Budding Female IT Entrepreneurs in Saudi Arabia: Impact of IT and Institutional Environment

Abstract

IT entrepreneurs represent a valuable source to any society. They prompt socio-economic growth, innovation and job creation. In this regard, there has been a growing recognition of the lack of women's IT entrepreneurial activities. Despite this recognition, a comprehensive literature shows a paucity of research in women's IT entrepreneurship. More specifically, innovation, technology and female entrepreneurs are rarely studied in the same context though each has a vital value for human and economy development. Consequently, a conceptual model that will affect women's IT entrepreneurial intention and decision-making processes is proposed. Hypotheses have been developed. Data has been collected in different Saudi female public universities as well as technology incubators, and entrepreneurship programs. Partial Least Square approach has been applied to analyze the data. The findings provide key factors affecting women's IT entrepreneurial intention to perform IT entrepreneurial behaviors.

Keywords

Female Entrepreneurship, IT Entrepreneurship, Entrepreneurial Intentions, Innovation, Saudi Arabia

Introduction

In the last decades, new business creation plays a key role in economic growth, job creation and innovation. Specifically, we could observe an increasing awareness of the importance of IT entrepreneurship and innovation (Aleidi and Chandran 2017b; Chen 2013; Chen 2014; Dutta et al. 2015). In this context, it is widely acknowledged that women in IT entrepreneurship are heavily underrepresented (Chandran and Aleidi 2018; Ezzedeen and Zikic 2012; Hampton et al. 2009; Hampton et al. 2011; Marlow and McAdam 2012; Mayer 2006). This phenomenon is more pronounced in a society characterized with a high level of stereotypical gendered expectations toward technology businesses (Aleidi and Chandran 2017a; Marlow and McAdam 2012). With this in mind, Saudi Arabia is an example of a society where gender difference affect IT entrepreneurial activities (Chandran and Aleidi 2018). Therefore, this highlights an importance of Saudi women in IT entrepreneurship context as a case for study as a disadvantaged population with high economic potential.

Women are a significant source of entrepreneurial potential, yet relatively untapped, pointing to the importance of spending greater effort to enhance level of participation by women's entrepreneurial activity. In this regard, supporting women entrepreneurs within the technology field should be a particular priority for academic researchers and politics (Hampton et al. 2011). However, the current literature shows a paucity of research in women's IT entrepreneurship. Specifically, in areas such as information systems and female entrepreneurship disciplines, the study of women's IT entrepreneurial behavior is ignored. Scholars suggest that there is a need to understand many aspects of gender relationships in the field of entrepreneurship in general and more specific in the technology domain (Aleidi and Chandran 2017b; Ezzedeen and Zikic 2012). Previous studies have attempted to examine different factors to understand women entrepreneurs in the IT 

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context (Ezzedeen and Zikic 2012; Hampton et al. 2011). However, earlier studies examine specific factors and that may prevent a comprehensive understanding of female entrepreneurial intention from a technological point of view. Therefore, given the significance of IT entrepreneurship and innovation on socio-economic growth and the necessity to enhance women’s involvement in business venturing, there is a need for further investigation. In particular, in order to encourage Saudi women tech-entrepreneurs, there is a need for identifying and understanding the factors and decision-making processes that affect women’s engagement in such businesses. However, literature shows that there is no empirical study to understand female entrepreneurial intention as a predictor to perform IT entrepreneurial behaviors. Furthermore, most of the literature on women’s entrepreneurship in general and more specifically in Saudi Arabia is focused on traditional and non-technological businesses. Consequently, this study is an attempt to fill that void by establishing a conceptual model of entrepreneurial intention to understand the phenomenon in which little is yet known such as female IT entrepreneurial behaviour in developing countries such as Saudi Arabia.

The current study investigates different factors affecting the entrepreneurial intention and decision-making processes that lead women to become tech-entrepreneurs. For the purpose of this study, following research questions have been formulated: (1) How do informal institutions “socio-cultural factors” (perceived opportunities, role model, and fear of failure) impact women’s IT entrepreneurial intention in the Saudi context? (2) How do technological factors (computer self-efficacy and personal innovativeness in IT) impact women’s IT entrepreneurial intention in the Saudi context? (3) How do attitude toward entrepreneurship, entrepreneurial self-efficacy, and subjective norms impact women’s IT entrepreneurial intention in the Saudi context?

Literature Review

IT Entrepreneurial Behaviour

Many authors pointed out that IT entrepreneurs have different antecedents’ factors and behavioral characteristics, which are highly related to technical skills and perceptions (Aleidi and Chandran 2017a; Chen 2014). IT entrepreneurs are expected to have more technical knowledge in addition to higher innovation capabilities and attitudes. Nichols & Armstrong (2003) define IT entrepreneurs as individuals, who organize, manage and accept the risk of IT entrepreneurship (Chandran and Aleidi 2018). Other authors describe IT entrepreneurs as those who identify and exploit opportunities by using IT skills, perceptions, knowledge and experience to create new value through the venture creation process (Chandran and Aleidi 2018). In the IT context, there are two ways to study behavior. While the first strategy relies on measuring behavior directly, second one is to measure behavior indirectly, commonly utilizing behavioral intention, which has been widely adopted in IS literature (Chen 2014; Marvel and Lumpkin 2007). Importantly, the second method has been widely applied to entrepreneurship in recent years with significant success. Hence, this study uses entrepreneurial intention as a dependent variable to predict a real behavior of women’s IT entrepreneurship, which will be further explained in the theoretical background section.

Current Status of Female Entrepreneurship in Saudi Arabia

Women’s entrepreneurship has recently become a topic of interest in Saudi Arabia. Although, women are traditionally restricted to join the economic field for a long time (Almohaisen and Manolova 2013), there is a quantum leap of women status in this area, driven largely by changing the direction of the Saudi government to support women’s empowerment and gender equality (Chandran and Aleidi 2018). According to Global Entrepreneurship Monitor 2016, the male rate of participation in the early-stage entrepreneurial activity (TEA) is 12.9%, and the female rate 9.7% in the Saudi context. Although participation in TEA has been increasing across both genders, women have been rapidly closing the gap since 2009 (Roomi et al. 2017). The government has launched many entrepreneurship initiatives in an effort to support the entrepreneurial culture, develop entrepreneurial leadership among Saudi youth, and enhance women’s role in the labor force and economic sector through entrepreneurship leadership. For example but not limited to, Aramco Entrepreneurship Center, and Badir Program from the scientific organization of King Abdulaziz City for Science and Technology (Chandran and Aleidi 2018). More recently, Vision 2030, which is a recent policy view of Saudi government marks a new phase in the development by promoting and supporting Small
Women’s IT Entrepreneurial Intentions

and Medium Enterprises (SMEs) to create suitable job opportunities for Saudi citizens as well as increasing women’s participation in the workforce (Chandran and Aleidi 2018). It aims to support the Kingdom’s sustainable development in the light of global trends that focus on technology, and innovation in the knowledge-based economy. For instance, Misk, which inspired by Vision 2030, is a non-profit foundation devoted to promote entrepreneurial culture, expanding Saudi’s economy and transferring its system from oil-based economy to a knowledge-based economy. More specifically, many initiatives have been launched by Misk to support network building and training programs for women entrepreneurs in IT business.

Theoretical Background and Hypotheses Development

Two major streams of literature provide the theoretical foundations for this research. The first is the literature on female entrepreneurship, illustrating the role of entrepreneurial intention as well as its antecedents including entrepreneurial attitudes, subject norms and other institutional variables. The second is the literature on information systems (IS), elaborating the role and importance of two context-specific factors computer self-efficacy, and personal innovativeness in IT, as key drivers of entrepreneurial intention in IT entrepreneurship. A considerable amount of literature argues that intention plays a relevant role in decision making to start a new firm and predict entrepreneurial behavior (Krueger et al. 2000; Palmer et al. 2015). The Theory of Planned Behaviour (TPB) by Ajzen (1991) is a broad theory of human behavior, which has been successfully adopted to predict and explain intentions to perform behaviors (Ajzen 1991; Autio et al. 2001). Ajzen’s theory has also become the most influential and increasingly common framework in entrepreneurial intention literature (Autio et al. 2001; Chandran and Aleidi 2018; Chen 2013; Chen 2014; Díaz-García and Jiménez-Moreno 2010; Kolvereid 1996; Krueger et al. 2000; Palmer et al. 2015). Many scholars applied the intentional theory with similar goals in different contexts. In addition, many authors considered intentional theory in their investigation in women’s entrepreneurship context (Camelo-Ordaz et al. 2016; Chandran and Aleidi 2018; Shinnar et al. 2012) among others.

There has been a growing recognition in IS research of the role of institutions in influencing the individual behavior toward technology (Liang et al. 2007). Institutions interact with both organizations and their members, and they suggest specifically that human behavior is influenced by organizations or institutional environments (North 1990; North 2005). Hence, the decision to start-up technological businesses is also determined by institutions. In terms of North (1990; 2005) informal institutions refers also to the socio-cultural factors that may affect entrepreneurial intention. The importance of such factors on the decision to create new businesses and in entrepreneurial behavior is well-documented (Díaz-García and Jiménez-Moreno 2010; Thornton et al. 2011) arguing that entrepreneurship is embedded in a social context (Thornton et al. 2011). These institutions might produce different perceptions and opportunities for men and women in society (Aleidi and Chandran 2017a; Noguera et al. 2013). This result in differences in entrepreneurial process, which may explain why women have different perceptions and they tend to perceive themselves and the entrepreneurial environment in a less favorable light than men (Langowitz and Minniti 2007). These perceptions (e.g. perceived opportunities, role models, and fear of failure), in turn, are also important cognitive elements to be considered because of their impact on entrepreneurial process including entrepreneurial intentions (BarNir et al. 2011; Camelo-Ordaz et al. 2016; Koellinger et al. 2013; Langowitz and Minniti 2007). Therefore, it is essential to consider the influence of socio-cultural factors on individual-level perceptions to the decision to start a business. Figure 1 shows the research model.

Figure 1. Research Model
Hypotheses Development

Perceived Opportunities: ability to recognize opportunities plays an important role in the entrepreneurial process. However, scholars show significant gender differences for this perception (Camelo-Ordaz et al. 2016; Koellinger et al. 2013; Noguera et al. 2013). They find that traditional roles assigned to women in a society support the idea that entrepreneurial activity is less desirable for them than for men (Langowitz and Minniti 2007), which lead them to perceive fewer entrepreneurial opportunities (Noguera et al. 2013). Other authors have demonstrated a positive and significant correlation between the ability to perceive opportunities and entrepreneurial intention of both genders, with a stronger effect on women (Langowitz and Minniti 2007). Specifically, the alertness to existing opportunities results in higher likelihood to develop the attitude as well as entrepreneurial self-efficacy (Hussain and Hashim 2016; Langowitz and Minniti 2007). Accordingly, the following hypotheses were formulated:

H1a: Perceived opportunities positively influences women’s attitude towards entrepreneurship.
H1b: Perceived opportunities positively influences women’s entrepreneurial self-efficacy.

Role Models: research on gender aspects in entrepreneurship has discussed the importance of woman’s knowledge of another entrepreneur, which has a positive influence of her participation in entrepreneurship (Aleidi and Chandran 2017a). Furthermore, Langowitz, et al (2007) have found that role models are involved in various stages of the entrepreneurial process and it is particularly appreciated by women, which positively and significantly influences women’s attitude to start a business (Langowitz and Minniti 2007). In the Saudi context, some authors show that women’s entrepreneurship has not provided enough successful role models as women entrepreneurs for encouraging more women in entrepreneurial initiatives as an appropriate career path (Aleidi and Chandran 2017a; Almobaireek and Manolova 2013). Consequently, this factor could also explain the gap in female entrepreneurship in the Kingdom. In conclusion, we could observe that role model plays an important role in female attitude and entrepreneurial self-efficacy. This finding is consistent with previous studies assertion that exposure to entrepreneurial models has a significant positive impact on the attitudes and entrepreneurial self-efficacy (Fellnhofer and Puimalainen 2017; Krueger 1993). As such, this study assumes that

H2a: Role models positively influence women’s attitude towards entrepreneurship.
H2b: Role models positively influence women’s entrepreneurial self-efficacy.

Fear of Failure: a sizeable amount of literature has established a relationship between risk tolerance and entrepreneurial intentions. From an IS perspective, scholars show that the individual with a high risk propensity has a high level of entrepreneurial intention (Chen 2014). Furthermore, scholars suggest that entrepreneurs must be able to face risky situations, and possible failure. Scholars find that women entrepreneurs are more risk-averse and consequently, less likely to expect debt financing in order to capitalize their business (Shinnar et al. 2012). Other authors observe that a strong relation between gender and fear of failure, and this aspect could play an important role in the explanation of the gender entrepreneurial gap (Koellinger et al. 2013; Shinnar et al. 2012). Similarly, entrepreneurial research has identified the perception of risk has a negative influence on the perception of desirability toward entrepreneurship (equivalent to attitude) and on the entrepreneurial self-efficacy (Giordano Martinez et al. 2017). On the basis of these arguments, the following hypotheses were formulated:

H3a: Fear of failure negatively influences women’s attitude towards entrepreneurship.
H3b: Fear of failure negatively influences women’s entrepreneurial self-efficacy.

Computer Self-Efficacy refers to the individual’s belief of his/her capability to use computer in different situations (Compeau and Higgins 1995). Scholars demonstrate that CSE is a key component of individual’s behavior in using computer (Chen 2013; Chen 2014; Compeau and Higgins 1995; Venkatesh 2000). He and Freeman (2010a) illustrate that CSE beliefs can have effect on behavioral intention through attitude (He and Freeman 2010). Furthermore, Chen (2013; 2014) demonstrated that CSE has a direct and positive impact on ESE, which in turn influences entrepreneurial intention. Therefore, it is reasonable to consider that CSE as an antecedent to female entrepreneurial self-efficacy in the IT context. CSE can be helpful to reduce the effects of low self-efficacy of women as previous studies show that compared to men, women more frequently have a reduced perception of their own entrepreneurial skills, regardless their real skills, particularly in sectors that are seen traditionally as male domains (Noguera et al. 2013; Wilson et al. 2007). This is consistent with a finding that shows users who possess high CSE are more likely to form positive perceptions of IT and IT usage intentions (Venkatesh 2000). Based on the arguments explored above, the following hypotheses are proposed:

H4a: Computer self-efficacy positively influences women’s attitude towards entrepreneurship.
H4b: Computer self-efficacy positively influences women’s entrepreneurial self-efficacy.
Personal Innovativeness in IT (PIIT): a considerable amount of IS literature has demonstrated that PIIT is associated with IT adoption and usage (Agarwal and Prasad 1998; Chen 2014; Dutta et al. 2015). PIIT represents “the willingness of an individual to try out any new information technology” (Agarwal and Prasad 1998, p. 3). From IS perspective, entrepreneurs highly depend on technological innovation to create new technology enterprises and new technologies (Chen 2014; Dutta et al. 2015). Some well-empirical studies have tested the relationship between PIIT and individual’s behavior providing evidence of a significant relationship (Agarwal and Prasad 1998; Chen 2014; Dutta et al. 2015). Furthermore, it is also reasonable to expect that PIIT could play a critical role in the development of entrepreneurial self-efficacy as well as the poor attitude toward IT entrepreneurship. This proposition confirms previous studies showing that individual with high PIIT will improve his/her ability, motivate him/her to incubate technological innovation and look for ways it could be deployed to transform technology innovation into market opportunity (Dutta et al. 2015). Thus, the following hypotheses are proposed:

**H5a:** Personal innovativeness in IT positively influences women’s attitude towards entrepreneurship.

**H5b:** Personal innovativeness in IT positively influences women’s entrepreneurial self-efficacy.

**Attitude toward Entrepreneurship** refers to the degree to which an individual has a positive or negative personal evaluation about willingness to be an entrepreneur (Liñán and Chen 2009). The positive attitude, greater the intention will be to perform a particular behavior including the entrepreneurial behavior (Ajzen 1991; Autio et al. 2001; Díaz-García and Jiménez-Moreno 2010; Hussain and Hashim 2016; Kolvereid 1996) among others. Accordingly, the following hypothesis is proposed

**H6:** Attitude towards entrepreneurship influences positively women’s IT entrepreneurial intention.

**Entrepreneurial Self-Efficacy (ESE)** reflects an individual’s perceived capability to perform entrepreneurial roles successfully (Chen et al. 1998). Many studies suggest that individual’s with higher entrepreneurial self-efficacy has higher entrepreneurial intentions (Chen et al. 1998; Krueger et al. 2000). However, the literature shows that, compared to men, women tend to perceive themselves and the entrepreneurial environment less desirable (Langowitz and Minniti 2007). This perception in turn influences their intentions and subsequent lower levels of entrepreneurial behavior (Wilson et al. 2007; Zhao et al. 2005). Additionally, there is evidence that women are more likely than men to limit their career choice and interests due to their low perception of the necessary skills (Wilson et al. 2007). Palmer et al. (2015) have found that the relationship between gender and entrepreneurial intentions was reduced when self-efficacy was considered. Therefore, it is possible to consider that women perceptions of themselves play a greater role in the decision to start a business. As such, this study assumes that

**H7:** Entrepreneurial self-efficacy influences positively women’s IT entrepreneurial intention.

**Subjective Norms** is a social perception, which refers to perceived social pressure from people including family, friends and others to perform a certain behaviour (Ajzen 1991; Díaz-García and Jiménez-Moreno 2010). A recent research has recognized that subjective norms have a great impact on entrepreneurial intention. The higher the perceived social pressure, the higher the IT entrepreneurial intention (Chandran and Aleidi 2018; Díaz-García and Jiménez-Moreno 2010). Therefore, we could observe that the environment and subjective norms play an important role in women’s IT entrepreneurial intention. From IS perspective, this proposition is consistent with Venkatesh & Morris (2000) assertion that women are strongly influenced by subjective norms perceptions of IT and IT usage intentions (Chandran and Aleidi 2018). Accordingly:

**H8:** Subjective norms influence positively women’s IT entrepreneurial intention.

**Methodology**

Most studies of entrepreneurial intention have relied on student samples (Autio et al. 2001; Chen 2014; Díaz-García and Jiménez-Moreno 2010) among others. In this study, we surveyed a broad range of samples to increase the generalizability of undergraduate student populations to older, who would provide different levels of knowledge, experience, and perception. Hence, the sample consists of female university students in their last years, majoring in different disciplines including but not limited to students majoring in IT and other related areas as well as subjects related to business and management. Also, it includes female nascent entrepreneurs who are not entrepreneurs yet, but are pondering on it and in the process of starting a business, which is therefore in line with the nascent entrepreneur profile as established by McGee et al., (2009)(Giordano Martínez et al. 2017). This study applied quantitative method to collect numerical data from
respondents. It adopts previously validated instruments in order to ensure that survey items are adequate. The survey was originally developed in English. A translated Arabic version has been included in the survey. A five-point Likert scale (1 = strongly disagree to 5 = strongly agree) is used as it is one of the most commonly used techniques of scaling responses in a survey design. Online survey was sent to 300 participants and 260 participated in the survey. After removing incomplete responses, a total of 180 responses were used for data analysis. With respect to the female university students, data has been collected in large, public universities in Saudi Arabia, which are Princess Nourah Bint Abdulrahman in Riyadh, which is the largest university for women in the world, female colleges at King Saud University in Riyadh, and female colleges of King Abulaziz University in Jeddah. To identify the nascent entrepreneurs, technology incubator, and entrepreneurship programs were targeted. This includes Badir’s program from the scientific organization of King Abdulaziz City for Science and Technology, as well as King Salman Institute for Entrepreneurship program at King Saud University that provides education and training programs for entrepreneurship guidance. The data were analysed using Partial Least Squares (PLS) Structural Equation Modelling (SEM) approach using the SmartPLS version 3 (Ringle et al. 2014). PLS-SEM is appropriate for this study because it allows formative and reflective constructs to be tested together (Chin et al. 2003). In this study, subjective norm is modelled as a formative construct (Eckhardt et al. 2009) while all other constructs are modelled as reflective indicators. The subjective norm is a multi-dimensional construct (Sohaib and Kang 2015) which covers various referent groups such as friends, family and colleagues.

Data Analysis

Descriptive analysis shows that 60% are in the age bracket of 18-25 years; followed by 30% participants are 26-35 years, 55% of the participants hold bachelor’s degree followed by master degree with 35%. Educational background of the participants includes 40% from IT and related areas, while 60% participants were from business and related areas. 65% participants are full-time students followed by 30% full time-employed and 5% unemployed. Finally, 45% of participants are nascent entrepreneurs.

Reliability and Validity Assessment

The data were first analysed for internal consistency, convergent validity and discriminant validity (Hair et al. 2011). Internal consistency is measured using Cronbach’s alpha with the recommended value of 0.70 (Hair et al. 2011). Furthermore, convergent validity is measured using average variance extracted (AVE) and the composite reliability (CR), and the acceptable values of AVE are 0.50 and the CR should be greater than AVE (Hair et al. 2014). Discriminant validity is measured using the square root of individual AVE of each construct that should be more than any correlation between the latent variables (Hair et al. 2014). Subjective norm is modelled as a formative construct that cannot be assessed in this procedure. All the items loadings of reflective factors and the items weight of the formative construct were significant at p value < 0.05. Table 1 shows acceptable results of the factors reliability and validity assessment.

<table>
<thead>
<tr>
<th></th>
<th>AVE</th>
<th>Alpha</th>
<th>CR</th>
<th>PO</th>
<th>RM</th>
<th>FoF</th>
<th>CSE</th>
<th>PIIT</th>
<th>ATE</th>
<th>ESE</th>
<th>SN</th>
<th>WEI</th>
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<td>0.79</td>
<td>0.87</td>
<td>0.42</td>
<td>0.19</td>
<td>0.33</td>
<td>0.00</td>
<td>0.25</td>
<td>0.48</td>
<td>0.40</td>
<td>0.25</td>
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</tbody>
</table>

Notes: 1. AVE: Average Variance Extracted, CR: Composite Reliability, C Alpha: Cronbachs Alpha
3. Diagonal elements are the square root of AVE.
Structural Model Testing

In the second step, the proposed hypotheses are tested using the structural model results. The path coefficient is assessed using bootstrapping technique for two-tailed tests. The value of $R^2$ indicates the percentage of the variance explained by the dependent factors in the structural model. Table 2 and Figure 2 show the path testing.

Table 2. Hypotheses Testing

<table>
<thead>
<tr>
<th></th>
<th>Path</th>
<th>Path coefficient mean</th>
<th>StDev</th>
<th>T statistics</th>
<th>P value</th>
<th>Supported?</th>
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<td>PO -&gt; ATE</td>
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<td>0.03</td>
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<td>0.03</td>
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<td>0.04</td>
<td>2.99</td>
<td>0.000**</td>
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<td>RM -&gt; ESE</td>
<td>0.22</td>
<td>0.03</td>
<td>2.65</td>
<td>0.000**</td>
<td>Yes</td>
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<td>H3a</td>
<td>FoF -&gt; ATE</td>
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<td>0.05</td>
<td>2.10</td>
<td>0.001*</td>
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<td>FoF -&gt; ESE</td>
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<td>0.04</td>
<td>2.22</td>
<td>0.002*</td>
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<td>H8</td>
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<td>0.04</td>
<td>6.20</td>
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Notes:
- *Significant at 0.05 level, ** Significant at 0.001 level

Figure 2. Path testing

The results show that all the hypotheses are accepted except H5b where the relationship between ‘personal innovativeness in IT’ and ‘entrepreneurship self-efficacy’ is insignificant. $R^2=0.37$ indicates 37% variance in attitude towards IT entrepreneurship, 28% in ‘entrepreneurship self-efficacy’ and 45% in ‘women’s IT entrepreneurship intention’ respectively.

Discussion and Conclusion

The major objective of this study was to analyze the impact of IT and institutional environment on women’s IT entrepreneurial intentions based on Theory of Planned Behaviour. As shown in Figure 2, the order of path significance among the institutional factors that have a significant effect on “attitude towards IT entrepreneurship” is “perceived opportunities” followed by “role model”. The results confirm that
“perceived opportunities” is the most important factor to be associated with attitude. This is consistent with the earlier literature, which shows the importance of opportunities perception and role models in promoting entrepreneurship (Fellnhofer and Puimalainen 2017; Hussain and Hashim 2016). Furthermore, the order of path significance among the institutional factors that have a significant effect on ‘entrepreneurial self-efficacy’ is also ‘perceived opportunities’ followed by ‘role model’. ‘Fear of failure’, on the other hand, shows a negative and significant effect on “attitude towards IT entrepreneurship” and ‘entrepreneurial self-efficacy’. This result further confirmed the prior findings that “fear of failure” is negatively affect entrepreneurial attitude and self-efficacy (Giordano Martínez et al. 2017), and more specific, women’s entrepreneurial decision (Langowitz and Minniti 2007; Noguera et al. 2013). Thus, as suggested by others, there is a need for initiatives specifically focused at young women in order to help reducing fear of failure perception. With regard to role models, as has been suggested by (Langowitz and Minniti 2007; Noguera et al. 2013), they have a significant effect in promoting female entrepreneurship in general by providing women entrepreneurs with the confidence to use their abilities and skills they are missing (or think they are missing). Additionally, they may help to reduce the ambiguity associated with starting a business and subsequent reduce the perception of fear of failure, if more information is available.

Concerning the IT factors, ‘computer self-efficacy’ and ‘personal innovativeness in IT’ both have significant effect on ‘attitude towards IT entrepreneurship’. This finding is consistent with the previous literature showing a positive influence of these factors on ‘attitude towards IT entrepreneurship’ (Chen 2013; Chen 2014; Dutta et al. 2015; He and Freeman 2010). Also, this finding confirms that technology skills are important characteristics of IT entrepreneurs, who have different characteristics from traditional entrepreneurs (Chen 2013; Chen 2014). In addition, ‘computer self-efficacy’ has a significant effect on ‘entrepreneurial self-efficacy’; however, our results show the insignificant effect of ‘personal innovativeness in IT’ on ‘entrepreneurial self-efficacy’. Although our data does not support the hypothesis, the earlier literature corroborates the importance of this construct on ESE (Chen 2014; Dutta et al. 2015) as well as it helps to identify individuals who are likely to adopt IT innovation earlier than others (Agarwal and Prasad 1998). In addition, the results also confirm that attitude and ESE positively influence women’s IT entrepreneurial intention. The role of attitude was also confirmed by prior studies as a key determinant of entrepreneurial intention (Díaz-García and Jiménez-Moreno 2010; Hussain and Hashim 2016; Kolvereid 1996) as well as ESE (Chen 2013; Chen 2014; Zhao et al. 2005) more specifically, for women’s decisions to start businesses (Langowitz and Minniti 2007). Finally, the results also confirm that the ‘subjective norms’ is a key factor towards “women’s IT entrepreneurial intention” and subsequent behaviour in Saudi context. This is in line with related studies (Chen 2013; Díaz-García and Jiménez-Moreno 2010). Hence, women who receive support and encouragement from their family members, close friends, or colleagues are more likely to have IT entrepreneurial intentions.

This research offers several contributions. First, it contributes to information systems and female entrepreneurship literature by enhancing our understanding of aspects influencing decisions to create new business in IT-related industries. Practically, the IT entrepreneurial intention model developed in this study can be a new driver of IT entrepreneurial behavior among women, which has rich practical implications for enhancing entrepreneurship, economic growth and innovation. Furthermore, this study is the reconfirmation of Theory of Planned Behavior in predicting the entrepreneurial intentions from developing countries context in general and Saudi women context in particular. Our study also contributes to support Kingdom’s new economic direction that aims to increase SMEs contribution to the economy, increase women’s participation in the workforce and transferring the economic system from its oil-based economy to a knowledge-based economy through innovation and technology. Finally, like any research this study has limitations. The research model did not cover all aspects of the institutional environment that may affect entrepreneurial intention and subsequent behaviour. Furthermore, although, as explained earlier, the election of intentional theory is justified by their acceptance and generalized use to explain entrepreneurial intentions in different contexts and areas, we confirm that entrepreneurial intention is not the actual behavior. Thus, this is an area for future research to consider the IT entrepreneurial behaviour as well.

References

Women’s IT Entrepreneurial Intentions


