourers without written contracts” (ILO 2017b). At the other end of the spectrum, Qatar has been much more successful in solving its own youth unemployment issues; rates were already low in 1991 at 3.4%; but most recent measurements show just 0.9% in 2016 and 1.1% in 2017. While 3.4% is a very admirable rate, the improvements that lead to 1.1% are worth investigation. It would be tempting to consider Qatar’s massive oil wealth spread over a relative small population as being the driver of such impressive youth unemployment rates. But, by way of comparison, consider Qatar’s very close and similar neighbour, Bahrain, which enjoyed a rate of 5.3% youth unemployment in 1991 but climbed to 5.9% in 2017 (WB 2017). One of the solutions to tackle these economic challenges is to identify those aspects of the economy which could increase innovation in each MENA state.

However, truly innovative outcomes in an economy are bound to the capabilities of the populace (Arnold and Wade 2015: 670). The capabilities of that ‘populace’ are directly connected to capabilities in research and development (R&D). If a nation does not have sufficient number, educational level, scientific skills and funding for researchers, there is no innovation-promoting populace. Without a large enough share of ‘native’ researchers, a country’s choices are to hire foreign researchers (as China has recently announced in its intention to offer 5–10 year visas to some 50,000 persons representing “high-end foreign talent”<sup>1</sup>; or purchase the scientific output (i.e. innovation) from other countries and markets (Nambisan and Sawhney 2007). However, this latter option removes any possibility of becoming the ‘first adopter’, thereby reducing economic benefits. Within the *Global Innovation Index* (GII) reports, one can read examples of both improved economic benefits driven by innovation (e.g. Switzerland and Qatar) as well as countries suffering from economic stagnation, many of these in MENA (Global Innovation Index 2017: 43).

Although R&D could be thought of as the ‘engine’ (or input) for innovation, the output of innovation is much more diffuse (Fig. 1):

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<sup>1</sup>In *Evaluation Criteria for Foreigners Employed in China*, China’s State Administration of Foreign Experts Affairs defines ‘high-end talent’ as Nobel Prize winners, top scientists in nearly every field of science, heads of major financial institutions, successful entrepreneurs, technology leaders, successful Olympic athletes, directors and professors of “high-level universities” (BBC 2018).



**Fig. 1** Application of innovation from R&D labs to development of products and/or services. Source: Authors' own work

1. *Brainware* represents the individuals—initially the researchers, but especially later as diffusion occurs, the members of the population, especially the youth—accepted into entrepreneurial development programmes as well as those who independently develop innovative ideas.
2. *Hardware* represents both the resources and other tools made available because of innovation, as well as for the promotion and facilitation of developing entrepreneurial ideas.
3. *Software* is one of the 'outputs', i.e. the broad collection of original ideas developed by individual researchers/teams. The best of these are refined further into entrepreneurial and innovation-oriented businesses.

The OECD and Eurostat offer an even more specific description:

It goes far beyond the confines of research labs to users, suppliers and consumers everywhere—in government, business and non-profit organisations, across borders, across sectors, and across institutions. The *Oslo Manual for Measuring Innovation* defines four types of innovation: **product** innovation, **process** innovation, **marketing** innovation and **organisational** innovation:

- **Product innovation:** A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user friendliness or other functional characteristics.
- **Process innovation:** A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.
- **Marketing innovation:** A new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.
- **Organisational innovation:** A new organisational method in business practices, workplace organisation or external relations (OECD and Eurostat 2005).

While the benefits of innovation to an economy are clear, not every government shares that perspective. It should be noted that excessive intervention by governments in the nation's economy stymies the development of innovation's benefits. Unfortunately, governmental interventions in MENA economies are prevalent (Salehi Esfahani 2006). And, "while the developing world has moved toward more market-oriented policies and production systems that are dominated by the private sector and rely on market signals, MENA has maintained much of the old style industrial policies and high state intervention in the economy that characterized much of the developing world in the past" (Nabli et al. 2006). Thus, the economies of MENA countries are particularly prone to excessive governmental intervention. It should be remembered that organizational DNA also determines the destiny of an organization, public or private. Faghih et al. (2016) believe: "...the defining elements of the genetic code or DNA of an organization . . . and their unique combination in an organization determine how ably and agilely the organization functions. Hence, they imperil or ensure enduring results" (p. 7).

## 2 Methodology

"Innovation inputs include factors like human capital and research, infrastructure, market sophistication and business sophistication. Innovation outputs refer to knowledge and technology outputs, as well as creative outputs" (Switzerland Global Enterprise 2016). Egypt, Qatar and Switzerland are compared based on their GII scores between 2008 and 2016 using Numerical Taxonomy. Switzerland, an innovation-driven economy, was chosen as a benchmark as it was the GII's highest-scoring economy in 2017—as it's been every year since 2011. Switzerland has also been considered the world's top-performing economy for the past nine successive years by the World Economic Forum (2018). The taxonomic results were used to consider the distances of Efficiency-driven Egypt and Innovation-driven Qatar's economies relative to the world's top-scoring innovation economy in the GII's 2016 report.

A description of the methodological steps for developing comparative data appears as a flowchart (Fig. 2).

## 3 Calculations of Comparative Indices

### 3.1 Step 1: Development of the Data Matrix

$$X_{oj} = \left( \sum_{i=1}^n X_{ij} \right) / n \quad (1)$$



Fig. 2 Flowchart of methodological steps. Source: Authors' own work

The purpose of step 1 was to develop a matrix with ‘n’ members (1, 2, 3, . . . , n) to represent the variables as groups. The groups were shown with ‘m’ (as an indicator of each study). The matrix, as it was shown in Eq. (1), consisted of ‘i’ rows and ‘j’ columns. The data matrices of the three countries were formed by using the GII’s indices data from 2008 to 2016. It should be noted that each indicator (for the scores of the indices and sub-indices) was normalized. In the tables that follow, the sub-indices of the innovation input and output for each year are placed in rows 1–7. Additionally, the first five sub-indices of institution, human capacity, infrastructure, market sophistication, and business sophistication (1–5) beside the two sub-indices of knowledge (scientific outputs) and creative outputs (6–7) comprise the Innovation Input Index and Innovation Output Index, respectively.

Concerning Tables 1 and 2, which represent the released data by GII in the years 2008 and 2009, GII reports have reported the data of the countries based on their rankings. Therefore, the values in these 2 years do not represent mathematical values, but the rankings. Obviously, Switzerland’s numbers in both the tables are lower than that of the Egypt and Qatar, which are due to Switzerland’s better rankings (Tables 3, 4, 5, 6, 7, 8 and 9).

**Table 1** GII's indices for Egypt, Qatar and Switzerland in 2008

	Index (X <sub>ij</sub> )	2008			
		Egypt	Qatar	Switzerland	X <sub>oj</sub>
1	Institution	75	29	4	36.00
2	Human capacity	66	32	4	34.00
3	Infrastructure	71	34	4	36.33
4	Market sophistication	86	36	23	48.33
5	Business sophistication	74	27	3	34.67
6	Knowledge	73	32	2	35.67
7	Competitiveness <sup>a</sup>	78	41	14	44.33

Source: Authors' own work based on GII data

<sup>a</sup>The year 2008 was the last year that Competitiveness was the label used in Item 7. In subsequent years, the Competitiveness label was replaced by Creativity

**Table 2** GII's indices for Egypt, Qatar and Switzerland in 2009

	Index (X <sub>ij</sub> )	2009			
		Egypt	Qatar	Switzerland	X <sub>oj</sub>
1	Institution	74	25	7	35.33
2	Human capacity	77	21	8	35.33
3	Infrastructure	82	37	5	41.33
4	Market sophistication	74	92	16	60.67
5	Business sophistication	103	28	4	45.00
6	Knowledge	84	51	4	46.33
7	Creative outputs	58	42	4	34.67

Source: Authors' own work based on GII data

**Table 3** GII's indices for Egypt, Qatar and Switzerland in 2010

	Index (X <sub>ij</sub> )	2010			
		Egypt	Qatar	Switzerland	X <sub>oj</sub>
1	Institution	61.7	83.5	92.6	79.27
2	Human capacity	26.4	52.5	55.1	44.67
3	Infrastructure	21.7	33.9	44.5	33.37
4	Market sophistication	35	39.2	70.1	48.10
5	Business sophistication	30.7	49.5	68	49.40
6	Knowledge	17.2	50.6	62	43.27
7	Creative outputs	29.5	36.9	54.4	40.27

Source: Authors' own work based on GII data

### 3.2 Step 2: Forming the Standard Matrix

Since the indicators were measured by different units,  $Z_{ij}$  Matrix was formed by the following formula, to eliminate the discrepancy between the units and to convert them to unit scales:

**Table 4** GII's indices for Egypt, Qatar and Switzerland in 2011

	Index (X <sub>ij</sub> )	2011			
		Egypt	Qatar	Switzerland	X <sub>oj</sub>
1	Institution	40.4	70.2	88.0	66.20
2	Human capacity	25.9	55.7	57.9	46.50
3	Infrastructure	33.6	49.0	60.8	47.80
4	Market sophistication	30.5	35.3	69.8	45.20
5	Business sophistication	31.9	60.3	63.5	51.90
6	Knowledge	22.6	25.2	72.0	39.93
7	Creative outputs	24.0	48.6	65.0	45.87

Source: Authors' own work based on GII data

**Table 5** GII's indices for Egypt, Qatar and Switzerland in 2012

	Index (X <sub>ij</sub> )	2012			
		Egypt	Qatar	Switzerland	X <sub>oj</sub>
1	Institution	43.9	73.80	87.30	68.33
2	Human capacity	28.3	31.90	55.40	38.53
3	Infrastructure	33.7	46.00	57.00	45.57
4	Market sophistication	35.8	47.40	77.50	53.57
5	Business sophistication	27.4	40.10	55.30	40.93
6	Knowledge	18	19.90	61.50	33.13
7	Creative outputs	28.2	48.50	71.80	49.50

Source: Authors' own work based on GII data

**Table 6** GII's indices for Egypt, Qatar and Switzerland in 2013

	Index(X <sub>ij</sub> )	2013			
		Egypt	Qatar	Switzerland	X <sub>oj</sub>
1	Institution	42.1	75.5	87.60	68.40
2	Human capacity	27.8	33.6	56.70	39.37
3	Infrastructure	36.1	53.1	59.00	49.40
4	Market sophistication	35.4	46.3	74.70	52.13
5	Business sophistication	28.9	43.4	54.20	42.17
6	Knowledge	25.4	20.4	60.90	35.57
7	Creative outputs	26.6	40.1	65.30	44.00

Source: Authors' own work based on GII data

$$S_j = \sqrt{\sum_{i=1}^n (X_{ij} - \bar{X}_j)^2 / n} \quad (2)$$

$$Z_{ij} = (X_{ij} - X_{oj}) / S_j \quad (3)$$

'X<sub>ij</sub>' is a *Data Matrix*, 'X<sub>oj</sub>' is an *Average Matrix* (Eq. 1) and 'S<sub>j</sub>' is a *Standard Deviation* for 'j' indicators, which are derived from the GII reports from 2008 to 2016. Therefore, in this paper 'i' represents the countries (Egypt, Qatar and Switzerland) in the time span 2008–2016. The *Standard Matrices* of them were



**Table 7** GII's indices for Egypt, Qatar and Switzerland in 2014

	Index (Xij)	2014			
		Egypt	Qatar	Switzerland	Xoj
1	Institution	39.5	77.70	89.60	68.93
2	Human capacity	27.9	35.30	59.20	40.80
3	Infrastructure	37.2	55.50	58.60	50.43
4	Market sophistication	35.9	45.90	72.30	51.37
5	Business sophistication	31.6	27.70	60.00	39.77
6	Knowledge	21.7	24.50	72.40	39.53
7	Creative outputs	25.1	34.70	64.80	41.53

Source: Authors' own work based on GII data

**Table 8** GII's indices for Egypt, Qatar and Switzerland in 2015

	Index (Xij)	2015			
		Egypt	Qatar	Switzerland	Xoj
1	Institution	39	75.00	90.30	68.10
2	Human capacity	27.3	32.60	63.30	41.07
3	Infrastructure	38.3	60.50	61.00	53.27
4	Market sophistication	34.2	42.80	69.80	48.93
5	Business sophistication	20	29.30	57.60	35.63
6	Knowledge	18.5	20.00	67.00	35.17
7	Creative outputs	21.8	33.80	61.40	39.00

Source: Authors' own work based on GII data

**Table 9** GII's indices for Egypt, Qatar and Switzerland in 2016

	Index (Xij)	2016			
		Egypt	Qatar	Switzerland	Xoj
1	Institution	40.4	72.80	89.50	67.57
2	Human capacity	26.9	33.30	63.60	41.27
3	Infrastructure	38.4	58.10	65.10	53.87
4	Market sophistication	36.7	42.60	67.50	48.93
5	Business sophistication	21	28.00	62.60	37.20
6	Knowledge	17	23.10	69.10	36.40
7	Creative outputs	21.6	34.50	62.50	39.53

Source: Authors' own work based on GII data

calculated and shown in the tables that follow (Tables 10, 11, 12, 13, 14, 15, 16, 17 and 18). Moreover, by converting the scales of the indices to the scales of the unit in the average = 0 and *Standard Deviation* = 1 in the *Z Matrix*, we could control 'Z' *Matrix* acceptability.

**Table 10** Standard matrix of 2008

	Index	2008 "Z Matrix"			Z <sub>oj</sub>	S <sub>z<sub>oj</sub></sub>
		Egypt	Qatar	Switzerland		
1	Institution	1.326	-0.238	-1.088	0.00	1.00
2	Human capacity	1.262	-0.079	-1.183	0.00	1.00
3	Infrastructure	1.265	-0.085	-1.180	0.00	1.00
4	Market sophistication	1.646	-0.539	-1.107	0.00	1.00
5	Business sophistication	1.334	-0.260	-1.074	0.00	1.00
6	Knowledge	1.283	-0.126	-1.157	0.00	1.00
7	Competitiveness	1.283	-0.127	-1.156	0.00	1.00

Source: Authors' own work based on GII data

**Table 11** Standard matrix of 2009

	Index	2009 "Z Matrix"			Z <sub>oj</sub>	S <sub>z<sub>oj</sub></sub>
		Egypt	Qatar	Switzerland		
1	Institution	1.366	-0.365	-1.001	0.00	1.00
2	Human capacity	1.392	-0.479	-0.913	0.00	1.00
3	Infrastructure	1.710	-0.182	-1.527	0.00	1.00
4	Market sophistication	0.614	1.442	-2.056	0.00	1.00
5	Business sophistication	1.658	-0.486	-1.172	0.00	1.00
6	Knowledge	1.709	0.212	-1.921	0.00	1.00
7	Creative outputs	1.631	0.513	-2.143	0.00	1.00

Source: Authors' own work based on GII data

**Table 12** Standard matrix of 2010

	Index	2010 "Z matrix"			Z <sub>oj</sub>	S <sub>z<sub>oj</sub></sub>
		Egypt	Qatar	Switzerland		
1	Institution	-1.355	0.327	1.028	0.00	1.00
2	Human capacity	-1.409	0.604	0.805	0.00	1.00
3	Infrastructure	-1.252	0.057	1.195	0.00	1.00
4	Market sophistication	-0.837	-0.569	1.406	0.00	1.00
5	Business sophistication	-1.228	0.007	1.221	0.00	1.00
6	Knowledge	-1.371	0.386	0.985	0.00	1.00
7	Creative outputs	-1.031	-0.322	1.354	0.00	1.00

Source: Authors' own work based on GII data

### 3.3 Step 3: Calculation of Compound Distance Among the Countries

In this step, Eq. (4) helped us to measure the *Compound Distance* between the three countries:

**Table 13** Standard matrix of 2011

	Index	2011 “Z matrix”			Z <sub>oj</sub>	S <sub>z<sub>oj</sub></sub>
		Egypt	Qatar	Switzerland		
1	Institution	-1.314	0.204	1.110	0.00	1.00
2	Human capacity	-1.412	0.630	0.781	0.00	1.00
3	Infrastructure	-1.275	0.108	1.167	0.00	1.00
4	Market sophistication	-0.840	-0.566	1.405	0.00	1.00
5	Business sophistication	-1.408	0.591	0.817	0.00	1.00
6	Knowledge	-0.764	-0.649	1.413	0.00	1.00
7	Creative outputs	-0.552	0.069	0.483	0.00	1.00

Source: Authors’ own work based on GII data

**Table 14** Standard matrix of 2012

	Index	2012 “Z matrix”			Z <sub>oj</sub>	S <sub>z<sub>oj</sub></sub>
		Egypt	Qatar	Switzerland		
1	Institution	-1.347	0.301	1.046	0.00	1.00
2	Human capacity	-0.852	-0.552	1.404	0.00	1.00
3	Infrastructure	-1.247	0.046	1.201	0.00	1.00
4	Market sophistication	-1.011	-0.351	1.362	0.00	1.00
5	Business sophistication	-1.187	-0.073	1.260	0.00	1.00
6	Knowledge	-0.754	-0.659	1.413	0.00	1.00
7	Creative outputs	-1.196	-0.056	1.252	0.00	1.00

Source: Authors’ own work based on GII data

**Table 15** Standard matrix of 2013

	Index	2013 “Z matrix”			Z <sub>oj</sub>	S <sub>z<sub>oj</sub></sub>
		Egypt	Qatar	Switzerland		
1	Institution	-1.367	0.369	0.998	0.00	1.00
2	Human capacity	-0.927	-0.462	1.389	0.00	1.00
3	Infrastructure	-1.370	0.381	0.989	0.00	1.00
4	Market sophistication	-1.010	-0.352	1.362	0.00	1.00
5	Business sophistication	-1.280	0.119	1.161	0.00	1.00
6	Knowledge	-0.564	-0.841	1.405	0.00	1.00
7	Creative outputs	-0.445	-0.100	0.545	0.00	1.00

Source: Authors’ own work based on GII data

$$D_{ab} = \sqrt{\sum_{i=1}^n (Z_{aj} - Z_{bj})^2} \tag{4}$$

D<sub>ab</sub> is a distance between two ‘a’ and ‘b’ countries.

Therefore:

$$D_{aa} = 0$$

$$D_{bb} = 0$$

$$D_{ab} = D_{ba}$$

**Table 16** Standard matrix of 2014

	Index	2014 “Z matrix”			Z <sub>oj</sub>	S <sub>z<sub>oj</sub></sub>
		Egypt	Qatar	Switzerland		
1	Institution	-1.377	0.410	0.967	0.00	1.00
2	Human capacity	-0.966	-0.412	1.378	0.00	1.00
3	Infrastructure	-1.401	0.537	0.865	0.00	1.00
4	Market sophistication	-1.007	-0.356	1.363	0.00	1.00
5	Business sophistication	-0.567	-0.838	1.406	0.00	1.00
6	Knowledge	-0.766	-0.646	1.413	0.00	1.00
7	Creative outputs	-0.972	-0.404	1.376	0.00	1.00

Source: Authors' own work based on GII data

**Table 17** Standard matrix of 2015

	Index	2015 “Z Matrix”			Z <sub>oj</sub>	S <sub>z<sub>oj</sub></sub>
		Egypt	Qatar	Switzerland		
1	Institution	-1.353	0.321	1.032	0.00	1.00
2	Human capacity	-0.867	-0.534	1.401	0.00	1.00
3	Infrastructure	-1.414	0.683	0.731	0.00	1.00
4	Market sophistication	-0.971	-0.404	1.376	0.00	1.00
5	Business sophistication	-0.978	-0.396	1.374	0.00	1.00
6	Knowledge	-0.740	-0.674	1.414	0.00	1.00
7	Creative outputs	-1.037	-0.314	1.351	0.00	1.00

Source: Authors' own work based on GII data

**Table 18** Standard matrix of 2016

	Index	2016 “Z Matrix”			Z <sub>oj</sub>	S <sub>z<sub>oj</sub></sub>
		Egypt	Qatar	Switzerland		
1	Institution	-1.333	0.257	1.076	0.00	1.00
2	Human capacity	-0.898	-0.498	1.395	0.00	1.00
3	Infrastructure	-1.368	0.375	0.994	0.00	1.00
4	Market sophistication	-0.917	-0.474	1.391	0.00	1.00
5	Business sophistication	-0.891	-0.506	1.397	0.00	1.00
6	Knowledge	-0.834	-0.572	1.406	0.00	1.00
7	Creative outputs	-1.050	-0.295	1.345	0.00	1.00

Source: Authors' own work based on GII data

Therefore, as shown in the tables that follow, the *Compound Distance Matrices* ‘D’ for the three countries (Egypt, Qatar and Switzerland) were symmetric and their diameters were equal to zero. As seen in the right-most column D, the names D12, D13 and D23 or D32, show the distances between ‘Egypt and Qatar,’ ‘Egypt and Switzerland,’ and ‘Qatar and Switzerland,’ respectively (Tables 19, 20, 21, 22, 23, 24, 25, 26 and 27).

**Table 19** Compound distances for Egypt, Qatar and Switzerland in 2008

Country	Egypt '1'	Qatar '2'	Switzerland '3'	D Matrix (2008)
Egypt '1'	0	3.997	6.393	D12 = 3.997
Qatar '2'	3.997	0	2.481	D23 = 2.481
Switzerland '3'	6.393	2.481	0	D32 = 2.481

Source: Authors' own work based on GII data

**Table 20** Compound distances for Egypt, Qatar and Switzerland in 2009

Country	Egypt '1'	Qatar '2'	Switzerland '3'	D Matrix (2009)
Egypt '1'	0	4.342	7.997	D12 = 4.342
Qatar '2'	4.342	0	5.169	D21 = 4.342
Switzerland '3'	7.997	5.169	0	D32 = 5.159

Source: Authors' own work based on GII data

**Table 21** Compound distances for Egypt, Qatar and Switzerland in 2010

Country	Egypt '1'	Qatar '2'	Switzerland '3'	D Matrix (2010)
Egypt '1'	0	3.713	5.688	D12 = 3.713
Qatar '2'	3.713	0	3.22	D23 = 3.22
Switzerland '3'	5.688	3.22	0	D32 = 3.22

Source: Authors' own work based on GII data

**Table 22** Compound distances for Egypt, Qatar and Switzerland in 2011

Country	Egypt '1'	Qatar '2'	Switzerland '3'	D Matrix (2011)
Egypt '1'	0	3.586	5.688	D12 = 3.586
Qatar '2'	3.586	0	3.213	D23 = 3.213
Switzerland '3'	5.688	3.213	0	D32 = 3.213

Source: Authors' own work based on GII data

**Table 23** Compound distances for Egypt, Qatar and Switzerland in 2012

Country	Egypt '1'	Qatar '2'	Switzerland '3'	D Matrix (2012)
Egypt '1'	0	2.732	5.688	D12 = 2.732
Qatar '2'	2.732	0	4.053	D21 = 2.732
Switzerland '3'	5.688	4.053	0	D32 = 4.053

Source: Authors' own work based on GII data

**Table 24** Compound distances for Egypt, Qatar and Switzerland in 2013

Country	Egypt '1'	Qatar '2'	Switzerland '3'	D Matrix (2013)
Egypt '1'	0	2.98	5.688	D12 = 2.98
Qatar '2'	2.98	0	3.698	D21 = 2.98
Switzerland '3'	5.688	3.698	0	D32 = 3.698

Source: Authors' own work based on GII data

**Table 25** Compound distances for Egypt, Qatar and Switzerland in 2014

Country	Egypt '1'	Qatar '2'	Switzerland '3'	D Matrix (2014)
Egypt '1'	0	2.845	5.688	D12 = 2.845
Qatar '2'	2.845	0	4.361	D21 = 2.845
Switzerland '3'	5.688	4.361	0	D32 = 4.361

Source: Authors' own work based on GII data

**Table 26** Compound distances for Egypt, Qatar and Switzerland in 2015

Country	Egypt '1'	Qatar '2'	Switzerland '3'	D Matrix (2015)
Egypt '1'	0	2.916	5.688	D12 = 2.916
Qatar '2'	2.916	0	4.205	D21 = 2.916
Switzerland '3'	5.688	4.205	0	D32 = 4.205

Source: Authors' own work based on GII data

**Table 27** Compound distances for Egypt, Qatar and Switzerland in 2016

Country	Egypt '1'	Qatar '2'	Switzerland '3'	D Matrix (2016)
Egypt '1'	0	2.59	5.688	D12 = 2.59
Qatar '2'	2.59	0	4.282	D21 = 2.59
Switzerland '3'	5.688	4.282	0	D32 = 4.282

Source: Authors' own work based on GII data

### 3.4 Step 4: Assignment of the Shortest Distances

In this step of the methodology every cell demonstrates the distances between the countries. Each matrix 'D' line defines the gaps between the countries, for example there is the most approximation among two countries if 'a' and 'b' have the shortest distance, i.e. country 'b' is a model for country 'a' and country 'a' is named a shade.

### 3.5 Step 5: Optimum Chart Drawing

The countries which had the most commonalities were connected together by a vector towards the country which is assumed as a model and the vector length equal to the shortest distance between the countries. For determining homogeneous countries, at first upper-line distance  $d_{(+)}$  and lower-limit distance  $d_{(-)}$  were calculated with the following Eqs. (5) and (6), ( $d$  is the average of the shortest distances and  $S_d$  is the standard deviation):

$$d_{(+)} = d + 2S_d \tag{5}$$

$$d_{(-)} = d - 2S_d \tag{6}$$

Furthermore, after measuring  $d_{(+)}$  and  $d_{(-)}$  for the three countries (Egypt, Qatar and Switzerland) in 2016 from the Eqs. (4) and (5), it became evident that the distances among the countries are not out of upper  $d_{(+)}$  and lower  $d_{(-)}$  limits range for the year 2016, therefore the three countries could be compared with one another.

### 3.6 Step 6: Ranking of the Countries in Terms of Improvement and Development

According to step 5, if the countries or places are not located in homogeneous groups then *Data Matrix* could be formed for homogenous group of countries and again *Standard Matrix*-calculated. In the *Standard Matrix*, we can find the biggest value in each column which is named the 'Ideal Amount'. In this paper all of the three reviewed countries are in an equally seamlessly space, so they can be compared with one another.

### 3.7 Step 7: Calculation of the Countries' Improvement

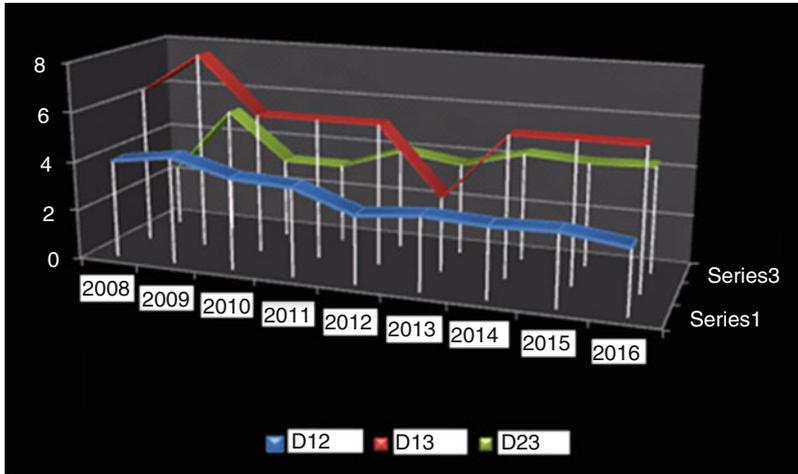
For finding improvement degrees for the countries,  $C_o$  (the upper limit of the development pattern) should be measured and then put up in the relation:  $f_i = (C_{io}/C_o)$  that  $C_{io}$  is development pattern over the upper limit of the development pattern, then  $C_o$  obtains from the Eq. (7):

$$C_o = \overline{C_{io}} + 2S_{io} \quad (7)$$

Development degree is between '0' and '1', i.e. when 'f<sub>i</sub>' value gets near to '0', the country is more developed than the case 'f<sub>i</sub>' approaches to '1'; in other words, the country gets close to undeveloped characteristics. After measuring  $C_{io}$  and  $f_i$  the countries were sorted based on the development degrees.

## 4 Conclusion

By considering the least distances between Qatar and the benchmark country (Switzerland) in the years 2008–2016 (Tables 19–27), the years 2008, 2010 and 2011 with the distances equal to  $D_{23} = 2.481$ ,  $D_{23} = 3.22$  and  $D_{23} = 3.213$  respectively, had been the most innovative years of Qatar. In 2011 the absolute value for Business Sophistication (60.3 for Qatar, 63.5 for Switzerland) presented in Table 4, while in 2010 and 2011 the absolute values for Human Capacity of Qatar (52.5 and 55.7, respectively) presented in Tables 3 and 4, had been the most effective



**Fig. 3** The line graph of taxonomic distances between study countries. Source: Authors’ own work based on the taxonomic study results

scores in shortening the distance between Qatar and the Human Capacity scores of Switzerland, which were 55.1 and 57.9, for 2010 and 2011, respectively.

Therefore, it could be concluded that Business Sophistication and Human Capacity indices are the potential competitive advantages of Qatar for having better innovative scores; in other words, Qatar can generate more innovation by concentrating on its market dynamics and especially on its human capital. Likewise, the taxonomic results for the time span between 2008 through 2016, presented in Tables 19–27, reinforce the fact that Innovation-driven economies perform better than those that are Efficiency-driven; Qatar should be expected to perform better than Egypt. What is noteworthy is Qatar has shown that performing as an Innovation-driven economy is not the preserve of older, more well-established, often Western, nations. Qatar’s key capability is the development and encouragement of more Innovation. As our taxonomic results in Compound Distance Matrices (Tables 19–27) show the least distance between Egypt and Qatar was reached in 2016 ( $D12 = 2.59$ ) presented in Table 27. Hopefully Egypt will be able to maintain this momentum.

The taxonomic results of this paper compare the Innovation distances between all three countries from 2008 to 2016 (Fig. 3).

Figure 3 shows the Innovation distances between Egypt and Qatar (blue), Egypt and Switzerland (red), and Qatar and Switzerland (green). Furthermore, the nearer the graph is to the lower horizontal axis (i.e. the base in the figure), the shorter the distance to the benchmark country’s score; thus, the more innovative the country is. As the figure shows, in 2008, Qatar reached its closest point to meeting the innovation level of the paper’s benchmark (Switzerland ( $D23 = 2.481$ )). The innovation distance between the two countries in 2009 ( $D23 = 5.159$ ) was the most experienced distance in the span 2008–2016. After 2013, Qatar had an



approximately continuous distance with the benchmark (2014: 4.361; 2015: 4.205; and 2016: 4.282).

Based on Fig. 3, Egypt in the interval between 2008 through 2016 always lagged behind the Innovation distance with Qatar (blue) i.e. a distance consistently greater than 2.50. The results of the Compound Distance Matrices of the paper summarized in Tables 19–27, also reveal that the least distance between Qatar and Egypt is related to 2016 ( $D_{12} = 2.59$ ) and the most distance occurred in 2009 ( $D_{12} = 4.342$ ). The decreasing effect on the distance between the two countries in 2016 is due to both Egypt's Institution index (40.4) as well as the country's Infrastructure index (38.4). The two highest scores of Egypt among all the scores of the country in the 2016 report are presented in Table 9. The good news for the innovation of Egypt is its decreasing distance in most years from Qatar. For example, the 'D12' scores of Egypt in the years 2008–2016 were 3.997 in 2008, 4.342 in 2009, 3.713 in 2010, 3.586 in 2011, 2.732 in 2012, 2.98 in 2013, 2.845 in 2014, 2.916 in 2015 and recently 2.59 in 2016. The year 2013 is also the only year that Egypt's innovation distance from Qatar is the same as its distance with Switzerland.

In *Towards a Measurement Agenda for Innovation*, the OECD sets out five key action areas to make measurement and tracking of Innovation statistics easier and more accurate: (1) “develop innovation metrics that can be linked to aggregate measures of economic performance; (2) invest in a high-quality and comprehensive statistical infrastructure to analyse innovation at the firm-level; (3) promote metrics of innovation in the public sector and for public policy evaluation; (4) find new and interdisciplinary approaches to capture knowledge creation and flows; (5) promote the measurement of innovation for social goals and of social impacts of innovation” (OECD 2009). The authors hope that this paper helps to contribute to these worthwhile attempts to measure Innovation.

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# Entrepreneurship in the Middle East and North Africa: A Bibliometric Analysis



Jasmina Berbegal-Mirabent, Inés Alegre, and Domingo Ribeiro-Soriano

**Abstract** Bibliometrics is an important field of information science that enables bibliographic material to be studied quantitatively. Using bibliometric techniques, this chapter offers an overview of entrepreneurship research in the Middle East and North Africa. Using the Web of Science and Scopus databases, we identify the most relevant research in this field, classified by the most influential authors and the top papers, journals and countries. The sample includes 657 articles published from 1963 to 2016, from 387 different sources. The findings show that studies addressing this topic have been published mainly in non-*JCR*-indexed journals. In contrast, it is important to note that the top papers (in terms of citations) appear to be published in well-known journals such as the *Journal of Business Venturing*, *Organization Studies* and *Technovation*. The most significant countries are those in the region being studied (such as Israel) but also the United States. The chapter ends with some recommendations for further research.

**Keywords** Bibliometric analysis · Entrepreneurship · Middle East · North Africa · Web of science · Scopus

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## 1 Introduction

The seminal paper of Shane and Venkataraman (2000) established entrepreneurship as a new field of research. Entrepreneurship involves the recognition, assessment and development of opportunities (Gartner 1990) and research shows that it cannot be associated with a particular age, gender or other characteristics of an entrepreneur (Gartner 2002; Marlow and McAdam 2013). In contrast, it is highly dependent on environmental factors such as legal regulations and networks (Hitt et al. 2001). Exploring these context-specific factors shows there is a set of papers focusing on entrepreneurial activity according to country (McDougall and Oviatt 2000; Busenitz et al. 2000). Academic research has been criticized for being biased toward studies carried out in the United States of America and Western Europe and the entrepreneurship field is no different. In the present chapter, the objective is to focus on entrepreneurship in the Middle East and North Africa (MENA). We perform a bibliometric analysis to offer an overview of all the entrepreneurship research conducted for this region. Contrary to what might have been expected, we find a large corpus of papers dealing with entrepreneurship in MENA and, although most of the papers have not been published in mainstream journals, they offer a rich and interesting set of knowledge.

The fast development of computers, the rise of the Internet and a hyperconnected society have hugely facilitated access to and the processing of information. However, research results have also increased exponentially, making it difficult for scholars and policymakers to be constantly and instantaneously aware of updates and new developments in their research fields. In this context, bibliometric analysis has become very popular as a technique to assess the-state-of-the-art scientific discipline. By studying and classifying bibliographic material quantitatively, this method allows a general picture to be obtained of a particular area of knowledge, which is very useful for identifying the most influential research and mapping the leading trends over time (Merigó and Yang 2015).

Bibliometric analysis has been shown to be paramount in the evaluation of social science research performance (Nederhof et al. 2000). Bibliometric studies have been conducted in a wide variety of disciplines (e.g., accounting, economics, innovation, operations management, marketing, and financial research), and recent studies have shown that modern bibliometric techniques can provide a lot of information about a research discipline (Wagstaff and Culyer 2012). Entrepreneurship research has been no exception. Bibliometric analyses include the works of Dos Santos et al. (2011) and Landström et al. (2012). While the former authors studied the most influential journals in this discipline, Landström and his colleagues, provided a complete bibliometric overview.

The purpose of this paper is thus to classify the bibliographic material in the field of entrepreneurship, but with a special focus on the MENA region. The rationale underlying the analysis relies on the need to identify the current status of entrepreneurship research in this region, a geographical area that is still underrepresented in the field of entrepreneurship. Although bibliometric studies have multiple uses, they

are particularly suitable for providing a general summary of a research field and for identifying leading researchers, journals and institutions (Bjork et al. 2014). Therefore, this chapter aims to provide a complete overview of the main publications and trends in entrepreneurship research in MENA by using a bibliometric software package.

To do so, we perform both meso-level and macro-level bibliometric analyses. We start by providing a summary of the database. Next, the macro-level analysis yields a general assessment in terms of country productivity and which are the target journals for publishing research about entrepreneurship in MENA. We then narrow down the analysis (meso-level) by examining which authors are the most prolific on this topic, how scholars cite the work of others, and other additional indicators that allow us to complement the analysis (e.g., bibliographic coupling and co-citation networks).

The remainder of the paper is organized as follows: we first justify the importance of entrepreneurship as a research field. The next section provides an overview of bibliometrics as a performance measurement tool for research evaluation. After this, we describe the methodological approach used. The results are reported in the following section. A discussion of the findings and concluding remarks will appear in the final section.

## 2 Importance of Entrepreneurship in MENA

Shane and Venkataraman (2000) defined entrepreneurship as the scholarly examination of how opportunities to create future goods and services are discovered, evaluated and exploited, by whom and with what effects. For there to be entrepreneurship, two factors need to interact: the entrepreneur and the opportunity. Opportunities are those occasions where a good, a service or a process can be sold at a higher price than its development costs. People who are able either to create or to recognize those opportunities are called entrepreneurs. However, entrepreneurs not only recognize opportunities they are also able to evaluate the potential of opportunities and put them into practice, thus invigorating the economy, creating jobs and offering value to consumers. In the past few decades, entrepreneurship has gained legitimacy as a field of study and research has shown that entrepreneurship is a critical factor for job creation and economic development. In addition, studies have shown that entrepreneurial firms produce an important spillover that goes beyond the entrepreneurial firm and positively affect other companies in the region and sector (van Praag and Versloot 2007).

In that sense, entrepreneurship in underdeveloped regions becomes critical. It is important to understand what contextual factors enhance entrepreneurship and which ones hinder it. The MENA region has undergone many significant changes in recent years. Even so, except for some specific cases, the region has higher unemployment rates and lower economic development than its neighbor Europe. Therefore, stimulating entrepreneurship in MENA is a way to encourage stability, prosperity and job creation (Naqvi 2012). As a Kauffman Foundation study

explicitly stated: “Startups are not everything when it comes to job creation. They are the only thing.” (Kane 2010).

### 3 Bibliometric Assessment of Research

The statistical analysis of scientific literature began with the works of Alfred J. Lotka (1926) and Gross and Gross (1927)—a pioneering study on the frequency distribution of scientific productivity and a citation-based study, respectively. However, it was not until the 1960s that the foundation of modern research evaluation techniques was established. The book *Little Science, Big Science* (Price 1963) by Derek de Solla Price was the first systematic approach to the structure of modern science applied to science as a whole, and in 1969 the word “bibliometrics” was used for the first time. Pritchard (1969) defined it as the application of mathematical and statistical methods to books and other media of communication. Because data collection was still done manually, basic models for scientific communication were developed. The first models included essential indicators such as growth and aging of information. In the 1980s, bibliometrics evolved into a distinct scientific discipline with a specific research profile thanks to the fast development of computer science and technology that allowed the creation of large bibliographic databases that could be processed automatically.

The technological advances in information and communication sciences of the past few decades have led to the creation of specific tools and software that enable bibliometric analysis to be undertaken, creating complex systems that are gradually introducing more accurate metrics. Now, bibliometric methods include components from mathematics, engineering, social and natural sciences. These are usually complemented by econometrics, social network analysis and other quantitative approaches.

Bibliometric research is aimed at three main target groups: bibliometricians (for the improvement of the method itself), researchers in different scientific disciplines (as an extension of science information by metric means), and policymakers (for a comparison of national, regional, and institutional structures of science). This chapter focuses on the second approach, where bibliometrics is used as an interdisciplinary field with the objective of providing entrepreneurship researchers interested in the MENA region with a complete, structured and clear picture of what has been published on this topic in the past century.

Basic units of analysis for bibliometric purposes range from measures of simple counts—such as publication counts, the number of coauthors, references or the number of citations received by a publication—to more complex measures that can be obtained as statistical functions defined in sets of bibliometric elements and units (van Raan 2003), such as bibliographic coupling. Scientific articles can also be assigned to the journals in which they appeared, information about the corporate addresses of their authors can be linked to institutions or countries, and key data on subject category and keywords can be used.

## 4 Methodology

To find all articles published so far on entrepreneurship in the Middle East and North Africa we searched in two databases: Thomson Reuters Web of Science (WOS) and Scopus. We believe these databases contain all the relevant publications in the area of business, management and entrepreneurship, which are the focus areas of our research. To be exhaustive, we searched for the term *entrepreneur*\* together with a word related to the location. By searching for *entrepreneur*\* we were able to identify all papers with the words *entrepreneurship*, *entrepreneurial*, *entrepreneurialism* and *entrepreneur*. For the location, we included the terms *Middle East* and *North Africa*, as well as the individual countries of the region: *Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates* and *Yemen*.

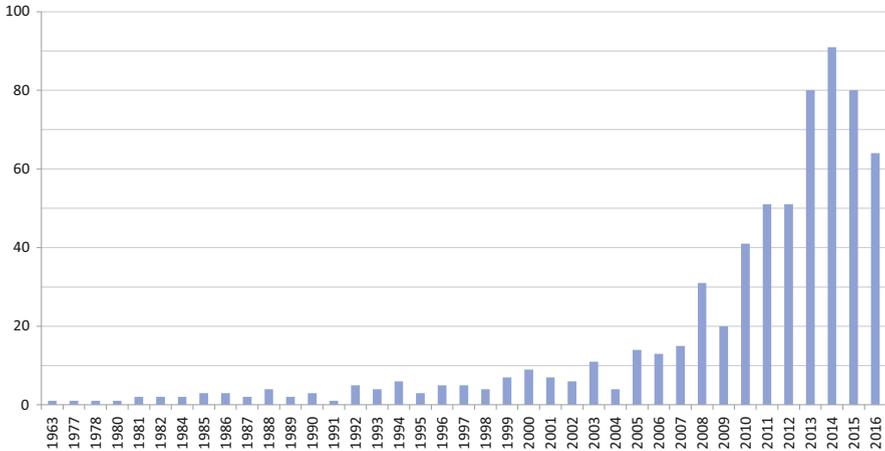
This search yielded 173 papers in WOS and 632 papers in Scopus. We merged both databases and eliminated duplicates, achieving a final database of 657 articles in the area of entrepreneurship in the Middle East and North Africa. This final database constituted the starting point of our analysis. The data analysis was done using the bibliometrix R package (Aria and Cuccurullo 2016). A summary of the articles found is shown in Table 1.

The search was conducted in January 2017, so the information for the year 2016 is complete. The database contains papers from 1974 to 2016 from 387 different journals, books or conference proceedings. Figure 1 shows the evolution of the number of papers published annually.

The first article published on entrepreneurship in the Middle East and North Africa was a review by Hoselitz (1963) of the Yusif A. Sayigh book *Entrepreneurs of Lebanon*. After this initial work, nothing more is identified until 1977, when papers start to be published continuously with an average annual percentage growth rate of 1.79%. Publications have been particularly extensive in the past 4 years, with 80 publications for the period that covers from 2013 to 2015. Papers have been written by a total of 1468 authors, with an average of 1.92 authors per article. The average number of citations per article in the Scopus database is 5.62.

**Table 1** Summary of the database

Articles	657
Sources (journals, books, etc.)	387
Keywords	985
Period	1964–2016
Average Scopus citations per article	5.62
Authors	1468
Authors of single-authored papers	218
Authors of multiauthored papers	1045
Average articles per author	0.52
Average authors per article	1.92
Average coauthors per article	2.23



**Fig. 1** Number of articles per publication year

## 5 Results

To be sound, bibliometric analyses need to employ significant measures to represent the bibliographic material. The following subsections set out the main results, starting with the analysis of the most productive countries, followed by the leading journals, top papers and most influential authors. The analysis ends by examining some mapping methods, such as bibliographic coupling and co-citation networks. A final section summarizes the main themes covered by these publications.

### 5.1 Most Productive Countries

The most prolific country, recorded as the country of affiliation of the first author, is by far the United States, followed by Israel and Iran. Figure 2 lists the most productive countries in terms of the number of papers as well as the number of citations received per country. It is important to note that the focus is on publications signed under the name of the institution or a team inside the country and not on the researcher's nationality. As shown in this figure, only four out of the ten countries included in the top ten list are countries from the MENA region, indicating that, despite this particular region being the focus of the research, authors from institutions worldwide have devoted attention to this topic. While it is quite common for the countries with the highest number of publications to be those with the highest number of citations, the United States and Israel in Fig. 2, this is not always the case. It is interesting to observe the situation of Iran—although this country has published prolifically, its studies have not been cited very much.



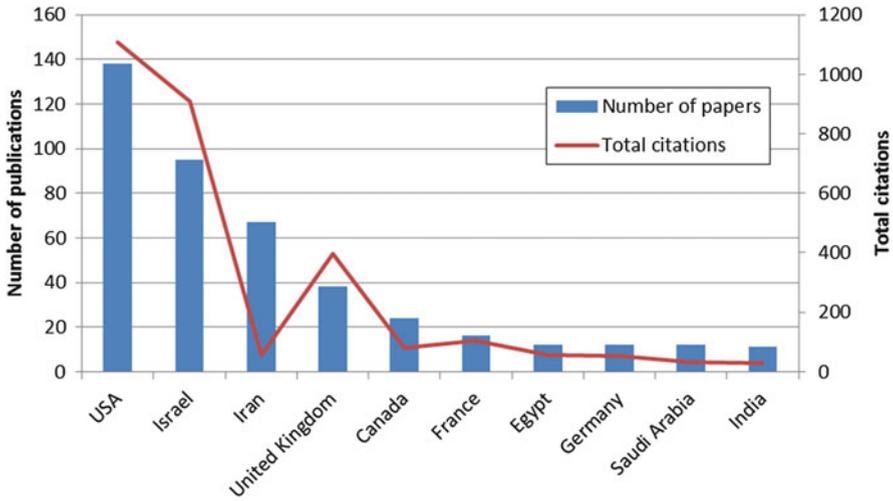


Fig. 2 Number of papers and total citations received by country



Fig. 3 Countries' collaboration network

Another issue that deserves attention when analyzing how productive countries are in a specific area is the analysis of the collaboration network. Figure 3 graphically illustrates the ties between each of the countries. The network has been built up by considering citations among papers—that is, the number of citations of papers from

another country that a paper from a particular country contains. Echoing the results in Fig. 2, the United States, Iran, Israel and the United Kingdom have larger circles than other countries do, indicating that they are more productive in this particular research area. Figure 3 also shows that US papers tend to cite manuscripts from countries such as Israel, Canada and the United Kingdom. The arrows also suggest the existence of strong ties between authors from the United Kingdom and scholars worldwide. Other than the United Kingdom, European countries are somewhat underrepresented. (Only Denmark, France, Germany, Italy and the Netherlands appear in Fig. 3.)

## 5.2 Top Authors by Number of Publications

Table 2 summarizes the ten most productive authors in entrepreneurship research in MENA. As shown, Syed Zamberi Ahmad leads the ranking with 11 papers, followed by Sibylle Heilbrunn (9) and Miri Lerner (9).

To provide a more complete view, several additional columns have been added, providing information about the author's affiliation and h-index. The h-index is a measure of the number of highly impactful papers a scientist has published. The larger the number of important papers, the higher the h-index, regardless of where the work was published.

Ahmad is the author with the most papers published in the collection of papers being studied. He publishes in the area of tourism and hospitality management (Ahmad 2015; Ahmad and Saber 2015) as well as on female entrepreneurs (Ahmad 2011a; Ahmad and Xavier 2011), and has written about different countries

**Table 2** Most productive authors and affiliation

Author	Affiliation	Country	No. of papers	H-index
Ahmad, Syed Zamberi	Abu Dhabi University	United Arab Emirates	11	3
Heilbrunn, Sibylle	Kinneret College on the Sea of Galilee	Israel	9	4
Lerner, Miri	Tel Aviv University	Israel	9	7
Schnell, Izhak	Tel Aviv University	Israel	8	3
Yemini, Miri	Tel Aviv University	Israel	6	2
Razin, Eran	Hebrew University of Jerusalem	Israel	4	4
Felsenstein, Daniel	Hebrew University of Jerusalem	Israel	4	4
Meydani, Assaf	Academic College of Tel Aviv-Yaffo	Israel	4	1
Schøtt, Thomas	University of Southern Denmark	Denmark	3	4
Abbey, Augustus	Morgan State University	USA	3	1

in MENA such as Saudi Arabia (Ahmad 2011b) and Yemen (Ahmad 2012). The second most productive author is Heilbrunn—from Israel, like the majority on this list of authors. Heilbrunn has published mostly about immigrant entrepreneurs (Heilbrunn and Kushnirovich 2008a, b; Kushnirovich and Heilbrunn 2008) and gender issues (Heilbrunn et al. 2014; Heilbrunn and Davidovitch 2011). Third on the list we find Lerner, with papers discussing the role of government and government policies such as compulsory military service on entrepreneurship (Avrahami and Lerner 2003; Lerner et al. 2005) and papers on the entrepreneurial aspirations of immigrants (Lerner and Hendeles 1993) and women (Lerner et al. 1997). Next, Izhak Schnell focuses on Arab entrepreneurs in Israel (Schnell and Sofer 2003; Slutsky et al. 2016; Sofer and Schnell 2000). Miri Yemini has had most of her papers on entrepreneurship in the MENA region published in journals dedicated to entrepreneurial education, reflecting on the school curriculum as well as other factors such as the country of origin and the discipline of study (Yemini and Bronshtein 2016; Yemini and Haddad 2010). Eran Razin, Daniel Felsenstein and Assaf Meydani have each had four papers published on entrepreneurship in MENA, covering a wide array of perspectives such as differences among ethnic groups (Razin 1989), rural compared to urban entrepreneurs (Bar-El and Felsenstein 1990) and political entrepreneurs (Meydani 2008). Finally, Thomas Schøtt has had several papers published on international comparisons of entrepreneurial behavior and Augustus Abbey papers on entrepreneurial education (Addae et al. 2015; Dobratz et al. 2015).

### 5.3 Top Manuscripts by Citations

Citation counts reflect how useful an article is to the academic community (Abramo et al. 2008). Yet, like other metrics, this indicator is not free of controversy (van Raan 2005). Its appropriateness as a measurement of research output is questionable because this variable does not reflect the type of citation and can be influenced by self-citation and friend-citation practices (Toutkoushian et al. 2003). Despite these flaws, the total number of citations is widely accepted as an indicator of an article's quality.

The manuscripts that have received more than 100 citations in Google Scholar are listed in Table 3.

Values of the total number of citations have been taken from three different sources: WOS, Scopus and Google Scholar. Because citations are not only tied to high quality but are also a matter of time, in the table we also report the average number of citations received per year since each article was published (in brackets).

As we can observe, the most influential articles were not published in a specific decade but cover the period from 1994 to 2007. The paper that received the highest number of citations appeared in 2006 in the *Journal of World Business*.

It should be noted that frequently cited papers are those published in top journals in the business and management fields. According to *Journal Citation Reports*, the *Journal of Business Venturing* is ranked sixth in a list of 120 journals in the area of

**Table 3** Top manuscripts by citations

References	TC WOS	TC Scopus	TC Google scholar
Sharir and Lerner (2006)	106 (9.64)	126 (11.45)	468 (42.55)
Lerner et al. (1997)	88 (4.40)	136 (6.80)	440 (22.00)
McCormick and Wahba (2001)	77 (4.81)	94 (5.88)	301 (18.81)
Felsenstein (1994)	60 (2.61)	92 (4.00)	263 (11.43)
Zilber (2007)	70 (7.00)	85 (8.50)	183 (18.30)

Numbers in brackets indicate the average number of citations per year  
 TC total citations, WOS web of science

**Table 4** Top ten journals

Publication	Total production	Journal citation records		SCImago journal rank	
		IF	Q	IF	Q
Journal of Entrepreneurship Education	37	–	–	0.322	Q2
International Journal of Entrepreneurship and Small Business	18	–	–	0.294	Q2
International Journal of Entrepreneurship	13	–	–	0.167	Q3
International Journal of Business and Globalisation	11	–	–	0.210	Q2
Journal of Developmental Entrepreneurship	11	–	–	0.271	Q2
Education, Business and Society: Contemporary Middle Eastern Issues	10	–	–	0.141	Q3
Journal of the International Academy for Case Studies	8	–	–	0.101	Q4
Entrepreneurial Executive	7	–	–	0.112	Q4
African Journal of Business Management <sup>a</sup>	6	1.105	Q3	–	–
International Journal of Middle East Studies	5	1.055	Q1	0.501	Q1

IF impact factor, Q quartile

<sup>a</sup>The Journal Citation Reports stopped including this journal in 2010. The impact factor reported refers to the year 2009. The base year for the remaining impact factors is 2015

business (impact factor: 4.204, quartile: 1). Similarly, *Organization Studies* and *Technovation* are both included in the first quartile in their respective areas, with impact factors higher than 2 (2.798 and 2.243 respectively).

## 5.4 Most Relevant Sources

To rank journals, we used the number of articles published (total production). Table 4 lists the top ten journals. We also include two additional columns with extra information—specifically, whether each journal is indexed in *Journal Citation Reports* and/or in the SCImago Journal Rank. Where the journal is indexed, we also provide the impact factor and quartile.

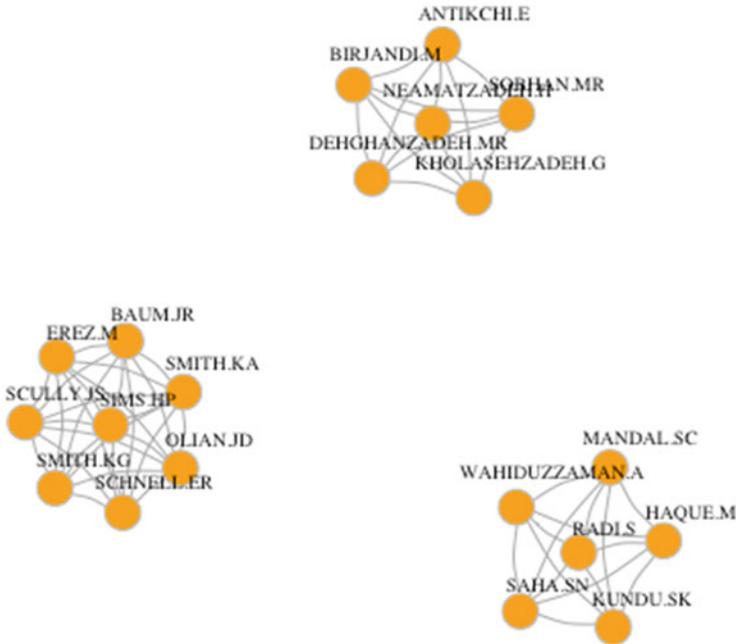
Surprisingly, most of the papers being studied have been published in journals that are not indexed in *Journal Citation Reports* but in second-order journals included in the second or third quartile in their respective areas in the SCImago Journal Rank. The sole exception is the *International Journal of Middle East Studies*, which clearly stands out as a top journal in the field of management and is also a target journal for studies reporting insightful research from the MENA region. As for the remaining journals, they are targeted at a wider audience, mainly in the field of entrepreneurship and small business.

### 5.5 *Bibliographic Coupling Networks and Co-citation Analysis*

The notion of bibliographic coupling was proposed in a Kessler 1963 paper by M.M. Kessler of the Massachusetts Institute of Technology (MIT). Bibliographic coupling occurs when two works reference a common third work in their bibliographies. That is, bibliographic coupling uses citation analysis in order to establish a similarity between documents. This measure indicates a probability that the two works treat a related subject matter. We say that two authors are bibliographically coupled if the cumulative reference lists of their respective works each contain a reference to a common document. The more citations there are to other common documents, the stronger the coupling will be. This method has been proved to offer a valuable alternative to other mapping techniques.

Figure 4 shows the results of the bibliographic coupling of the top 20 authors by Jaccard similarity coefficient. As shown in the figure, the bibliographic coupling of the top 20 authors shows three clearly differentiated clusters. First, there is a cluster made up of authors including Schnell, Smith, Scully and Erez. All of their publications are about entrepreneurship in Israel. There is a second cluster that includes authors such as Kundu, Wahiduzzaman and Mandal. All these authors discuss the pharmaceutical industry in Bangladesh. Finally, the third cluster involves authors such as Neamatzadeh and Dehghanzadeh, who focus on entrepreneurship in hospitals, particularly on nurses and doctors. By sharing a common theme, these articles tend to cite the same type of literature and papers.

Bibliographic coupling is often confused with co-citation analysis. While the former deals with papers that cite shared items in their reference lists, the latter—first set out by Small (1973) and Marshakova (1973)—analyzes reference pairs. Both techniques form clusters that include related research topics or authors. Nevertheless, compared to co-citation clustering, bibliographic coupling offers several advantages. According to Glänzel (2003), bibliographic coupling is immediately available and applicable after publication of a body of literature that does not contain only cited documents. Furthermore, it can be applied to practically all publications, with no need to restrict the analysis to frequently cited papers (as in co-citation analysis).



**Fig. 4** Bibliographic coupling of the top 20 authors

## 5.6 Themes

The articles that constitute the basis of this bibliometric analysis are diverse and cover a wide range of aspects of entrepreneurship research as well as a wide range of geographical regions within the Middle East and North Africa. Still, we are able to outline three general trends and themes that group these studies. We hope this analysis will provide interesting insights and serve as a guide for future research.

First, many of the studies selected address entrepreneurial topics, comparing several aspects of entrepreneurship across different regions or cultures. This is the case, for example, of the well-cited paper of Mair and Schoen (2007). These authors do a case comparison between social enterprises in Egypt, Bangladesh and Spain. Similarly, Baum et al. (1993) explore differences in entrepreneurial motivations between US and Israeli entrepreneurs. Other papers study entrepreneurial perceptions (Malach-Pines et al. 2005), entrepreneurial career intentions (Moriano et al. 2012) or the impact of culture on quality (Mosadegh Rad 2006). In this group of papers, the Middle East and Africa are just used as a setting for comparison because of this area's cultural differences compared to the United States or Europe. These studies tend to be qualitative and include cross-country comparisons (one of them being from the MENA region). Other studies adopt a more quantitative approach and rely on data gathered through questionnaires, for example, sent to entrepreneurs in the United States as well as to entrepreneurs in the MENA region. The main purpose

of this first group of articles is to explore the relationship of cultural factors on different entrepreneurial antecedents, processes or outcomes.

Second, other studies that fulfilled the criteria of addressing entrepreneurial issues in the MENA region are those that explore entrepreneurship among minority groups. Minorities can be either by gender or by origin. In this group, we find studies about the performance of Israeli female entrepreneurs (Lerner et al. 1997) and about the entrepreneurial motivations and status of female entrepreneurs in the United Arab Emirates (Naser et al. 2009; Itani et al. 2011). Other studies included in this group are those about migrant entrepreneurs, either individuals from the MENA region becoming entrepreneurs in other countries such as the United States (Raijman and Tienda 2000) or France (Al Ariss 2010), or individuals who, after having been emigrants, are returning to their home country in MENA. The work of McCormick and Wahba (2001) illustrates this latter case and explores the link between overseas employment and savings on entrepreneurial activity by migrants on their return to Egypt.

Finally, there is a set of papers that develop new theories and insights on entrepreneurship with an empirical setting from the MENA region. That is the case of the highly cited paper of Sharir and Lerner (2006), one of the seminal papers on social entrepreneurship. Their findings and conclusions are based on a field study of 33 social ventures in Israel. Similarly, the study of Zilber (2007), published in *Organization Studies*, examines the role and use of stories in the creation of institutional entrepreneurship. The empirical setting from which the findings are drawn is located in Israel. In this last group, we also include those studies that explore other entrepreneurial aspects such as innovation (Felsenstein 1994) and quality-related issues (Reichel et al. 2000).

The overarching conclusions from the first two groups of papers outlined above is that entrepreneurship in MENA is interesting just because it provides enough cultural and political diversity to serve as a good basis for comparison with the United States or Europe. Although it is true that the role of culture and cultural, political and geographical diversity is an interesting topic that deserves attention, the MENA region is considered as merely a region for comparative studies but not one that is interesting and valid on its own. That is why we would like to underline the importance of the last group of papers. In this last group, entrepreneurs in MENA constitute the empirical setting per se, whereas in many other top entrepreneurship papers the empirical setting is entrepreneurs in the United States. As Zahra (2011) points out, the Middle East (and we would include North Africa here also), offers great opportunities for management scholars.

## 6 Conclusions

Over the years, many authors have provided a wide range of overviews of the field of entrepreneurship. Nevertheless, few of them have focused on bibliometric analysis. Nowadays, bibliometrics offers a wide range of methods, measures and software

tools to evaluate scholarly productivity. The aim of this chapter has been to present a general bibliometric analysis of entrepreneurship research in a particular region, the Middle East and North Africa. Specifically, we have been able to summarize the main trends while identifying the leading researchers, countries and journals in this area. Two main databases have been used as primary sources for gathering articles, the Web of Science and Scopus. After applying the appropriate filters, 657 papers have been scrutinized.

The most relevant findings are summarized as follows. First, the results show that research into this topic started in the mid-1960s but it was not until 2008 that a growing pattern could be observed. Since then, the number of publications has increased significantly, with an important peak in 2014. Second, the United States is the most productive country but countries in the region being studied, such as Israel and Iran, are trying to catch up. The productivity of these countries corresponds with the most prolific authors. Of the ten most influential authors, seven are affiliated to universities in Israel, specifically to Tel Aviv University or the Hebrew University of Jerusalem. The top cited papers also confirm the leading role of Israeli authors. Both Miri Lerner (from Tel Aviv University) and Daniel Felsenstein (from the Hebrew University of Jerusalem) are among the authors with the highest number of quoted papers. Third, researchers investigating entrepreneurship in MENA publish their work in journals that focus on international business issues or that cover entrepreneurship in a broad sense.

A key finding is that these journals appear to be indexed in the SCImago Journal Rank, instead of *Journal Citation Reports*. There are two possible interpretations of this result. One relates to the interest of *JCR*-indexed journals in reporting studies comparing countries or regions. This result is quite logical because leading journals are very selective about the articles they publish as they are interested only in articles with a strong potential of being cited. That is, top journals seek papers that can reach a wide audience. The second explanation has to do with the promotion system of academics. Because scholars from the MENA region are those who publish more about this topic (considering the different countries in the area as a whole), the high number of research outlets in SCImago Journal Rank journals seems to indicate that the promotion system in the MENA region is not as highly dependent on *JCR*-indexed publications as it is in European countries (e.g., France, Germany, Italy and Spain). Nevertheless, highly cited papers have been published in leading management journals (e.g., *Organization Studies* and *Technovation*).

Although we believe that this study provides useful insights to the study of entrepreneurship in MENA, it is important to note that we identified some limitations, which in turn represent future research lines. Probably the main limitation relates to the selection of the articles. Despite WOS and Scopus being regarded as two of the most influential databases in academic research and enjoying a sound reputation, we are being limited by failing to include studies from other, second-order sources. Some relevant material might not be indexed in the two databases used and therefore it has been omitted. Also, note that the data was collected in January 2017. The picture we provide here takes into account the materials published up to that month. However,



every week new articles continue to be published. Further studies might consider updating the information we summarize here.

Concerning the bibliometric analysis, we are reporting the results displayed by bibliometrix. Although the metrics used by this software package are reliable and relevant, we need to ask whether there might be other indicators that could help illustrate better the current literature on entrepreneurship in the MENA region. Further investigations could also explore certain aspects of the geographic dimension of cooperation between countries and institutions, and determine trends in the regional flow and spillover of knowledge generated by such collaborations.

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# Entrepreneurship Research in Iran: Current Trends and Future Agendas



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**Abstract** This chapter examines the current trends and future research agendas for entrepreneurship in Iran. Using the systematic literature review method, the papers published in the field were organized and the chronological evolution of the papers was examined. Some 208 articles published in between 2000 and 2012 were identified in 38 academic journals. The findings revealed that entrepreneurship paper publication has witnessed several variations where the number and quality of published articles constantly increased from 2000 to 2007, critically improved from 2008 to 2011 and then declined in 2012. Furthermore, the majority of these papers focus on fragmented topics, are mostly at the exploratory stage and descriptive and have little contribution to theory building.

**Keywords** Entrepreneurship research · Systematic literature review · Iran

## 1 Introduction

Entrepreneurship has recently attracted the increased attention of policy makers, researchers, educators and practitioners throughout the world. This is because of the prominent effects of entrepreneurship and entrepreneurial activities in organizational, economic and social development of both developed and developing countries (Gibb 2002; Matlay 2006). Particularly for developing countries including Iran, entrepreneurship has been considered as an effective solution to the economic and

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social crises and challenges that the country is grappling with and may encounter in the future (Ahmadpour Daryani et al. 2009a; Cheng et al. 2009). Consequently, researchers have made tremendous attempts to provide better insights into various aspects of the entrepreneurship phenomenon, develop the body of knowledge on the phenomenon and establish entrepreneurship as a specific domain of research and practice (Aldrich 2012; Grégoire et al. 2006; Mitchell 2011). Scholars accentuated that contextual factors such as cultural, social and economic environments highly influence entrepreneurship and research in the field (Zahra 2007) and business environment differs across countries (Cardon and Kirk 2013).

Much of our knowledge about entrepreneurship also came from the U.S and Europe having mature economies and highly encouraging and supportive environment for entrepreneurship (Jing et al. 2014). Furthermore, there is little information on the main focal areas and interests of entrepreneurship researchers in different countries (Bruton et al. 2008) and our knowledge about “how entrepreneurship research developed in different regions” is limited (Jing et al. 2014, p. 1).

Specifically in Iran, few studies have systematically examined the literature and entrepreneurship research development (Arasti and Valinejad 2011). In general, previous studies mostly included few numbers of published articles on a specific area of entrepreneurship. To narrow the gap, this study aims to examine the current trend and future research agendas for entrepreneurship in Iran. Using the systematic literature review (SLR) method, it organizes the papers published in the field and examines the chronological evolution of the research on entrepreneurship. This chapter also presents the research themes emerging in the research period. Doing this, the gap in the empirical research findings is identified and the direction for future research is suggested. The findings of the current study make several contributions to entrepreneurship literature. Firstly, it makes contributions to map out the research program on entrepreneurship, particularly in Iran. It also provides contribution to entrepreneurship literature in languages other than English. Secondly, this study improves the number of papers included in the analysis by previous researchers. In most prior studies, less than 200 papers on entrepreneurship were analyzed (George et al. 2016; Jing et al. 2014).

Furthermore, this study is one of the first contributions to entrepreneurship research literature in Iran using the SLR. Specifically, this chapter provides better insights into contextualized entrepreneurship studies in Iran and how the theories originally developed in more developed countries addressed the specific context of entrepreneurship in Iran. By including the papers in academic journals, this study also reflects a better picture of the related research works on entrepreneurship in top ranking Iranian journals (Ahmadpour Daryani et al. 2009b). It also implies Iranian scholars' research interests and themes in more than the last decade.

This chapter is organized in four main sections. After the introduction, we explain the research method and represent the process through which the SLR was conducted. Then, we present our findings related to the six key research themes emerging from this study including entrepreneurship education and training, SMEs, entrepreneurs and entrepreneurship process, organizational and corporate entrepreneurship, social entrepreneurship and family businesses and entrepreneurship

development in national and international levels. Finally, we discuss the findings and conclude with highlighting the future agendas for research on the emerging themes.

## 2 Method

To examine the current status and future agendas of entrepreneurship research in Iran, we utilized the systematic literature review (SLR) method. In the SLR, the findings of available studies on a specific topic or research question such as entrepreneurship are summarized and interpreted using an extensive search of relevant peer-reviewed articles and a set of specific criteria for choosing articles to review is specified (Cook et al. 1995). Indeed, the SLR assists researchers in identifying the gaps in the current research and suggests new research activities and helps policy makers, managers and practitioners “develop a reliable knowledge base by accumulating knowledge from a range of studies” (Tranfield et al. 2003, p. 220). Therefore, the researchers require to document and describe all the procedures undertaken in details in order to reduce biases and ensure transparency of their findings (Denyer and Neely 2004). The SLR has been extensively adopted in the studies on various aspects of entrepreneurship including entrepreneurial ventures (Thorpe et al. 2005), entrepreneurial opportunity recognition (George et al. 2016), social entrepreneurship (Lehner and Kansikas 2013), entrepreneurship education (Pittaway et al. 2004), and innovation (Pittaway et al. 2004).

We focused on the entrepreneurship papers published in Iranian academic journals rather than the utility and citation of the publications because citation partially manifests the impact and importance of the research and is biased against specific popular authors (Ratnatunga and Romano 1997). This study differs from traditional literature review of entrepreneurship research in that it sought to use a clear scientific process that can be repeated by other researchers as well as a thorough bibliographical search of published entrepreneurship studies in Iran (Cook et al. 1997; Tranfield et al. 2003). Although one can find a robust body of literature on entrepreneurship all over the world, in this study we concentrated only on papers published in Iran based on the assumption that cultural, social and economic factors that affect entrepreneurship and entrepreneurship research vary in different countries (Jing et al. 2014). Furthermore, we aimed to provide a precise picture of the current trends and future research agendas for entrepreneurship research and practice in Iran and explore the gaps in the empirical entrepreneurship research (Tranfield et al. 2003).

Drawing on previous SLRs on entrepreneurship, we also included only peer-reviewed papers in academic journals excluding conference proceedings, books, book chapters, book reviews, tutorials, technical reports, working papers, Masters theses and PhD dissertations in order to reduce bias in our findings. Furthermore, papers published in top academic journals present influential and approved knowledge on entrepreneurship (George et al. 2016).

Building on the two steps for the SLR proposed by Moustaghfir (2008), we adopted the following phases in this study. First, we established the criteria to identify the top-rank journals published in Iran under the classification of Academic-Research journals (which is the highest scientific journal ranking in Iran). These criteria assisted us in selecting the high quality articles from the key journals that have published the findings of entrepreneurship empirical studies.

We used the website of the journals to retrieve the related articles. We limited our analysis to the entrepreneurship articles published between 2000 and 2012 (the year of data analysis for this study). We started the analysis of the articles published from 2000 because we could not find any studies on entrepreneurship in academic journals before the year 2000 in Iran. Then, we specified a series of keywords related to entrepreneurship such as entrepreneur(s), entrepreneurial, entrepreneurship, business, venture, innovation and opportunity. These keywords were deliberately selected broad in order to include a wide range of studies on entrepreneurship (George et al. 2016). We used the keywords to search within the title, keywords, abstract and full text of each article. The initial search yielded 221 articles selected from 38 Academic-Research journals published in the Persian language. Of the articles, 13 were eliminated from the analysis because they were review papers. Therefore, the analysis was performed on 208 papers. The journals were organized based on the number of the articles relevant to entrepreneurship. Table 1 presents the name of selected journals and frequency of the published articles in each journal. As the table shows, entrepreneurship articles have been published in a wide range of journals in different areas such as economics, social science, psychology, arts and humanities, educational science (educational administration, school psychology and educational innovations), sports science, agriculture, business, management, information technology and women studies. Most of these journals are not specific entrepreneurship journals but expanded their scope to include entrepreneurship research findings. Furthermore, the majority of the entrepreneurship research findings in Iran are published in the *Journal of Entrepreneurship Development* (142, 64.8%) since its first publication in 2008.

In the second step of the SLR, one of the authors read the title, abstract, keywords and full text of the retrieved articles to determine their relevance to entrepreneurship in Iran. Then, the selected articles and the retrieved information were checked in depth by other authors regarding the title, year of publication, area of study and characteristics of research method (type of research method, research instrument, data analysis method and sample) in order to minimize bias against the researcher and improve reliability of the findings (Tranfield et al. 2003). Following Pittaway and Cope (2007), we further coded the articles based on their main themes and sub-themes in order to provide a general comprehensive map of entrepreneurship research in Iran and identify the interconnections between the themes and gaps in the research areas.



**Table 1** Entrepreneurship articles by categories

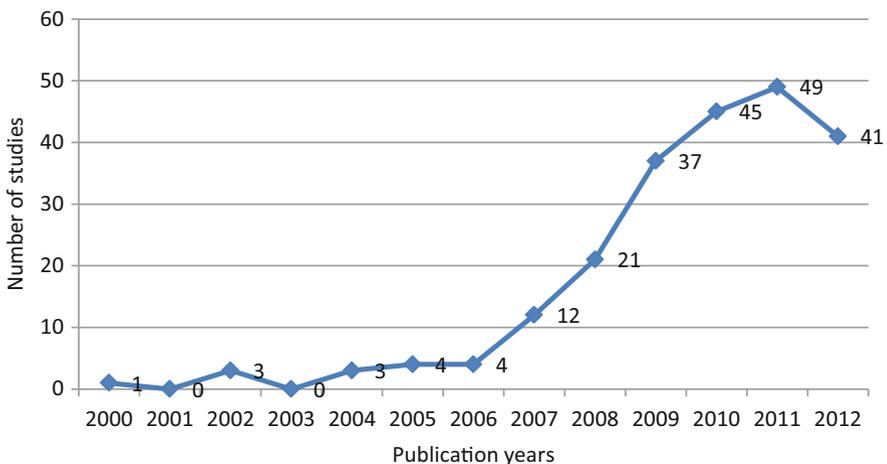
Category	1995-2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
EE & TR	1	1	2	1	5	3	2	4	2	14	3	11	34	83
SMEs	-	1	1	-	1	-	-	-	4	9	11	13	13	53
OR & CE	-	-	-	-	-	-	-	3	5	10	11	8	4	41
EN & EP	1	-	-	-	-	2	2	-	-	8	6	9	10	38
ED	-	-	-	-	-	-	-	1	2	-	1	4	4	12
SE & FB	-	-	-	-	-	-	-	-	1	1	4	2	1	9
Total	-	2	3	1	6	5	3	8	14	42	36	47	66	236

Note: *EE & TR* entrepreneurship education and training, *SMEs* small and medium size enterprises, *EN & EP* entrepreneur and entrepreneurship process, *OR & CE* organizational and corporate entrepreneurship, *SE & FB* social entrepreneurship and family business, *ED* entrepreneurship development

### 3 Results

This section presents the results of the SLR, answering the research questions individually based on the data from the 208 articles extracted from 38 Academic-Research journals over a publication period of 12 years (2000–2012). Figure 1 shows the number of studies published in the period. The figure indicates the number of published articles on entrepreneurship consistently increased from 2000 to 2007, dramatically improved from 2008 to 2011 and then declined in 2012. Regarding the research subject areas, we identified six areas including humanities, social and behavioral sciences (187, 85.4%), agricultural science (22, 10.1%), technical science (8, 3.7%) and medicine (2, .9%).

Furthermore, most of the studies have examined entrepreneurship in Tehran, the capital city of Iran (101, 48.5%) covering also provinces other than Tehran (59, 28.5%), national (45, 21.6%) and international levels (3, 1.4%). Regarding research methods (survey vs. experimental), a majority of the studies were conducted using a survey research design (105, 47.9%) and through a quantitative method (152, 69%) followed by mixed method (38, 17.4%) and qualitative method (28, 12.8%). Notably, none of the studies used an experimental or quasi-experimental research method. The analysis also indicated that researchers have mostly analyzed the data obtained by a questionnaire (151, 71.2%), interview protocol (26, 12.2%) and a combination of the two instruments (35, 16.5%). Six main themes emerged from the thematic analysis of the articles including entrepreneurship education and training, SMEs, entrepreneurs and entrepreneurship process, organizational and corporate entrepreneurship, social entrepreneurship and family businesses and entrepreneurship development at national and international levels. These themes and the related sub-themes are presented in the following sections.



**Fig. 1** The number of published studies from 2000 to 2012

### ***3.1 Entrepreneurship Education***

Entrepreneurship education has been constantly a core focus of entrepreneurship research in Iran (Table 2). Studies on this theme examined the entrepreneurial characteristics and the organizational factors that facilitate the development of entrepreneurial capabilities. Interestingly, in accordance with research findings in other MENA countries (Ooi and Ahmad 2012) the first entrepreneurship study published in a scientific journal found a significant positive relationship between university students' personal characteristics (creativity, achievement motivation and self-esteem) and their motivation to pursue entrepreneurship as their future career path (Shekarshakan et al. 2002). The only entrepreneurship paper published in 2003 was also dedicated to entrepreneurship education and examined graduates' entrepreneurial characteristics. Of the three published papers in 2004, two contributed to exploring the entrepreneurial characteristics of university graduates (Kalantari et al. 2004) and developing an organizational structure model for entrepreneurship in higher education institutions (Kordnaej et al. 2005). From 2005 to 2008, several studies examined entrepreneurial characteristics (self-effectiveness and tolerance of uncertainty) and attitudes of university students (Bromandnasab and Shekarshakan 2007; Jafarimoghadam and Etemadi 2008; Salimifar and Mortazavi 2005), factors affecting entrepreneurial performance of graduates (Eskandari et al. 2006) and the impact of school organizational environment on students' entrepreneurial spirit (Samadi and Shirzadi Esfehiani 2007). Research on entrepreneurship education in 2009 focused on entrepreneurial propensity of university students (Arabiun et al. 2009; Barani et al. 2009), the relationship between gender and students' entrepreneurial characteristics (Feiz 2009) and the impact of entrepreneurship education programs (e.g., creative teaching methods, entrepreneurship extra-curriculum activities, appropriate textbooks, students' interest-based programs) on developing students' entrepreneurial characteristics (Hosseini et al. 2009).

Several research findings have also been published on the entrepreneurship process in universities (Sadeghi and Ghanadan 2009), curriculum objectives and development (Liaghatdar et al. 2009; Yadollahi Farsi and Mirarab Razi 2009) and the factors affecting entrepreneurial universities (F. Sharifzadeh et al. 2009a). While scant research has been conducted on entrepreneurial traits of university students between 2010 and 2011 (Farajollahi et al. 2011; Ghasemi and Asadi 2010), exploring such characteristics among students again emerged as a buzz topic in 2012 (Abbasi et al. 2002; Ahmadi et al. 2012; Alipour et al. 2012; Amini et al. 2012; Khanifar et al. 2012; Rezaei Zadeh et al. 2012). Research has also investigated the factors that shape university students' entrepreneurial intentions (Akbari et al. 2012; Karimi et al. 2012; Rahmanian Koushkaki et al. 2012) and their needs of entrepreneurship education (Rezaei et al. 2012). Between 2010 and 2012, a growing body of research has evaluated the impact of university administration (Talebi et al. 2011), organizational structure (Yadolahi Farsi et al. 2011) and model (Kavoosi and Rahmati Zanjantalab 2010) and entrepreneurial characteristics (Kordnaej et al.

**Table 2** Themes and sub-themes of the articles on entrepreneurship education

Themes	Sub-themes	Papers
Personal variables	Achievement need and achievement motivation	Kalantari et al. (2004); Feyz (2009); Moradi and Shabanali Fami (2010); Talebi et al. (2010); Ahmadi et al. (2012); Alipour et al. (2012); Amini et al. (2012); Khanifar et al. (2012)
	Creativity	Hezarjaribi (2003); Shekarshekan et al. (2002); Kalantari et al. (2004); Ahmadi et al. (2012); Amini et al. (2012); Khanifar et al. (2012)
	Risk taking	Hezarjaribi (2003); Kalantari et al. (2004); Feyz (2009); Alipour et al. (2012); Amini et al. (2012); Khanifar et al. (2012)
	Entrepreneurial skills and propensity to act	Hezarjaribi (2003); Kalantari et al. (2004); Barani et al. (2009); Arabiun et al. (2009); Feyz (2009)
	Tolerance of ambiguity, emotional intelligence, uncertainty and failure	Salimifar and Mortazavi (2005); Borumand Nasab and Shekarshekan (2007); Feyz (2009); Khanifar et al. (2012)
	Self-esteem, self-efficacy and self-confidence	Shekarshekan et al. (2002); Borumand Nasab and Shekarshekan (2007); Khanifar et al. (2012); Rezaeezade et al. (2012)
	Internal locus of control	Feyz (2009); Amini et al. (2012); Khanifar et al. (2012)
	Need for independence	Ahmadi et al. (2012); Amini et al. (2012); Khanifar et al. (2012)
	Proactiveness, imagination and challenging	Feyz (2009); Khanifar et al. (2012)
	Entrepreneurial spirit	Salimifar and Mortazavi (2005); Samadi and Shirzadi Esfehiani (2007); Ghasemi and Asadi (2010); Farajolahi et al. (2011)
	Entrepreneurial intentions	Akbari et al. (2012); Karimi et al. (2012); Rahmadian Koushkaki et al. (2012)
	Entrepreneurial attitudes	Jafarimoghadam and Etemadi (2008)
	Entrepreneurial performance	Eskandari et al. (2006)
	Needs of education	Rezaee et al. (2012)
	Organizational variables	Perceived obstacles to university entrepreneurship
Structure and environment		Kordnaeej et al. (2005); Samadi and Esfehiani (2007); Yadollahi Farsi et al. (2011)
Administration, leadership and managerial systems		Sharifzade et al. (2009a); Gahramani et al. (2011); Talebi et al. (2011)
	Commercialization of university research findings	Pourezat et al. (2010); Meigounpoory and Ahmadi (2012)

(continued)

**Table 2** (continued)

Themes	Sub-themes	Papers
	Lecturers' entrepreneurial skills, teaching methods	Mohammadi Elyasi et al. (2012); Arasti et al. (2012a)
	Effectiveness of entrepreneurship education	Baghersad et al. (2012)
	Curriculum objectives, development and	Leyaghatdar et al. (2009); Yadollahi Farsi and Mirrab Razi (2009)
	Entrepreneurial characteristics	Kordnaeej et al. (2012)
	Entrepreneurship process	Sadeghi and Ghanadan (2009)

**Table 3** Themes and sub-themes of the articles on entrepreneurship training

Themes	Sub-themes	Papers
Entrepreneurship and professional training	Entrepreneurial behavior and skills of staff	Shekary and Arani (2011)
	Women entrepreneurship empowerment and entrepreneurial tendency	Tabatabaie and Hosseineyan (2005)
	Women's employment activities	Salehi Najafabadi et al. (2006)
	Group self-efficacy of disabled women	

2012) and students' perceived obstacles to (Hosseini et al. 2009) university entrepreneurship. Research in these years has also investigated the factors influencing commercialization of university research findings (Pourezat et al. 2010), university leadership (Ghahramani et al. 2011) and managerial systems (Talebi et al. 2011), entrepreneurial skills of entrepreneurship lecturers (Mohammadi Elyasi et al. 2012) and effectiveness of university entrepreneurship e-learning programs (Baghersad et al. 2012).

Following the previous research, we grouped the articles on entrepreneurship training under entrepreneurship education (Table 3). Unlike entrepreneurship education, we could only find few researches on entrepreneurship training. Research on entrepreneurship training started in 2005 and provided empirical evidence for the significant relationship between professional and entrepreneurship training and women's entrepreneurial tendency (Tabatabaie and Hosseineyan 2005). From then, researchers have explored the influential impact of such training on employment activities of women (Salehi Najafabadi et al. 2006), entrepreneurial behavior of staff (Mehrabad and Mohtadi 2011), group self-efficacy of disabled women (Moradi and Shabanali Fami 2010) and entrepreneurial skills of employees from insurance companies (Shekarey and Heidarzadeh Arany 2011).

### 3.2 *Small and Medium Sized Enterprises (SMEs)*

This research stream started in 2004. We organized the articles on this stream around four main sub-themes including SMEs' environment, performance, success, growth and development, internationalization and the effect of SMEs on employment change (Table 4). Research on the appropriate environment for SMEs explored the supportive (Mortazavi and Maharati 2004; A. Sharifzadeh et al. 2010) and economic factors that facilitate and/or obstruct SMEs' creation (Alvani and Rahmati 2008; Amiri et al. 2009; Maleki et al. 2009; Zivdar 2011; Zivdar and Ghasemi 2011) and development (Ahmadpour Daryani et al. 2009a). These studies have also

**Table 4** Themes and sub-themes of the articles on SMEs

Themes	Sub-themes	Papers
Environment	Facilitators and impediments	Mortazavi and Maharati (2004); Alvani and Rahmati (2008); Ahmadpour Daryani et al. (2009b); Amiri et al. (2009); Maleki et al. (2009); Sharifzadeh et al. (2010); Zivdar (2011); Zivdar and Ghasemi (2011); Talebi et al. (2011, 2012)
Performance	Strategic resource planning, marketing and distribution system	Alem Tabriz et al. (2010); Khodadad Hosseini and Kolabi (2012); Rezvani and Fanaeei (2012)
	Information technology, e-trading, outsourcing and social network	Talebi et al. (2009); Sohrabi and Khanlari (2010); Teymori and Ashori (2010); Mehdivand and Zali (2011); Zali et al. (2011)
	Innovation capacity and competitiveness	Fakour and Ansari (2009); Rezaeian et al. (2010); Zafarian et al. (2012)
	Personal traits and skills, ethics and social responsibility	Doroudian et al. (2012); Zare Ahmadabadi et al. (2012)
	Entrepreneurship indicators	Arabiun et al. (2010)
Success	Personal characteristics	Mohammadi and Asgari (2011); Azar et al. (2012)
	Banks' financial supports, financial indicators, and national policies and rules	Azar et al. (2012); Khoshnodifar et al. (2010)
	Knowledge management	Seyed Javadin et al. (2011)
Growth and development	National	Khanifar and Vakili (2008); Moghimi and Ahmadpour Dariani (2008); Sharifzadeh et al. (2009b); Kermanshah and Samei (2010); Vafaei and Shafei (2010); Alimirzaei et al. (2011); Talebi et al. (2011, 2012)
	Internationalization	Rezvani et al. (2009); Faghihi et al. (2010); Talebi et al. (2010)
	Employment change	Feizpour et al. (2011)

emphasized the role that science and technology parks play in SMEs' growth (Talebi et al. 2011). Studies mostly focused on examining the strategies on organization resource planning (Alem Tabriz et al. 2010) and competitiveness (Rezaeian et al. 2010), personal traits and skills (Doroudian et al. 2012), thinking capital and social networks (Mehdivand and Zali 2011; Zali et al. 2011), information technology and e-trading (Sohrabi and Khanlari 2010; Teymori and Ashori 2010), marketing and distribution system (Khodadad Hosseini and Kolabi 2012; Rezvani and Fanaeei 2012), innovation capacity (Fakour and Ansari 2009; Zaefarian et al. 2012), nature and type of outsourcing (Talebi et al. 2009), and ethics (Zare Ahmadabadi et al. 2012). Research has also specified indicators for SMEs' level of entrepreneurship (Arabiun et al. 2010). The variety of research focuses implies that researchers identified different factors that affect SMEs in Iran and did not intensely concentrate on a particular area to provide deep insights into the area.

Among the factors that influence SMEs' success in Iran, studies have explored the significant impact of banks' financial supports (Khoshnodifar et al. 2010), personal characteristics of the entrepreneur (Azar et al. 2012; M. Mohammadi et al. 2011), knowledge management (Seyed Javadin et al. 2011) and national policies and rules (Azar et al. 2012). Researchers have also looked at SMEs' growth and development from environmental, organizational and integrative perspectives. In the environmental perspective, studies examined the impact of obstacles and constraints (Alimirzaei et al. 2011) and education (Moghimi and Ahmadpour Dariani 2008) on SMEs' development. In the organizational perspective, researchers highlighted the significant relationship between organizational factors (Khanifar and Vakili 2008; Vafaei and Shafei 2010), science and technology parks (Talebi et al. 2011), competitive and growth strategies (Kermanshah and Samei 2010; Talebi et al. 2012) and SMEs' growth. Through an integrative perspective, Sharifzadeh et al. (2009b) suggested a combination of personal characteristics (e.g., personal capabilities and competencies and economic motivation), business dimensions (e.g., production resource management and marketing management), a supportive environment (e.g., family and institutions), business learning and business infrastructures as the influential factors on the development of agricultural SMEs. This SLR also revealed emerging research themes on exploring the factors that affect internationalization of SMEs in Iran (Faghihi et al. 2010; Rezvani et al. 2009; Talebi et al. 2010). Researchers have also provided empirical evidence for the significant impact of SEMs on changes in the employment (Feizpour et al. 2011).

### ***3.3 Entrepreneur and the Entrepreneurship Process***

Studies on entrepreneurs have focused on six sub-themes including role of gender, entrepreneurial characteristics, success and failure factors, decision making and entrepreneurial behavior (Table 5). Overall, research on this stream provides a

**Table 5** Themes and sub-themes of the articles on entrepreneur and entrepreneurship process

Category	Themes	Sub-themes	Papers
Entrepreneur	Personal variables	Success and failure	Abolghasemi et al. (2009); Razghandi and Dorani (2009); Arasti and Gholami (2010); Mohammadi Elyasi and Notash (2011)
		Achievements, decision making and entrepreneurial behavior	Keshavarzfar and Arabiun (2012); Mobaraki et al. (2012); Khodayaryfar et al. (2012); Neghabi et al. (2012)
		Internal locus of control, need for achievement, values and intuition cognition	Ahmadpour Daryani et al. (2009a); Rezaei Toroghi et al. (2010)
		Motivation	Ahmadpour Daryani et al. (2009b); Arasti and Valinejad (2011)
	Demographic variables	Women's perceived obstacles, cultural and social stereotypes, women's family financial problems	Arasti (2006); Golrod (2009); Sharifi and Adeli (2010)
		Women's particular needs and success	Shaemi et al. (2011)
		Women's networking communication	Arasti and Akbari Jokar (2006)
		Women's employment rate	
		Immigration	
	Entrepreneurship process	Entrepreneurial opportunity	Personal and social variables
Environmental variables			Imanipour and Kanani (2009); Amini Nejad et al. (2010); Jafarjnd et al. (2011); Khanifar et al. (2011)



fragmented picture of the impact of gender on entrepreneurship and there are still many critical unaddressed questions on the relationship between the two variables. Studies on this vein started with investigating the impact of women entrepreneurs' networking communication practices on their business start-up (Arasti and Akbari Jokar 2006) and the cultural and social factors that affect their business (Arasti 2006). Then, the findings of Golrod's (2009) study highlighted the critical role that family and specifically financial problems of family, having parents as an entrepreneur and family emotional and financial supports play in driving women to become an entrepreneur. Research also attempted to explore the obstacles that women entrepreneurs perceive in the process of a new venture creation (Sharifi and Adeli 2010). Studies have also systematically classified women entrepreneurs' motivation to become an entrepreneur (Arasti and Valinejad 2011) and their specific needs (Shaemi et al. 2011).

Only few studies looked at entrepreneurs from a psychological perspective and explored the particular characteristics such as intuition cognition (Rezaei Toroghi et al. 2010) and achievement motivation (Ahmadpour Daryani et al. 2009a) that differentiate entrepreneurs from non-entrepreneurs. Researchers have also investigated the reasons behind entrepreneurs' success and failure. They first attempted to distinguish entrepreneurial managers' success or failure in promoting organizational entrepreneurship by examining their entrepreneurial traits such as internal locus of control, tolerance of ambiguity, innovativeness, self-actualization, self-efficacy and self-esteem (Abolghasemi et al. 2009). Then, studies examined the impact of personal and environmental factors on entrepreneurs' success (Razghandi and Dorani 2009) and failure (Arasti and Gholami 2010; Mohammadi Elyasi et al. 2011). Identifying the factors that affect entrepreneurs' decision making (Keshavarzfar and Arabiun 2012; Mobaraki et al. 2012), achievements (Khodayaryfar et al. 2012) and entrepreneurial behavior (Neghabi et al. 2012) has recently emerged in the studies on entrepreneurs.

In addition to the entrepreneur, researchers have also investigated the process of entrepreneurship through different perspectives. First, researchers developed a communication model for the process of entrepreneurship (Farhangi and Safarzadeh 2005). Then, studies focused on the influence of social capital on novice entrepreneurs' financing (Amini Nejad et al. 2010) and their financial needs from the design to development phase (Khanifar et al. 2011). Regarding entrepreneurial financing, one article examined the factors that affect entrepreneurial investors' decision to exit (Imanipour and Kanani 2009).

Furthermore, studies examined the personal, environmental, behavioral and job-related factors affecting the process of entrepreneurship (Jafarjnd et al. 2011).

Of the critical phases in the process of entrepreneurship, entrepreneurial opportunity has mostly attracted the attention of researchers. Research has consistently explored the personal (creativity, self-efficacy, entrepreneurial characteristics and awareness and previous knowledge) and social (links and networks) factors

that influence entrepreneurial opportunity recognition among successful entrepreneurs and in different organizations (Azizi et al. 2012; R. Gholipour et al. 2009b; Kordnaeej et al. 2010; Mohammadi Elyasi et al. 2011; Saremi and Alizade Sani 2009). Several articles have also explored entrepreneurial opportunities in transportation systems (Fartook Zadeh and Rajabi Nohouji 2009) and companies (Kordnaeej et al. 2010), airlines (Kourani and Ahmadpour Dariani 2011) and food counseling services (Meigounpoory et al. 2011).

### 3.4 Organizational and Corporate Entrepreneurship

A robust body of literature investigated different aspects of organizational and corporate entrepreneurship (Table 6). We organized these articles around three general sub-themes including staffs' and managers' entrepreneurial characteristics and behavior, factors affecting organizational entrepreneurship creation and development and measuring organizational entrepreneurship. Exploring entrepreneurial

**Table 6** Themes and sub-themes of the articles on organizational and corporate entrepreneurship

Themes	Sub-themes	Papers
Entrepreneurial characteristics, skills and behavior	Managers	Kazemi and Maharati (2007); Kordnaeej et al. (2007); Jahangir and Kalantari (2008); Pardakhtchi et al. (2008); Abolghasemi et al. (2009); Gholipour et al. (2009a); Yadollahi Farsi et al. (2009); Marzban et al. (2010); Mehrabad and Mohtadi (2011); Naeiji and Abbasalizadeh (2011); Divandari and Bagheri (2012)
	Staffs	Zare et al. (2007); Abdolmalki et al. (2008); Hadizadeh Moghadam et al. (2009); Beygi Neya et al. (2010); Hezarjaribi and Ebrahimi (2010); Mohammadi et al. (2011); Nikraftar (2011); Fani et al. (2012)
Organizational entrepreneurship creation and development	Organizational variables	Imanipour and Zivdar (2008); Alambeygi and Malek Mohammadi (2009); Mahmoudi and Beiryae (2009); Manian et al. (2009); Yadollahi Farsi et al. (2009); Arabi and Abedi (2010); Danaeefard et al. (2010); Hosseinzadeh Shahri (2010); Ghahremani et al. (2010); Ghanati et al. (2010); Arabi and Mostafavi (2011); Madhoshi and Sadati (2011); Talaei (2011); Ghasemiyeh and Abdollahi (2012); Mobini Dehkordi et al. (2012)
	Environmental variables	Rezaee et al. (2011); Saeidi et al. (2010); Seyyed Naghavi and Abdolhpour (2010)

characteristics and behavior of staff and managers has been consistently a hot topic for research. Researchers have investigated the relationship between psychological empowerment (Zare et al. 2007), entrepreneurial skills (Abdolmalki et al. 2008), emotional intelligence (Hadizadeh Moghadam et al. 2009) and entrepreneurial characteristics (Beygi Neya et al. 2010; Fani et al. 2012; H. R. Mohammadi et al. 2011; Nikraftar 2011) with staffs' entrepreneurial tendency, intentions and job satisfaction in different organizations.

Managers have also been a subject of organizational entrepreneurship research. Studies examined managers' entrepreneurial behavior (Kazemi and Maharati 2007), characteristics (Abolghasemi et al. 2009; Jahangir and Kalantari 2008; Naeiji and Abbasalizadeh 2011), motivation (Gholipour et al. 2009a) and innovation (Divandari and Bagheri 2012). Research has also examined the effectiveness of management in preparing an appropriate environment for organizational entrepreneurship development (Pardakhtchi et al. 2008). Furthermore, studies contributed to the significant impact of entrepreneurial climate in the organization (Marzban et al. 2010) and organizational structure (Yadolahi Farsi et al. 2009) on managers' entrepreneurial behavior. Researchers have also highlighted organizational culture, control style, short and long term profits, organizational award system and leadership style as the obstacles to organizational entrepreneurship behavior (Kordnaeij et al. 2007; Mehrabad and Mohtadi 2011).

More specifically, Rezaee et al. (2011) classified the obstacles to corporate entrepreneurship in business counseling corporates into four main groups which are: structural, environmental, personal (psychological) and educational. Several articles explored the environmental variables such as social capital and innovation (Saeidi et al. 2010; Seyyed Naghavi and Abdolahpour 2010) and ICT (Alambeygi and Malek Mohammadi 2009; Vafaei and Moghimi 2010) as to be influential on organizational entrepreneurship creation and development. Two papers have also contributed to conceptual models for organizational entrepreneurship (Jahangiri and Mobaraki 2009; Rezvani et al. 2008). Of the organizational structure factors affecting organizational entrepreneurship, studies highlighted the degree of formalization, complexity and centralization (Hosseinzadeh Shahri 2010; Yadolahi Farsi et al. 2009) and information systems (Mahmoudi and Beiryae 2009). Studies have also examined organizational culture (Ghahremani et al. 2010; Ghanati et al. 2010; Mobini Dehkordi et al. 2012), an encouraging and supportive organizational environment (Danaeefard et al. 2010) and knowledge management process (Madhoshi and Sadati 2011) as the significant factors influencing organizational entrepreneurship. In addition, organizational entrepreneurship and entrepreneurial activities have been studied as an independent variable influencing performance of different organizations and corporates (Arabi and Abedi 2010; Arabi and Mostafavi 2011; Ghasemiyeh and Abdollahi 2012; Imanipour and Zivdar 2008; Manian et al. 2009). We found only one paper on measuring organizational entrepreneurship using internal corporate indicators (Talaie 2011).

**Table 7** Themes and sub-themes of the articles on social entrepreneurship and family businesses

Category	Themes	Sub-themes	Papers
Social entrepreneurship	Personal and environmental variables		Moghimi et al. (2008); Ansari et al. (2010); Omrani et al. (2010)
	Organizational variables	Model and performance	Asadi et al. (2011); Arasti et al. (2012a, b); Yadegar et al. (2011)
Family businesses	Capital structure		Seyed Amiri et al. (2009)
	Personal variables		Khanifar et al. (2010)

### 3.5 *Social Entrepreneurship and Family Businesses*

Only few articles concentrated on social entrepreneurship and family businesses (Table 7). Despite the extensive studies on social entrepreneurship in other countries (Lehner and Kansikas 2013), research on social entrepreneurship started in 2007 and examined the impact of social entrepreneurship components (entrepreneurial culture, entrepreneurial plans and activities and entrepreneurial success factors) on the performance of private organizations (Moghimi et al. 2008). Then, Sedgheyani et al. studied the behavioral characteristics (creativity, innovativeness, entrepreneurial beliefs, searching for social capital and entrepreneurial opportunity recognition and exploitation) of social entrepreneurs. Omrani et al. (2010) found individuals, mission, contextual factors, capital and entrepreneurial opportunities as the significant factors affecting social entrepreneurship as perceived by social entrepreneurs. Ansari et al. (2010) identified social capital and social responsibility as the particular characteristics of social entrepreneurs. In 2011, Asadi et al. developed a model for social entrepreneurship in non-profit organizations (a street children organization) and Yadegar et al. (2011) investigated how social entrepreneurs start social entrepreneurship initiations. Finally, Arasti et al. (2012a) specified the institutional factors affecting the emergence of social entrepreneurship activities.

Of the articles in this stream, only two studies contributed to family and home entrepreneurship. Research on the topics started in 2009 and examined the structure of family business capital in 88 textile and oil family corporations (Seyed Amiri et al. 2009). The second article presented the significant relationship between demographic variables (gender and marital status) and motivation (entrepreneurial motivation, joblessness, financial problems and beliefs) and individuals' decision to establish a home business (Khanifar et al. 2010).

### 3.6 *Entrepreneurship Development at National and International Levels*

As Table 8 indicates, of the few studies on national entrepreneurship development, one examined the obstacles and constraints of entrepreneurship development in sports (Yadolahi Farsi et al. 2011) and one attempted to develop a strategic plan

**Table 8** Themes and sub-themes of the articles on entrepreneurship development at rural, national and international levels

Themes	Sub-themes	Papers
Rural development	Influential factors	Rezvani and Najarzadeh (2008); Ghambarali and Zarafshani (2008); Alimirzaei et al. (2011); Heydari Sareban (2012)
Facilitators, obstacles and constraints		Kordnaeej et al. (2007); Alambeygi et al. (2011); Aghajani and Talebnejad (2011)
Policy making and strategic plan		Yadollahi Farsi et al. (2011); Arasti et al. (2012a)
Globalization and international trading		Tayebi and Fakhri (2010)

for religious entrepreneurship (Arasti et al. 2012a). Alambeygi et al. (2011) looked at the role played by entrepreneurship research and development in the success of IT transmission in agriculture. Researchers have also examined different aspects of rural entrepreneurship development. While Rezvani and Najarzadeh (2008) studied entrepreneurial awareness and skills of rural people, Ghambarali and Zarafshani (2008) explored the indicators for rural entrepreneurs’ success. Research has also specified the obstacles and constraints that rural entrepreneurs face in developing their business ventures (Alimirzaei et al. 2011). Furthermore, study focused on identifying the factors that influence agricultural entrepreneurship development in rural areas (Heydari Sareban 2012). Kordnaeej et al. (2007) and Aghajani and Talebnejad (2011) emphasized the role of entrepreneurship centers in entrepreneurship development. At the international level, only one article looked at the impact of globalization and international trading on entrepreneurship development among different countries (Talebi et al. 2010).

## 4 Discussion

This chapter was an attempt to provide a precise map of the research on entrepreneurship in Iran in a 12-year period (2000–2012). Furthermore, it synthesized the entrepreneurship research findings to identify the areas of interest and future trends for research through a systematically review of 208 articles published in the top academic journals. The findings indicate that entrepreneurship research in Iran started almost a decade later than other countries such as the U. S, Europe and China and the literature is recent and unsubstantial (Jing et al. 2014). Most of the studies were conducted at provincial levels and specifically in Tehran and few of the papers were based on a national research. This research scarcity may face policy makers, researchers and educators with serious challenges in providing the

appropriate environment for entrepreneurship development. We also found out that very few studies presented the findings of an international research and no research was conducted in collaboration with international researchers representing the data across countries. Furthermore, despite the critical importance of journals specifically devoted to publishing entrepreneurship research findings, only one journal (*Journal of Entrepreneurship Development*) has recently published in entrepreneurship. Though, from its first publication, this journal played a critical role in improving the number and quality of the entrepreneurship articles.

In general, paper publication on entrepreneurship varies in different periods where the number of published articles constantly increased from 2000 to 2007, drastically improved from 2008 to 2011 and then declined in 2012. These papers focused on six subject areas including humanities, social and behavioral sciences, agricultural science, technical science and medicine. The majority of these studies used a survey research design and was conducted through a quantitative research method. We found no research using an experimental or quasi-experimental research method. Regarding research instrument, the researchers mostly employed a questionnaire and a mix of a questionnaire and an interview protocol.

The thematic analysis also implied six key themes of the articles which are: entrepreneurship education and training, SMEs, entrepreneurs and entrepreneurship process, organizational and corporate entrepreneurship, social entrepreneurship and family businesses and entrepreneurship development at national and international levels. Articles on entrepreneurship published in a scientific journal started with examining entrepreneurship education. This indicates the critical importance of entrepreneurship education for the researchers, educators and policy makers in Iran. This trend protects high interests of researchers in entrepreneurship education at international level (Pittaway and Cope 2007). As illustrated in the research findings in the MENA countries (Lope Pihie and Bagheri 2013), research in this stream has constantly explored entrepreneurial characteristics, attitudes and motivation of university students and graduates. Though, these papers explored different characteristics and reported only few common entrepreneurial characteristics (e.g., self-efficacy and tolerance of uncertainty) in students.

Between 2010 and 2011, less research was conducted on entrepreneurial traits of university students and studies examined their intentions to new venture creation. In 2012, exploring such characteristics among students again emerged as a buzz research topic. This is in contrast to the huge number of studies that examined entrepreneurship education and training in other countries (Sirelkhatim and Gangi 2015). Few studies have also examined the effective organizational structure for entrepreneurship education both at higher education institutions and schools. From 2009, the focus of the research shifted from exploring students' entrepreneurial characteristics to the factors (e.g., gender) that affect these characteristics and their propensity to become an entrepreneur. The significant impact of different components of entrepreneurship education programs such as curricular and extra-curricular activities, university management and leadership, creative teaching methods, entrepreneurial skills of entrepreneurship lecturers, textbooks and needs for education on

developing students' entrepreneurial capabilities has also been emphasized. Researchers have also questioned the effectiveness of university entrepreneurship e-learning programs. Although these studies have extensively examined the organizational factors affecting entrepreneurship education, they do not provide a comprehensive picture of the future directions of such education in Iran as other MENA countries (Mastura and Abdul Rashid 2008).

Another emergent research topic was the process and factors affecting (e.g., university administration, organizational model, entrepreneurial university characteristics and students' perceived obstacles) entrepreneurship in universities. Researchers have also recognized the importance of and factors influencing commercialization of university research findings. Despite the robust body of literature on entrepreneurship education, this analysis included only few articles on entrepreneurship training. This stream of research started in 2005 and found a significant relationship between entrepreneurship training and entrepreneurial tendency among women, entrepreneurial behavior and skills of staff and group self-efficacy of disabled women.

The second major theme emerged from the SLR was SMEs. This theme included four key sub-themes which are: SMEs' environment, performance, success, growth and development as well as internationalization of SMEs and the impact of SMEs on employment changes. First, research on the appropriate environment for SMEs explored the supportive and economic factors that facilitate and/or obstruct SMEs' creation and development as well as the role played by science and technology parks in their growth. Second, studies highlighted strategies on organizational resource planning and competitiveness, personal traits and skills of the entrepreneurs, thinking capital and social networks, information technology and e-trading, marketing and distribution system, innovation capacity, nature and type of outsourcing and ethics as to be influential on SMEs' performance. While research in other countries specified social capital, entrepreneurial orientation and organizational resources as the influential factors affecting entrepreneurial performance of new ventures (Chen 2007). Research has also developed the indicators for measuring the level of entrepreneurship in SMEs. Third, studies have identified banks' financial supports, personal characteristics of the entrepreneur, knowledge management and national policies and rules as to be influential on SMEs' success in Iran. Fourth, SMEs' growth and development were investigated through environmental, organizational and integrative perspectives. In the environmental perspective, studies examined the impact of obstacles and constraints and education on SMEs' development. In the organizational perspective, studies highlighted the significant relationship between organizational factors, science and technology parks, competitive and growth strategies and SMEs' growth. Finally, in the integrative perspective researchers suggested a combination of personal characteristics, business dimensions, a supportive environment, business learning and business infrastructures as the influential factors on SMEs' development. Emergent research topics on SMEs investigated the factors that affect SMEs' internationalization and the significant impact of SEMs on the employment changes.

The third key theme which emerged from our study was the entrepreneur and the entrepreneurship process. Overall, studies provide a fragmented and underdeveloped picture of the entrepreneur, the process of entrepreneurship and the interplay between the two key factors in venture creation. Studying the role of the entrepreneur, researchers mostly investigated the environmental factors that drive women to become an entrepreneur and successfully run a new venture (e.g., networking communication practices, culture and society and family). In contrast to the intersection between gender and entrepreneurship in other countries which explored the socially constructed stereotypes (Gupta et al. 2008), only few studies looked at women entrepreneurship through a psychological perspective exploring their perceived obstacles in the process of entrepreneurship, entrepreneurial motivation and particular needs. We could find no research that compares entrepreneurial characteristics, motivation and behavior of females and males. This implies the lack of research on different aspects of gender and entrepreneurship and insignificant contribution to theory development on the intersections between gender and entrepreneurship (Harrison et al. 2015). In addition to the role of gender, research on entrepreneurs explored the psychological characteristics that differentiate entrepreneurs from non-entrepreneurs and the influence of entrepreneurial managers' success on improving organizational entrepreneurship. This emphasizes that exploring entrepreneurial characteristics of staff and managers has been constantly a hot topic for research in Iran as in other countries (Tan 2001). Studies have also identified the personal and environmental factors that influence entrepreneurs' success, failure, decision making, achievements and entrepreneurial behavior. In contrast to research in other countries (Chen et al. 1998), we found no study that compared entrepreneurial characteristics, motivation and behavior among entrepreneurs and non-entrepreneurs. Research on the process of entrepreneurship in Iran was conducted in three main directions. First, a communication model for the process of entrepreneurship was developed. Second, the social capital and financial needs required by entrepreneurs as well as the factors that affect entrepreneurial investors' decision to exit were specified. In general and unlike the broad focus of research on entrepreneurial finance in other developing countries (Eddleston et al. 2014), there is a high scarcity of research on this area in Iran. Third, the personal, environmental, behavioral and job-related factors influencing the process of entrepreneurship were identified. Furthermore, research has consistently explored the personal and social (links and networks) factors that influence entrepreneurial opportunity recognition among successful entrepreneurs and in different organizations and companies. Despite the importance of research on other aspects of entrepreneurial opportunity such as opportunity creation and exploitation (George et al. 2016), we could find no research on these topics among the papers that we studied. More specifically, our understanding on the appropriate socioeconomic environment and rules and regulations that encourage and support entrepreneurial opportunity creation, evaluation and exploitation is insufficient.

The fourth key theme emerging from this study was organizational and corporate entrepreneurship. Our findings revealed three general sub-themes related to this theme. First, researchers investigated the impact of entrepreneurial characteristics



and behavior of both staff and managers on their performance and job satisfaction in different organizations. For staff, the impact of entrepreneurial characteristics, entrepreneurial skills, psychological empowerment and emotional intelligence were suggested as the significant factors influencing their entrepreneurial tendency and intention as well as their job satisfaction. While for managers, studies focused on examining their entrepreneurial behavior, characteristics and motivation and the impact of entrepreneurial climate in the organization and organizational structure on their entrepreneurial behavior. The studies also investigated managers' effectiveness in providing an appropriate environment for the development of organizational entrepreneurship. Therefore, there is a wide gap in our knowledge on the effect of managers' entrepreneurial characteristics and behavior on improving their job performance and satisfaction.

There is also no information on the impact of managers' entrepreneurial characteristics and behavior on their staff entrepreneurial behavior, performance and job satisfaction. Second, studies identified the personal, organizational, environmental and educational obstacles that hinder entrepreneurial behavior in different organizations and corporates. Researchers have also explored the environmental and organizational structure variables that affect organizational entrepreneurship creation and development. Based on these studies, two conceptual models for organizational entrepreneurship were developed. Finally, the effects of organizational entrepreneurship and entrepreneurial activities as independent variables on the performance of organizations and corporates have been investigated. Internal corporate indicators have also been used to measure the degree of corporate entrepreneurship. Yet, the mediating and moderating factors that affect different aspects of organizational and corporate entrepreneurship have not been examined.

In contrast to researchers' great interests in social entrepreneurship (e.g., Lehner and Kansikas 2013) and family businesses (Goel and Jones 2016) all over the world, only few researchers have recently contributed to this theme. The majority of these researchers focused on exploring the personal and social characteristics of social entrepreneurs and their perceptions toward the factors that affect social entrepreneurship. The process of how social entrepreneurs start social entrepreneurship initiatives has also been investigated. In addition, social entrepreneurship has been examined as an independent variable where its significant impact has been suggested on performance of private organizations. It has also been considered as a dependent variable where the institutional factors that affect the emergence of social entrepreneurship were highlighted. Of the articles under this theme, only two were dedicated to family business. One article examined the structure of capital in family businesses and the other found a significant relationship between demographic variables (gender and marital status) and motivation with individuals' decision to establish a home business. These findings imply a huge gap in our contextualized knowledge on family businesses in Iran that encounters researchers and practitioners with serious challenges in conducting research and facing the difficulties of running a family business in Iran.

Finally, studies on entrepreneurship development at national and international levels have been conducted in four main directions. First, researchers explored the

obstacles and constraints of entrepreneurship development both in sports and rural areas. Second, several studies examined the facilitators and impediments of rural entrepreneurship success and development. Third, researchers attempted to develop a strategic plan particularly for religious entrepreneurship and examined the role that entrepreneurship centers play in developing entrepreneurship at the national level. Contrary to the extensive literature on international entrepreneurship in other countries (Jones et al. 2011), only one article investigated the impact of globalization and international trading on entrepreneurship development across different countries. Therefore, there is a wide gap in our knowledge on entrepreneurship development both at national and international levels.

## 5 Conclusion

Based on the SLR and in accordance with previous research (Jing et al. 2014), we can conclude that entrepreneurship research in Iran is highly fragmented and underdeveloped, mostly exploratory and descriptive and greatly drawn on the theories and research methodologies developed in western countries. The literature, therefore, has little contribution to the global body of knowledge on entrepreneurship (Meyer 2006). Furthermore, all through the development process and in contrast to other countries (e.g., the U.S, Europe and China) “internal forces” were the main drivers of entrepreneurship research. Therefore, huge investments are needed in the development of entrepreneurship research in Iran. Establishing specific centers for entrepreneurship research can greatly help to develop strategic plans for entrepreneurship research at national level. These centers can also conduct international entrepreneurship research projects where researchers from other countries collaborate in conducting research and present a more holistic picture of entrepreneurship across countries. Particularly, collaboration in research works with Asian countries can highly contribute to the development of entrepreneurship in MENA region (Jing et al. 2014). These centers can also publish journals that particularly dedicated to the findings of entrepreneurship studies and improve the number and quality of entrepreneurship contributions. Holding national and international conferences on entrepreneurship can also provide researchers with the opportunities to share their theoretical and methodological development. All of the articles in this study were empirical and no paper was devoted to theory building. The scarcity of research on theory building and the importance of stabilizing entrepreneurship field by theory building studies have been emphasized by researchers in other countries (George et al. 2016; Jing et al. 2014). Validating the theories developed in western countries and exploring the political, cultural, social and economic particularities and differences of other nations including Iran can highly help the development of indigenous theories on entrepreneurship (Hindle and Moroz 2010; Jing et al. 2014). Furthermore, high concentration of researchers on doing studies in Tehran highlights the importance of undertaking entrepreneurship related studies in other provinces and specifically at national level in order to provide a comprehensive map of

entrepreneurship in Iran. Due to the critical role played by the *Journal of Entrepreneurship Development* as the only scientific journal dedicated to entrepreneurship, more such journals should be established in order to publish high quality articles on entrepreneurship.

## 6 Limitations and Future Research Agendas

As with other SLRs, this study has several limitations. First, it includes the articles published in the Academic-Research journals excluding books, book chapters, conference proceedings and research reports. Although the journals represent validated knowledge that has great effects on the research field, future research should include other sources of entrepreneurship research. Using the research streams and themes emerging from this study, future meta-analysis can also provide a holistic understanding of entrepreneurship research in Iran. Second, this study does not analyze the citations of the papers and calls for further investigations. Finally, we only concentrated on the papers published in Persian language. Future research can include the papers on entrepreneurship in Iran in other languages.

This study suggested important agendas for future research on entrepreneurship in Iran. First, exploring the reasons behind the critical increment of articles from 2008 to 2011 and decrement of the papers in 2012 has a great potential for future research. In respect to research methodology, future studies should concentrate on longitudinal and experimental research designs in order to provide more precise insights into different aspects of entrepreneurship. Although entrepreneurship research in Iran started with studies on entrepreneurship education, there are still many unanswered questions related to the most effective teaching methods and the impact of these methods on developing students' entrepreneurial mindset as well as entrepreneurial competencies. In general, these studies have been conducted in isolation from other research areas such as higher education governance and policy making, entrepreneurial learning and business environment. Furthermore, the national policies and programs for entrepreneurship education, the role of government and other related organizations and institutions in promoting such education, effectiveness of the budgeting and funding systems and assessment methods for achieved objectives and outcomes can also be subjected to future research. Scarcity of research in these aspects of entrepreneurship education has been emphasized by previous researchers. Further research is also required to examine if entrepreneurship graduates launch a real new venture and whether they are more successful in leading their ventures than other graduates. Further research is also recommended to investigate if entrepreneurship graduates have a higher chance for employment and whether there is a higher demand in the job market for graduates with entrepreneurship education and if these graduates are more innovatively perform their job tasks than other graduate students. Another area of research is the general business and enterprise environment and the role that environment can play in encouraging and supporting graduates to establish new ventures, specifically in knowledge-based and high technology businesses. It is also recommended that future researches develop

indigenous models for the relationships between entrepreneurship education, government, industries and entrepreneurial businesses as well as how to commercialize university research findings and translate the knowledge created in universities into entrepreneurial ventures. Future studies can also pay more attention to the development of the curricular and extra-curricular activities that can better improve students' entrepreneurial learning, attitudes and competencies (Pittaway et al. 2010).

Research on how to provide the opportunities to experience the real entrepreneurial business environment can highly help educators in developing entrepreneurial competencies in students. Another research area that should be given more attention is to explore if current university lecturers and professors have the required qualifications to teach entrepreneurship, if they are provided with the requisite infrastructures to teach entrepreneurship and whether their education backgrounds, entrepreneurship experiences and teaching skills affect students' entrepreneurial learning and entrepreneurial competencies development. Comparative studies on existing entrepreneurship teaching methods at different education levels and across universities and their effects on students' entrepreneurial motivation, mindset and competencies will also provide educators with valuable information on entrepreneurship education promotion.

In addition, this study revealed a wide gap in the literature on entrepreneurship training and its influence on fostering various aspects of organizational performance and growth. Further studies should include both males and females and examine the effect of entrepreneurship training on developing entrepreneurial competencies in both staffs and managers. An emergent topic of research was the impact of entrepreneurship training on disabled women. Future research should examine if the current training for disabled people and specifically disabled women is effective in developing entrepreneurial capabilities in them, whether they are successful in leading their new ventures and if not what the reasons behind their failure are. Developing the entrepreneurship training programs and activities for disabled people has also a great potential for further investigations. These studies will help to promote entrepreneurship among people with disabilities.

Despite the robust body of research on SMEs in Iran, our knowledge on the appropriate business environment for SMEs' growth and development is limited. First, we found no article on the national economic policies and rules that facilitate SMEs' creation, growth and development. Second, no research investigated the infrastructures required by SMEs to improve their international performance and success. Third, there was no comparative study exploring the entrepreneurial characteristics, motivation and behavior between males and females and how gender differences affect a new venture performance and success. Fourth, there was no contribution to the differences of entrepreneurial competencies among nascent, novice and serial entrepreneurs in different phases of a new venture creation and growth. No research has also examined the interactive effects of the entrepreneur and the entrepreneurship process. Furthermore, we could not find any studies on how ethics affect the entrepreneur and entrepreneurship process. While research has constantly explored entrepreneurial opportunity recognition, we found no research on entrepreneurial opportunity creation, exploration, evaluation and exploitation.

This confirms the lack of a holistic approach to and scarcity of empirical evidence on different phases of entrepreneurial opportunity (George et al. 2016).

This SLR has also opened several new directions for future research on organizational and corporate entrepreneurship. First, a key direction for future research is to examine the influence of managers' entrepreneurial characteristics and behavior on improving their job performance and satisfaction. The impact of managers' entrepreneurial characteristics and behavior on their staff entrepreneurial behavior, performance and job satisfaction also need further investigations. Second, huge research efforts are needed in examining the association between organizational leaders' entrepreneurial leadership behavior and their success in facing current organizations' challenges. Research can also be undertaken to explore the impact of entrepreneurial leadership on staff entrepreneurial behavior and performance as well as success of organizations. The third critical direction of future research is to suggest the effective organizational structure and environment that foster entrepreneurial behavior in both managers and staff. Furthermore, developing the indicators for measuring organizational entrepreneurship and exploring the mediating and moderating factors that affect organizational entrepreneurship have great potentials for further research.

Future research should also address many questions in relation to social entrepreneurship and family business. Some of these questions are: which personal, environmental and organizational factors motivate and enable individuals to become a social entrepreneur? Are there gender differences in individuals' intention toward social entrepreneurship? What are the facilitators and impediments to social entrepreneurship in Iran? and how networking affects social entrepreneurship development? Due to the scarcity of articles on family business, future studies are needed in different aspects of the topic. First, the factors that motivate and enable individuals to establish a family business should be identified in order to improve the number of family businesses. Second, gender differences in family business management should be explored. Third, the most effective family business governance and financing structure and factors leading to a family business failure should be recognized in order to enhance the probability of family business success. Furthermore, comparative studies should investigate the differences in the crisis readiness and management in family and non-family businesses. Finally, future studies should investigate the effects of business policies on family business development.

In general, entrepreneurship literature in Iran requires huge efforts in doing empirical studies on entrepreneurship development and research at national and international levels. At national level, researchers should concentrate on exploring the factors that foster entrepreneurship development in different provinces and across the country. In addition, further studies should be done on the appropriate policies and infrastructures for the development of entrepreneurship all over the country. At international level, there is an urgent need for further research into internationalization of new ventures in order to open new trading windows to the growth of entrepreneurial ventures in Iran. To do so, researchers should explore the factors that improve new ventures' competitiveness in the global business environment. They can also examine the motives that drive entrepreneurs to enter the global markets.

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# A Review of the Status of Social Entrepreneurship Research and Education in Iran



Zahra Arasti and Aidin Salamzadeh

**Abstract** Despite its long history, social entrepreneurship research and education are not old topics in Iran. In fact, the history mainly goes back to the establishment of the Faculty of Entrepreneurship in the University of Tehran. On the one hand, more generally, the roadmap of research on social entrepreneurship still remains controversial, and fragmented efforts are made and continued to investigate this topic in Iran. On the other hand, social entrepreneurship education was mostly developed based on the topics covered by the curriculum which was designed by the faculty members of the Faculty of Entrepreneurship. Incremental improvements, however, are considered. Thus, the present chapter tried to shed light on social entrepreneurship research and education in Iran. To do so, the main Persian databases for papers (Magiran, SID, and Noormags) and theses (IranDoc, and the Library of the University of Tehran) were selected and searched accordingly. In addition to this, research works indexed in Google scholar, Thomson Reuters and Scopus databases were added. Then, the research works were categorized based on their publication date. Finally, the trend and a classified view of the status quo were presented. Secondly, in order to elaborate on the status of social entrepreneurship education in the country, the evidence from those research works was added to the national reports, and thus an integrated view was offered. In conclusion, the chapter concluded with some remarks on the improvement of the research roadmap and education on social entrepreneurship in Iran, as well as some directions for future research.

**Keywords** Social entrepreneurship · Social entrepreneurship research · Social entrepreneurship education · Iran

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## 1 Introduction

When it comes to social entrepreneurship and enterprise, several definitions and concepts might come into one's mind. Although the topic seems to be clear, there are still many controversial issues to be considered in this domain, such as: What might be called "social" entrepreneurship? What is the difference between a typical social or commercial entrepreneurial activity?, and the like. The topic is still drawing the attention of scholars, and each year a number of events are held to clarify this topic (Carragher et al. 2016). Since the authors are not going to deal with this challenging issue, in this chapter, social entrepreneurs are defined as "*those who adopt a social mission for their work*" (Pitt-Catsouphe et al. 2017). Besides, contextual elements are of paramount importance in defining and dealing with any social entrepreneurial activities. As Mulyaningsih and Ramadani (2017) argue, one of the main contextual elements is religion, which is mostly neglected in the literature. Thus, to investigate the concept the authors will point out the relevant elements.

It is crystal clear that without offering relevant educational courses/programs, the topic remains vague and may be tricky for those who are/will be engaged in such a social entrepreneurial process or even those individuals who want to do research on this topic. As Bridge (2015) argues, the enterprise education was started in the 1930s; however, the focus on social entrepreneurial activities is a recent trend, which has been initiated in the last three decades (Radovic Markovic and Salamzadeh 2012; Choi and Majumdar 2014). Brock et al. (2009), also highlight the importance of social entrepreneurship education and its dimensions. However, their study mostly deals with reviewing the concept, as well as the main aspects of social entrepreneurship education, such as course materials, pedagogic principles, as well as the role of practitioners. Nevertheless, in many countries the idea of studying social entrepreneurship education is a challenge. In Iran also these two—i.e. social entrepreneurship education and research—are inadequately discussed (Daryani et al. 2011; Salamzadeh et al. 2013).

Therefore, on the one hand, the concept is new and sensitive to many elements, and on the other hand, investigating this phenomenon in an emerging economy, i.e. Iran, needs more concentration. Thus, in the present chapter, after a brief review of the literature, the research method is discussed. Then, social entrepreneurship research and education will be elaborated respectively. Based on the findings of the research, the main upcoming trends will be mentioned accordingly. In the last part, the chapter concludes with some remarks on the improvement of the research roadmap and education on social entrepreneurship in Iran.



## 2 Social Entrepreneurship Research and Education: A Necessity or a Fashion?

Social entrepreneurship research and education are prerequisites of social change in different societies (El Ebrashi 2013). The higher the rate and pace of doing social research in a society, the higher the probability of experiencing a social impact would be. Educating social entrepreneurs is also another factor that would affect social change (Desa and Koch 2014). In fact, scaling of social impact is one of the key dependent variables in assessing social entrepreneurial activities (Bacq et al. 2015). Thus, in order to increase social impact and to create social value, entrepreneurship education and research have been vastly included in policies. Policy makers try to create social value through devising appropriate social policies and instruments in support of social entrepreneurship, and this is not possible without doing research and offering educational courses/programs (Acs et al. 2013).

Different waves of social entrepreneurship education that are created based on a variety of axioms and presumptions, go through a continuum which starts from those scholars who do not believe in social entrepreneurship education to those who consider it a *must* for social entrepreneurs to succeed (Smith et al. 2008). The first group of scholars considers it a fashion, while the second group feels the necessity and shows interest in how social entrepreneurship education is taught in business school worldwide (Wu et al. 2013). They deal with identifying distinctive skills for social entrepreneurs and discussing how some identified skills can be taught in experiential learning formats/modules (Mueller et al. 2015). Thus, demand for social entrepreneurship education has grown significantly, resulting in increased course offerings in higher education institutions (HEIs) as well as (graduate) business schools worldwide. Meanwhile, little is known about how to offer such courses/programs (Miller et al. 2012).

Moreover, regarding social entrepreneurship research, much is done to clarify the subject and its dimensions, while just 10 years ago the concept used to be so confusing or even vague to many scholars (Choi and Majumdar 2014). Hopefully, after some years of confusion, a series of generally accepted definitions, measures, and conceptualizations have emerged (Hoogendoorn 2016); however as Spais and Beheshti (2016) argue, still there are controversial issues to be solved and considered by scholars. One of the main issues is the interdisciplinary nature of the field which misleads some scholars. For instance, Dzombak et al. (2016) believe that “*despite its great potential, the literature on social entrepreneurship education is essentially non-existent*”! Second, using different approaches in educating (potential) social entrepreneurs could be misunderstood. Since, there are several approaches which are inherently distinguished by their axioms and presumptions. Third, most of such educational programs are initiated in urban areas, and not in universities. Thus, the topic is still new in universities and higher education institutions (Hazenberg et al. 2016).

In a nutshell, it is evident that social entrepreneurship research and education is a necessity, and not just a fashion. Without putting effort into these issues, then

waiting for a social change could be just a *dream*. Therefore, to make social change happen, it is highly recommended to educate (potential) candidates to become social entrepreneurs, and also to do research on the topic (Kirby and Ibrahim 2011; Salamzadeh et al. 2013). That is why the authors attempt to elaborate on these two pillars in an emerging country, such as Iran. Indeed, doing such research in other countries, or even between countries, would be interesting.

### 3 Research Method

The main aim of this chapter is to present a big picture of social entrepreneurship education and research in Iran. Therefore, first, the main Persian databases for papers (Magiran, SID, and Noormags) and theses (IranDoc, and the Library of the University of Tehran) were considered as the basis for investigating the research done in this domain. In addition to this, research works indexed in Google scholar, Thomson Reuters and Scopus databases were added. Then, the research works were categorized based on their publication date. Finally, the trend and a classified view of the status quo were presented. Accordingly, 112 research works, including 59 Persian manuscripts (2003–2016), 40 Persian theses (2006–2016), and only 13 English papers (2011–2016), were identified which dealt with social entrepreneurship in Iran. Since Magiran, SID, and Noormags are the most official databases for research papers, these sources were used. It should be noted that these databases cover the most prominent journals of the country. By the way, IranDoc is also the most prominent database for theses and dissertations (Khosrowjerdi and Alidousti 2010). Moreover, evidence from the Library of University of Tehran is added to cover more social entrepreneurship theses. In addition to these databases, Google scholar, Thomson Reuters and Scopus were used to find the works which were published in English.

### 4 Social Entrepreneurship Research in Iran

Social entrepreneurship research is important in order to facilitate scholars, academics, and social entrepreneurs, gain insights on this concept and propose future research opportunities in any context (Sengupta and Sahay 2017). According to Mair and Marti (2006), challenging, questioning, and rethinking the concepts and assumptions from different points of view could be beneficial. Indeed, it creates an exceptional opportunity in order to assimilate and challenge traditional entrepreneurship assumptions in an effort to develop a convincing and uniting paradigm (Griffiths et al. 2013). Yet, in the literature, social entrepreneurship research has been presented as “*a field of action in a pre-paradigmatic state, a field that lacks an established epistemology*” (Lehner and Kansikas 2013). As a result, this field is still

in an embryonic state and an integrated definition is still missing (Pless 2012). This is the case in an emerging economy like Iran.

Consequently, the importance of this neglected topic is evident, and therefore, it is inevitable to investigate this domain in order to make a clear and integrated view of the whole field (Gras et al. 2014). Especially, in Iran, there is a fragmented body of knowledge regarding the topic and general awareness is low (Daryani et al. 2011; Salamzadeh et al. 2013; Salamzadeh and Kawamorita 2017). On the one hand, there is such a need to clarify the subject, and on the other hand, most of the current research is published in the Persian language, which makes this significant part of the story missing for international researchers (e.g. see Keyhani and Jafari Moghadam 2008). Therefore, Persian manuscripts and theses in the field of social entrepreneurship are classified and reviewed in this chapter in order to shed light on the existing roadmap as well as the trend.

The following tables show the manuscripts published in different journals and the theses released by various universities based on the year of publication (Tables 1, 2 and 3).

As it is shown in the table, the process journal publications emerged in 2003, by a series of basic manuscripts that were published to clarify the concept of social entrepreneurship. After some years, almost in 2010, more specific research works appeared as the concept was generally introduced to the researchers of the field. The following table shows the trend. It must be noted that the databases are not normally updated; then there is almost a 2/3-year lag in indexing the theses. That is why the figure shows a decrease in the last 3 years (Fig. 1).

According to our research, 61 Persian manuscripts (2003–2016), 49 Persian theses (2006–2016), and only 13 English papers (2011–2016) were dedicated to social entrepreneurship in Iran. Moreover, most of the research is published in Persian journals. The following figures show the frequency of publications in different journals/institutions. As it is shown in the following figure, most of the Persian manuscripts (46%) were published in six journals, i.e. Journal of Entrepreneurship Development (10), Tavan Yab (4), Karafarin e Naab (4), Work and Society (4), Gozideh Modiriati (3), and Mohandesi Modiriati Magazine (3). It shows that the subject is poorly recognized as a coherent research area for national journals, other than the Journal of Entrepreneurship Development which is published quarterly by the Faculty of Entrepreneurship (University of Tehran) (Fig. 2).

Moreover, the frequency of the published theses and dissertations by their institutions is shown in the following figure. It should be noted that due to the central role of the Faculty of Entrepreneurship in this field, and since its data is not indexed in IranDoc, the authors searched the Library of the University of Tehran to add the relevant theses. Almost 76% of the theses are published in University of Tehran (61%) and Allameh Tabatabaei University (14%). It goes without saying that these two universities have entrepreneurship programs, and most of the current research is done by these two universities (Fig. 3).

The trend shows that most of the first publications were dealing with elaborating the concepts of social entrepreneur and social entrepreneurship (e.g. literature reviews, comparisons with commercial entrepreneurship, reviewing the models,

**Table 1** Manuscripts published in Persian journals

Code	Year	Author(s)	Title	Journal
<i>M1</i>	2016	MohamadReza Taghizade, & MohamadReza Gholizadeh	Social entrepreneurship vision	Journal of Management
<i>M2</i>		Majid VagharMousavi, Anousha Ghods Alavi, & Mosaib Abbasi	The role of social entrepreneurship in development of social justice	Journal of Entrepreneurship in Agriculture
<i>M3</i>		Atefeh Movagharzadeh, Vahid Zakeriafshar, Ayoub Sheykhi, & Mojtaba Nasrollahpour	The impact of social entrepreneurship on organizational performance through transactional leadership style of managers in the city of Kerman NGOs	Urban Management
<i>M4</i>		Fatemeh Pahlevani	The role of social marketing in development of social entrepreneurship: A sustainable development approach	Behineh Pardaz Engineering Quarterly
<i>M5</i>	2015	Mahdi Kermani, Mohammad Mazloun Khorasani, Hossein Behravan, & Mohsen Noghani Dokht Bahmani	Empowerment based on social entrepreneurship: presenting a grounded theory (a case study of the headquarters for empowering female householders at Tehran municipality)	Quarterly Journal of Social Sciences
<i>M6</i>		Rasol Maleki	An investigation into the features of social entrepreneurship in governmental organizations: a case study of the organization for nomadic peoples' affairs, Kohgiluyeh & Boyer-Ahmad province	Social Development & Welfare Planning
<i>M7</i>		Hojatolah Moradi, Setareh Sadeghi, & Yaser Bayati	The impact of social intelligence on social entrepreneurship of the managers of Charmahal va Bakhtiari province	Basij Strategic Management Quarterly
<i>M8</i>		Mehnoush Sharifi, & Ahmadreza Pishbin	Fostering rural development through social entrepreneurship: lessons Learned of the Grameen bank	Journal of Entrepreneurship in Agriculture
<i>M9</i>		Sedigheh Javan, & S.J. FarajolahHosseini	Empowerment of rural women through social entrepreneurship	Moravej

(continued)

**Table 1** (continued)

Code	Year	Author(s)	Title	Journal
M10		Mohammad Reza Ardalan, & Vahid Soltanzadeh	Affected social entrepreneurship of intelligent leadership with the role of mediator organizational learning	Journal of Entrepreneurship Development
M11		Seyed Ahmad Firouzabadi, & Hamideh Dabaghi	The role of social entrepreneurship in community development	Journal of Community Development
M12		Maryam SharifiyanSani	Two essentials of sustainable social entrepreneurship	Gozideh Modiriat
M13		Ali Mobini Dehkordi, & Mehran Keshtkar Haranki	Social innovation: an exploration of conceptualization based on content analysis of definitions	Journal of Innovation Management
M14		Editorial	The report of the social entrepreneurship conference	Tavan Yab
M15		Nabiolah Hosseini	Social entrepreneurship	Jahan Gostar
M16	2014	Atousa Ravesh	Three sides of the triangle of social entrepreneurship	Tavan Yab
M17		Zahra Arasti, Fatemeh Sadat Ghafourian, & Mohammad Kaviani	Strategic management in religious entrepreneurship: case study—Pedaran Asemami organization	Journal of Entrepreneurship Development
M18		Editorial	The 1st national conference of social entrepreneurship for disabled individuals: a report	Tavan Yab
M19		Farnoush Elami, & Hamid Rahimian	Educational strategies and social entrepreneurship in Iran	Quarterly Journal of Training & Development of Human Resources
M20		Taimoor Marjani, & Seyed Sadreddin Sadri	Development of social entrepreneurship: problems, effective factors, and solutions	Organizational Culture Management
M21		Shaghayegh Mohammadi, & Ayatollah Momayez	Identifying critical success factors in social technopreneurship for Delivering Municipal Services to Disabled People	Journal of Science & Technology Policy
M22		Zahra Arasti, & Mohamad Mehdi Maleki	Formal and informal institutional factors affecting social entrepreneurial activities of women	Quarterly Journal of Women’s Studies Sociological and Psychological
M23	2013	Zinab Sadat Sajjadi, & Hamid Reza Ghasemi Banabari	Key success factors on social entrepreneurship in Iran—Experts’ perspective	Quarterly Journal of Human Resources Studies

(continued)

**Table 1** (continued)

Code	Year	Author(s)	Title	Journal
M24		Alireza Nashri, & Ali Kafaee MohammadNejad	Analyzing the state of social entrepreneurship	Karafarin e Naab
M25		Hasan Boudlaei, Mohammad Khanbashi, & Ghazaleh Farahani	Phenomenological study about competencies of social entrepreneurs	Journal of Public Administration Perspective
M26		Zahra Arasti, Hadi Zarei, & Fatemeh Didehvar	Review of regulatory policies for development of social entrepreneurship with a comparative approach	Journal of Entrepreneurship Development
M27		Hossein Pahlevanian	The impact of social entrepreneurship on enabling not-for-profit institutions	Mohandesi Modiriati Magazine
M28		Fahimeh Babalhavaeji, & Nastran Zamani Rad	A survey on the relationship between social capital and social entrepreneurship in the academic libraries: A case study of the central libraries of Ministry of Science, Research and Technology in Tehran	Journal of Information Systems and Services
M29		Hamid Rahimian, Mahmood Ahmadpour Dariani, Abbas Abbaspour, & Farnoosh A'lami	Identifying causal factors of forming social entrepreneurship behavior in Iran	Journal of Entrepreneurship Development
M30	2012	Ebrahim Hamidi	The social entrepreneurship process	Mohandesi Modiriati Magazine
M31		Zahra Arasti, Farinaz Fathi, & Arian Gholipour	Personal characteristics affecting social entrepreneurship intention of economic entrepreneurs	Quarterly Journal of New Economy and Commerce
M32		Zohreh Dehdashti Shahrokh, & Hamed AbdolAli	Social entrepreneurship from a strategic marketing approach	Work and Society
M33		Zohreh Dehdashti Shahrokh, & Hamed AbdolAli	The relationship between organizational atmosphere and social entrepreneurship in organization	Work and Society
M34		Zahra Arasti, Mohammad Mehdi Maleki Karam Abad, & Mahmoud Motavaseli	Identifying the institutional factors affecting the emergence of social entrepreneurial activity	Journal of Entrepreneurship Development
M35		Hamed AbdolAli	Social entrepreneurship in a competitive world	Karafarin e Naab
M36		Asadolah Divsalar, & MohamadReza Naghavi	Investigating the effective factors in success of rural entrepreneurs from a social view	Planning of Space Quarterly Journal

(continued)

**Table 1** (continued)

Code	Year	Author(s)	Title	Journal
<i>M37</i>		Hossein Pahlevanian	Achieving social entrepreneurship	Mohandesi Modiriati Magazine
<i>M38</i>		Nader Seyyed Amiri	Investigating the aspects of social entrepreneurship	Karafarin e Naab
<i>M39</i>	2011	Nader Seyyed Amiri	Investigating the aspects of social entrepreneurship	Karafarin e Naab
<i>M40</i>		Nasim Yadgar, Abbas Bazargan, & Nezamoddin Faghieh	The process of forming social entrepreneurial ventures: application of grounded theory	Journal of Entrepreneurship Development
<i>M41</i>		Mehri Asadi, Seied Mostafa Razavi, & Maghsood Farasat Khah	Social entrepreneurship model for organizing street children	Journal of Entrepreneurship Development
<i>M42</i>		Ali Asghar Mirakzadeh, & Majid Bahrami	Necessity of social entrepreneurship as a sustainable platform in rural communities	Work and Society
<i>M43</i>		Habibolah Salarzahi	Vaghf as a sustainable social entrepreneurship model in islam	Neday e Eslam Quarterly
<i>M44</i>		Babak Sepas Moghadam	Faithless social entrepreneur	Gozideh Modiriati
<i>M45</i>	2010	Editorial	Social entrepreneurship	Tavan Yab
<i>M46</i>		Manochehr Ansari, Mahmood Ahmadpour, & Zahra Behrozazar	Individual characteristics affecting the development of social Entrepreneurship in charities in the province of Tehran	Journal of Entrepreneurship Development
<i>M47</i>		Zahra Omrani, Mahdi Haghghi Kafash, & Nader Mazlomi	Prioritization of factors affecting social entrepreneurship in Iran from the viewpoint of social activists	Journal of Entrepreneurship Development
<i>M48</i>		Jamshid Salehi Sedghiani	A social entrepreneurship model based on behavioral approach	Journal of Entrepreneurship Development
<i>M49</i>		Editorial	Commercial entrepreneurship and social entrepreneurship: An interview with Mrs. Daneshvar	Gozideh Modiriati
<i>M50</i>	2009	Seyed Hussein Abtahi, Fattah Shareefzadeh, & Habib Ebrahimpour	A survey of social entrepreneurship concepts, theories and models and designing conceptual model	Organizational Culture Management
<i>M51</i>		Editorial	Characteristics of entrepreneur and social entrepreneur	Work and Society
<i>M52</i>		Maryam Rousta, & Mohamad Mehdi Heidari	Social entrepreneur beyond commercial entrepreneur	Industry and Entrepreneurship

(continued)

**Table 1** (continued)

Code	Year	Author(s)	Title	Journal
M53	2008	Maryam Rousta, & Mohamad Mehdi Heidari	Social entrepreneurship: Renaissance, definitions and models	Journal of Management
M54		Maryam Rousta, & Mohamad Mehdi Heidari	Social entrepreneur beyond commercial entrepreneur	Tadbir
M55		Editorial	Social entrepreneurship	Sepideh Danaei
M56	2007	Seyed Mohamad Moghimi, Maryam Rousta, & Mohamad Mehdi Heidari	Investigating the relationship between social entrepreneurship and performance effectiveness in NGOs of females	Women Studies
M57		Editorial	Social entrepreneurship: from birth to death	Sepideh Danaei
M58		Saeed Shahbaz Moradi	A review of social entrepreneurship	Organizational Knowledge Management
M59		Editorial	Social entrepreneurship and NGOs	Peyk e Shoura
M60	2006	Mostafa AliMiri	Social entrepreneurship: A review of social and political contexts	Journal of Management Knowledge
M61	2003	Seyed Mohamad Moghimi	Social entrepreneurship	Rahyaft Journal

Source: Magiran, SID, and Noormags

etc.), while after some years, from 2010, a new generation of studies emerged. This new generation's aim seemed to be to examine the effect of other factors on social entrepreneurship, or vice versa. Moreover, most of the theses (90%) were published in this generation.

Another approach to categorize the extant literature is to classify the works by their main focus, i.e. individual, process, organizational, or environmental. The following table shows an overview of the existing literature. A considerable part of research (37%) is done at organizational level, while individual and environmental level research includes 51% of the existing research, and process is rarely studied (see Table 4).

As illustrated in Fig. 4, process is overlooked in social entrepreneurship research in Iran; while, most of the literature deals with organizational issues. This might be due to the preliminary focus on the concept of social entrepreneur and the organization he/she establishes. Moreover, organizational issues such as form and nature of the created venture were highly stressed in the existing literature. Context or environment was also another concern, which mostly dealt with policy making dilemmas or moderating variables. In fact, social entrepreneurship is defined as "*individuals or organizations engaged in entrepreneurial activities*" (Hoogendoorn 2016), and such a definition might have been the basis for many research works, while the process views are marginalized (Diochon et al. 2016).



**Table 2** Persian theses

Code	Year	Author	Title	Institution	
<i>T1</i>	2015	Mahnaz Ebrahimiyan Dehaghani	Social entrepreneurship and Its role in development of eco-tourism: Case of Khoor and Biabanak	Mazandaran University	
<i>T2</i>		Farhad Ebrahimi	Investigating the impact of organizational intelligence on aspects of social entrepreneurship	Islamic Azad University	
<i>T3</i>	2014	Mohamad Hossein Jafari	Investigating the relationship between social capital and social entrepreneurship in not-for-profit HEIs in Babol	Mazandaran University	
<i>T4</i>		Elham Rezagholizadeh	Explaining the crowdfunding process in social entrepreneur organizations	University of Tehran	
<i>T5</i>		Mahnaz Behrad	Investigating the effects of virtual social networks on entrepreneurial marketing	University of Tehran	
<i>T6</i>		Pooya Hedayat	Exploring social entrepreneurship development through business clusters'	Raazi University	
<i>T7</i>		Mohamad Farid Ghoba	How to implement corporate social responsibility within SMEs: A strategic approach	University of Tehran	
<i>T8</i>		Akram Kamankesh	Factors affecting social entrepreneurship in sports organizations of Markazi province	Arak University	
<i>T9</i>		2013	Mehri Asadi	Designing a social entrepreneurship model for organizing street children	University of Tehran
<i>T10</i>			Zahra Abedini	Identifying and ranking the effective factors in recognition of social entrepreneurial opportunities	University of Tehran
<i>T11</i>	Narges Laleh		Identification of effectiveness criteria of stakeholders in social entrepreneur institutions	University of Tehran	
<i>T12</i>	Rezvan Saber		Identification of learning resources and methods of entrepreneurs in the process of social entrepreneurial opportunity recognition	University of Tehran	
<i>T13</i>	Hossein Shakeri		The relationship between personal characteristics and social entrepreneurship development in NGOs of Kordestan province	Allameh Tabatabaei University	
<i>T14</i>	Elaheh Adel Rastkhiz		Designing a social business model with health approach	University of Tehran	
<i>T15</i>	Elaheh Alizadeh		Influence of social capital on (social) entrepreneurial opportunities recognition	University of Tehran	
<i>T16</i>	Zahra Maleki		Investigating social entrepreneurship in students of agriculture: emphasizing on social capital	Raazi University	
<i>T17</i>	Arezu Abbaspour Fard		Identifying and ranking of social entrepreneurship development strategies to enable women under the coverage of IKIC	Siastan and Balouchestan University	
<i>T18</i>	Sahar Esfandiyari		Function of social entrepreneurship in enabling and improving informal shelters	Allameh Tabatabaei University	

(continued)

**Table 2** (continued)

Code	Year	Author	Title	Institution	
<i>T19</i>	2012	Farnoush Alami	Designing a model for training social entrepreneurs in Iran	Allameh Tabatabaei University	
<i>T20</i>		Zeinab Avaiedi	Identification of performance evaluation measures in social entrepreneur organizations with BSC	University of Tehran	
<i>T21</i>		Fatemeh Mousavi	Designing an appropriate model for supportive organizations in achieving women's social entrepreneurship	University of Tehran	
<i>T22</i>		Hadi Zarei	Identification of regulatory policies of social entrepreneurship development in Iran based on grounded theory	University of Tehran	
<i>T23</i>		Behrad Seyed Zare	Identification of performance measures in social entrepreneur organizations: Case of UNESCO Iran	University of Tehran	
<i>T24</i>		Javad Abdi	Studying the determinants of donors' intention toward social entrepreneurship in philanthropic activities in Zahedan	Siastan and Balouchestan University	
<i>T25</i>		Mohamad Mehdi Maleki	Identifying the institutional factors affecting the creation and implementation of social entrepreneurial activities in Iran	University of Tehran	
<i>T26</i>		Fatemeh Sadat Ghafourian	Identification of a strategic planning framework for social entrepreneur organizations	University of Tehran	
<i>T27</i>		Mahmoud Mehregan	The effect of social capital on performance of educational firms: Case of the higher education center of water and power technology of Iranian power ministry	University of Tehran	
<i>T28</i>		Mehdi Kermani	Investigating the enabling process of female-headed households focusing on social entrepreneurship approach	Ferdowsi University	
<i>T29</i>		Majid Sajasi	Exploring the impact of social entrepreneurship on quality of life	Allameh Tabatabaei University	
<i>T30</i>		2011	Abbas Arab	The role of transformative leadership style of managers in predicting social entrepreneurial activities of employees	Ferdowsi University
<i>T31</i>			Fatemeh Bazyar	Identification of a social entrepreneurship development model in charity institutions of Tehran	University of Tehran
<i>T32</i>			Zahra Rahmanifar	Designing a social entrepreneurship model for female-headed households in Tehran	University of Tehran
<i>T33</i>	Fatemeh Karami		Investigating the impact of social capital on social entrepreneurship development	University of Tehran	
<i>T34</i>	Farinaz Fathi		Identification and explanation of individual factors that reinforce social entrepreneurial intention	University of Tehran	
<i>T35</i>				Identification of the key factors affecting entrepreneurship in arts	University of Tehran

(continued)

**Table 2** (continued)

Code	Year	Author	Title	Institution
T36		Masoumeh Shahverdi	Identification of nano-tech based social entrepreneurial opportunities in purifying water	University of Tehran
T37		Golnaz Arefi	Identification of it-based social entrepreneurial idea for female-headed households under the supervision of Tehran municipality	University of Tehran
T38		Hassan Jond	Impact of new generation networks on corporate social entrepreneurship in MNCs: case of Irancell	University of Tehran
T39		Mehdi Moravej Yazdi	Presenting a model for social entrepreneurship development in Tehran	University of Tehran
T40		Maryam Asadi	Identification of the impact of social capital on success of social entrepreneurship: cases of Mahak, Ra'ad, and Mehrafarin	University of Tehran
T41		Majid Bahrami	Exploring the principles of sustainable development in entrepreneurial activities in Kermanshah with emphasis on social entrepreneurship	Raazi University
T42	2010	Majid Darestani	Identification of environmental barriers of social entrepreneurship in charity institutions of Tehran	University of Tehran
T43		Yadollah Karami	Identification of the factors affecting the success of self-employment plans in IKIC: a social entrepreneurial approach	University of Tehran
T44		Nasim Yadegar	Exploring the process of creating social entrepreneur institutions: grounded theory	University of Tehran
T45	2009	Laleh Izadyar	Investigating the relationship between social entrepreneurship and social capital in the ministry of health and environment organization	Tarbiat Modarres University
T46		Hamed Abdolali	The relationship between elements of organizational atmosphere and social entrepreneurship in organization: case of Iran khodro co.	Allameh Tabatabaei University
T47		Zahra Omrani	Ranking the determinants of social entrepreneurship in Iran from the standpoint of social activists	Allameh Tabatabaei University
T48	2008	Nafiseh Sadat Hashemi	The relationship between social capital, emotional intelligence and social entrepreneurship in Tose'e saderat bank	Allameh Tabatabaei University
T49	2006	Maryam Rousta	Investigating the relationship between social entrepreneurship and performance effectiveness in women NGOs	University of Tehran

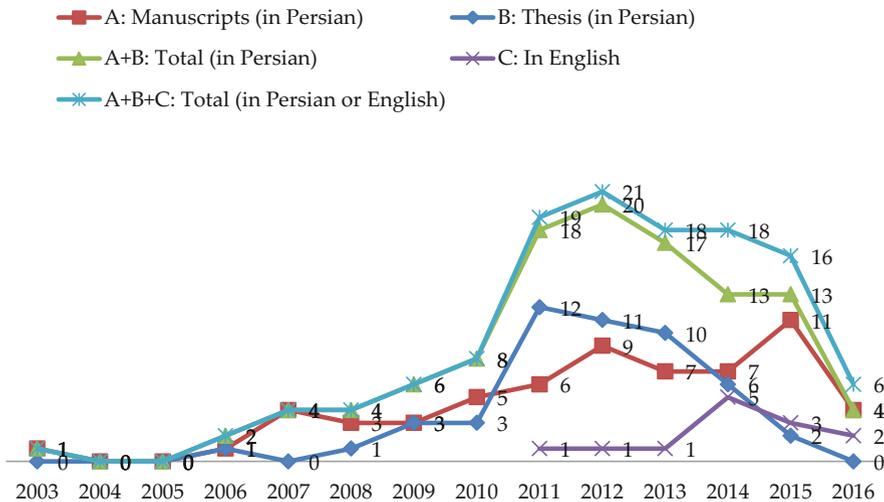
**Table 3** English manuscripts/theses

Code	Year	Author	Title	Institution/Journal
<i>E1</i>	2016	Amir Rahdari, Sahar Sepasi, & Mohammad Morad	Achieving sustainability through Schumpeterian social entrepreneurship: the role of social enterprises	Journal of Cleaner Production
<i>E2</i>		Ali Asghar Mardani, Kiumars Ahmadi, & Ataallah Mohamadi	On the investigation of staff's empowerment and increased level of social entrepreneurship opportunities (case study: general bureau of cooperation, labor, and social welfare, province of Kurdistan)	World Scientific News
<i>E3</i>	2015	Zahra Arasti, Hadi Zarei, & Fatemeh Didehvar	Identifying the evaluative indicators of regulatory policies for the development of social entrepreneurship	Public Organization Review
<i>E4</i>		Amir Forouharfar, Aligholi Rowshan, & Habibollah Salarzahi	Making a comprehensive model for the measurement of social entrepreneurship efficiency	Asian Journal of Research in Social Sciences and Humanities
<i>E5</i>		Ehsan Dogani, & Abbas Talebbeydokhti	Examining the role of developing strategies to expand insurance on social entrepreneurship	Journal of Scientific Research and Development
<i>E6</i>	2014	Tahereh Miremadi	The role of discourse of technological nationalism and social entrepreneurship in the process of development of new technology: a case study of stem cell research and therapy in Iran	Iranian Studies
<i>E7</i>		Aligholi Rowshan, & Amir Forouharfar	Customized social entrepreneurship theory & customized social entrepreneurship strategy as a theory conceptualization & practice towards sustainable development in Iran	Asian Journal of Research in Social Sciences and Humanities
<i>E8</i>		Morad Mirzadeh, Mahbobe Rashidi, & Vahide Gorgij	Study of the relationship between social capital and social entrepreneurship in supportive organizations: Emdad committee, welfare organization and social security organization in Jiroft city	Asian Journal of Research in Business Economics and Management
<i>E9</i>		Rahim Moein	Studying the effect of components of social entrepreneurship on tourism industry development.	Academic Journal of Research in Economics and Management

(continued)

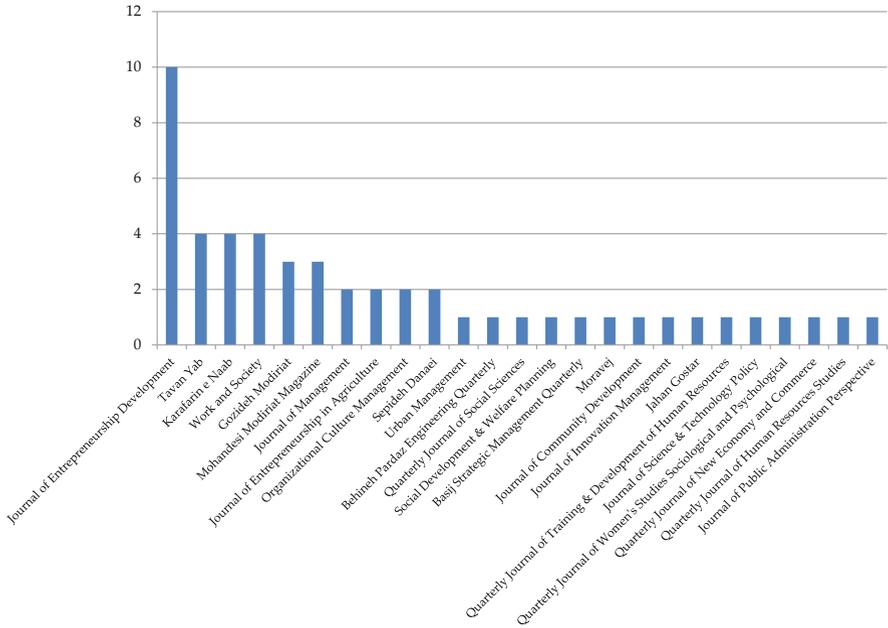
**Table 3** (continued)

Code	Year	Author	Title	Institution/Journal
E10		Rahim Moein	Investigation and prioritization of social entrepreneurship components based on tourism industry development approach using TOPSIS technique	International Journal of Scientific Management and Development
E11	2013	Aidin Salamzadeh, Ali Azimi, & David A Kirby	Social entrepreneurship education in higher education: insights from a developing country	International Journal of Entrepreneurship and Small Business
E12	2012	Mohammad Hassan Mobaraki, Alireza Mohageri, & Yadollah Karami	Identifying the factors that affect the success of self-efficiency and self-employment plans among the clients of IKIC through the lens of social entrepreneurship	International Journal of Business and Management
E13	2011	Aidin Salamzadeh, Yashar Salamzadeh, & Mehran Nejati	Social entrepreneurship: analyzing literature and proposing a comprehensive model	USM

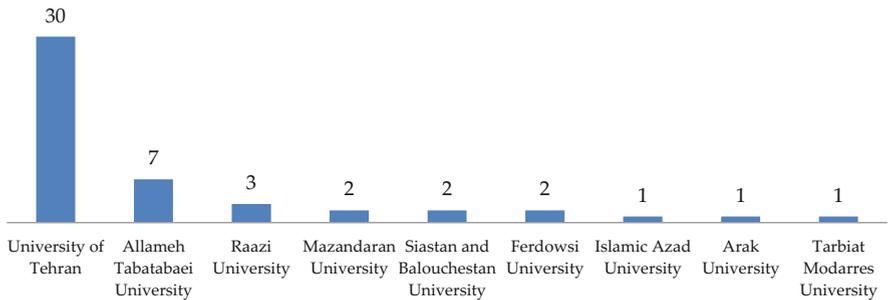


**Fig. 1** Total number of published works (2003–2016)

In a nutshell, one could conclude that the area of social entrepreneurship research is overlooked by Iranian authors and thus, there is a growing need to present more findings on this subject. Based on the existing facts and figures, University of Tehran and Allameh Tabatabaei University are the leaders in social entrepreneurship research; however their leadership is questionable, since the number of research works is limited, and their contribution would be affected by others’ potential to move forward in this arena.



**Fig. 2** Number of Persian manuscripts published in Persian journals



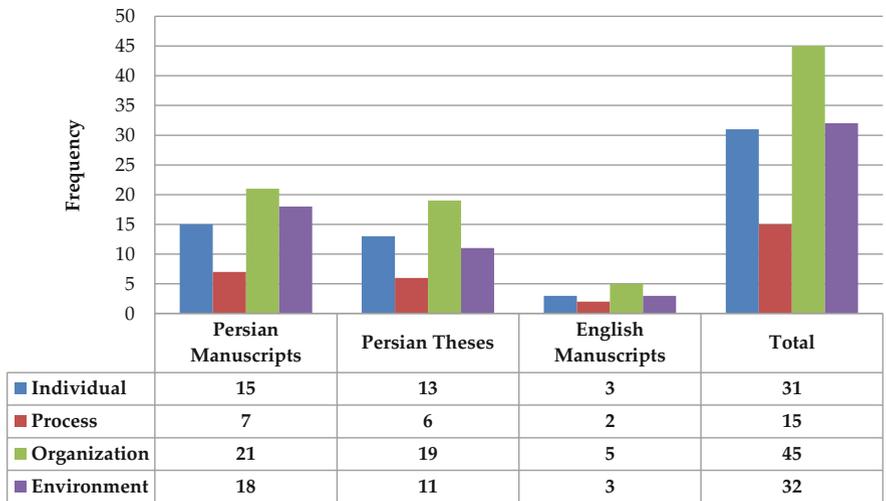
**Fig. 3** Number of published Persian theses

## 5 Social Entrepreneurship Education in Iran

Given the fact that most of researchers believe in entrepreneurship education as a means to promote entrepreneurial activity today—while a considerable number of them did not believe so (Karimi et al. 2010)—the topic has turned to a series of

**Table 4** An overview of social entrepreneurship research in Iran

		Individual	Process	Organization	Environment
Persian manuscripts	#	15	7	21	18
	%	24.5	11.5	34.5	29.5
Persian theses	#	13	6	19	11
	%	26.5	12	39	22.5
English manuscripts/theses	#	3	2	5	3
	%	23	16	38	23
Total	#	31	15	45	32
	%	25	12	37	26



**Fig. 4** An overview of social entrepreneurship research in Iran

“How?” instead of “Why?” questions (Guerrero et al. 2014, 2015). Entrepreneurship education makes individuals more able to overcome entrepreneurial challenges, to take more risks, to tolerate uncertainty, to get ready to move forward, to innovate, and in a nutshell, to become more like an entrepreneur. Then, on the one hand, entrepreneurship education has become a necessity for interested individuals. On the other hand, such an education must be extensively and inclusively coupled with any educational system (Douglas 2015).

Social entrepreneurship education is also an integral part of this issue, since social entrepreneurs are a considerable part of entrepreneurs. Furthermore, much attention is paid to this domain over the last decade, especially when the problem of combining business and social values raised (Zhu et al. 2016). For instance, Pache and

Chowdhury (2012) named “*social entrepreneurs as institutionally embedded entrepreneurs*”, and presented a social entrepreneurship education model. Other researchers, such as Wu et al. (2013), Mueller et al. (2015), and Karatas-Ozkan et al. (2016) raised this issue and tried to present a creative solution for realizing social entrepreneurship education.

The topic is, then, extensively studied in several contexts; however, it is neglected in most of emerging economies (Kirby and Ibrahim 2011). For instance, in Iran, Salamzadeh et al. (2013) made the first attempt to focus on this topic by conducting a survey among students at the University of Tehran. Hopefully, most of the respondents were aware of social entrepreneurship; however, a large number of them did not know the pioneer social entrepreneurs of the country and their institutions. This study highlights the importance of social entrepreneurship education in Iran. Unfortunately, despite the great number of social entrepreneurs working in the ecosystem, less attention has been paid to this area (See Tables 1–3).

Regardless of the existing shortcomings in this domain, some steps have been taken by different stakeholders. For instance, as soon as it was established, the Faculty of Entrepreneurship designed a course, which was approved by the Ministry of Science, Research and Technology. After expansion of the entrepreneurship program in different universities, the mentioned course is also taught as a part of the program. Moreover, some courses have been designed for deprived populations, such as female-headed households, by the Ministry of Labour, Cooperatives and Social Welfare.

In addition to these efforts, some other entities started working on this area. For instance, among private/non-governmental institutes, Parto School provided some packages in order to support social entrepreneurial activities, through social entrepreneurship education, capacity building and empowerment, team work, and social learning. Other supporters of this concept are indeed NGOs and philanthropic Institutions, such as Raad. Moreover, administrative organizations, such as Imam Khomeini Relief Committee and Municipalities, have held several workshops to teach social entrepreneurship, especially in deprived areas. Furthermore, online platforms have tried to play an important role in promoting social entrepreneurship education. For example, Hamamooz.ir, Karafarini.ir, Socialedu.ir, and the like, have allocated a significant part of their resources, activities and content to social entrepreneurship education.

In sum, informal social entrepreneurship education and learning platforms are growing, while formal channels still need more attention. Lack of unity of command in making required policies, low number of social entrepreneurship educators, and lack of clear understanding among policy makers and practitioners are among the main reasons for the present state of social entrepreneurship education in Iran.



## 6 Conclusion

Social entrepreneurship research and education are mutually exclusive fields, which are entangled (Nicolopoulou 2014). That is to say that without doing research in this domain, the concepts would remain vague (Oham et al. 2016). Even, if the research conducted, without educating the research findings, no progress is possible (Carraher et al. 2016). Moreover, one should note that this area of research is so unique, since it deals with evolutionary needs and problems of people in a variety of societies. The need for improving the knowledge of communities, and inviting them to engage in such activities is another dilemma in a country like Iran. However, based on our historical background, several mechanisms are already invented to promote social entrepreneurial activities, such as Golrizan and Vaqf (Salamzadeh et al. 2013). Yet, still considerable gaps exist in this domain. Since, there is a lack of integrity and the knowledge of scholars is still fragmented.

Thus, the chapter tries to provide a review of the state of social entrepreneurship research and education in Iran. Based on the findings of this research, in a 14 years period (2003–2016), only 123 research works were published in this regard—Most of which were published after 2010—i.e. in less than a decade. First, most of the research was dedicated to the concept of social entrepreneur(ship) itself, and not its nature and dimensions. Second, even the latest works were dealing with previously solved issues such as the effect of social capital on social entrepreneurship. Third, most of the works were published by authors of two institutions—i.e. University of Tehran and Allameh Tabatabaei University. It shows that the concept is not extensively investigated by national scholars. Fourth, investigating the balance between formal and informal social entrepreneurship education facilities and programs, revealed that formal education does not meet the minimum requirements, and still needs more efforts. While, informal education is growing, especially through online media.

It is crystal clear that, without further investigation, it is not possible to propose appropriate propositions. Then, future researchers might put more focus on the reasons why such social problems exist in an emerging economy like Iran. They might conduct content analyses to investigate the social entrepreneurship research and education in Iran; However, different understandings of the concept, its novelty, and lack of consensus among scholars, might be a challenge in such efforts. Moreover, scrutinizing the curricula is a challenging effort that would be an interesting topic to study. Since formal social entrepreneurship education is limited in the country, designing such a course/program is a *must* to improve the social entrepreneurship ecosystem in Iran. Finally, designing a roadmap to integrate the efforts could pave the way for future researchers, and also it could highlight the existing gaps in the literature. The following table shows the main issues to be considered by future researchers (Table 5).

**Table 5** Directions for future research

	Degree of importance	
	Less important	Most important
Social Entrepreneurship Research	<ul style="list-style-type: none"> <li>– Identifying the social problems</li> <li>– Investigating the process/individual views</li> <li>– Content analysis</li> <li>– Investigating the role of community-led social ventures/ NGOs</li> <li>– Marketing practices for social entrepreneur organizations</li> <li>– Investigating human resource management issues in social entrepreneurship</li> </ul>	<ul style="list-style-type: none"> <li>– Defining a roadmap</li> <li>– Research prioritization</li> <li>– Defining the social entrepreneurship ecosystem and its elements</li> <li>– Investigating the role of potential key players in the ecosystem</li> <li>– Case studies of failed and successful social ventures</li> </ul>
Social Entrepreneurship Education	<ul style="list-style-type: none"> <li>– Identifying the (potential) target groups</li> <li>– Designing some unofficial courses</li> <li>– Provide course materials (biographies or written case studies, . . .)</li> </ul>	<ul style="list-style-type: none"> <li>– Identifying the key players in social entrepreneurship education and defining their roles</li> <li>– Promoting the key players as Role Models</li> <li>– Designing some academic courses/ programs</li> </ul>

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# Challenges of Entrepreneurial Finance: A Systematic Analysis of Empirical Researches



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**Abstract** Raising the capital has long been highlighted as the key factor that not only influences venture creation and survival, but it also affects its success and growth. Yet, few studies examined entrepreneurial finance and specifically entrepreneurial finance challenges. This study aims to extend our understanding of the challenges of financing ventures by systematically analyzing the empirical researches focusing on entrepreneurial finance. Some 93 papers on entrepreneurial finance were examined and 24 were selected for this analysis. The results explored three main challenges of financing new ventures including conflicts between the entrepreneur and investor, the constraints and policies they face while the implications of the findings for entrepreneurial finance research and practice are discussed as well.

**Keywords** Entrepreneurial finance · Challenges · Conflicts between entrepreneur and investor · Entrepreneurial finance constraints · Policies · Access to finance · MENA countries

## 1 Introduction

Recent studies revealed the influence of fundraising on the creation of a venture as well as its survival, success and growth (Davila et al. 2003; Brinckmann et al. 2011). Entrepreneurs around the world have long been struggling with various challenges in raising capital to create their venture and maintain and improve its performance regardless of the nature (Marcus et al. 2013), size and stage (Polzin et al. 2018) of the business or whether it is located in a developed or developing country (e.g., Denis 2004 in the U.S.; Marlow and Patton 2005, in the U.K.; Naidu and Chand 2012, in Fiji and Tonga; Politis et al. 2012, in Sweden; Siemens 2007, in Canada). As the

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Global Entrepreneurship Monitoring (GEM) report and Global Competitiveness Report suggest access to financial resources is a critical challenge for entrepreneurs around the world and is the fourth main challenge for doing business in developed countries and the top challenge in developing countries (Daniels et al. 2016). In addition to entrepreneurs, financing entrepreneurial ventures is challenging for the investors because of the differences in the perceptions of the investor and entrepreneur (Polzin et al. 2018) and huge uncertainties and risks that investors need to face to invest in an entrepreneurial business (Rasmussen and Sørheim 2012). Specifically, in the Middle East and North Africa (MENA) Region which is one of the most strategic areas in the world that have a great rate of unemployment and low economic growth rates (Lagoarde-Segot and Lucey 2010), entrepreneurs and investors should overcome more severe challenges than their counterparts in developed countries (Jabbouri 2016).

According to the World Bank report on Early Stage Innovation Financing (ESIF) facility (2012), unemployment rate in MENA is about 10% and the rate is increasing to 23% for youths and women. In addition, the report suggests that despite their strong culture of entrepreneurship and investment and a high number of angel investors in the MENA Region, the countries have one of the lowest start-up rates in the world and entrepreneurs establish only 6.3 businesses for every 100 people each year which is very low compared with the rate of business creation in the developed countries (42 for every 100 people). The costs of new venture creation are also high in the MENA Region (38.0% of per-capita income) compared with the developed countries having high incomes (5.3% of per-capita income). Although MENA countries have attempted to facilitate the business start-up process by offering new technologies since 2008, there is still a huge need to improve the process using various e-services. In couple with the high costs of business start-ups, entrepreneurs in these countries encounter different challenges and constraints to access financial resources other than those offered by the banks. According to the Africa and Middle East alternative finance benchmarking report (2017), peoples' perceptions toward failure is another challenge that entrepreneurs should encounter in their endeavors to start their venture.

These challenges mainly originate from deficiencies in the managerial models (Lagoarde-Segot 2013) and a high dependence on foreign direct investments and international capital markets in the MENA countries (Jabbouri 2016) and only few entrepreneurs in the region succeed to obtain foreign financial resources (Africa and Middle East alternative finance benchmarking report 2017). In addition to the challenges at the international markets, entrepreneurs in the region should face the imperfections in the financial markets of their own country (Bekaert and Harvey 2000). Specifically, MENA countries lack stable business environments, effective legal frameworks (such as ownership restrictions and bankruptcy laws) and tax incentives that inspire investors and particularly angels to invest in entrepreneurial ventures (Africa and Middle East alternative finance benchmarking report 2017).

Despite the previous research works to highlight the challenges that entrepreneurs face in financing their business, there is still a wide gap in our empirical knowledge and understanding of these challenging factors (Rasmussen and Sørheim 2012),

particularly in the MENA Region (Jabbouri 2016). This chapter aims to highlight the challenges of entrepreneurial finance using a systematic analysis of the published empirical researches and provide the foundations for the future development in the field. We have classified the challenges into three main categories including the personal and interpersonal factors, environmental and social factors and business related factors. This study highly contribute to the few systematic literature reviews on entrepreneurial finance (Denis 2004; Paré et al. 2009; Block et al. 2017) and different forms of financing new ventures such as entrepreneurial equity financing (Drover et al. 2017) and crowdfunding (Short et al. 2017). This chapter has been organized in four main sections. In the first section, we describe the methodology employed in this systematic review. The second section highlights the key challenges emerging from our study. Then, we discuss the implications of our findings for the development of research and practice in entrepreneurial finance. Finally, we conclude by suggesting the future research agendas in financing new ventures.

## 2 Methodology

We adopted the systematic literature review (SLR) method to examine the challenges of entrepreneurial finance and identify the gaps in empirical studies for several reasons. First, the method allowed us to investigate various aspects of new venture financing integrating both entrepreneurship and finance perspectives (Wright et al. 2007). Second, the method enabled us to provide policy makers and practitioners with a consistent knowledge on entrepreneurial finance created by analyzing validated empirical research findings (Tranfield et al. 2003). Furthermore, using the precise and detailed research objectives and procedures undertaken in this analysis, other researchers can replicate and synthesize our findings (Cook et al. 1997; Denyer and Neely 2004). This method has also been used by previous researchers to examine entrepreneurial finance (Denis 2004; Paré et al. 2009; Block et al. 2017).

This analysis focused on the peer-reviewed papers published in established journals because these articles provide validated and impactful knowledge in the field (George et al. 2016; Ordanini et al. 2008). To avoid biases in our analysis and findings, we also excluded conference proceedings, books, book chapters, book reviews, tutorials, technical reports, working papers and PhD theses because of inconsistency in their peer review process (Liñán and Fayolle 2015). In addition, we did not examine the utility and citation of the papers based on the assumption that citation partially manifests the impact and importance of the articles and is biased against specific popular authors (Ratnatunga and Romano 1997). To identify the appropriate papers, we searched the Scopus database because compared with other databases for scientific papers, this database has the most comprehensive coverage (George et al. 2016; Liñán and Fayolle 2015). Unlike previous literature reviews on entrepreneurial finance (Drover et al. 2017) and in order to include a wide range of papers on entrepreneurial finance, we did not limited our analysis to the finance

journals. Therefore, we examined papers on a wide range of journals published articles on both entrepreneurship and finance and avoided the biases of focusing on specific journals and deleting the relevant papers in other journals (López-Fernandez et al. 2016).

We used a series of related keywords to entrepreneurial finance (e.g., entrepreneurial finance, fund raising, start-up financing, early stage financing, venture capital, business angel, angel investor, informal finance, venture capital, private equity, financial challenge and financial constraints) to search within the title, keywords, abstract and full text of the papers. These keywords were used as the criteria to select the papers and ensured the inclusion of a wide range of articles related to different aspects of venture financing (George et al. 2016). We did not limit time to a particular period so that the analysis incorporated the published papers up to September 2017, the time of data collection for this analysis. This stage assisted us in selecting the top quality scientific articles from key journals that have published relevant papers to entrepreneurial finance (Tranfield et al. 2003). Through this process, we selected 93 articles from 37 journals. Table 1 demonstrates the list of journal titles and the number of relevant articles published in each journal. As the table presents, the majority of the papers were published in *Venture Capital: An International Journal of Entrepreneurial Finance* and *Journal of Business Venturing*, *Entrepreneurship Theory and Practice* followed by *Journal of Corporate Finance*, *Small Business Economics* and *Frontiers of Entrepreneurship Research*. Although the main focus of other journals (such as *Asia Pacific Journal of Management*, *Journal of Management* and *Technological Forecasting and Social Change*) was not entrepreneurship and finance, they expanded their scope to include papers related to financing entrepreneurial ventures.

In the next step, we read the titles, abstracts and keywords of the papers and organized them in three groups (Thorpe et al. 2005). Group “A” included the papers that were recognized relevant to entrepreneurial finance. Group “B” represented the articles that required further investigation to ensure their relevance and group “C” included the papers that were not relevant to new venture financing. Of the papers, 24 were empirical studies related to entrepreneurial finance challenges and 69 were literature review papers or did not focus on challenges of entrepreneurial finance and were eliminated from the analysis. The empirical studies mostly used the quantitative methods (19) followed by qualitative (3), one experimental and one mixed method to explore entrepreneurial finance challenges. Regarding the geographical contexts, the majority of the studies were conducted in European countries (12 articles), the U.S. (3 articles), Africa (3 articles), and cross-countries (3 articles), Canada (1 article), Australia (1 article) and India (1 article).

In line with Denis (2004), we organized the selected papers based on the sources of venture financing challenges into three themes including conflicts between entrepreneur and investor, financial constraints and public policies (Table 2). Then, the researchers ended the analysis by reading, re-reading and discussing each paper and coding them carefully based on their main research area, themes and sub-themes (Jones et al. 2011). Some examples of the initial codes emerging from this study are: entrepreneur’s perception toward investor value, entrepreneur’s decision-making



**Table 1** List of journals and published articles

Journal title	Number of papers	%
Venture Capital: An International Journal of Entrepreneurial Finance	21	22.5
Journal of Business Venturing	19	20.4
Entrepreneurship Theory and Practice	6	6.4
Journal of Corporate Finance	4	4.3
Small Business Economics	4	4.3
Frontiers of Entrepreneurship Research	3	3.2
Asia Pacific Journal of Management	2	2.1
Journal of Management	2	2.1
Technological Forecasting and Social Change	2	2.1
Journal of African Business	2	2.1
Journal of Small Business and Entrepreneurship	2	2.1
Financial Markets and Portfolio Management	1	1
Social Science Research	1	1
International Entrepreneurship and Management Journal	1	1
Journal of Economic Interaction and Coordination	1	1
Research Policy	1	1
Pacific-Basin Finance Journal	1	1
Journal of Small Business Strategy	1	1
Journal of Banking and Finance	1	1
Journal of Small Business and Enterprise Development	1	1
International Journal of Business	1	1
Asian Social Science	1	1
World Development	1	1
Journal of Contemporary Asia	1	1
Technology Analysis and Strategic Management	1	1
Commonwealth and Comparative Politics	1	1
International Journal of Gender and Entrepreneurship	1	1
International Journal of Entrepreneurial Behavior and Research	1	1
Entrepreneurship and Regional Development: An International Journal	1	1
The Journal of Entrepreneurship	1	1
Journal of Contemporary European Studies	1	1
International Tax and Public Finance	1	1
International Small Business Journal	1	1
Annals of Finance	1	1
Journal of Financial Economics	1	1
Applied Economics Letters	1	1
The Journal of Technology Transfer	1	1

**Table 2** Themes and sub-themes of entrepreneurial finance challenges

Themes	Sub-themes	Authors
Conflicts between the entrepreneur and investor	Effects of conflict	Brettel et al. (2013); Zacharakis et al. (2010); Collewaert (2008); Collewaert and Sapienza (2016)
	Factors shaping conflict (antecedents)	Collewaert and Fassin (2013); Forbes et al. (2010); Appelhoff et al. (2015); Polzin et al. (2018)
Financial constraints	Factors affecting access to finance	Aterido et al. (2013); Hulten (2012); Kwong et al. (2012); Demirel and Parris (2015); Kasseeah and Thoplan (2012); Lee and Drever (2014); Sengupta (2011); Colombo et al. (2014); Takalo and Tanayama (2010)
Public policies	Facilitating policies and deregulation	Egeln et al. (1997); Satta (2007); Magri (2009); Chatterji and Seamans (2012); Carpentier and Suret (2010)
	Factors reducing effectiveness of policies	Romanf et al. (2009); Coelho et al. (2004)

style, perceived unethical behavior, and financing decisions. The following sections represent the main findings of this study.

### 3 Conflicts Between the Entrepreneur and Investor

This study identified two lines of fragmented studies on conflict and venture financing. The first line focused on the effects of conflict on the entrepreneur as well as the venture. Brettel et al. (2013) and Zacharakis et al. (2010) explored how entrepreneurs' perceptions toward conflict affect their relationships with investors. Specifically, perceived task conflict significantly improves the value that entrepreneurs give to venture capital firms. Furthermore, entrepreneurs' perceptions toward conflict in their relationships with investors deteriorate the value of venture capital firms for the entrepreneurs and consequently influence the quality of their collaboration and the success of their joint cooperation. Jehn et al. (1999) defined task conflicts as work-group members' disagreements about their task goals, duties and mission and relationship conflict as the discrepancies in their interpersonal relationships and interactions and personal favors. However, task conflict is not always favorable for entrepreneurs and venture capitalists and decreases entrepreneurs' confidence in investors' cooperation. In addition to the effects of conflict on the relationship between the entrepreneur and investor, task conflict between entrepreneurial teams and business angels significantly reduces innovativeness of portfolio companies and this effect highly depends on the interdependency of the tasks, task management style as well as characteristics and trust of both entrepreneurs and investors and the extent to which they achieve their goals (Collewaert 2008).

Importantly, the negative impact of conflicts between entrepreneurs and angel investors on portfolio companies' innovativeness is stronger on the condition that there is a low agreement on priorities between the two parties, that the members of entrepreneurial teams have less various experiences and that the communications among the team members are more common (Collewaert and Sapienza 2016).

The second line of research on conflict and raising finance for new ventures focused on the factors that create conflicts. These studies highlighted the nature and style of decision making and perceived unethical behaviors as the antecedents of conflict between entrepreneurs and investors. Highlighting the dysfunctional effect of relationship conflict compared with task conflict, Forbes et al. (2010) argued that entrepreneurial teams experience higher relationship conflicts specifically when their financing decisions less involve the venture. Polzin et al. (2018) examined the mismatches between entrepreneurs' and investors' perceptions toward the evaluation criteria, risk and risk management as sources of their relationship challenges. In addition to the perception of risk and evaluation criteria, the authors highlighted the perceived importance of risk and the channels that entrepreneurs and investors employ to find their partners as the factors that create the mismatch between them and consequently stimulate challenges in their relationships. Using a sample of 141 German ventures, Appelhoff et al. (2015) examined how entrepreneurs' decision making style (causal versus effectual styles) affects the level of conflict they experience in their relationship between investors. Their findings indicate that using the causal decision making style lessens the perceived conflicts between founding teams and investors. Collewaert and Fassin (2013) examined how entrepreneurs' and investors' perceptions toward unethical behavior influence the process of conflict that they experience. Analyzing 11 conflict cases, the authors argued that perceptions of unethical behavior by both entrepreneurs and investors improves the fault attribution or blaming behaviors and thereby stimulates conflicts between them. In addition, perceived unethical behavior improves the probability of growth in their conflict, influences the strategies that they use to manage their conflict and enhances the chance of the venture failure.

## 4 Financial Constraints

Studies on the financial constraints of venture creation mostly explored the factors that hinder access to financial resources. Gender has been highlighted as one of the critical challenges of entrepreneurial financing, specifically in developing countries. Focusing on eight Sub-Saharan countries (Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon and Central African Republic), Aterido et al. (2013) argued that women's less tendency and access to formal financial services such as bank debate prevent women entrepreneurs to actively participate in external financial markets. Specifically, unemployed women and those with lower education experienced higher level of barriers to gain finance for their venture. However, controlling for personal and enterprise-related variables such as size, industry sector,

ownership type and age of the enterprise, the authors found no significant relationship between gender and use of external financing services. The authors also concluded that researchers should also consider the business factors rather than differences between female and male entrepreneurs to provide a better picture of the influence of gender on venture financing. Using the GEM data for the UK, Kwong et al. (2012) examined potential women entrepreneurs' perceptions toward the financial constraints they may face in creating their own venture and how gender interacts with other factors such as personal and economic characteristics to construct women's perceptions of the constraints in financing a new venture. The findings of this study also confirmed that females perceive more difficulties than males in accessing finance and consequently they are less confident in obtaining external finance to launch their business.

Furthermore, interaction between gender and personal characteristics significantly influences the relationship between the variables. Gender and the desire as well as request for finance to grow a business have also been examined in Australia (Hulten 2012) where gender differences are found to be influential in aspiration to grow. Yet, the authors failed to find a significant difference between females and males on their demand for business growth finance and the constraints they face in gaining finance. Importantly, when the firm, owner and risk characteristics were controlled, there was no difference between females and males in their demand for business growth finance and the constraints they face in gaining finance. Overall, the findings of these studies are contrasting and inconclusive. This highlights the importance of further investigating the association between gender and entrepreneurial finance and examining other factors than gender when investigating entrepreneurial venture financing.

In addition to gender, our analysis explored several studies examining constraints of access to finance for entrepreneurial firms. In the UK, for example, Demirel and Parris (2015) looked at the constraints that environmental SMEs face in gaining external financial resources including VCs, bank loans and government funds for their innovation activities. The findings of this study revealed that focus on innovation activities hinders such businesses' access to bank loans which is much easier compared with other sources of finance while R&D and patenting activities of such enterprises improve the probability of their access to UK government and VC fundings. Takalo and Tanayama (2010) argued that government can decrease the constraints of financing innovation for technology-based entrepreneurial firms by subsidizing R&D activities and developing policies that monitor innovative projects to be subsidized. The acceptance of informal risk capital was also suggested as a factor that reduced the financial constraints of high-technology entrepreneurial firms in Italy (Colombo et al. 2014). Studies have also explored the firm related factors that impeded or facilitate access to business finance. More specifically, Kasseeah and Thoplan (2012) classified four firm-related characteristics that affect SMEs' ability to get access to finance in Mauritius, one of the sub-Saharan nations in Africa. These compelling characteristics are size and age of the firm as well as the working capital and constraints imposed on the firm by its external environment. Lee and Drever (2014) investigated if geographical discrepancy influences entrepreneurs' perceived

constraints to finance. Interestingly, this study found no significant relationship between geographical differences and access to finance for most of the firms in the UK when the firm characteristics such as firm growth, credit scores and selection effects were controlled. Another firm characteristic that found to be influential in entrepreneurial financing was the nature of strategies that firms develop for networking. Examining Indian entrepreneurs in Information and Communication Technology industry, Sengupta (2011) highlighted the facilitating impact of networking on entrepreneurs' access to finance by creating and developing trust between entrepreneurs and investors.

## 5 Public Policies

Studies have mostly explored the role of government policies in facilitating access to finance. Egelin et al. (1997) highlighted the importance of developing foundations of firms through intervening policies that reduce the liquidity constraints for SMEs and start-ups in Germany. Examining small businesses' access to finance in Tanzania as a developing country, Satta (2007) developed an integrated approach to policies including three interdependent policy choices that facilitate small business' access to required finance. The core characteristics of these policy options is the establishment of bank schemes based on current rural and commercial banks. Magri (2009) examined the role of deregulation and innovation in credit markets in facilitating access to finance for very small businesses in Italy. More recently, Chatterji and Seamans (2012) also found that deregulation of credit cards enhances the chance of specifically black entrepreneurs to launch their own business. The findings of this study suggested that the differences between entrepreneurs in Northern and Southern division of Italy are gradually disappearing. However, credit is still allocated to small businesses based on their geographical location in Italy. Carpentier and Suret (2010) also suggested the significant impact of the regulations developed for the protection of investors on preventing entrepreneurial ventures in Canada to enter the stock market and grow. The authors argued that relaxation in the regulation can reduce the constraints that micro businesses experience in financing the business.

Using the GEM data for financing entrepreneurial businesses, Romani et al. (2009) contested that despite the adequate sources of public financing in Chile, there is a huge gap in the distribution of the finance to different groups of entrepreneurs. The authors also highlighted three critical factors (lack of competitive high-tech clusters, informal investment and private financing, specific training for entrepreneurs) that reduce the effectiveness of public policies in providing financial resources for entrepreneurs. Coelho et al. (2004) questioned the promising policies that encourage entrepreneurship and direct entrepreneurs' perceptions toward their entry and success. The authors suggested the importance and necessity of developing public interventions that offer entrepreneurs with true information on entrepreneurial activities and guide them through the process of creating their own venture.

## 6 Discussion

Numerous studies on entrepreneurial finance and superficially the challenges of gaining finance for entrepreneurial firms in recent years highlight the need to examine the scholarly arguments and themes of these studies. This systematic review set out to explore the financial challenges of entrepreneurial finance. Overall, our study found only few studies on entrepreneurial finance challenges. These studies are mainly fragmented and do not provide a comprehensive picture of the difficulties that entrepreneurs should overcome in the process of financing their venture. Our findings revealed three key challenges that venture creators in different countries have to encounter financing their business. The first source of entrepreneurial finance challenges is the conflicts that occur between the entrepreneurs and investors and influence the quality and success of both gaining and investing in entrepreneurial ventures. Studies in this stream investigated the effects and origins of the conflicts. This analysis found researches that examined task and relationship conflicts and their consequences for entrepreneurial finance. Findings of these studies suggested that entrepreneurs' perceived conflicts regarding their tasks enhance the value of venture capitals for them (Brettel et al. 2013). While for entrepreneurial teams, task conflicts decrease the innovativeness of portfolio companies (Collewaert 2008), entrepreneurs' perceived conflicts toward their relationship with investors also decrease the value of venture capital firms for them (Zacharakis et al. 2010).

Of the factors that create conflicts between entrepreneurs and investors, the nature and style of decision making and perceived unethical behaviors attracted the most attention of researchers. The findings of these studies suggested that entrepreneurs experience higher degree of conflicts in their relationship with the investors when they use the effectual decision making style (Appelhoff et al. 2015) and less engage their venture in their entrepreneurial finance decisions (Forbes et al. 2010). Perceived unethical behavior also creates and increases conflicts between entrepreneurs and investors and is destructive for their relationships as it influences their conflict management strategies and fault attribution and blaming behaviors.

This systematic review also found financial constraints as the second main source of entrepreneurial finance challenges. The majority of studies on financial constraints examined the challenges of access to finance. This finding confirmed the GEM findings that access to fund is a critical challenge for entrepreneurs around the world (Daniels et al. 2016). Our finding highlighted gender as the main obstacle in the process of obtaining finance for entrepreneurial ventures. Specifically in developing countries, women encounter various finance difficulties, have less access to formal financial services such as banks (Aterido et al. 2013) and consequently are less confident in obtaining finance to start their own venture than men (Kwong et al. 2012). Women's entrepreneurial finance challenges are not limited to new venture creation. Despite their high demand to grow their business, women also lack the inspiration to strive and gain finance for their business growth (Hulten 2012). These findings confirm the previous research in the MENA countries that highlight gender

as one of the key obstacles to engage in new venture creation (The World Bank report 2012) and obtain finance for entrepreneurial ventures (El Hamidi 2017).

In addition to entrepreneurs, entrepreneurial firms should also overcome different financial constraints for their entrepreneurial activities. While innovation activities hinder entrepreneurial firms' access to bank loans, R&D and patenting improve their chance to obtain government and VC funding (Demirel and Parris 2015). However, capital risk acceptance (Colombo et al. 2014) and developing policies to monitor and allocate budget to R&D activities and innovative projects by the government reduce the financial constraints, specifically for high-technology entrepreneurial firms (Takalo and Tanayama 2010). Firm-related factors such as firm size, age, working capital (Kasseeah and Thoplan 2012) and nature of networking strategies (Sengupta 2011) also affect access to financial resources.

Finally, our analysis demonstrated that studies on public policies and regulations investigated the changes in the policies that facilitate access to finance for SME owners and entrepreneurs. Several studies suggested developing intervening policies to reduce liquidity constraints (Egeln et al. 1997), provide entrepreneurs with precise information that guide them through the process of venture creation (Coelho et al. 2004) and facilitate the establishment of bank schemes (Satta 2007). While others highlighted the need for deregulations of innovation, credit cards and credit markets (Chatterji and Seamans 2012; Magri 2009) as well as developing effective protecting regulations, specifically for investors (Carpentier and Suret 2010).

## ***6.1 Implications of the Findings***

Our findings have several implications for research and practice. First, this study found a huge gap in empirical research on entrepreneurial finance in general and challenges of entrepreneurial finance in particular. The majority of the studies examined, had been conducted in European countries. This suggests that researchers require to fill the gaps by exploring the challenges of entrepreneurial finance in different countries and specifically in the MENA Region (Jabbouri 2016). Second, the findings of this study provide better understanding of the difficulties that entrepreneurs require to overcome in order to improve their chance of success in gaining capital for their venture. Finally, policy makers can use the findings of this study to explore the entrepreneurial finance challenges created by policies and regulations and develop more effective and purposeful policies that reduce these challenges and offer entrepreneurs with the encouraging and appropriate business environment.

## ***6.2 Limitations and Future Research Agendas***

This study is an attempt to systematically review the empirical studies on challenges of entrepreneurial finance. The findings provide a deeper understanding of the empirical published research on the difficulties of raising fund for venture creation and growth. However, our study has several limitations that open new directions for future research. First, our analysis is limited to the published papers up to September 2017. Therefore, it does not include papers that are in the process of publication and will be published until the time of this study publication. Second, this study included the articles published in academic journals to represent validated knowledge that has influential effects on the research field (George et al. 2016). To provide a comprehensive knowledge on the challenges of entrepreneurial finance, future research should examine books, book chapters, conference proceedings and research reports. This study also did not analyze the citation of the papers because co-citation analysis partially presents the influence and importance of the research and is biased against specific authors (Ratnatunga and Romano 1997). Future research using co-citation methods offers deeper systematic explanation of studies on entrepreneurial finance challenges.

Importantly, our analysis revealed that the majority of studies on entrepreneurial finance challenges employed the quantitative methods of inquiry. Therefore, future researches using qualitative, experimental and longitudinal research methods are highly encouraged in order to provide deeper knowledge on entrepreneurial finance challenges. Additionally, the challenges emerging from this study highlight the need to examine other sources of entrepreneurial finance challenges. Researchers can also examine the personal characteristics of entrepreneurs and investors that stimulate their perceptions of conflicts. Additionally, future studies should explore the communications and interactions that improve or reduce the conflicts between entrepreneurs and investors. Future research should also explore other sources of conflicts between entrepreneurs and investors. Due to the contrasting of research findings on the relationship between gender and entrepreneurial finance, further research need to be undertaken to examine the relationship between the two variables in the economic context of different countries. As suggested by Aterido et al. (2013), these studies should examine personal and enterprise related characteristics (e.g., size, industry sector, ownership type and age of the enterprise) when exploring the relationship between gender and entrepreneurial finance. Future research should also explore the facilitating or impeding roles that public policies, rules and regulations play in the process of raising finance for entrepreneurial ventures and the ways to improve their effectiveness.



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