Strategic interventions to improve women entrepreneurship in GCC countries

A relationship modeling approach

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Abstract

Purpose – In Gulf Cooperation Council (GCC) countries, entrepreneurship is not a very popular option among women. The low rate of entrepreneurship as a career choice among females is attributed to factors that are specific to females in GCC region. The purpose of this paper is to understand these variables and their interrelationships that lead to low rate of adoption of entrepreneurship as a career choice among females in GCC region.

Design/methodology/approach – The research followed a two-stage process; first, a comprehensive literature review was conducted to identify barriers to female entrepreneurship in GCC region. In the second stage, the identified barriers were modeled using fuzzy interpretive structural modeling technique to construct a hierarchical structure and the impact matrix cross-reference multiplication applied to a classification approach to analyze the control power and dependence among these barriers.

Findings – The research shows that there exists a group of barriers having a high driving power and low dependence requiring maximum attention and of strategic importance, while another group consists of those variables that have high dependence and are the resultant actions.

Practical implications – This research will help policy makers to focus on variables that are most important and requires immediate attention for the development and empowerment of female entrepreneurship in the GCC region. The paper suggests future course of action to provide an impetus to efforts aimed at improving female entrepreneurship in the GCC region.

Originality/value – The policy makers in the GCC region have accorded high priority to entrepreneurship to reduce the dependence of population on government jobs. This research is one of the few studies on female entrepreneurship conducted in GCC region to understand the impediments that limit the adoption of entrepreneurship as a career choice by women.

Keywords GCC, Interpretive structural modeling, Female entrepreneurship

Paper type Research paper

1. Introduction

Women entrepreneurship is considered to be a vital tool for enhancing and promoting the employment and innovation in the developed and developing nations. A substantial amount of research is extant on this topic in the developed nations; however, comparatively quite a

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few focus on developing nations. The Gulf Cooperation Council (GCC) region is witnessing a notable growth in female education, and the female population is an emergent power for socioeconomic advancement. According to a report by Al Masah Capital Limited in 2012, female graduates in the GCC outnumber their male counterparts which clearly indicates that the GCC countries have swiftly upgraded access of females to advanced education. Nonetheless, female employment in the GCC states is low, at 26.9 per cent, women's participation in the regional work force is almost half that of the world's average (51.7 per cent). Similarly, women's involvement in entrepreneurship as compared to men varies significantly in the Middle East and North Africa (MENA) economies where more than two-thirds of the early-stage entrepreneurs are men (Global Entrepreneurship Research Association, 2013). This raises the question: why is women's augmented education not transforming into superior equality in the workplace? According to Maier (2013) attitudinal, institutional and socio-cultural factors inform women's empowerment within the workforce. Henceforth, there is a dire necessity for examining the challenges and prospects women entrepreneurs face in the GCC region to promote and implement policies related to women entrepreneurship.

The research presented in this paper reviews the relevant literature with a specific focus on the impediments associated with the women entrepreneurship in the GCC countries. Further, using interpretive structural modeling (ISM) methodology, it develops a structural model revealing the relationships among the barriers to female entrepreneurship. Based on the comprehensive review and results of the model, this study offers useful theoretical insights and practical suggestions and inferences for the policy makers to identify the main barriers and design the effective policies to overcome these barriers making entrepreneurship among females an attractive career choice in GCC region.

2. Barriers to female entrepreneurship

Variations exist in the GCC countries with regard to the range of women's entrepreneurship activities, the challenges they face and the available support programs. Existing literature indicates that the women in the Middle East are gradually adopting the entrepreneurial spirit due to its positive insights and a weakened dread of failure. Their participation stems from the pursuit of market opportunities rather than need based. Yet, the women entrepreneurial activity rate fluctuates amid various GCC nations and is lesser than that of male counterparts (Jamali, 2009; Hattab, 2012). In the following paragraphs, factors that inhibit the growth of entrepreneurship among women in GCC countries are discussed.

2.1 Difficult to access capital

Women in developing and emerging countries face greater difficulties in securing ventures funding than men. Possible reason can be the dearth of individual collateral and land title against which they could secure a loan (World Bank, 2011). Previous researches reveal that some of the nagging barriers to female entrepreneurship are lower initial levels of overall capital, lower ratios of debt finance compared to males (Bruin *et al.*, 2007) as well as poor access to financial capital (Gundry *et al.*, 2002; Weiler and Bernasek, 2001). In this respect, the greatest difficulties are experienced by Saudi women, followed by Bahraini women (Al Turki and Braswell, 2010). Most of the Emirati businesswomen start their businesses from their personal savings and borrowings from their family and friends and do not prefer to take loans from foreign banks. This can be attributed to the higher interest rates and too much documentation (Jabeen *et al.*, 2015). Al-Owaihan and Rao (2010) reported that financial and networking problems are the major obstacles for many Kuwaiti women entrepreneurs, especially at the start-up stage.

2.2 Lack of supportive regulatory environment

The regulatory environment for women business owners has seen some improvements in the GCC recently. But Welsh *et al.* (2014) reported that Saudi women are less satisfied with the quality and quantity of institutional help received which is particularly crucial for mature businesses that are less likely to enjoy support from their families or friends whose own savings recede during the initial stages of the business. Interestingly, GCC women increasingly demonstrate a willingness to take risks and set up their own businesses. Responding to this new trend, GCC governments are trying to develop programs to support female entrepreneurship. Yet, women entrepreneurs' exercise of choice is considerably limited by the meso-environment (which includes regional support policies, organizational and industrial initiatives, environmental concerns such as professional exclusion and social networking) as well as the macro environment, namely, nationwide policies, culture, decree and the economy (Brush *et al.*, 2009).

2.3 Dual role and responsibility

Sustainable work–life balance issue has also started gaining attention in the developing countries (Rehman and Roomi, 2012; Mathew and Panchanatham, 2011). Brush (1992) reported that family obligations are assumed to be the women's primary responsibility, and thus work and family presents different sets of priorities and challenges for both men and women. Work responsibilities could be affected by time and mobility constraints during the management of a business (Brush *et al.*, 2009; McClelland, 2004). Women face uneven distribution of childcare and other domestic responsibilities which become major barriers in the advancement of their career (Cross and Linehan, 2006). However, the two could be coordinated in such a way that one becomes intrinsic to the other (Allen and Truman, 1993). Several scholars (Aldrich and Cliff, 2003; Dyer, 2003) have advocated the benefits of adopting a "family embededness perspective", and reported that entrepreneurs' businesses and families are mostly inseparable and cannot be considered as separate entities with no noticeable effects on each other.

2.4 Cultural and religious beliefs

In Arab societies, Islamic culture largely influences women's participation in the labor force. While acknowledging Islam as a culturally unifying force, Kabasakal and Bodur (2002) attribute the variations in social norms and practices toward women to Islamic culture. In Bahrain and Oman, Dechant and Al-Lamky (2005) explored the numerous social factors that might influence the business start-up of women and found, interestingly, that Islam has an affirmative impact on their work. However, there are some cultural practices that might prevent women from conducting their business unlike men and may affect their mobility in conducting their business. Social attitudes and traditions represented the major obstacle in the advancement of UAE women entrepreneurs (Itani *et al.*, 2011). To meet certain masculine values in most cultures, women in the labor force are constrained by the societal norms (Tower and Alkadry, 2008). McIntosh and Islam (2010) investigated the impact of Islam on Bahraini women entrepreneurs' and found that Islamic conduct played a substantial role in the lives of women. This undoubtedly indicates that some factors that affect women entrepreneurship in conventional Muslim nations are dissimilar from those affecting women entrepreneurs in the North American and Western European context.

2.5 Limited social networks/social ties

Fielden and Dawe (2004) suggest that socially constructed barriers are responsible for inhibiting women's progression. Their study also acknowledge that mentoring and network support is equally important in enhancing women's outlook with respect to business

management and new business establishment as financial support. Despite the fact that the significance of networks to small ventures is well-recognized (Rosa and Hamilton, 1994; Huang *et al.*, 2013), women are often less welcome in social networks (Brush, 1992; Burt, 2000), particularly in customary societies (Ufuk and Ozgen, 2001). Hence, women instituting networks, particularly with men, is not encouraged in Arab and Muslim culture (Omair, 2008).

2.6 Gender bias

To enhance the participation of women in the labor force, it is essential to maintain gender parity. Maier (2013) reported that the employers in the GCC and worldwide discriminate against women, as they believe that women are costlier and not as much productive as men. Although both the genders are stated equal in terms of civil liberties and duties in the constitutions of most of the Muslim nations in the Middle East. Nonetheless, the business milieu in the Middle East is still greatly influenced by gender issues. Business women in the GCC region encounter various problems which obstruct them in lower participation and contribution in the commercial trade as compared to their male counterparts. Ahmad (2011) in his study found that Saudi businesswomen consider their gender as a major barrier in economic ventures which makes them severely dependent on their male kin to complete the trade registration and related processes. Similarly, the United Arab Emirates has entrenched norms about the Emirati women roles to the overall society (El-Ghannam, 2002; Metcalfe, 2006; Mostafa, 2005).

2.7 Lack of managerial skills

According to Minnitti *et al.* (2007), women's tendency to start novel ventures is certainly interrelated to a self-assessment of their professional abilities and awareness; thus, preparing women with these skills is considered essential to escalate their rate of venture creation. Despite government support, UAE women complained of the insufficiency of proper training and education in finance and management that proved to be a hindrance in their business success. Apparently, some women entrepreneurs were unaware of the support and coaching available through various syndicates and government-backed non-profit organizations (Itani *et al.*, 2011). Mohsen (2007) reported that the Arab businesswomen face various informal external barriers which is mainly based on ethnic rules and regulations. For instance, Egyptian women get very limited opportunities to advance their professional venturing skills (Ministry of Finance, 2007; Hattab, 2012). Idrus *et al.* (2014) highlighted the lack of training and education as a barrier to women entrepreneurs and how a training program could solve these problems in Malaysia.

2.8 Lack of family support

There can be gender contrasts in the way the family and the community deliberately or unknowingly that impact young females' instructive and scholastic decisions and vocation yearnings. Families may not support their girls, for instance, to pursue degrees in science and engineering or accept that these are unseemly occupations – unless one or both of the parents work in these disciplines (Cohoon and Aspray, 2006). The business people's learning base, family backing and outside backing can be critical in endeavor creation (Chang *et al.*, 2009). Family resistance and cultural restrictions are significant obstructions confronting female entrepreneurs, which is more evident in male-dominated societies with strong gender stereotyping (Rehman and Roomi, 2012; Roomi and Parrott, 2008). Lin (1999) pointed out that women's network is influenced by family connections, and it may show an obstruction in business terms. Previous researches have likewise reported that the backing and support of relatives impact the accomplishment of female entrepreneurs (Naser *et al.*, 2009; Jabeen *et al.*,

2015) Likewise, while family and friends are seen by some women as an important and useful source of support, for others they can be unsupportive and damaging (Fielden and Hunt, 2011).

2.9 Risk aversion

Brindley (2005) has stated that risk-taking is an inherent characteristic of the entrepreneurial personality. Slovic (2000) found that in the majority of studies on risk-taking, women are generally averse to taking risks, while men are more inclined to take risks. Several studies (Koellinger *et al.*, 2007; Minniti *et al.*, 2005) show that women tend to have a higher fear of failure. Nel *et al.* (2010) contend that the apprehension of disappointment is a major barrier that confront female entrepreneurs. GCC females have inward boundaries that restrain their capacity to exceed expectations in business and hinder their readiness to take part in business ventures. Some of those fears relate to an attitude of risk aversion, or fear of being in a failing position (Itani *et al.*, 2011). A study by Zeffane (2013) noted that there are no other real contrasts between the two genders on general entrepreneurial capabilities; women were less inclined to taking risk.

2.10 Limited information technology skills

Women have generally been found to avoid educational, career and entrepreneurship opportunities in science, technology, engineering and math (Al Marzouqi and Forster, 2011). Consequently, they have been unable to be equal with men in computer science and information technology at the workplace, especially in the MENA region. This is attributed to national education policies (Cohoon and Aspray, 2006), lack of female science and IT teachers at primary, secondary and tertiary levels and differential/inequitable relationships and interactions between (male) teachers and male/female students (Jenson and Rose, 2003). Alaedini and Razavi (2005) also consider lack of technical knowledge by women as a limiting factor fin pursuing entrepreneurship in GCC countries.

2.11 Opportunity identification process

Opportunity identification is viewed as a key issue, given that it is an imperative entrepreneurial ability and a source of competitive advantage (DeTienne and Chandler, 2007). Gender differences in opportunity identification have been connected to contrasts in human capital variables including training and work experience, with men essentially using their earlier industry or entrepreneurial experience females (Boden and Nucci, 2002). While men and women might in reality have exceptional and separated loads of human capital as implied by DeTienne and Chandler (2007), the confirmation for the most part recommends that females have less human capital to convey to independent work that adversely affects their potential for circumstance identification and misuse.

2.12 Motivational and personality barriers

Various scholars (Carter and Rosa, 1998; Huarng *et al.*, 2012) revealed differences in business characteristics, motives of entrepreneurial endeavor and evaluations of main barriers to starting and maintaining entrepreneurial activities, personality traits, management style and business acumen. Brush (1992) observed in her study that a higher extent of females are inspired by disappointment with their present work and view business ownership as a job alternative that is more similar with other parts of their life. While males and females have numerous similarities, females are affected and encouraged more by family needs and males by monetary motives (Buttner, 1993). For some women, the motivation for entrepreneurship arises from negative conditions, while for others by positive opportunities (Langenfeld, 1999).

2.13 Lack of quality pre-venture consultation and assistance

Gine and Mansuri (2014) find that business training does indeed lead to increased business knowledge and better business practices. However, women do improve business knowledge but show no adjustments in their business practices and profitability. In Saudi Arabia, the lack of coordination between various government departments appears to be the most important barrier, followed by a shortage of laws protecting women's investments and customers, shortcomings in community support, and social and cultural restrictions (Sadi and Al-Ghazali, 2010). In UAE, women business organizations like Abu Dhabi Business Women Council and Dubai Business Women's Council provide training on entrepreneurship and specific sources of help such as feasibility studies and consulting services for the setting up of businesses including securing finance for small and medium enterprises. However, pre-venture consultation and assistance is not the same across the entire GCC region.

2.14 Limited role of women in the economic growth of Gulf Cooperation Council countries

Given their high levels of education, females are a huge yet underused asset of the GCC economies. Various global studies have recognized that an increment in the female work market investment has a substantial, positive and considerable effect on financial advancement and social development. However, in GCC, local and expatriate males dominate different commercial enterprises (Tahseen Consulting, 2015). It is evident from Table I that female labor market participation rates in the GCC significantly lag behind the OECD average and, in some cases, are among the lowest in the world.

2.15 Over-reliance of women in Gulf Cooperation Council countries on government jobs

Women are unwilling to start a business venture because they prefer work in the public sector because it is deemed more respectable by society, requires shorter working hours and shows commitment to the country. In addition, women prefer the security of the public sector and rarely use private facilities in finding employment in view of the greater challenges they face in securing employment than men. In addition, because of cultural stigma, many Emirati women still have few opportunities for professional development and promotion and are often awarded less professional respect than foreign women (Kirdar, 2010) (Table II).

3. Methodology

As evident from the previous section, there are many variables that might impact the adoption of entrepreneurship as a career by females in the GCC countries. More importantly, policy makers would be interested in understanding the relationships among them so that

Country	Labor market participation male nationals (%)	Labor market participation female nationals (%)
Bahrain	68	33
Kuwait	61	30
Oman*	45	20
Qatar	65	35
Saudi Arabia	63	16
United Arab Emirates	58	20
OECD average	69	51

Note: *Indicates transitivity
Source: National Statistical Agencies of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE (Tahseen consulting, 2015)

Table I.
Labor market participation in GCC countries for male and female

they can channelize the resources to mitigate those barriers that have maximum impact. This can be achieved using fuzzy interpretive structural modeling (fuzzy-ISM) methodology that can effectively model these relationships. Fuzzy-ISM can be considered as a modified version of interpretive structural modeling (Warfield, 1974a; Sage, 1977) in a way that it not only considers the existence of an interaction between sub-elements but also the dominance of the interaction among the variables (Joshi *et al.*, 2009). The steps of fuzzy-ISM methodology are presented in Figure 1.

3.1 Fuzzy structural self-interaction matrix

Following the previous studies and keeping in mind the contextual relationship for each barrier of women entrepreneurship, the existence of a relation between any two barriers (*i, j*) and associated direction of the relation is questioned (Govindan *et al.*, 2013). In the present research, the relationships among variables of the system under consideration are negative impact or worse. This implies that one variable has a negative impact on the performance of the other variable. Considering this relationship, variables are considered in pairs' to determine the type of relationship. The four types of relationships that can emerge from such analysis are:

(1) V: Barrier *i* will worsen Barrier *j*;

(2) A: Barrier *j* will worsen Barrier *i*;

(3) X: Barriers *i* and *j* will worsen each other; and

(4) O: Barriers *i* and *j* are unrelated.

In addition, in fuzzy-ISM approach, the strength of the relationship between two variables is assessed on a 0-l scale as shown in Table III. This feature of fuzzy-ISM provides the decision makers the chance to focus on those elements which they are keen to study. For example, if the analyst is keen to study those variables with high strength of interaction only, he focuses on all entries of 0.7 and 0.9 only and replacing all other entries to 0s in the reachability matrix (Joshi *et al.*, 2009).

Thus, based on the strength rules of Table III, the above-stated symbols of V, X and O would have a range of values as mentioned in Table IV.

Now using the relationships rules of Table II and based on the discussion with experts, the relationships among the identified barriers to transparency in a supply chain are represented in Table V.

Country	% of female nationals employed in the public sector	% of female nationals employed in the private sector
Bahrain	50	50
Kuwait	94	6
Oman	65	35
Qatar	88	12
Saudi Arabia	63	37
UAE	89	11

Source: National Statistical Agencies of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE (Tahseen Consulting, 2015)

Table II. Employment across public and private sectors for females in GCC

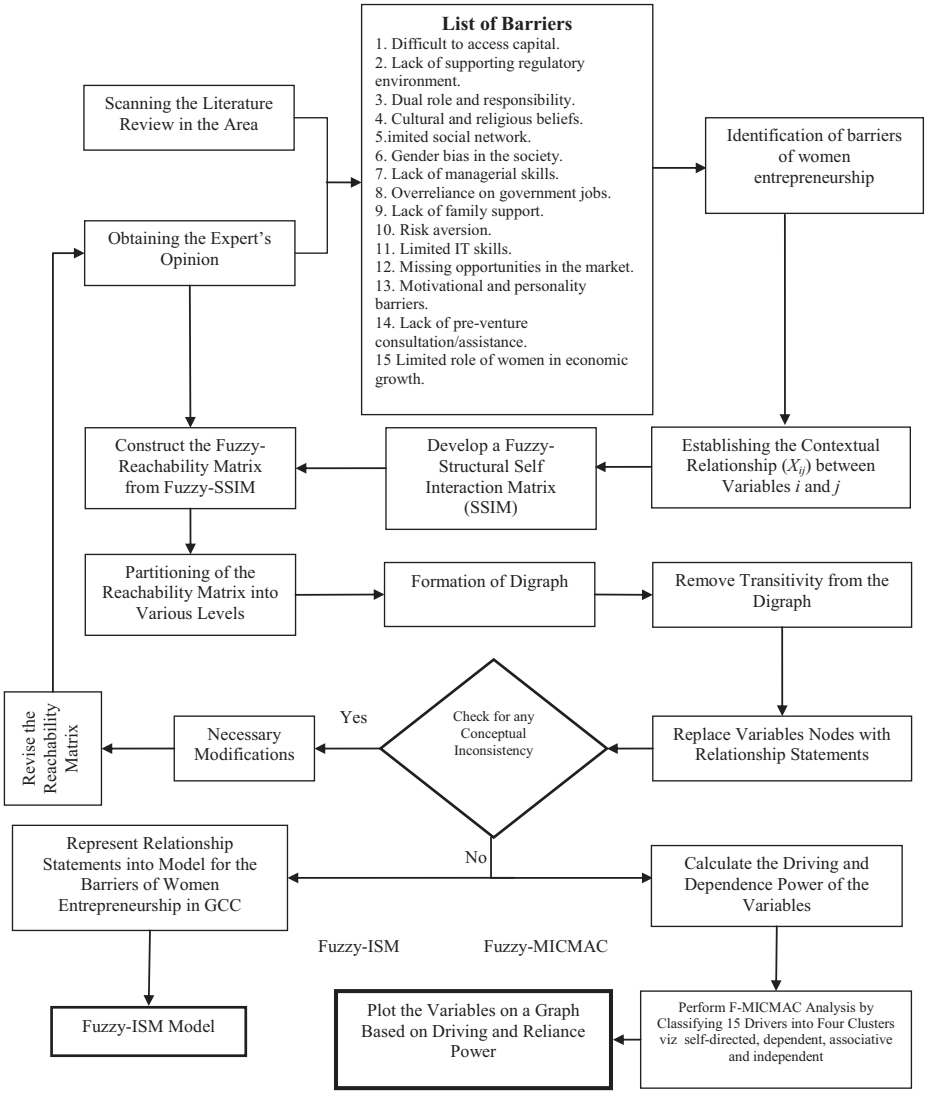

Figure 1.
Fuzzy-ISM methodology

Source: Adapted from Faisal *et al*. (2007)

Dominance of interaction	No	Very low	Low	Medium	High	Very high	Full
Grade	N	VL	L	M	H	VH	F
Value on fuzzy scale	0	0.1	0.3	0.5	0.7	0.9	1

Table III.
Qualitative consideration on 0-1 scale for strength of interaction

Source: Adapted from Joshi *et al*. (2009)

3.2 Fuzzy reachability matrix

The traditional ISM methodology requires the matrix as represented by Table V to be converted into a binary matrix, called the initial reachability matrix by substituting V, A, X, O by numerical values as per the rules mentioned below (Khan *et al.*, 2015):

- If the cell (*i, j*) entry in structural self-interaction matrix (SSIM) is "V", then the (*i, j*) entry in initial reachability matrix becomes 1 and the cell (*j, i*) entry becomes 0.
- If the cell (*i, j*) entry in the SSIM is "A", then the cell (*i, j*) entry in the initial reachability matrix becomes 0 and the cell (*j, i*) entry becomes 1.
- If the cell (*i, j*) entry in the SSIM is "X", the cell (*i, j*) entry in the initial reachability matrix becomes 1 and the cell (j, i) entry also becomes 1.
- If the cell (*i, j*) entry in the SSIM is "O", the cell (*i, j*) entry in the initial reachability matrix becomes 0 and the (*j, i*) entry also becomes 0.

But in this research in addition to the rules stated above, we need to consider the strength of relationships as well, and thus the entries of Table V are changed using the rules of Tables III and IV and the above rules to finally arrive at Table VI. Further, in Table VI entries are updated based on transitivity rules (Faisal and Al-Esmael, 2014).

3.3 Level partitions and fuzzy-interpretive structural modeling

Final reachability matrix as shown in Table VI is used to develop the reachability set and antecedent set for each enabler. The reachability set can be found by examining the row of

Strength of interaction	V	A	X
Full	V_1	A_1	X_1
Very high	V_2	A_2	X_2
High	V_3	A_3	X_3
Medium	V_4	A_4	X_4
Low	V_5	A_5	X_5
Very low	V_6	A_6	X_6

Table IV.
Symbols to indicate the relationships among the barriers

↓ Barriers	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
1. Difficult to access capital	V_2	A_3	A_4	O	O	O	A_4	V_2	A_3	A_3	A_3	O	A_4	A_1	–
2. Lack of supporting regulatory environment	V_4	O	V_4	V_5	V_2	V_4	O	O	V_2	V_2	O	O	V_4	–	
3. Dual role and responsibility	V_2	V_3	O	V_2	X_4	V_3	A_2	V_3	X_4	A_4	V_4	A_3	–		
4. Cultural and religious beliefs	O	V_3	V_3	V_4	V_5	V_5	V_1	V_2	V_2	V_1	V_1	–			
5. Limited social network	O	V_3	A_4	V_4	A_2	V_4	A_3	V_4	A_3	A_3	–				
6. Gender bias in the society	V_3	V_3	V_4	V_4	V_3	V_4	X_2	O	V_4	–					
7. Lack of managerial skills	O	V_4	X_3	V_3	X_3	V_4	A_4	O	–						
8. Overreliance on government jobs	O	A_3	A_3	A_3	O	A_4	A_2	–							
9. Lack of family support	V_3	V_4	V_4	V_5	O	V_3	–								
10. Risk aversion	V_3	O	A_2	O	O	–									
11. Limited IT skills	O	V_4	X_4	V_4	–										
12. Opportunities identification difficult	V_2	A_3	A_4	–											
13. Motivational and personality barrier	O	V_3	–												
14. Lack of quality pre-venture consultation	O	–													
15. Limited role of women in economic growth	–														

Table V.
Fuzzy structural self-interaction matrix (fuzzy-SSIM)

Table VI.
Final fuzzy-reachability matrix

↓ Barriers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Control power
1. Difficult to access capital	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.8
2. Lack of supporting regulatory environment	1.0	1.0	0.5	0.0	0.0	0.9	0.9	0.7*	0.7*	0.5	0.9	0.3	0.5	0.7*	0.5	9.1
3. Dual role and responsibility	0.3	0.0	1.0	0.0	0.5	0.0	0.5	0.9	0.0	0.7	0.5	0.9	0.0	0.7	0.9	6.9
4. Cultural and religious beliefs	0.7*	0.0	0.7	1.0	1.0	1.0	0.9	0.5	1.0	0.3	0.3	0.5	0.7	0.7	0.1*	9.4
5. Limited social network	0.7	0.0	0.0	0.0	1.0	0.0	0.0	0.5	0.0	0.5	0.0	0.5	0.0	0.7	0.5*	4.4
6. Gender bias in the society	0.7	0.0	0.7	0.0	0.7	1.0	0.5	0.5*	0.9	0.5	0.7	0.5	0.5	0.7	0.7	8.6
7. Lack of managerial skills	0.7	0.0	0.5	0.0	0.7	0.0	1.0	0.5*	0.0	0.5	0.7	0.7	0.7	0.5	0.5*	7.0
8. Overreliance on government jobs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
9. Lack of family support	0.5	0.0	0.9	0.0	0.7	0.9	0.5	0.5	1.0	0.7	0.5*	0.3	0.5	0.5	0.7	8.2
10. Risk Aversion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.7	2.2
11. Limited IT skills	0.5*	0.0	0.5	0.0	0.9	0.0	0.7	0.3*	0.0	0.7*	1.0	0.5	0.7	0.5	0.0	6.3
12. Opportunities identification difficult	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	1.0	0.0	0.0	0.9	2.6
13. Motivational and personality barriers	0.5	0.0	0.0	0.0	0.5	0.0	0.7	0.7	0.0	0.9	0.7	0.5	1.0	0.7	0.5*	6.7
14. Lack of quality pre-venture consultation	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.7	0.0	1.0	0.7*	3.8
15. Limited role of women in economic growth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0
Reliance	7.5	1.0	4.8	1.0	6.0	3.8	5.7	8.9	3.6	6.3	5.3	6.4	4.6	6.7	8.6	

Note: *Indicates transitivity

the reachability matrix, while antecedent set consists of all the elements found in the column of each variable (Warfield, 1974a). Further, an intersection of these two sets is also developed. Once this is complete for all the elements, an analysis is conducted to find out the element for which the entries of the intersection set and the reachability are identical. This element(s) is considered as the topmost element(s) in the hierarchy. This element will be removed from the reachability set and the antecedent set of all the remaining elements. This iterative process is continued till the levels of all the variables under study are identified (Tables VII and VIII).

3.4 Building the fuzzy-interpretive structural modeling-based model

An important output of fuzzy-ISM methodology is the structural model also known as digraph. This is derived using entries of Table III and considering the iterative process of Section 3.3 for the level of an element. All the elements that emerge at the same level are shown in the digraph occupying the same hierarchy. The model is refined by eliminating any transitive links among the barriers resulting in the final model as shown in Figure 2.

Barrier p_i	Reachability set $R(p_i)$	Antecedent set $A(p_i)$	Intersection set $R(p_i) \cap A(p_i)$	Level
1	1,8,15	1,2,3,4,5,6,7,9,11,13,14	1	
2	1,2,3,6,7,8,9,10,11,12,13,14,15	2	2	
3	1,3,5,7,8,10,11,12,14,15	2,3,4,6,7,9,11	3,7,9,11	
4	1,3,4,5,6,7,8,9,11,12,13,14,15	4	4	
5	1,5,8,10,12,14,15	3,4,5,6,7,9,11,13	5	
6	1,3,5,6,7,8,9,10,11,12,13,14,15	2,4,6,9	6,9	
7	1,3,5,7,8,10,11,12,13,14,15	2,3,4,6,7,9,11,13	3,7,11,13	
8	8	1,2,3,4,5,6,7,8,9,10,11,12,13,14	8	I
9	1,3,5,6,7,8,9,10,11,12,13,14,15	2,4,6,9,10	6,9	
10	8,10,15	2,3,4,5,6,7,9,10,11,13	10	
11	1,3,5,7,8,10,11,12,13,14	2,3,4,6,7,9,11,13	3,11,13	
12	8,12	2,3,4,5,6,7,9,11,12,13.14	12	
13	1,5,7,8,10,11,12,13,14,15	2,4,6,7,9,11,13	7,11,13	
14	1,8,12,14,15	2,3,4,5,6,7,9,11,13,14	14	
15	15	1,2,3,4,5,6,7,9,10,11,12,13,14,15	15	I

Table VII. Iteration *i*

Barrier p_i	Reachability set Rp_i	Antecedent set $A(pp_i)$	Intersection set $R(p_i) \cap A(p_i)$	Level
1	1	1,2,3,4,5,6,7,9,11,13,14	1	II
2	1,2,3,6,7,9,10,11,12,13,14	2	2	VII
3	1,3,5,7,10,11,12,14	2,3,4,6,7,9,11	3,7,9,11	V
4	1,3,4,5,6,7,9,11,12,13,14	4	4	VII
5	1,5,10,12,14	3,4,5,6,7,9,11,13	5	IV
6	1,3,5,6,7,9,10,11,12,13,14	2,4,6,9	6,9	VI
7	1,3,5,7,10,11,12,13,14	2,3,4,6,7,9,11,13	3,7,11,13	V
9	1,3,5,6,7,9,10,11,12,13,14,15	2,4,6,9,10	6,9	VI
10	10	2,3,4,5,6,7,9,10,11,13	10	II
11	1,3,5,7,10,11,12,13,14	2,3,4,6,7,9,11,13	3,11,13	V
12	12	2,3,4,5,6,7,9,11,12,13.14	12	II
13	1,5,7,10,11,12,13,14	2,4,6,7,9,11,13	7,11,13	V
14	1,12,14	2,3,4,5,6,7,9,11,13,14	14	III

Table VIII. Iteration ii-vii

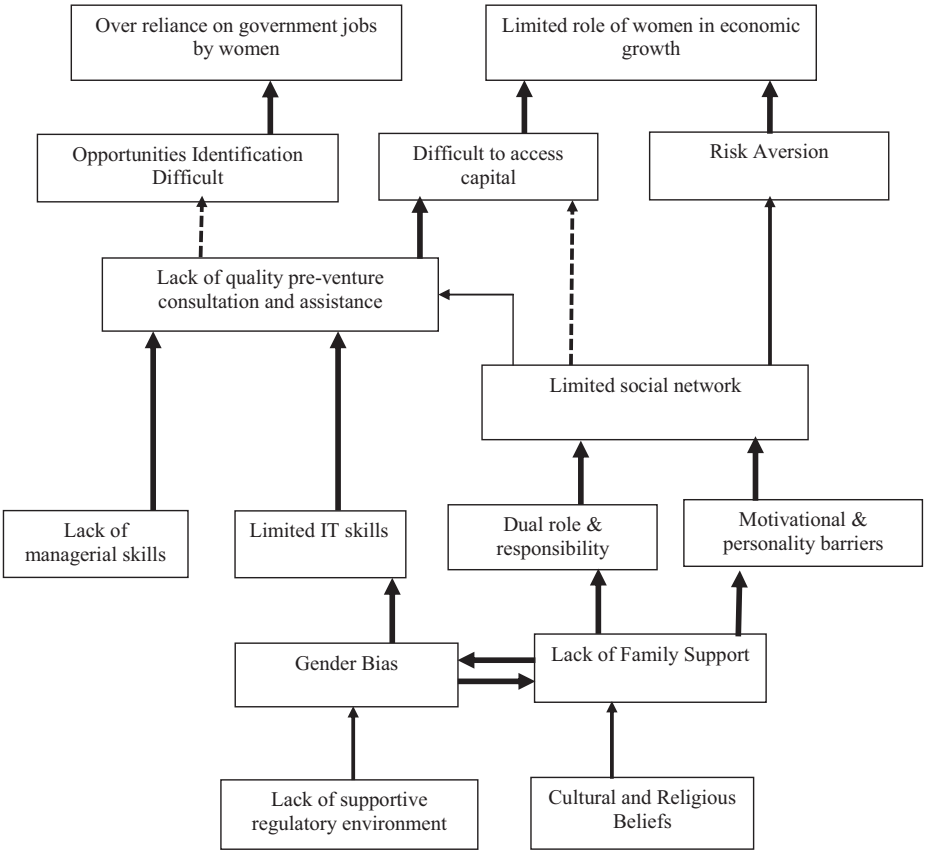

Figure 2.
Fuzzy-ISM-based model for the barriers to women entrepreneurship in GCC

3.5 Fuzzy-impact matrix cross-reference multiplication applied to a classification analysis

Another major outcome of this research is the classification of various barriers based on their power to impact other variables or being impacted by others alternately known as "control power" and "reliance". The concept of impact matrix cross-reference multiplication applied to a classification analysis was developed by Duperrin and Godet (1973) and is used in conjunction with ISM model to improve the understanding of the variables. The control power for each element is calculated from final reachability matrix by adding all the entries in the row of the corresponding to that element, while all the entries in the column of that variable provide the reliance of that variable. Once the control power and the reliance for all elements are obtained, it is plotted in a grid. Further, based on these two values, all the elements can be classified under four groups (Thakkar *et al.*, 2008; Khan *et al.*, 2015). These groups are "self-directed" barriers, which have low values of "control power" and "reliance". These barriers can be considered as redundant in the whole system. The second category consists of the "dependent barriers" that have low score on control power but rank high on "reliance" dimension. The third cluster contains the "associative barriers" that have moderate values for both "control power" and "reliance". The typical characteristic of these variables is that they form a link between those variables that have a high control power and those that have low control power but high reliance. The fourth cluster includes the

"independent barriers" having strong control power but low reliance. It is observed that a variable with a very strong control power (called a strategic variable) falls into either the "independent" or "associative" categories. The control power and the reliance of each of these barriers are shown in Table VI. In this table, an entry along the columns and rows indicates the reliance and control power, respectively. From this, the control power-reliance diagram is constructed as shown in Figure 3.

4. Discussion

Women-owned businesses are one of the fastest growing entrepreneurial populations in the world (Brush *et al.*, 2009). Establishment and development of women-owned enterprises not only contribute to overall economic, political and social development but also play a vital role in women's liberation and empowerment to achieve their individual (personal) goals and ambitions (Roomi and Harrison, 2010). But research on women entrepreneurship are usually been conducted in developed countries (Welter *et al.*, 2006; Cetindamar *et al.*, 2012) and with very little research focusing on women entrepreneurship in developing countries (Javadian and Singh, 2012).

The model developed in this research indicates that the most important barriers that negatively affect the growth of women entrepreneurship in GCC countries are lack of supportive regulatory environment, cultural and religious beliefs, gender bias and lack of family support. Patriarchal social values and associated traditional gender roles lead society to attach lower value to female employment and entrepreneurship (Karatas-Ozkan *et al.*, 2010). Cultural and religious beliefs, gender bias and lack of family support are so-called soft issues, while regulatory environment falls in the category of hard issues (Elam and Siri, 2010). Policy makers need to consider influence of the soft issues on women's response to the hard issues because it directly impacts women entrepreneurs' attitude to access business start-up support (Lockyer and George, 2012). To develop a supporting environment,

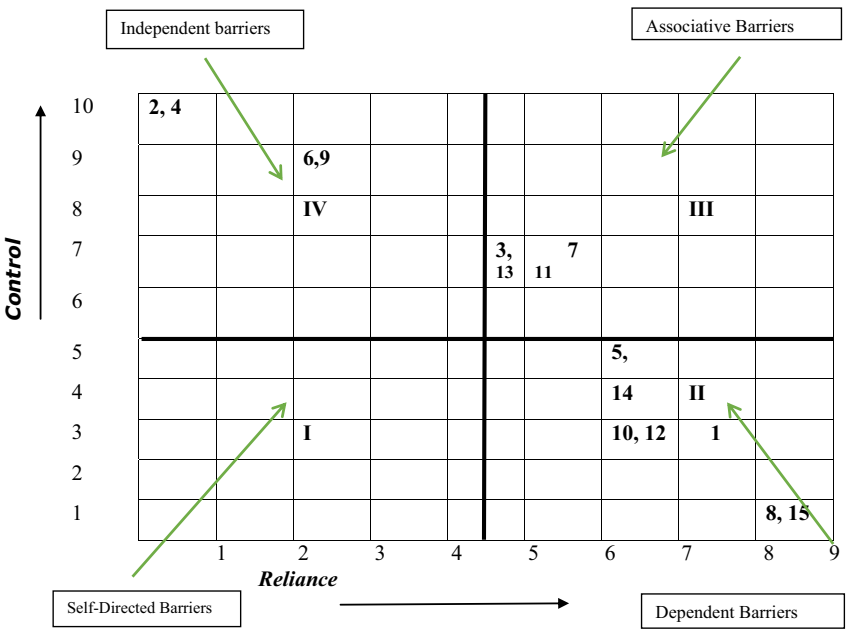

Figure 3.
Control power and reliance diagram

governments can set regulations to ensure that banks extend credit with low interest rates and require little collateral deposits from women entrepreneurs (Ozar, 2007). Governments' can also reduce the bureaucratic procedures required for the establishment of new ventures and make them easier to follow (Maden, 2015).

Previous research has established that the level and type of entrepreneurship is the product of the socio-economic and cultural structure in which the individual is situated (Begley and Tan, 2001). These factors may push or pull (often depending on their socio-economic position) women into entrepreneurship. While "push" factors are often necessity driven, "pull" factors are driven by a desire for personal challenge and satisfaction; characteristics are more frequently associated with middle and upper class women. Though growing evidence from developing economies reveals that women entrepreneurs are particularly likely to be affected by necessity motivation (Maden, 2015) which is a push factor, in GCC countries, this might not be true as most of the men have a secure job through which they can easily support their family. Thus, female entrepreneurship in GCC is motivated by a desire to become independent and to some extent to become their own boss which can be considered as driven by pull factors. This understanding is important for policy makers to develop suitable strategies to support the underlying motivations for women entrepreneurship.

Conflict between one's domestic and business life are also deemed as two distinct but related problems, both having their origins in the gender-stereotyped beliefs within the society (Maden, 2015). The ISM model in the present research also indicates that dual responsibility which is balancing the conflicting role demands of work and family is a barrier with high driving power. This barrier denies women the opportunity to invest time in more strategic issues such as gaining knowledge and planning (Lockyer and George, 2012). As a matter of fact, this factor has been mentioned to increasingly detract women entrepreneurs from satisfaction and well-being as business owners (Teoh and Chong, 2014).

ISM model highlights that another barrier that affects the women entrepreneurial capability is limited social network, which is considered important for the process of idea generation to venture creation. Networking is important as it helps in providing important information, making connections and gaining skills and knowledge required to manage an entrepreneurial venture (Ripolles and Blesa, 2005; Welter and Kautonen, 2005; Hisrich and Brush, 1984). Without a strong social and business networking, many women entrepreneurs face financial, socio-cultural and legal barriers to scale up their businesses (Teoh and Chong, 2014). Women also have different kinds of networks, which will provide them with different information (Shaw *et al.*, 2006) which might be of less value where business opportunities are concerned (Brush *et al.*, 2009). Thus, women entrepreneurs should be educated about the importance of networking and how to become part of networks. In GCC countries, women can solicit the help of the male members of their family to become part of the wider network (Vossenberg, 2013). With the advent of so many ICT tools, this task has become much easier without the requirement of women to interact with men face-to-face which might not be possible in a traditional GCC society.

The ISM model shows that the limited social network affects the access to capital. This was also reported in previous research which corroborates that networking activity, and social capital plays an important role in women business owners' access to financial capital (Carter *et al.*, 2003; Shaw *et al.*, 2006). These barriers force educated women to look for stable, less risky alternatives which in many cases lead them to seek employment in government or semi-government organizations. In addition, when women take on more jobs rather than creating new venture and working to sustain them, their role in growth of the economies of these countries is rather limited. These two barriers are important considering the fact that governments in GCC countries are focused on limiting their role in providing employment to the youth in these countries.

Presently, all the GCC economies have the goal of supporting female entrepreneurship to contribute to economic growth, as they see women as an untapped resource. The governments in these countries need to take several initiatives to promote women entrepreneurship. The literature suggests that women and men entrepreneurs react to the same environment differently due to the characteristics attributed to gender dissimilarities (Croson and Gneezy, 2009). Such differences explain the differing strategies adopted by men and women entrepreneurs in approaching the same issues, trends, opportunities and threats. Thus, policy makers developing programs targeted at women entrepreneurs should recognize these differences between men and women entrepreneurs and customize the programs as per the need of the target group.

Thus, public institutions, local administrations, professional organizations, women's organizations and other non-governmental organizations in these countries need to carry out training activities to sensitize their employees about the requirements of women entrepreneurs. Another initiative similar to Norway can be to focus on women who are potential entrepreneurs and who can be inspired by other successful women through role modeling (Pettersson, 2012). A major area that requires focus is entrepreneurship education (Ooi *et al.*, 2011). It is important to inculcate entrepreneurial spirit and the sense of equity among the younger generation and thus entrepreneurial education can start at the school level. This would help the younger generation understand and appreciate the significance of significance of entrepreneurs in the society along with the context of gender. It is also noticed that many of the characteristics seen and portrayed as desirable for entrepreneurship are generally based on actions attributed to men. Consequently, programs designed to support entrepreneurs are built around these gendered stereotypes (Lockyer and George, 2012). Thus, special care needs to be taken to design programs intended to help women entrepreneurship in GCC countries.

5. Conclusions, limitations and scope for future research

Increasingly, researchers in the women's entrepreneurship field are using a variety of mixed methods to unravel the complex issues of women's entrepreneurship (Carter *et al.*, 2007). The research presented in this paper has also used a soft modeling tool to develop a relationship model for the barriers to women entrepreneurship in GCC countries. Despite the growing importance of women entrepreneurs, they are understudied, and the paucity of research on the phenomenon of women's entrepreneurship is well documented (de Bruin *et al.*, 2006, 2007; Baker *et al.*, 1997). Thus, the present study would add to the body of literature on women entrepreneurship and would help to understand the root causes of that might inhibit the growth of women entrepreneurship in GCC countries. This research has presented an argument that to motivate women in GCC countries to take the challenging role of an entrepreneur; there is a need to understand the interrelationships among the barriers to women entrepreneurship. This has prompted the authors to identify the barriers that could impact women entrepreneurship in GCC countries and model their interrelationships.

The present study also has several limitations. First, the ISM model developed is based on inputs of a select experts group and thus may have an element of bias. Second, the model developed in the study has not been statistically validated. Path analysis or structural equation modeling (SEM) approaches have the capability of testing the validity of such a hypothetical model. AMOS or LISREL software could be used to further examine the relationships derived from this model. If the number of responses is limited, PLS-graph can be used to validate the model. Third limitation might be the number of variables considered to develop the model. However, extensive literature review was done to identify these variables, but there is a chance that some variable might have been neglected. For future

research, it is also suggested that a quantitative study along with a qualitative one may be conducted using primary data collection process through a survey questionnaire approach coupled with case study methodology to gain deeper insights.

References

Ahmad, S.Z. (2011), "Businesswomen in the Kingdom of Saudi Arabia: characteristic, growth patterns and progression in a regional context", *Equality, Diversity and Inclusion: An International Journal*, Vol. 30 No. 7, pp. 610-614.

Al Marzouqi, A.H. and Forster, N. (2011), "An exploratory study of the under-representation of Emirate women in the United Arab Emirates' information technology sector", *Equality, Diversity and Inclusion: An International Journal*, Vol. 30 No. 7, pp. 544-562.

Al Turki, N. and Braswell, R. (2010), *Businesswomen in Saudi Arabia: Characteristics, Challenges, and Aspirations in a Regional Context*, Monitor Group, pp. 45-64.

Alaedini, P. and Razavi, M. (2005), "Women's participation and employment in Iran: a critical examination", *Critique: Critical Middle Eastern Studies*, Vol. 14 No. 1, pp. 57-73.

Aldrich, H.E. and Cliff, J.E. (2003), "The pervasive effects of family on entrepreneurship: toward a family embeddedness perspective", *Journal of Business Venturing*, Vol. 18 No. 5, pp. 573-596.

Allen, S. and Truman, C. (Eds) (1993), "Women and men entrepreneurs: life strategies, business strategies", *Women in Business: Perspectives on Women Entrepreneurs*, Routledge, London, pp. 1-13.

Al-Owaihan, A. and Rao, C.P. (2010), "Women entrepreneurs and their firms: attributes and problems", *Journal of International Business and Entrepreneurship Development*, Vol. 5 No. 1, pp. 48-62.

Baker, T., Aldrich, H. and Liou, N. (1997), "Invisible entrepreneurs: the neglect of women business owners by mass media and scholarly journals in the USA", *Entrepreneurship and Regional Development*, Vol. 9 No. 2, pp. 221-238.

Begley, T.M. and Tan, W. (2001), "The socio-cultural environment for entrepreneurship: a comparison between East Asia and Anglo-Saxon countries", *Journal of International Business Studies*, Vol. 32 No. 3, pp. 537-555.

Boden, R.J. and Nucci, A. (2002), "On the survival prospects of men's and women's new business ventures", *Journal of Business Venturing*, Vol. 15 No. 4, pp. 347-362.

Brindley, C. (2005), "Barriers to women achieving their entrepreneurial potential", *International Journal of Entrepreneurial Behaviour and Research*, Vol. 11 No. 2, pp. 144-161.

Bruin, A., Brush, C. and Welter, F. (2007), "Advancing a framework for coherent research on women's entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 31 No. 3, pp. 323-339.

Brush, C.G. (1992), "Research on women business owners: past trends, a new perspective and future directions", *Entrepreneurship Theory & Practice*, Vol. 16 No. 4, pp. 5-30.

Brush, C.G., de Bruin, A. and Welter, F. (2009), "A gender-aware framework for women's entrepreneurship", *International Journal of Gender and Entrepreneurship*, Vol. 1 No. 1, pp. 8-24.

Burt, R.S. (2000), "The network entrepreneur", in Swedberg, R. (Ed.), *Entrepreneurship: The Social Science View*, Oxford University Press, Oxford, pp. 281-307.

Buttner, E.H. (1993), "Female entrepreneurs: how far have they come?", *Business Horizons*, Vol. 36 No. 2, pp. 59-65.

Carter, N., Brush, C., Gatewood, E., Greene, P. and Hart, M. (2003), "Women entrepreneurs who break through to equity financing: the influence of human, social and financial capital", *Venture Capital*, Vol. 5 No. 1, pp. 1-28.

Carter, S. and Rosa, P. (1998), "The financing of male-and female-owned businesses", *Entrepreneurship and Regional Development*, Vol. 10, pp. 225-241.

Carter, S., Shaw, E., Wilson, F. and Lam, W. (2007), "Gender, entrepreneurship and bank lending: the criteria and processes used by bank loan officers in assessing applications", *Entrepreneurship Theory & Practice*, Vol. 31 No. 3, pp. 427-444.

Cetindamar, D., Gupta, V.K. and Karadeniz, E.E. and Egrican, N. (2012), "What the numbers tell: the impact of human, family and financial capital on women and men's entry into entrepreneurship in Turkey", *Entrepreneurship & Regional Development: An International Journal*, Vol. 24 Nos 1/2, pp. 29-51.

Chang, E.P.C., Memili, E., Chrisman, J.J., Kellermanns, F.W. and Chua, J.H. (2009), "Venture preparedness and start-up decisions: does family help? A report on Hispanic entrepreneurs in the US", *Family Business Review*, Vol. 22 No. 3, pp. 279-292.

Cohoon, J.M. and Aspray, W. (Eds) (2006), *Women and Information Technology: Research on Underrepresentation*, MIT Press, Cambridge, MA.

Croson, R. and Gneezy, U. (2009), "Gender differences in preferences", *Journal of Economic Literature*, Vol. 47 No. 2, pp. 1-27.

Cross, C. and Linehan, M. (2006), "Barriers to advancing female careers in the high-tech sector: empirical evidence from Ireland", *Women in Management Review*, Vol. 21 No. 1, pp. 28-39.

de Bruin, A., Brush, C. and Welter, F. (2006), "Introduction to the special issue: towards building cumulative knowledge on women's entrepreneurship", *Entrepreneurship Theory & Practice*, Vol. 30 No. 5, pp. 585-594.

de Bruin, A., Brush, C. and Welter, F. (2007), "Advancing a framework for coherent research on women's entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 31 No. 3, pp. 323-339.

Dechant, K. and Al-Lamky, A. (2005), "Toward and understanding of Arab women entrepreneurs in Bahrain and Oman", *Journal of Developmental Entrepreneurship*, Vol. 10 No. 2, pp. 123-141.

DeTienne, D. and Chandler, G. (2007), "The role of gender in opportunity identification", *Entrepreneurship Theory and Practice*, Vol. 31 No. 3, pp. 365-386.

Duperrin, J.C. and Godet, M. (1973), "Methode de hierar chization des elements d'um system", Rapport Economique de CEA, Commissariat a' l'E' nergie Atomique (CEA), Paris, pp. 45-51.

Dyer, W.G. (2003), "The family: the missing variable in organizational research", *Entrepreneurship Theory and Practice*, Vol. 27 No. 4, pp. 401-416.

Elam, A. and Siri, T. (2010), "Gendered institutions and cross-national patterns of business creation for men and women", *European Journal of Development Research*, Vol. 22 No. 3, pp. 331-348.

El-Ghannam, R.A. (2002), "Analytical study of women's participation in economic activities in Arab societies", *Equal Opportunities International*, Vol. 21 No. 1, pp. 1-18.

Faisal, M.N. and Al-Esmael, B.A. (2014), "Modeling the enablers of organizational commitment", *Business Process Management Journal*, Vol. 20 No. 1, pp. 25-46.

Faisal, M.N., Banwet, D.K. and Shankar, R. (2007), "Supply chain risk management in SMEs: analysing the barriers", *International Journal of Management and Enterprise Development*, Vol. 4 No. 5, pp. 588-607.

Fielden, S.L. and Dawe, A. (2004), "Entrepreneurship and social inclusion", *Women in Management Review*, Vol. 19, pp. 139-142.

Fielden, S.L. and Hunt, C.M. (2011), "Online coaching: an alternative source of social support for female entrepreneurs during venture setting up", *International Small Business Journal*, Vol. 29 No. 4, pp. 345-359.

Gine, X. and Mansuri, G. (2014), *Money or Ideas? A Field Experiment On Constraints to Entrepreneurship in Rural Pakistan*, World Bank, Mimeo, Washington, DC.

Global Entrepreneurship Research Association (2013), "Global entrepreneurship monitor key indicators", available at: www.gemconsortium.org/key-indicators (accessed 2 July 2015).

Govindan, K., Palaniappan, M., Zhu, Q. and Kannan, D. (2013), "Analysis of third party reverse logistics provider using interpretive structural modeling", *International Journal of Production Economics*, Vol. 140 No. 1, pp. 204-211.

Gundry, L.K., Ben-Yoseph, M. and Posig, M. (2002), "The status of women's entrepreneurship: pathways to future entrepreneurship development and education", *New England Journal of Entrepreneurship*, Vol. 5 No. 1, pp. 39-51.

Hattab, H. (2012), "Towards understanding female entrepreneurship in Middle Eastern and North African countries: a cross-country comparison of female entrepreneurship", *Education, Business and Society: Contemporary Middle Eastern Issues*, Vol. 5 No. 3, pp. 171-186.

Hisrich, R.D. and Brush, C.G. (1984), "The woman entrepreneur: management skills and business problems", *Journal of Small Business Management*, Vol. 22 No. 1, pp. 30-37.

Huang, V.Z., Nandialath, A., Alsayaghi, A.K. and Karadeniz, E.E. (2013), "Socio-demographic factors and network configuration among MENA entrepreneurs", *International Journal of Emerging Markets*, Vol. 8 No. 3, pp. 258-281.

Huarng, K.H., Mas-Tur, A. and Yu, T.H.K. (2012), "Factors affecting the success of women entrepreneurs", *International Entrepreneurship and Management Journal*, Vol. 8 No. 4, pp. 487-497.

Idrus, S., Pauzi, N.M. and Munir, Z.A. (2014), "The effectiveness of training model for women entrepreneurship program", *Procedia - Social and Behavioral Sciences*, Vol. 129, pp. 82-89.

Itani, H., Sidani, Y.M. and Baalbaki, I. (2011), "United Arab Emirates female entrepreneurs: motivations and frustrations", *Equality, Diversity and Inclusion: An International Journal*, Vol. 30 No. 5, pp. 409-424.

Jabeen, F., Katsioloudes, M.I. and Das, S.S. (2015), "Is family the key? Exploring the motivation and success factors of female Emirati entrepreneurs", *International Journal of Entrepreneurship and Small Business*, Vol. 25 No. 4, pp. 375-394.

Jamali, D. (2009), "Constraints and opportunities facing women entrepreneurs in developing countries: a relational perspective", *Gender in Management: An International Journal*, Vol. 24 No. 4, pp. 232-251.

Javadian, G. and Singh, R.P. (2012), "Examining successful Iranian women entrepreneurs: an exploratory study", *Gender in Management: An International Journal*, Vol. 27 No. 3, pp. 148-164.

Jenson, J. and Rose, C.B. (2003), "Women @ work: listening to gendered relations of power in teachers' talk about new technologies", *Gender and Education*, Vol. 15 No. 2, pp. 169-181.

Joshi, R., Banwet, D.K. and Shankar, R. (2009), "Indian cold chain: modeling the inhibitors", *British Food Journal*, Vol. 111 No. 11, pp. 1260-1283.

Kabasakal, H. and Bodur, M. (2002), "Arabic cluster: a bridge between East and West", *Journal of World Business*, Vol. 37 No. 1, pp. 40-54.

Karatas-Ozkan, M., Inal, G. and Ozbilgin, M. (2010), "Turkey", in Fielden, S. and Davidson, M. (Eds), *International Handbook of Successful Women Entrepreneurs*, Edward Elgar Press, Cheltenham and New York, NY, pp. 175-188.

Khan, H., Talib, F. and Faisal, M.N. (2015), "An analysis of the barriers to the proliferation of M-commerce in Qatar", *Journal of Systems and Information Technology*, Vol. 17 No. 1, pp. 54-81.

Kirdar, S. (2010), "Women's education in the GCC – The road ahead", *Higher Education and the Middle East: Empowering Under-served and Vulnerable Populations*, The Middle East Institute, Washington, DC, pp. 18-21.

Koellinger, P., Minniti, M. and Schade, C. (2007), "I think I can, I think I can: overconfidence and entrepreneurial behavior", *Journal of Economic Psychology*, Vol. 28 No. 4, pp. 502-527.

Langenfeld, C. (1999), "The female entrepreneurs and their perceptions of start-up experience", UMI Dissertations Services, MI.

Lin, N. (1999), "Social network and status attainment", *Annual Review of Sociology*, Vol. 25, pp. 476-487.

Lockyer, J. and George, S. (2012), "What women want: barriers to female entrepreneurship in the West Midlands", *International Journal of Gender and Entrepreneurship*, Vol. 4 No. 2, pp. 179-195.

McClelland, E. (2004), "Irish female entrepreneurs: mapping the route to internationalization", *Irish Journal of Management*, Vol. 25 No. 2, pp. 92-107.

McIntosh, J.C. and Islam, S. (2010), "Beyond the Veil: the influence of Islam in female entrepreneurship in a conservative Muslim Context", *International Management Review*, Vol. 6 No. 1, pp. 102-108.

Maden, C. (2015), "A gendered lens on entrepreneurship: women entrepreneurship in Turkey", *Gender in Management: An International Journal*, Vol. 30 No. 4, pp. 312-331.

Maier, S. (2013), "From the classroom to the boardroom: enhancing women's participation in the GCC Workforce", *Policy Note 4*, available at: www.mbrsg.ae/getattachment/2e3a43af-332c-42d2-8796-6fd4b16f124c/From-the-Classroom-to-the-Boardroom-Enhancing-Wome.aspx (accessed 22 March 2015).

Mathew, R.V. and Panchanatham, P. (2011), "An exploratory study on the work-life balance of women entrepreneurs in South India", *Asian Academy of Management Journal*, Vol. 16 No. 2, pp. 77-105.

Metcalfe, D.B. (2006), "Exploring cultural dimensions of gender and management in the Middle East", *Thunderbird International Business Review*, Vol. 48 No. 1, pp. 93-107.

Ministry of Finance (2007), "Egyptian women entrepreneurs: profiles of success", The Egyptian Small and Medium Enterprise Policy (SMEPol) Project, Cairo.

Minniti, M., Arenius, P. and Langowitz, N. (2005), *2004 Global Entrepreneurship Monitor Special Topic Report: Women in Entrepreneurship*, Centre for Women Leadership, Babson Park, MA.

Mohsen, D. (2007), "Arab women entrepreneurs and SMEs: challenges and realities", available at: www.masress.com/en/dailynews/109630 (accessed 2 July 2015).

Mostafa, M.M. (2005), "Attitudes towards women managers in the United Arab Emirates: the effects of patriarchy, age, and sex differences", *Journal of Managerial Psychology*, Vol. 20 No. 6, pp. 522-540.

Naser, K., Mohammed, W.R. and Nuseibeh, R. (2009), "Factors that afect women entrepreneurs: evidence from an emerging economy", *International Journal of Organizational Analysis*, Vol. 17 No. 3, pp. 225-247.

Nel, P., Maritz, A. and Thongprovati, O. (2010), "Motherhood and entrepreneurship: the mumpreneur phenomenon", *International Journal of Organizational Innovation*, Vol. 3 No. 1, pp. 6-34.

Omair, K. (2008), "Women management in the Arab context", *Education, Business and Society: Contemporary Middle Issues*, Vol. 1 No. 2, pp. 107-123.

Ooi, Y.K., Selvarajah, C. and Meyer, D. (2011), "Inclination towards entrepreneurship among university students: an empirical study of Malaysian university students", *International Journal of Business and Social Science*, Vol. 2 No. 4, pp. 206-220.

Ozar, S. (2007), "Women entrepreneurs in Turkey: obstacles, potentials and future prospects", available at: www.genderclearinghouse.org/Ar/Ar/upload/Assets/Documents/pdf/Comp%20I%20Prop%2043%20Full%20Draft%20Turkey%20copy.pdf (accessed 15 February 2016).

Pettersson, K. (2012), "Support for women's entrepreneurship: a Nordic spectrum", *International Journal of Gender and Entrepreneurship*, Vol. 4 No. 1, pp. 4-19.

Rehman, S. and Roomi, M.A. (2012), "Gender and work life balance: a phenomenological study of women entrepreneurs in Pakistan", *Journal of Small Business and Enterprise Development*, Vol. 19 No. 2, pp. 209-228.

Ripolles, M. and Blesa, A. (2005), "Personal networks as fosterers of entrepreneurial orientation in new ventures", *International Journal of Entrepreneurship and Innovation*, Vol. 6 No. 4, pp. 239-248.

Roomi, M.A. and Harrison, P. (2010), "Behind the veil: women-only entrepreneurship training in Pakistan", *International Journal of Gender and Entrepreneurship*, Vol. 2 No. 2, pp. 150-172.

Roomi, M.A. and Parrott, G. (2008), "Barriers to development and progression of women entrepreneurs in Pakistan", *International Journal of Entrepreneurship*, Vol. 17 No. 1, pp. 59-72.

Rosa, P. and Hamilton, D. (1994), "Gender and ownership in UK small firms", *Entrepreneurship Theory and Practice*, Vol. 18 No. 3, pp. 11-25.

Sadi, M.A. and Al-Ghazali, M. (2010), "Doing business with impudence: a focus on women entrepreneurship in Saudi Arabia", *African Journal of Business Management*, Vol. 4 No. 1, pp. 1-11.

Sage, A. (1977), *Interpretive Structural Modelling: Methodology for Large-scale Systems*, McGraw-Hill, New York, NY, pp. 91-164.

Shaw, E., Lam, W., Carter, S. and Wilson, F. (2006), Theory, practice and policy: an integrated view on gender, networks and social capital. *Proceedings of the 51st World Conference of the International Council for Small Business, Melbourne, June*.

Slovic, P. (2000), *The Perception of Risk*, Earthscan Publications Ltd, London.

Tahseen Consulting (2015), "Female labor market participation", available at: http://tahseen.ae/blog/?tag=female-labor-market-participation

Teoh, W.M.Y. and Chong, S.C. (2014), "Towards strengthening the development of women entrepreneurship in Malaysia", *Gender in Management: An International Journal*, Vol. 29 No. 7, pp. 432-453.

Thakkar, J., Kanda, A. and Deshmukh, S.G. (2008), "Interpretive structural modeling (ISM) of IT-enablers for Indian manufacturing SMEs", *Information Management & Computer Security*, Vol. 16 No. 2, pp. 113-136.

Tower, L. and Alkadry, M. (2008), "The social costs of career success for women", *Review of Public Personnel Administration*, Vol. 28 No. 2, pp. 144-165.

Ufuk, H. and Ozgen, O. (2001), "Interaction between the business and family lives of women entrepreneurs in Turkey", *Journal of Business Ethics*, Vol. 31 No. 2, pp. 95-106.

Vossenberg, S. (2013), "Women entrepreneurship promotion in developing countries: what explains the gender gap in entrepreneurship and how to close it?", available at: www.msm.nl/getattachment/e94b7b38-e17b-4c5d-b497-c4135be7ec86 (accessed 26 February 2016).

Warfield, J.N. (1974a), "Developing interconnected matrices in structural modeling", *IEEE Transactions on Systems, Man and Cybernetics*, Vol. 4 No. 1, pp. 81-87.

Weiler, S. and Bernasek, A. (2001), "Dodging the glass Ceiling? Networks and the new wave of women entrepreneurs", *The Social Science Journal*, Vol. 38 No. 1, pp. 85-103.

Welsh, D.H.B., Memili, E., Kaciak, E. and Al Sadoon, A. (2014), "Saudi women entrepreneurs: a growing economic segment", *Journal of Business Research*, Vol. 67 No. 5, pp. 758-762.

Welter, F. and Kautonen, T. (2005), "Trust, social networks and enterprise development: exploring evidence from East and West Germany", *International Entrepreneurship and Management Journal*, Vol. 1 No. 3, pp. 367-379.

Welter, F., Smallbone, D., Mirzakhalikova, D., Schakirova, N. and Maksudova, C. (2006), "Women entrepreneurs between tradition and modernity – the case of Uzbekistan", in Welter, F., Smallbone, D. and Isakova, N. (Eds), *Enterprising Women in Transition Economies*, Ashgate, Hampshire, pp. 45-66.

World Bank (2011), *Doing Business 2011-Kazakhstan: Making a Difference for Entrepreneurs*, Washington, DC.

Zeffane, R. (2013), "Gender and youth entrepreneurial potential: evidence from the United Arab Emirates", *International Journal of Business and Management*, Vol. 8 No. 1, pp. 60-72.

Further reading

Carter, N. and Brush, C. (2005), "Gender", in Gartner, W., Shaver, K., Carter, N. and Reynolds, P. (Eds), *Handbook of Entrepreneurial Dynamics: The Process of Business Creation*, Sage, Thousand Oaks, CA, pp. 12-25.

Kabasakal, H., Aycan, Z. and Karakas, F. (2004), "Women in management in Turkey", in Davidson, J.M. and Burke, J.R. (Eds), *Women in Management Worldwide: Facts Figures and Analysis*, Ashgate, Aldershot, pp. 273-293.

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