

RESEARCH

Open Access



Implication of attitude of graduate students in Oman towards entrepreneurship: an empirical study

Omer Ali Ibrahim^{1*}, Sonal Devesh² and Vaheed Ubaidullah¹

* Correspondence:

omeribrahim@cbfs.edu.om

¹Professional Studies Department,
College of Banking and Financial
Studies, Muscat, Oman

Full list of author information is
available at the end of the article

Abstract

The purpose of the paper is to assess the implication of attitude of graduate students in Oman towards entrepreneurship. Exploratory factor analysis (EFA), and a multivariate regression model were used to assess the attitude and identify its influencing factors. Data was collected through a structured questionnaire, with a sample of 165 students, selected from four colleges in Muscat.

Results show that although graduates in Oman have a positive attitude towards entrepreneurship, preference to start their own business after graduation is low. Increasing graduates' business knowledge and understanding of business risk, in addition to promoting entrepreneurship education can positively influence their attitude towards entrepreneurship. The government, higher education institutions and business incubators have an important role to play in changing the attitude of graduates towards entrepreneurship, and setting effective entrepreneurship strategies. Recommendations for future research have been made at the end of the paper.

Keywords: Entrepreneurship, Attitude towards entrepreneurship, Exploratory factor analysis, Oman

Background

With the increasing pace of globalization and limited roles of governments in job creation, promoting entrepreneurship has become one of the policy options for nations to sustain growth and create more jobs in the economy (Baron and Shane 2008; Fayolle 2007; Frederick et al. 2006; Global Entrepreneurship Monitor GEN 2013; Naudé 2011; Schaper and Volery 2004). The final communique of the 2014 G20 Leaders' Summit also recognized entrepreneurship as an important driver for job creation and economic growth and called for entrepreneurship-oriented policies to reduce youth unemployment (G20, 2014).

Graduate unemployment has become a major concern among policy makers in Oman during the recent years. The number of job seekers has been increasing continuously, 146,385 in 2015, forming 11.7% of the nation's workforce (Muscat daily 2015). Similarly, official statistics have shown that the number of graduates in the country increased from 12,518 in 2011 to 16,343 in 2015, with a compound annual growth rate of 14.3% (National Center for Statistics and Information 2015). The dynamics of unemployment in Oman may be attributed to a number of reasons, among which are the slow growth of the economy due to oil price decline and the

attitude of graduates towards the workplace. The growth domestic product (GDP) of Oman grew at a rate of 4.5% in 2015 (National Center for Statistics and Information 2015), which is far below the growth rate of the labour force of 13.4% (World Bank, 2015). Furthermore, international reports have shown that the business environment in Oman is not conducive for doing business and creating more jobs. Oman was ranked 62nd globally in 2016 as a favorable environment for doing business (World Economic Forum 2016).

Another dimension to the problem stems from the fact that Omani graduates prefer to work in the government sector, as they feel there is more job security compared with in the private sector.

(Benchiba et al. 2016; National Center for Statistics and Information 2015). This situation, however, is not sustainable given the volatility of oil prices, the main source of government revenues, which will undermine the government's capacity to create more jobs.

With the rising numbers of graduates in the labour force and saturation of employment in the government sector, graduate unemployment in Oman will accumulate over time. Many analysts believe that changing the attitude of graduate students towards self-employment and building entrepreneurship bases in Oman is required. This raises the following questions: What is the attitude of graduates in Oman towards entrepreneurship? What are the key factors influencing these attitudes? How should entrepreneurship be promoted in Oman?

Literature review

There is abundant literature relating to the importance of entrepreneurship and its determining factors. Entrepreneurship has been recognized as a key means by which a country's competitiveness can be stimulated (European Commission 2009; Kitson et al. 2004). The benefits of entrepreneurial activity in terms of job creation or economic growth have been well addressed by Baron and Shane 2008; Fayolle 2007; Frederick et al. 2006; and Van Praag and Versloot (2007). Small and medium enterprises (SMEs) have contributed significantly to the socio-economic and political environment for most of the developed and developing nations in the last decade Matlay and Westhead (2005). Also, according to the Organization for Economic Co-operation and Development (OECD) Policy Brief (2000), SMEs have been very influential in the economic growth of many countries and government policies could be instrumental in promoting entrepreneurship, facilitating start-up and expansion, improving access to venture capital and other types of financing. According to Christina et al. (2014), about 60% of the SMEs in Oman are sources of employment for Omanis.

Identifying the factors influencing entrepreneurship is a key issue for policy makers in order to design effective self-employment policies and entrepreneurship initiatives. Many studies have used the Robinson and Haynes (1991) model of entrepreneur attitude orientation scale to investigate the factors influencing attitude towards entrepreneurship (Ammal and Mathi 2014; Koh 1995; Paramond 2004; Tan et al. 1996; Tkachev and Kolvereid 1999). These studies showed that attitude towards entrepreneurship is influenced by family, business background, innovativeness, self-efficiency, risk-taking and independence, which in turn affect student career choice as an entrepreneur. Students with family and personal experience in entrepreneurship have a more

positive attitude towards an entrepreneurial career (Hatala 2005). AmmaL and Mathi's study, (2014), assessed the attitude of undergraduate students in Ibri College towards making entrepreneurship a career choice. The study, comprising 60 students and using a descriptive approach, found that family business background, innovativeness, students' confidence and independence impact their attitude towards a career choice. However, the limitations of the study, which concentrated on only one college, do not provide a representative sample or conclusive results.

Risk taking has been shown to have a strong relationship with the success of entrepreneurs in establishing new ventures (Antonites and Wordsworth 2009). Belwal et al. (2015) revealed that the majority of university students in Oman were optimistic and interested in starting their own business, but at the same time lacked knowledge about how to achieve this. Factors such as confidence and effective connections with established entrepreneurs were observed as enablers for starting a business. Fear of failure and unwillingness to take risks were seen as the major obstacles facing university students in embarking on an entrepreneurial path. The main shortcoming of this study is that its conclusions cannot be generalized, as it adopted a non-probability sampling method.

Imran et al. (2011) and Ahmed et al. (2010) indicated that innovativeness and independence will impact students' attitudes towards entrepreneurship. Students who are more confident and independent in their ability, based on practical experience, will have a positive attitude toward entrepreneurship as a career choice.

Joint decision making is very important when it comes to business and reducing risk. An entrepreneur's decision to start up a new business venture is not considered according to ability, instead it is influenced by family or peers and their entrepreneurial experiences (Veesam 2015). Similarly, da Costa et al. (2009) highlighted that among a group of information technology students in Brazil interest in creating a new business was influenced by the perceived vocation of the entrepreneurship course, the perception of social support in decision making from friends and family, the ownership of a business and the perception of entrepreneurial skills mastery.

Furthermore, many empirical studies have shown that entrepreneurship education and training influence individuals' intentions to start a business, and have called for integrating entrepreneurship intern programs with the education curricula (Farashah 2013; Kuehn 2008; Lanero et al. 2011). Entrepreneurship education is important for equipping graduates with the required entrepreneurial competencies, such as innovativeness and risk-taking (Ferreira et al. 2012). McMullan and Gillin (1998) ascertained that 87% of students of graduate degree programs in entrepreneurship at the Australian University started a venture within 2 years after graduation. It is also understood that individuals' perceptions of start-up barriers can be modified through self-employment training (Hatala 2005). Kolvereid and Moen (1997) and Lee et al. (2005) found that students who took an entrepreneurship course had higher start-up intentions, possessing more knowledge about new venture creation than students who did not pursue such a course. Evidence of a direct relationship between entrepreneurial learning and being self-employed has been indicated by Der Zwan et al. (2013) Self-employment decisions can be affected by fostering entrepreneurial interest and skills through education. Hence, entrepreneurial programs need to be integrated with the college curriculum. Al-Harrasi and Al-Salti (2014) investigated the entrepreneurial intention among Information Systems students at Sultan Qaboos University, using a qualitative approach of

focus group discussion with seven respondents. The study revealed that the majority of the students had low entrepreneurial intention. According to the study, the factors that have a positive influence on students' entrepreneurial intention are money, independence and work flexibility, while the lack of entrepreneurship courses in the department have a negative impact on their entrepreneurial intention. Furthermore, the study identified that Omani students are not well educated about the supportive programs for entrepreneurs provided by the government and private sector.

The role of training is also important for influencing attitude towards entrepreneurship. According to Matlay and Westhead (2005), conducting follow-up events and encouraging participation in local and international SMEs conferences, workshops and seminars on a periodical basis will create interest among students to venture into entrepreneurship. Al Barwani et al. (2014) showed that most SME owners in Oman had prior work experience of at least 1 year, while over 80% never received formal training related to SMEs. Among the challenges faced by many SMEs in Oman are the lack of required knowledge of business, lack of modern managerial and administrative skills and limited knowledge of how to deal with officials, regulations and required bureaucracy.

With regard to how entrepreneurship should be promoted, literature emphasized the role of the government, educational institutions, and business incubators. The government has a key impact not only on how many new businesses are created, but also — and perhaps more importantly — on the nature of these firms and their ability to grow through creating a favorable environment (GEN 2012). Koh and Wong (2005) identified four main roles for the government to play in innovation-based economies, including fostering a broad and productive R&D culture, closely linked to higher education. These are: investing in scientific research areas which are not feasible in the private sector; lowering the cost of risk taking by encouraging strong university–industry interactions; providing incentives for cooperative pre-market basic research; and finally, facilitating the commercialization of publicly financed research. An additional government role is in initiating strategic planning measures for SMEs. As discussed by Abonyi (2005), the government can provide support in six areas: (1) training in general business management entrepreneurship; (2) counselling and advice; (3) technology development and transfer; (4) marketing information; (5) business links between SMEs and large firms (e.g. subcontracting) and among SMEs (e.g. development of 'enterprise clusters'); and (6) financing aimed at channeling funds to SMEs either directly (e.g. special purpose financial institutions such as 'SME banks') or indirectly (e.g. through special 'windows' of commercial banks), perhaps at preferential rates. Furthermore, the government has a noticeable role in improving the business climate (e.g. political and macroeconomic stability; laws, regulations and dispute resolutions; reduced corruption and bureaucratic barriers; fair competition and robust infrastructure).

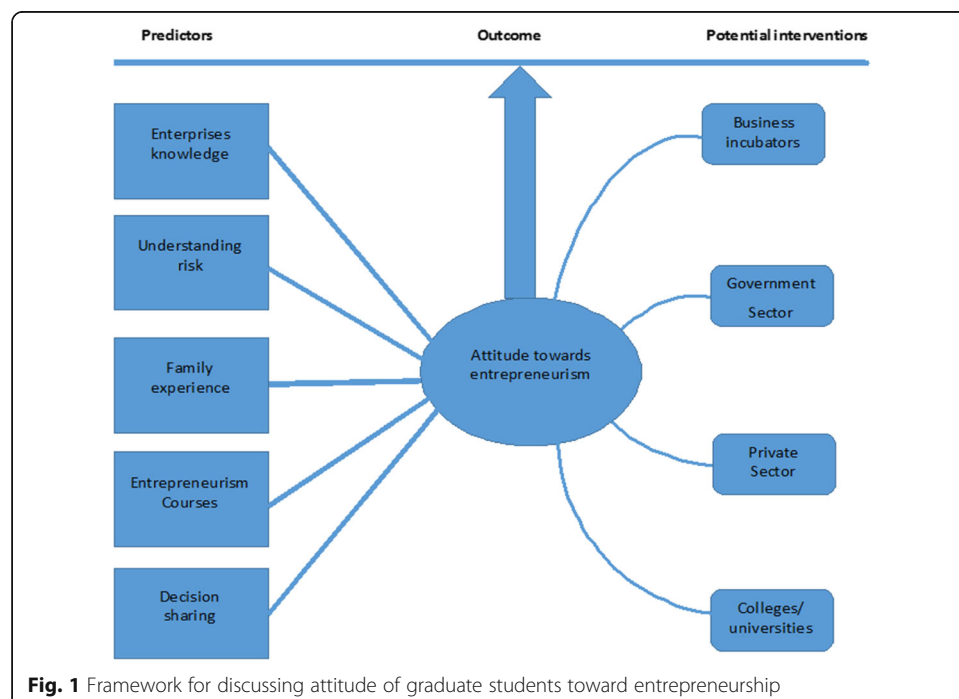
Concerning business incubators, evidence has shown that they have achieved promising results in many countries in the world in the creation and growth of entrepreneurship (Al-Mubarak and Busler 2010; Todorovic and Moenter 2010; InfoDev 2007; Campbell 1989). Business incubators usually provide many services, such as shared infrastructure (i.e. office space, meeting rooms), business advisory services, financial services and connections with experienced business professionals (Ogutu and Kihonge, (2016). Government support and private sector partnership with business incubation is critical for any entrepreneurship initiative to perform effectively.

Higher education institutions are the real manufacturers of potential entrepreneurs and their role is pivotal in providing education, training and innovation (Farashah 2013; Ferreira et al. 2012). Kuehn 2008; Lanero et al. 2011). The contribution of higher education institutions in promoting entrepreneurship was well explained by Gibb (2013): “Entrepreneurial higher education institutions are designed to empower staff and students to demonstrate enterprise, innovation and creativity in research, teaching and pursuit and use of knowledge across boundaries. They contribute effectively to the enhancement of learning in a societal environment characterized by high levels of uncertainty and complexity and they are dedicated to creating public value via a process of open engagement, mutual learning, discovery and exchange with all stakeholders in society — local, national and international.”

Based on the above discussion, this paper develops a framework for discussing the attitude towards entrepreneurship in Oman. The framework in Fig. 1 highlights the predictors affecting the attitude towards entrepreneurship, the outcome represented in the attitude, and the potential interventions to influence that attitude.

Using the above framework, the main aim of this paper is to assess the attitude of graduate students in Oman towards entrepreneurship and identify the influencing factors, using a quantitative and qualitative (mixed) approach.

Understanding this attitude is now even more important to Oman given the global economic instability and the decline in oil prices that have made entrepreneurship the only viable option for the country’s sustainability. Research in this area is currently lacking in Oman. The few studies that addressed entrepreneurship in the framework of SMEs, such as Christina et al. 2014; Al Barwani et al. (2014); Benchiba et al. 2016, have concentrated on challenges facing entrepreneurs, such as cultural and social norms, financial support and regulation, while ignoring to foster the correct attitudes towards entrepreneurship as a career choice. Although other studies such as that of Ammal and



Mathi 2014; Al-Harrasi and Al-Salti 2014 and Belwal et al. 2015, have addressed student attitude and intention towards entrepreneurship, they have failed to come up with conclusions that can be generalized to the graduate population, due to the qualitative nature of the methodologies adopted.

This paper further hypothesizes that there is a positive attitude towards entrepreneurship among graduates in Oman and that business knowledge, family experience, understanding risk, entrepreneurship education and decision sharing positively influence entrepreneurial attitude.

Methods and sampling frame

Exploration of the objectives of the study requires a mixed survey design. The quantitative part is concerned with assessing the attitude of graduate students towards entrepreneurship and its determinants, while the qualitative part provides insights on the role of entrepreneurship education in influencing students' attitude towards starting their own business.

The study population comprised final semester, undergraduate students in business related specializations of four colleges in Muscat; two public, Sultan Qaboos University and College of Banking and Financial Studies and two private, Muscat College, and Majan College. The four colleges were selected as they are a good representation of the graduate population in Oman (National Center for Statistics and Information 2015), and the students were chosen because they had completed entrepreneurship courses and were potential entrepreneurs.

A stratified random sampling scheme was used to represent both public and private colleges, with a share of 65% for government colleges, and 35% for private colleges. Data for the study was collected through a structured questionnaire, comprising a sample of 165 students. The five-point Likert scale was used to measure attitude towards entrepreneurship; the understanding risk variables being: "strongly agree", "agree", "neutral", "disagree" and "strongly disagree". For the other variables in the questionnaire, such as decision sharing, and knowledge in areas of enterprises, a three-point Likert scale was used, where 3 was "great", 2 was "limited" and 1 was "none"; a higher mean score on a variable indicating greater knowledge or a positive attitude. The questionnaire was subject to a pilot-test with a sample of 20 respondents. The survey instrument showed a reliability of 0.89, based on Cronbach's Alpha. The questionnaire results were further augmented with interviews with two teachers of entrepreneurship courses taught in higher education institutes in Oman, to provide insights on entrepreneurship education and its role in enhancing students' attitude towards establishing their own business after graduation.

An exploratory factor analysis (EFA) was used as an approach to data analysis to determine whether attitude variables group together on significant factors. The Kaiser Meyer-Olkin measure of sampling adequacy (Kaiser 1974) and Bartlett's test of Sphericity (Bartlett 1954) were used to test the justification of factor analysis implementation. A principal component analysis and extraction method with a Varimax with Kaiser Normalization rotation was used to determine the factor loading and commonalities. From the results of the EFA, a multivariate regression model was developed to identify the key factors influencing the attitude of graduate students in Oman towards entrepreneurship.

Results and discussion

Background

Oman is a high-income economy that is heavily dependent on oil resources. Oil contributes to more than 77% of government revenues, 62.5% of exports and 51.6% of the GDP (National Center for Statistics and Information 2015).

The current period of oil price decline has severely affected the Omani economy. The GDP has declined from an average of 5.7% during the period 2010–2014 to 3.8% in 2015 and the government budget showed a deficit of RO 2.68 billion in the first 8 months of the year 2015 (Central Bank of Oman 2016). To cope with this crisis, the government introduced many measures, including cutting public spending by 11% year-on-year, as well as slashing subsidies by 62%, deregulating fuel prices, raising corporate tax and increasing fees for government services. With these developments the government's ability to generate more employment to meet the rising numbers of graduates will be challenging. Hence, promoting entrepreneurship can be one of the policy options for Oman to address graduate unemployment.

Main findings

Results of the survey, that involved 165 students, showed that the majority were female (72%) compared to 28% male. This reflects the gender distribution in the higher education institutions in Oman. About 62.4% of students reported to have family experience in business, and 52.4% have participated in entrepreneurship education. About 38% of the students surveyed indicated that after graduation they would prefer to work in the government sector, 44% preferred the private sector, and only 18% chose self-employment.

Exploratory factor analysis

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.756 and Bartlett's test of Sphericity was significant at 0.000; indicating a high sampling adequacy and a justification for proceeding with factor analysis, as shown in Table 1.

Factor analysis led to six factors, accounting for 52.2% of the cumulative variance. Although this is not a relatively high percentage, it indicates that other important variables such as business incubators have not been considered. Reasons are due to lack of data, as business incubators are in a nascent stage in Oman.

The results of factor analysis are shown in Table 2 and interpreted as follows: the first factor, "knowledge of business risk", consists of items 4, 5, 9, 11, 12, 14, 15, 19, 21, 22, 25 and 28. This factor explains 19.3% of the total variance. Students appear to believe that understanding risk is very important as a motivating factor for starting a business. The second factor, "knowledge of an enterprise", contains items: 1, 2, 6, 8, 10, 13, 16, 20 and 27, accounting for 12.0% of total variance.

The third factor, "decision sharing", consists of items: 7, 18, 23 and 26, and accounts for 6.82%. The fourth factor, "family business experience", consists of item 3, and accounts for 5.18% of total variance. The fifth factor, "type of college", consists of item 17 and accounts for 4.59% of total variance. The sixth factor, "entrepreneurship education" consists of item 24 and accounts for 4.35 of total variance. The summary statistics for these variables are provided in Table 3, presented by gender.

Table 1 Factor analysis for components of entrepreneurship

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Commonalities
	Total	per cent of Variance	Cumulative per cent	Total	per cent of Variance	Cumulative per cent	
1	5.43	19.39	19.39	5.43	19.39	19.39	.716
2	3.37	12.03	31.42	3.37	12.03	31.42	.549
3	1.91	6.82	38.24	1.91	6.82	38.24	.526
4	1.45	5.18	43.42	1.45	5.18	43.42	.333
5	1.29	4.59	48.01	1.29	4.59	48.01	.324
6	1.22	4.35	52.36	1.22	4.35	52.36	.461
7	1.13	4.03	56.39				.493
8	1.02	3.65	60.04				.423
9	0.98	3.50	63.54				.515
10	0.96	3.44	66.98				.688
11	0.90	3.22	70.20				.468
12	0.87	3.10	73.30				.621
13	0.81	2.89	76.19				.547
14	0.76	2.73	78.92				.591
15	0.65	2.32	81.24				.467
16	0.59	2.12	83.36				.545
17	0.58	2.08	85.45				.516
18	0.56	2.00	87.45				.475
19	0.49	1.73	89.18				.595
20	0.47	1.69	90.87				.624
21	0.45	1.62	92.49				.615
22	0.39	1.41	93.90				.586
23	0.36	1.28	95.18				.536
24	0.34	1.23	96.40				.435
25	0.29	1.04	97.45				.522
26	0.28	0.99	98.43				.454
27	0.24	0.86	99.30				.419
28	0.20	0.70	100.00				.619

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy = 0.751

Bartlett's Test of Sphericity Approximately Chi-Square = 1385.9

df = 378 Sig = 0.000

Extraction Method: Principal Component Analysis

Table 3 indicates that the female students have shown a higher level of attitude, business knowledge, understanding of business risk and decision sharing than the male students. With the exception of attitude variable, they have shown greater variations (as indicated by the standard deviation) in their understanding of business risk, knowledge of enterprises and decision sharing, compared to their male counterparts. With regard to family experience, 63% of male students indicated that their family has business experience, compared to 62.2% for female students. About 55% of the female students had attended entrepreneurship courses, compared to 46% of male students.

Table 2 Rotated components of entrepreneurship matrix

Items	Components					
	1	2	3	4	5	6
1. I know the basics of starting up an enterprise		0.35	0.20	0.71	0.16	-0.14
2. I know business planning of an enterprise	0.20	0.46		0.48	0.14	0.21
3. My family has business experience				0.62	-0.14	
4. I have a satisfactory level of problem solving skills	0.75			-0.17		0.15
5. I have a satisfactory level of leadership & communication skills	0.72			0.21		0.16
6. I have fair knowledge of enterprise finance		0.64		0.21		-0.27
7. Close friends approve my decision of starting a business	-0.16		0.70	0.16	-0.12	0.25
8. I know the business models of an enterprise		0.53			0.14	0.15
9. I know the necessary practical details to start a business	0.43	0.51	-0.13		0.14	-0.17
10. I know insurance & tax laws of an enterprise		0.42			-0.37	
11. I can control the process of setting up a new business	0.67				0.26	0.13
12. Starting a business and keeping it working is easy for me	0.35		-0.20			0.65
13. I know about business development ideas		0.52	0.24	0.23		0.29
14. I am prepared to start a viable business	0.49			0.15	0.44	0.11
15. I have a satisfactory level of recognition to be an entrepreneur	0.75				-0.14	
16. I know problem recognition & solution of enterprises		0.58	0.11	0.23	-0.17	
17. I pursue public education					0.77	
18. Close family approves my decision to start a business			0.79	0.11		-0.23
19. I have a satisfactory level of development of new products and services to be an entrepreneur	0.68	0.16			-0.13	-0.16
20. I have knowledge of writing a business plan		0.53				0.47
21. I have a satisfactory level of networking and making professional contacts to be an entrepreneur	0.59	0.18		-0.19	0.15	
22. I have a satisfactory level of implementing ideas	0.70					0.14
23. I share the decision of starting a business with close relatives			0.61		0.15	-0.27
24. I have taken entrepreneurship subjects at college		0.28		0.39	-0.41	-0.22
25. I have a high probability of success in starting a business	0.66		-0.11			-0.13
26. Close colleagues approve my decision to start a business		0.22	0.59	-0.23	-0.27	0.14
27. I know the responsibilities of entrepreneurs		0.68	0.11		-0.10	
28. I have a satisfactory level of creative ideas and skills	0.75		-0.10	0.15		0.12

Extraction Method: Principal Component Analysis. Rotation: Varimax with Kaiser Normalization

Table 3 Summary statistics of attitude variables by gender

Gender		Attitude	Business knowledge	Business Risk	Decision sharing	Family experience	Entrepreneurship course
Male	Mean	4.0304	1.8469	3.6159	1.8315	63.0 ^a	45.7 ^a
	N	46	45	46	46		
	Std. Deviation	.56720	.33859	.57668	.41518		
Female	Mean	4.1513	1.8804	3.6723	2.1050	62.2 ^a	54.6 ^a
	N	119	118	119	119		
	Std. Deviation	.49947	.36438	.59717	.49521		
Total	Mean	4.1176	1.8712	3.6566	2.0288		
	N	165	163	165	165		
	Std. Deviation	.52031	.35673	.59032	.48875		

^aResults are quoted in per cent, rather than means, as these are categorical variables (yes/no)

Model for entrepreneurship

Based on the framework in Fig. 1 and the exploratory factor analysis, the following multivariate regression model was used to identify the factors influencing the attitude of graduate students in Oman towards entrepreneurship.

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 \text{ with the restrictions}$$

$$\beta_1 > 0; \beta_2 > 0; \beta_3 > 0; \beta_4 > 0; \beta_5 > 0; \beta_6 > 0$$

where

- Y = Attitude towards entrepreneurship
- X₁ = Level of knowledge in the area of enterprise
- X₂ = Understanding business risk
- X₃ = Family history of entrepreneurship
- X₄ = Joining entrepreneurship courses
- X₅ = Level of decision sharing
- X₆ = Type of education (private/public)

Results of the model in Table 4 show the following:

- The level of knowledge in areas of enterprise indicated a significant positive impact on attitude toward entrepreneurship, with *P*-value 0.047 < 0.05. This means that the higher the level of enterprise knowledge, the more positive the attitudes toward entrepreneurship.
- The level of understanding of risk taking ability has also shown a positive impact on attitude, with *P*-value 0.000 < 0.05; indicating that the higher the knowledge about risk, the greater the attitudes toward entrepreneurship.
- The experience of a graduate’s family or close relatives with business has no significant impact on the attitude of graduates towards entrepreneurship, with *P*-value of 0.861 > 0.05.
- Attending an entrepreneurship course was found to have a positive influence on attitude toward entrepreneurship, with *P*-value 0.025 < 0.05.
- Decision sharing with family, close friends, or colleagues has no influence on graduates’ attitude toward entrepreneurship, with the *P*-value of 0.173 > 0.05.
- The type of college, private or public, has no impact on students’ attitude towards entrepreneurship, with the *P*-value 0.464 > 0.05.

Table 4 Results of the coefficients of the Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients	T	P-value	Conclusion
	B	Std. Error	Beta			
(Constant)	11.75	1.670	-	7.041	.000	Reject (<i>P</i> -value < 0.05)
Enterprise knowledge (x1)	0.109	0.055	0.143	1.999	.047	Reject (<i>P</i> -value < 0.05)
Risk understanding (x2)	0.165	0.023	0.479	7.134	.000	Reject (<i>P</i> -value < 0.05)
Family experience (x3)	-0.059	0.338	-0.012	-1.75	.861	Accept (<i>P</i> -value > 0.05)
Entrepreneurship courses (x4)	0.784	0.347	0.161	2.261	.025	Reject (<i>P</i> -value < 0.05)
Decision sharing (x5)	-0.114	0.083	-0.091	-1.368	.173	Accept (<i>P</i> -value > 0.05)
Type of education (x6)	-0.248	0.338	-0.050	-0.734	.464	Accept (<i>P</i> -value > 0.05)
R-Squared = 0.345	F = 16.44		P-value = 0.000			

- The five factors included in the model explain 34.5% of the variations in attitude toward entrepreneurship. This low per cent indicates that other important variables have not been included in the model.
- The F-value of the model of 16.44, and the P-value of 0.000 show that the model as a whole is significant and can be used to explain the attitude in Oman toward entrepreneurship.

Attitude towards entrepreneurship

Table 5 shows the level of attitude towards entrepreneurship among students of higher education institutes in Oman.

Table 5 shows that there is a positive attitude towards entrepreneurship among graduates in Oman. The overall average score of attitude was 4.13 points. The participants showed a positive attitude towards entrepreneurship, with at least 73% for all the items of the attitude. Despite this positive attitude, only 18% of the students showed an interest in working in self-employment schemes after graduation, compared to 38% who preferred to work in the government sector, and 44% in the private sector.

Enterprise knowledge

Knowledge in the areas of enterprise is very important for any individual starting a business. This includes knowledge of starting up, planning, finance, management, and the laws and regulations governing the process of starting a business.

Table 6 indicates that the level of knowledge of graduates in higher education institutions in Oman is relatively high, amounting to 1.88 as a whole. The minimum level of knowledge was expressed in the areas of conducting feasibility studies, insurance and tax laws of enterprises and enterprise finance. These are the weak areas where graduates’ knowledge needs to be strengthened and promoted.

Decision sharing

Creating a business requires consultation of many close parties, including family members, relatives, friends and colleagues in the college/university.

We note from Table 7 that the level of decision sharing of the graduates with close family, or close relatives, friends or colleagues at colleges is limited (the average is

Table 5 Level of attitude of graduates towards entrepreneurship

Attitude items	Level of attitude (per cent)					Mean	Result
	SD	D	N	A	SA		
1. If I have the opportunity and resources, I would like to start a business	0	1.2	7.3	37.8	53.7	4.44	Very high
2. Among various options, I would rather be an entrepreneur	1.8	2.4	14	37.8	43.9	4.20	Very high
3. Being an entrepreneur would lead to great satisfaction	0	3	15.9	45.7	35.4	4.12	Very high
4. Being an entrepreneur implies more advantages than disadvantages	0	4.9	20.1	47.6	27.4	3.98	High
5. A career as an entrepreneur is attractive	0	3	23.2	53	20.7	3.91	High
Overall	0.4	2.9	16.1	44.4	36.2	4.13	Very high

SD Strongly disagree, D Disagree, N neutral, A Agree, SA Strongly agree
Sources: Field survey (2016)

Table 6 Level of knowledge in areas of enterprise

Areas of knowledge	Level of knowledge (per cent)			Mean	Result
	None	Some	Great		
1. Enterprise development ideas	19.5	57.3	23.2	2.04	Some
2. Basics of starting up an enterprise	11.6	76.2	12.2	2.01	Some
3. Problem recognition & solution of enterprises	20.1	62.2	17.7	1.98	Some
4. Business planning of an enterprise	18.3	68.3	13.4	1.95	Some
5. Responsibilities of entrepreneurs	25.2	55.2	19.6	1.94	Some
6. Business model of an enterprise	28	59.8	12.2	1.84	Some
7. Enterprise financing	30.5	60.4	9.1	1.79	Some
8. Conducting feasibility studies	42.1	48.2	9.8	1.68	Some
9. Insurance and tax laws of an enterprise	42.9	47.2	9.8	1.67	Some
Overall	26.5	59.4	14.1	1.88	Some

Sources: Field survey (2016)

approximately 2.03). The highest impact comes from close family (2.28), followed by close relatives (2.07). The role of close family is relatively higher than that of other people in graduates' decision making when establishing a business in Oman.

Risk knowledge and assessment

Risk knowledge and assessment is vital in the process of starting any business. Table 8 shows the students' levels of understanding about business risk.

Table 8 shows that the graduate students' overall knowledge of business risk is moderate. The average understanding of business risk ranges from a minimum of 3.12 for the case of starting a business and keeping it working, to the highest of 3.89 in the area of implementing ideas.

Discussion

The study found that graduate students in Oman have a positive attitude towards entrepreneurship, with female students scoring a higher average compared to that of male students. The positive attitude towards entrepreneurship is expected for both genders, given the slow growth of the Omani economy and constraints of the government to provide more jobs in the government sector due to oil price decline. With the increasing female population in higher education in Oman, government should capitalize on their positive attitude and design entrepreneurship initiatives that suit this

Table 7 Level of decision sharing to start a business

People involved in the decision sharing to start a business	Level of decision sharing (per cent)			Mean	Result
	No impact	Limited	Great		
1. Close family approves the decision to start a business	18.3	35.4	46.3	2.28	Limited
2. Close relatives approve the decision	19.5	53.7	26.8	2.07	Limited
3. Close friends approve the decision	24.4	48.2	27.4	2.03	Limited
4. Close colleagues at college/university approve the decision	39	48.2	12.8	1.74	Limited
Over all	25.3	46.3	28.4	2.03	Limited

Sources: Field survey (2016)

Table 8 Level of understanding of business risk

Areas of business risk	Level of understanding risk (per cent)					Mean	Results
	SD	D	N	A	SA		
1. I have satisfactory levels of implementing ideas	0	5.5	24.4	45.7	24.4	3.89	High
2. I have satisfactory levels of creative ideas and skills to be an entrepreneur	0	9.1	22	46.3	22.6	3.82	High
3. I can anticipate the probability of success for the business	1.8	6.1	26.2	45.1	20.7	3.77	High
4. I have satisfactory levels of leadership and communication skills	0.6	7.3	26.2	45.7	20.1	3.77	Moderate
5. I have satisfactory levels of developing new products and services	0.6	6.7	32.9	40.9	18.9	3.71	Moderate
6. I have satisfactory levels of recognition as an entrepreneur	2.4	7.9	31.1	35.4	23.2	3.69	High
7. I can easily control the process of creating a new business	1.2	6.7	30.5	45.7	15.9	3.68	Moderate
8. I have satisfactory levels of problem solving	1.2	8.5	26.2	49.4	14.6	3.68	Moderate
9. I have satisfactory level of networking and making professional contacts	2.4	12.2	24.4	40.2	20.7	3.65	Moderate
10. I know the necessary practical details to start a business	0.6	11	28.2	46	14.1	3.62	Moderate
11. I can start a viable business	0.6	12.9	30.1	41.1	15.3	3.58	Moderate
12. I know the basics of starting a business and keeping it working smoothly	4.9	24.4	36.6	22	12.2	3.12	Moderate
Over all	1.4	9.9	28.2	42	18.6	3.66	Moderate

SD strongly disagree, D Disagree, N neutral, A Agree, SA strongly agree

Sources: Field survey (2016)

segment by providing them with more access to finance from banks, training, etc. Interestingly, results have also shown that despite this positive attitude towards entrepreneurship, students are still reluctant to choose self-employment after graduation. This may be due to the uncertainties associated with the Omani economy and risky business environment (World Economic Forum 2016) and hence, graduates would rather prefer to work in the government sector (Benchiba et al. 2016; National Center for Statistics and Information 2015).

With regard to the factors influencing students' attitude towards entrepreneurship, the level of knowledge in areas of enterprises has been found to have a positive influence. The greater the level of enterprise knowledge among students, the higher their interest in entrepreneurship. This is consistent with most of the studies that addressed personal experience (Ammal and Mathi 2014; Koh 1995; Paramond 2004; Tan et al. 1996; Tkachev and Kolvereid 1999). In Oman, students lack the knowledge of how to start a business, and are occupied with fear of failure, as revealed by Belwal et al. (2015). This explains why despite the positive attitudes of students towards entrepreneurship, they are reluctant to undertake self-employment after graduation. Promoting knowledge in the areas of enterprise could be achieved through strengthening internship programs. A collaborative effort should be generated between colleges and industry to increase students' knowledge and awareness of enterprises. Internship programs will expose graduates to the real enterprise environment and increase their confidence in taking risks.

The study also found that understanding of risk is correlated with attitude towards entrepreneurship. This result is consistent with studies by Antonites and Wordsworth 2009; Kor et al. (2007); Belwal et al. (2015). Students' perception of the risks involved in the business environment in Oman should be improved to encourage them to start

their own business. This is despite the fact that during recent years, Oman's competitive fundamentals have deteriorated and its business environment perceived to be risky; according to the Global Competitiveness Report (2016), Oman's rank in doing business declined from 46th to 62nd position between 2014–2016. The report demonstrated that the government can create an encouraging and motivating business environment in Oman by removing the restrictive labour regulations and promoting efficient government administration.

The government can also strengthen the role of business incubators, who provide great support to graduates in the form of start-up funding, location, networking opportunity, training and many other useful services (Kotler et al., 2008). Oman has recently started setting up business incubators represented in the Knowledge Oasis Muscat (KOM), a joint venture with United Kingdom Technology Park Programs. The KOM provides a number of facilities including business and finance information, network building and technology transferring. The organization has also created the Knowledge Mine (TKM) Program to assist the start-up companies with a complete support package (Al Mubarak 2008).

The study found that family experience in business had no influence on graduates' decision to follow a career in entrepreneurship. This result is inconsistent with the findings of Koh (1995), Paramond (2004), Tan et al. (1996), Tkachev and Kolvereid (1999) and AmmaL and Mathi (2014), whose studies showed that students who had family and personal experience in entrepreneurship would develop a positive attitude towards an entrepreneurial career.

In this study entrepreneurship education has been found to be positively correlated with attitude towards entrepreneurship. The same result was confirmed by almost all of the literature; Al-Harrasi and Al-Salti, (2014); Farashah, (2013); Kolvereid and Moen, (1997); Kuehn, (2008); Lanero et al. (2011); Lee et al. (2005); Matlay and Westhead (2005). The interviews conducted with teachers of entrepreneurship courses, revealed that the higher education system in Oman is still too focused on grades and careers and is not oriented towards innovation and entrepreneurship. The cooperation between the institutions and the Ministry of Higher Education should be promoted to create a positive attitude which could be generated through seminars, conferences and workshops for students. Additional encouragement and motivation would come through organizing visits to meet specific entrepreneurs for experience sharing, organizing contests for idea generation and start-up experiences and linking students with incubation centers.

For the level of decision sharing, the study found that seeking advice from family, friends and colleagues to start a business has no influence on graduates' attitude toward entrepreneurship in Oman. This result is not consistent with many studies (Da Costa et al. 2009, Veeram 2015) and might reflect the slow decision sharing process in general in Omani society.

Conclusion and recommendation

With the increasing rates of graduate unemployment in Oman and government constraints on employing more graduates, promoting entrepreneurship has become one of the policy options to sustain growth and address graduate employment. Fostering graduates' entrepreneurial potential by understanding and appreciating their attitude

and talents, in addition to promoting an entrepreneurial culture among them will result in stimulation of economic growth and development for Oman.

Although the paper found that, in Oman, graduate students' approach towards entrepreneurship is positive, many of them still prefer to work in the private and government sectors rather than start their own business after graduating. This situation requires students' knowledge of enterprises and business risk to be enhanced, and entrepreneurship education in colleges and universities to be strengthened, in order to create a positive attitude towards entrepreneurship.

A specific intervention program needs to be implemented to improve entrepreneurial self-efficacy and entrepreneurial interest. The government has important roles to play in promoting entrepreneurship through creating an environment conducive to doing business and reducing business risk. Government can also support business incubators and higher education institutions to team up in promoting and producing a positive image of entrepreneurship as a career for the graduates. There is a need for higher education institutes in Oman to strengthen their entrepreneurial educational programs with creativity and innovation, to enhance graduates' interest in becoming potential entrepreneurs.

Although this paper highlighted the integral role of business incubators in changing the attitude of students towards entrepreneurship, this role has not been thoroughly investigated due to lack of data, as business incubators are still in a nascent stage in Oman. This could be an area of future study. Another area that warrants research is assessment of the culture of entrepreneurship in higher education institutions in Oman and the implication of this on motivating students to start up their own business.

Acknowledgement

The authors would like to thank the College of Banking and Financial Studies for the research grant provided for completing the paper.

Funding

The study was funded by the College of Banking and Financial Studies (CBFS) in Oman, as part of the Research Grant Scheme.

Authors' contributions

All authors contributed extensively to the work presented in this paper. Dr. Omer initiated the conception and design of the work. Mr. Vaheed developed the theoretical framework and conducted the literature review. Ms. Sonal Devesh managed the data collection and data analysis and worked closely with Dr. Omer in the finalization of the paper. All authors contributed equally to the editing and approving the final version of the paper for publication.

Competing interest

The authors declare that they have no competing interests.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Author details

¹Professional Studies Department, College of Banking and Financial Studies, Muscat, Oman. ²Postgraduate Studies and Research Department, College of Banking and Financial Studies, Muscat, Oman.

Received: 23 November 2016 Accepted: 29 March 2017

Published online: 04 April 2017

References

- Abonyi, G. (2005). Transformation of Global Production, Trade and Investment: Global Value Chains and International Production Networks. Paper presented to the Expert Group Meeting on SMEs' Participation in Global and Regional Supply Chains, UNESCAP, Bangkok, November, 9, 2005. Available at: http://www.unescap.org/sites/default/files/indpub2439_fullpercent20text.pdf. Accessed 17 June 2016.
- Ahmed, I., Nawaz, M. M., Ahmad, Z., Shaukat, Z. S., Usman, A., & Ul-Rehman, W. (2010). Determinants of students' entrepreneurial career intentions: evidence from business graduates. *European Journal of Social Sciences*, 15(2), 14–22.

- Al Barwani, K.M., Al Jahwari, M.R., Al Saidi, A.S., & Al Mahrouqi, F.S. (2014). Towards a Growing Competitive and Dynamic Small and Medium sized Enterprises Sector in Oman: Central Bank of Oman, Economics, Research and Statistics Department. Retrieved from <https://www.cbo.gov.om>. Accessed 17 June 2016.
- Al-Harrasi, S., & Al-Salti, S. (2014). Entrepreneurial intention among information systems (IS) students at sultan qaboos university: an exploratory study. *Global Journal of Management and Business Research: A Administration and Management*, 14(9), 31–34.
- Al-Mubarak, H. (2008). State investment in business incubators. *Public Administration Quarterly*, 12(2), 196–215.
- Al-Mubarak, H., & Busler, M. (2010). Business incubators models of the USA and UK: a SWOT analysis. *World Journal of Entrepreneurship, Management and Sustainable Development*, 6(4), 335–354.
- Ammal, A., & Mathi, K. (2014). Attitudes of Undergraduate Students towards Entrepreneurship as a career choice in Oman. *Journal of international academic research for multidisciplinary*, 2(6), 651–661.
- Antonites, A. J., & Wordsworth, R. (2009). Risk tolerance: a perspective on entrepreneurship education. *Southern African Business Review*, 13(3), 70–74.
- Baron, R. A., & Shane, S. A. (2008). *Entrepreneurship: a process perspective* (2nd ed.). Mason: Thomson South-Western.
- Bartlett, M. S. (1954). A note on the multiplying factors for various chi square approximation. *Journal of Royal Statistical Society*, 16(Series B), 296–298.
- Belwal, R., Al Balushi, H., & Belwal, S. (2015). Students' perception of entrepreneurship and enterprise education in Oman. *Education and Training*, 9(8), 924–947.
- Benchiba, N., Mogielnicki, R., Owens, S., & Jackson, W.S. (2016). Oman Employment Report Insights for 2016. Oxford Strategic Consulting, UK. Retrieved from http://www.oxfordstrategicconsulting.com/wp-content/uploads/2016/01/OxfordStrategicConsulting_OmanEmployment_Jan2016.pdf. Accessed 19 May 2016.
- Campbell, C. (1989). Change agents in the new economy: business incubators and economic development. *Economic Development Review*, 7, 56–59.
- Central Bank of Oman. (2016). *Mid-year review of Omani economy 2015*. Available at :<http://www.cbo-oman.org/OccasionalPapers/CBOMidYear2015EN.pdf>. Accessed 5 Aug 2016.
- Christina, B., Neelufar, A., & Al Amri, S. (2014). Challenges and barriers encountered by the SMEs owners in Muscat. *International Journal of Small Business and Entrepreneurship Research*, 2(3), 1–13.
- Da Costa, F. J., Soares, A. A. C., & Bonfim, D. G. (2009). Factors of influence on the entrepreneurial interest: an analysis with students of information technology related courses. *Journal of Information Systems and Technology Management*, 6(2), 227–246. doi:10.4301/S1807-17752009000200005.
- Der Zwan, P. V., Zuurhout, P., & Zoetermeer, J. H. (2013). *Entrepreneurship education and self-employment: the role of perceived barriers*. Retrieved from <http://www.ondernemerschap.nl/pdf-ez/H201301.pdf>. Accessed 14 Mar 2016.
- European Commission. (2009). European Competitiveness Report 2009, Brussels: DG Enterprise and Industry, available at http://www.NBAK09001ENC_002.pdf. Accessed 18 June 2016.
- Farashah, A. D. (2013). The process of impact of entrepreneurship education and training on entrepreneurship perception and intention. *Study of educational system of Iran, Education + Training*, 55(8/9), 868–885.
- Fayolle, A. (2007). *Entrepreneurship and new value creation: the dynamic of the entrepreneurial process*. Cambridge: Cambridge University Press.
- Ferreira, J. J., Raposo, M. L., Rodrigues, R. G., Dinis, A., & do Paço, A. (2012). A model of entrepreneurial intention: an application of the psychological and behavioral approaches. *Journal of Small Business and Enterprise Development*, 19(3), 424–440.
- Frederick, H. H., Kuratko, D. F., & Hodgetts, R. M. (2006). *Entrepreneurship: theory, process and practice*. Victoria: Cengage Learning.
- G20 Leaders' Communiqué Brisbane Summit, 15–16 November 2014, available at <http://www.mofa.go.jp/mofaj/files/000059841.pdf>. Accessed 18 June 2016.
- Gibb, A. A. (2013). *Developing the entrepreneurial university of the future* (Key challenges, opportunities and responses). Paris: OECD. Available at https://heinnovate.eu/sites/default/files/heinnovate_concept_note_june_2014.pdf. Accessed 20 Aug 2016.
- Global Entrepreneurship Monitor (GEN). (2013). *Global report: fifteen years of assessing entrepreneurship across the globe*. <http://www.babson.edu/Academics/centers/blank-center/globalresearch/gem/Documents/GEM%202013%20Global%20Report.pdf>. Accessed 11 Nov 2016.
- Hatala, J. P. (2005). Identifying barriers to self-employment: the development and validation of the barriers to entrepreneurship success tool. *Performance Improvement Quarterly*, 18(4), 50–70.
- Imran, A., Ahmad, H. M., Ur Rehman, K., & Safwan, N. (2011). Factors influencing intention to create new venture among young graduates. *Africa Journal of Business Management*, 5(1), 121–127.
- InfoDev. (2007). Innovation and entrepreneurship in developing countries: Impact assessment and lessons from InfoDev's Global Network of Business Incubators. Retrieved from http://www.infodev.org/infodev-files/resource/InfodevDocuments_6.pdf. Accessed 18 Apr 2016.
- Kaiser, H. (1974). An index of factorial simplicity. *Psychometrika*, 39, 31–36.
- Kitson, M., Martin, R., & Tyler, P. (2004). Regional competitiveness: an elusive yet key concept? *Regional Studies*, 38(9), 991–999.
- Koh, H. C. (1995). Factors associated with entrepreneurial inclination: an empirical study of business undergraduates in Hong Kong. *Journal of Small Business and Entrepreneurship*, 12(2), 29–41.
- Koh, W. T. H., & Wong, P. K. (2005). Competing at the frontier: the changing role of technology policy in Singapore's economic strategy. *Technological Forecasting and Social Change*, 72(1), 255–285. Elsevier.
- Kolvareid, L., & Moen, Ø. (1997). Entrepreneurship among business graduates: does a major in entrepreneurship make a difference? *Journal of European Industrial Training*, 21(4), 154–160.
- Kor, Y. S., Mahoney, J. T., & Michael, S. G. (2007). Resources, capabilities and entrepreneurial perceptions. *Journal of Management Studies*, 44(7), 1191–1196.
- Kotler, P., Armstrong, G., Wong, V., & Saunders, J. (2008). *Principles of Marketing*. London: Prentice Hall.
- Kuehn, K. W. (2008). Entrepreneurial intentions research: Implications for entrepreneurship education. *Journal of Entrepreneurship Education*, 11, 87–98.

- Lanero, A., Vázquez, J. L., Gutiérrez, P., & García, M. P. (2011). The impact of entrepreneurship education in European universities: an intention-based approach analyzed in the Spanish area. *International Review of Public Nonprofit Marketing*, 8(2), 111–130.
- Lee, S. M., Chang, D., & Lim, S. B. (2005). Impact of entrepreneurship education: a comparative study of the U.S. and Korea. *International Entrepreneurship and Management Journal*, 1(1), 27–43.
- Matlay, H. Westhead, P. (2005). Virtual teams and the rise of e-entrepreneurship in Europe. *International Small Business Journal*, 12(3), 353–365.
- McMullan, W. E., & Gillin, L. M. (1998). Developing technological start-up entrepreneurs: a case study of a graduate entrepreneurship programme at Swinburne university. *Technovation*, 18(4), 275–286.
- Muscat Daily. (2015). Muscat Daily.com. Retrieved from <http://www.muscatdaily.com/Archive/Oman/Unemployment-rate-in-the-sultanate->. Accessed 5 Mar 2016.
- National Center for Statistics and Information. (2015). *Statistical year book. Issue 43–2015*. Oman: National Center for Statistics and Information.
- Naudé, W. A. (2011). *Entrepreneurship and economic development*. Palgrave Macmillan: UNU-WIDER.
- Ogutu, V., & Kihonge, E. (2016). Impact of business incubators on economic growth and entrepreneurship development. *International Journal of Science and Research (IJSR)*, 5(5), 231–241.
- Paramond, S. (2004). Attitude towards entrepreneurship in organization. *The Journal of Entrepreneurship*, 13(1), 53–68.
- Robinson, P., & Haynes, M. (1991). Entrepreneurship education in America's major universities. *Entrepreneurship Theory and Practice*, 15(3), 41–52.
- Schaper, M., & Volery, T. (2004). *Entrepreneurship and small business: a pacific Rim perspective*. Queensland, John Wiley and Sons Australia Ltd: Milton.
- Tan, W. L., Long, A., & Robinson, P. (1996). Entrepreneurship attitude orientation and the intention to start a business. *Journal of Small Business Management*, 13(4), 50–61.
- Tkachev, A., & Kolvereid, L. (1999). Self-employment intentions among Russian students. *Entrepreneurship and Regional Development*, 11(1), 269–280.
- Todorovic, Z., & Moenter, K. (2010). Tenant firm progression within an incubator: progression toward an optimal point of resource utilization. *Academy of Entrepreneurship Journal*, 16(1), 23–40.
- Van Praag, C. M., & Versloot, P. H. (2007). What is the value of entrepreneurship? a review of recent research. *Small Business Economics*, 29, 351–382.
- World Bank. (2015). World Development Indicators (WDI). Washington, DC: World Bank Publications.
- World Economic Forum (2016). The Global Competitiveness Report 2015-2016. Available at http://www3.weforum.org/docs/gcr/2015-2016/Global_Competitiveness_Report_2015-2016.pdf. Accessed 21 July 2016.