

Technological and Institutional Perspectives of Women's IT Entrepreneurial Intention in Saudi Arabia

Emergent Research Forum Paper

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Abstract

Despite the increasing awareness of the importance of technological entrepreneurship and innovation, and the necessity to enhance women participation in such businesses, a comprehensive literature review shows a paucity of research in women's IT entrepreneurship. Specifically, Information Systems and female entrepreneurship disciplines have ignored the study of women's IT entrepreneurial behavior. Drawing on previous literature, this research for the first time aims to develop an integrated model of women's IT entrepreneurship. Particularly, this research in progress aims to examine the influence of institutional and technological factors on intention and decision-making processes that lead women to become tech-entrepreneurs in Saudi Arabia. The investigation reveals that understanding entrepreneurial intention is critical for motivating a new generation of women entrepreneurs in the IT context. Better guidance can be a new driver of IT entrepreneurial behavior among Saudi women which is the aim of this study.

Keywords

Women's Entrepreneurship- Saudi Arabia - Technology- Based Entrepreneurship- Innovation

Introduction

In recent years, technological entrepreneurship has been one of the most important drivers of economic growth, social value, and innovation (Chen 2013; Chen 2014; Dutta et al. 2015; Marvel and Lumpkin 2007). In this context, it is widely acknowledged that women in technology entrepreneurship are heavily underrepresented (Ezzedeen and Zikic 2012; Hampton et al. 2011; Marlow and McAdam 2012). This phenomenon is more pronounced in a society characterized with a high level of stereotypical gendered expectations toward technology businesses (Marlow and McAdam 2012) and well-defined gender roles such as Saudi community (Almobaireek and Manolova 2013). In order to encourage Saudi women tech-entrepreneurs, there is a need to identify and understand the factors and decision-making processes that will lead women to become so. However, most of the literature on female entrepreneurship in general and more specifically in Saudi women context is concentrated in non-technological businesses. Also, previous literature shows that there is no empirical study to understand women's entrepreneurial intention as a predictor to perform IT entrepreneurial behaviors. Hence, the initial model has been developed to explain IT entrepreneurial intention as a new driver of IT entrepreneurial behavior for Saudi women.

Many authors point out that IT entrepreneurs have different antecedents' factors and behavioral characteristics, which are highly associated with technology skills and perception. IT entrepreneurs can be defined as an individual who exploits opportunities by using technology knowledge and experience to create new value through the venture creation process (Marvel and Lumpkin 2007). Furthermore, IT entrepreneurs should be able to organize, manages and accepts the risk of technological entrepreneurship (Chen 2013; Chen 2014). Hence, it is essential to understand what influences individual's specific intention to engage in technological entrepreneurship in order to support and empower their progress as entrepreneurs, and to ultimately increase the culture of entrepreneurship, economic activity, innovation

and creation of jobs. In this perspective, current information systems studies have recently focused their attention on the importance of IT entrepreneurial intention as a predictor to perform IT entrepreneurial behavior (Chen 2013; Chen 2014; Dutta et al. 2015).

However, it is widely accepted that technology and innovation are concepts traditionally been viewed as masculinized domains. This phenomenon makes these fields less attractive to women and resulting in a women-related invention and innovation being less perceived as profitable business ideas (Hampton et al. 2011; Marlow and McAdam 2012). The literature shows that innovation, technology and women's entrepreneurs are rarely discussed in the same context, though each has a vital value for human and economy development. Scholars suggest that there is a need to understand many aspects of gender relationships in the field of entrepreneurship generally and more specifically in technology domain (Ezzedeen and Zikic 2012). Furthermore, despite a growing number of women graduates and studying subjects in different fields, such as information technology from higher education institutions, women entrepreneurs are heavily underrepresented in this area (Hampton et al. 2011). Specifically, in Saudi women context, whereas their knowledge has not yet been transferred into technology businesses (Yousuf Danish and Lawton Smith 2012). In Saudi Arabia, women's entrepreneurship is a relatively recent phenomenon and women entrepreneurs face challenges related to traditional values and well-defined gender roles (Almobaireek and Manolova 2013). Women participation in the economic field has been limited for a long time and women unemployment rates always exceed men in the Kingdom (Almunajjed 2010). Recently, female entrepreneurs have started some successful entrepreneurial businesses. Also, there is a noticeable improvement of women status in the economic field, driven largely by changing the direction of Saudi government to support women's empowerment and gender equality. The government has launched many entrepreneurship initiatives in an effort to support the entrepreneurial culture and enhance women role in the labor force and economic sector through entrepreneurship leadership, such as Aramco Entrepreneurship Center, and Badir Program from the scientific organization of King Abdulaziz City for Science and Technology. However, women's participation in these initiatives is nascent with a limited entrepreneurship rate (Yousuf Danish and Lawton Smith 2012).

Based on previous literature of female entrepreneurship and information systems (IS), the current study aims to examine the influence of institutional and technological factors on intention and decision-making processes that lead women to become tech-entrepreneurs in Saudi Arabia. Hence, the following research questions have been formulated:

- Do formal institutions affect Saudi women's IT entrepreneurial intention (access to finance and governmental support)?
- What roles do entrepreneurial self-efficacy and technological factors (computer self-efficacy, and related knowledge and experience in IT) play in the decision making to start technological entrepreneurship by Saudi women?

Theoretical Framework and Hypotheses Development

A considerable amount of literature show that intention plays a very relevant role in the decision to start a new firm and predict entrepreneurial behavior (Autio et al. 2001; Díaz-García and Jiménez-Moreno 2010). Since entrepreneurship represents planned, intentional behavior, it becomes suitable to research using the formal models of intentions. Specifically, the theory of planned behavior (TPB), has also become the most influential and increasingly common framework in entrepreneurial intention literature (Chen 2014; Díaz-García and Jiménez-Moreno 2010; Zhao et al. 2005). Hence, this study utilizes behavioral intention to explain women's IT entrepreneurial intention as a predictor to perform IT entrepreneurial behavior. However, there is a need for other variables to measure IT entrepreneurial intentions. Hence, this study utilizes also different frameworks and previous literature in IS, which are strongly relevant and supportive to the research questions. This includes formal institutions and the literature on information systems, which represent the significance of particular factors, computer self-efficacy, and related knowledge and experience in IT, as key drivers of IT entrepreneurial intention.

Institutions are defined as the "rules of the game" in a society, and they suggest specifically that human behavior is influenced by organizations or institutional environments (North 1990). Within the gender literature, scholars show a significant effect of institutional factors on the entrepreneurial process (Amine and Staub 2009; Noguera and Urbano 2013). Also, they pointed out that the institutional theory is one of the most appropriate conceptual frameworks to analyze the influence of such factors on female entrepreneurship. The development of the institutional economic theory by North allows us to understand

and examine different formal factors (laws, government support ...) that influence women's entrepreneurship. Furthermore, this model fits perfectly within the intentional model, which could support this study. However, applying institutional theory on the context of Saudi women has not been existed. Therefore, this paper aims to analyze the influence of formal factors (access to capital, and governmental support) on Saudi women entrepreneurs in the IT context.

Hypotheses and Research Model

Access to capital has long been recognized as the most critical element of new venture creation and subsequent successful performance (Marlow and Patton 2005). Also, financial capital is one of a major issue for women entrepreneurs in the global community. Based on the literature, women have less opportunity than men to gain access to develop their new businesses for various reasons (Amine and Staub 2009; Marlow and Patton 2005; Noguera and Urbano 2013). According to Shinnar et al. (2012), perceived absence of support including finance could be act as a barrier that faces women entrepreneurial intention (Shinnar et al. 2012). On the other hand, higher knowledge about sources of support assistance including access to finance has a positive influence on entrepreneurial intentions (Liñán et al. 2013). Accordingly, perceived access to capital is an important factor in women's entrepreneurial intention and plays a greater role in the decision of entry into entrepreneurship. Therefore, the following hypothesis is proposed:

H1: *perceived Access to capital influences positively the IT entrepreneurial intention of Saudi women.*

Governmental support is another formal factor in this study. The government's role facilitates or restrict access to resources of creation a new business, and reduce or increase the risk for an entrepreneur (Amine and Staub 2009; Shinnar et al. 2012). A considerable amount of studies suggested that unfavorable conditions in the regulatory environment, can be a further barrier to women who desire to become entrepreneurs or to expand an entrepreneurial venture (Amine and Staub 2009). In Saudi Arabia, although, businesswomen have faced challenges about the regulatory environment, Saudi government has made a significant effort to support women economic empowerment. As a case in point, Vision 2030, which is a recent policy view of Saudi government marks a new phase in the development by promoting and supporting entrepreneurship to create suitable job opportunities for Saudi citizens as well as providing greater employment opportunities for women and encouraging them to join the workforce. In this study, we believe that the government support, procedure requirements, and assistance with business startup are important factors for fostering entrepreneurial culture among women and influencing the decision to set up a new business. Therefore, the following hypothesis is proposed:

H2: *government support influences positively the IT entrepreneurial intention of Saudi women.*

Self-Efficacy is a motivational factor, which interacts with behavioral intention and social environment (Chen 2014; Wilson et al. 2007). Within the field of entrepreneurship, entrepreneurial self-efficacy (ESE) reflects an individual's confidence in his or her ability to be able to succeed as entrepreneurs and perform entrepreneurial roles and tasks successfully (Chen et al. 1998). Research on gender aspects has recently focused their attention on self-efficacy belief, and perception of abilities and skills. According to the literature, compared to men, women's perception of their entrepreneurial skills have been more reduced frequently, regardless their real skills, particularly in sectors that are seen traditionally as male domains (Noguera and Urbano 2013; Wilson et al. 2007). This perception in turn impacts their entrepreneurial intention and subsequent lower levels of entrepreneurial behavior (Wilson et al. 2007; Zhao et al. 2005). Recent studies show the positive and significant effect of ESE in women's entrepreneurial intention (Austin and Nauta 2015; Wilson et al. 2007; Zhao et al. 2005). In the present study, it is possible to consider that women perceptions of themselves play a greater role in the decision to start a business. Thus, the following hypothesis is proposed:

H3: *entrepreneurial self-efficacy influences positively the IT entrepreneurial intention of Saudi women.*

Computer Self-Efficacy (CSE) is a domain-specific that refers to individual's beliefs and judgments of their capabilities to use computer in different situations (Compeau and Higgins 1995). A sizeable amount of IS literature demonstrated that CSE is a key component of individual's behavior in using computer (Chen 2013; Chen 2014; Compeau and Higgins 1995). Individuals with higher CSE have higher and positive perceptions of IT and IT usage intentions (Venkatesh and Davis 1996). Chen (2013; 2014) demonstrated that CSE has a positive impact on entrepreneurial self-efficacy (ESE), which in turn influences entrepreneurial intention (Chen 2013; Chen 2014). In the present study, it is reasonable to consider that CSE as an antecedent to ESE and it would help in reducing the effects of low self-efficacy of women and consequently increasing ESE. Thus, the following hypothesis is proposed:

H3a: computer self-efficacy positively influences the entrepreneurial self-efficacy of Saudi women.

Related Knowledge and Experience in IT (RKE) become important with regarding the development of IT entrepreneurial intention. Individual with a high level of RKE will enable him/her to connect the previous relevant knowledge with the new knowledge, which in turn helps to identify and develop technological opportunities in business (Dutta et al. 2015; Marvel and Lumpkin 2007). From this viewpoint, Dutta, et al, (2015) were able to demonstrate that RKE of the entrepreneur act as key drivers, which influence the development of entrepreneurial intentions in technological industries. Following the social cognitive theory, RKE provide the most important source of information for the development of entrepreneurial self-efficacy. Therefore, it is more reasonable to assume that RKE is an antecedent to ESE, which in turn influence IT entrepreneurial intention. Thus, the following hypothesis is proposed:

H3b: related knowledge and experience in IT positively influence the entrepreneurial self-efficacy of Saudi women.

Based on the above hypotheses, the following research model has been developed as shown in Figure 1.

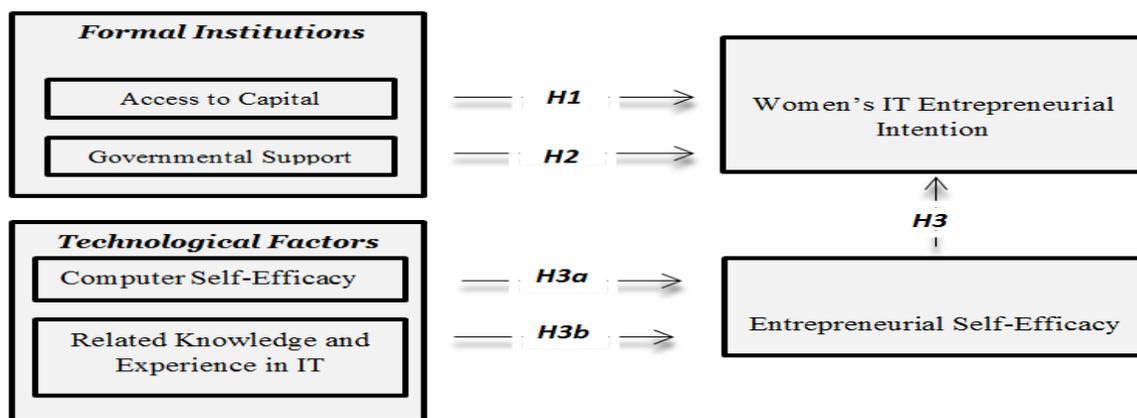


Figure 1: Initial Model

Research Methodology

This study will apply both quantitative and qualitative methods. Stage one will employ a quantitative method using the survey instrument for data collection, and stage two will employ a qualitative method. For qualitative analysis, data collected from interviews will be interpreted to validate the quantitative results. As the study aims to explore the influence of chosen factors on women's IT entrepreneurial intentions in Saudi Arabia, it is concluded that the survey must be targeted at female level. Specifically, the survey instrument will be administered to university students (fourth and fifth year) majoring in information systems and other related areas as well as subjects related to business and management. Furthermore, the sample of this study will include non-entrepreneurs including graduates, employed and unemployed women and nascent entrepreneurs, who are not entrepreneurs yet, but are pondering on it. With regard to the sample of students, there are several reasons for this selection. Firstly, university students' samples have been widely used in entrepreneurship research especially when considering entrepreneurial intentions as the student will make a professional career choice and decision imminently after, and often before, graduation (Autio et al. 2001; Dutta et al. 2015). Also, Chen (2013-2014) stated that university students are well-educated and technologically savvy and many university students are interested in exploring business in the technology sector. Other authors show that university students are a dynamic segment of the population and, in the information age, they reflect the main source of entrepreneurial talent (Díaz-García and Jiménez-Moreno 2010).

Conclusion

This study aims to make a significant contribution to women's IT entrepreneurs in general and Saudi women entrepreneurs in particular by answering the research questions, as yet unaddressed. Consequently, the initial model has been proposed to examine the selected constructs. The result of this

study will provide a further understanding of the dynamics involved in the decision-making process concerning women in technological entrepreneurship in Saudi Arabia. Practical implications of this study aim to provide knowledge and means for policymakers for designing policies that promote female technology-based entrepreneurship. Also, a better understanding of IT entrepreneurial behavior would help to advance knowledge for educators to improve education and information systems curriculums.

References

- Almobaireek, W. N., and Manolova, T. S. 2013. "Entrepreneurial Motivations among Female University Youth in Saudi Arabia," *Journal of Business Economics and Management* (14:sup1), pp. S56-S75.
- Almunajjed, M. 2010. "Women's Employment in Saudi Arabia: A Major Challenge," *Booz & CO*, pp. 2-13.
- Amine, L. S., and Staub, K. M. 2009. "Women Entrepreneurs in Sub-Saharan Africa: An Institutional Theory Analysis from a Social Marketing Point of View," *Entrepreneurship and Regional Development* (21:2), pp. 183-211.
- Austin, M. J., and Nauta, M. M. 2015. "Entrepreneurial Role-Model Exposure, Self-Efficacy, and Women's Entrepreneurial Intentions," *Journal of Career Development*, p. 0894845315597475.
- Autio, E., H. Keeley, R., Klofsten, M., GC Parker, G., and Hay, M. 2001. "Entrepreneurial Intent among Students in Scandinavia and in the USA," *Enterprise and Innovation Management Studies* (2:2), pp. 145-160.
- Chen, C. C., Greene, P. G., and Crick, A. 1998. "Does Entrepreneurial Self-Efficacy Distinguish Entrepreneurs from Managers?," *Journal of business venturing* (13:4), pp. 295-316.
- Chen, L. 2013. "It Entrepreneurial Intention among College Students: An Empirical Study," *Journal of Information Systems Education* (24:3), p. 233.
- Chen, L. 2014. "Understanding It Entrepreneurial Intention: An Information Systems View," *Journal of Computer Information Systems* (55:1), pp. 2-12.
- Compeau, D. R., and Higgins, C. A. 1995. "Computer Self-Efficacy: Development of a Measure and Initial Test," *MIS quarterly*, pp. 189-211.
- Díaz-García, M. C., and Jiménez-Moreno, J. 2010. "Entrepreneurial Intention: The Role of Gender," *International Entrepreneurship and Management Journal* (6:3), pp. 261-283.
- Dutta, D. K., Gwebu, K. L., and Wang, J. 2015. "Personal Innovativeness in Technology, Related Knowledge and Experience, and Entrepreneurial Intentions in Emerging Technology Industries: A Process of Causation or Effectuation?," *International Entrepreneurship and Management Journal* (11:3), pp. 529-555.
- Ezzedeen, S. R., and Zikic, J. 2012. "Entrepreneurial Experiences of Women in Canadian High Technology," *International Journal of Gender and Entrepreneurship* (4:1), pp. 44-64.
- Hampton, A., McGowan, P., and Cooper, S. 2011. "Developing Quality in Female High-Technology Entrepreneurs' Networks," *International Journal of Entrepreneurial Behavior & Research* (17:6), pp. 588-606.
- Liñán, F., Nabi, G., and Krueger, N. 2013. "British and Spanish Entrepreneurial Intentions: A Comparati Ve Study," *Revista de economía Mundial* (33).
- Marlow, S., and McAdam, M. 2012. "Analyzing the Influence of Gender Upon High-Technology Venturing within the Context of Business Incubation," *Entrepreneurship Theory and Practice* (36:4), pp. 655-676.
- Marlow, S., and Patton, D. 2005. "All Credit to Men? Entrepreneurship, Finance, and Gender," *Entrepreneurship theory and practice* (29:6), pp. 717-735.
- Marvel, M. R., and Lumpkin, G. T. 2007. "Technology Entrepreneurs' Human Capital and Its Effects on Innovation Radicalness," *Entrepreneurship Theory and Practice* (31:6), pp. 807-828.
- Noguera, M., and Urbano, D. 2013. "Female Entrepreneurship in Catalonia,").
- North, D. C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge university press.
- Shinnar, R. S., Giacomini, O., and Janssen, F. 2012. "Entrepreneurial Perceptions and Intentions: The Role of Gender and Culture," *Entrepreneurship Theory and Practice* (36:3), pp. 465-493.
- Venkatesh, V., and Davis, F. D. 1996. "A Model of the Antecedents of Perceived Ease of Use: Development and Test," *Decision sciences* (27:3), pp. 451-481.
- Wilson, F., Kickul, J., and Marlino, D. 2007. "Gender, Entrepreneurial Self-Efficacy, and Entrepreneurial Career Intentions: Implications for Entrepreneurship EducationI," *Entrepreneurship theory and practice* (31:3).
- Yousuf Danish, A., and Lawton Smith, H. 2012. "Female Entrepreneurship in Saudi Arabia: Opportunities and Challenges," *International Journal of Gender and Entrepreneurship* (4:3), pp. 216-235.
- Zhao, H., Seibert, S. E., and Hills, G. E. 2005. "The Mediating Role of Self-Efficacy in the Development of Entrepreneurial Intentions," *Journal of applied psychology* (90:6), p. 1265.