Predicting start-up intention among the females of Saudi Arabia using social cognitive theory

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Abstract

Purpose – The purpose of this paper is to explore the start-up intention among the female population in Saudi Arabia using the social cognitive theory (SCT).

Design/methodology/approach – This paper is based on the Global Entrepreneurship Monitor nationwide survey of 1,835 adult females in 2017. This is one of the most comprehensive surveys for assessing the start-up climate across the globe including Saudi Arabia. The data have been analyzed using simple techniques such as chi-square statistics, correlation, and logistics regression. The factors affecting start-up intentions have been identified using the social cognitive theory (SCT).

Findings – Out of 1,835 adult females surveyed under Global Entrepreneurship Monitor, 568 of them have reported start-up intention, i.e. 31.9 percent. The profile of females with and without start-up intention has been mapped in terms of age, family size, working status, education level, region, and citizenship to understand the potential group. The results of the correlation coefficient indicated a significant and positive relationship between start-up intention (SI) among females and self-efficacy (SE), career choice (CC), employment generation (EG), and social welfare (SW). The regression estimates proved that both the constructs, i.e. self-efficacy beliefs and outcome expectations of the social cognitive model are positive and significant.

Practical implications – The result of this paper provides empirically meticulous evidence for understanding the start-up intention of females in Saudi Arabia based on the social cognitive theory. This study provides a key strategy for changing the start-up ecosystem for females in the Kingdom of Saudi Arabia. By focusing on the required knowledge, skill, and experience among females belonging to young, small family size, not-working and having higher family income may provide better start-up intention for all those who are willing to venture into a new business as a career choice, have the intention to create jobs and wish to solve social problems.

Originality/value – Considering the current focus of the government for establishing a knowledge-based economy by promoting new programs in the kingdom for start-ups and SMEs, the findings of this research can be valuable for the rapid acceleration of a new model of growth supported by the grass-root rise of women entrepreneurs.

Keywords Women entrepreneurship, Start-up intention, Global entrepreneurship (GEM), Social cognitive theory, Saudi Arab

Paper type Research paper

Introduction

The Kingdom of Saudi Arabia is a predominantly oil-based economy with strong government controls over major economic activities, and has undergone remarkable changes in a relatively short span of time. It possesses about 16% of the world's proven petroleum reserves, contributes to about 42% of Gross Domestic Product (GDP), and comprises about 90% of export earnings. Under the leadership of the Custodian of the Two Holy Mosques, Vision 2030 was launched on 25 April 2016, which aimed at harnessing the potential of the economy by diversifying from oil to non-oil sectors. This economic transformation requires boosting the growth of nonhydrocarbons, modernize the public sector, foster the

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entrepreneurial mindset among the Saudi population, stimulate SME activities and growth, and attract more foreign investment into the country. The Vision 2030 mandates the country to increase the private sector's contribution from 40 to 65% of GDP, reduce the unemployment rate from 11.6 to 7%, enhance the contribution of small and medium enterprises (SMEs) to GDP from 20 to 35%, and to increase women's participation in the workforce from 22 to 30% by 2030.

The country is adopting a holistic strategic turnaround for establishing a sustainable economic model with an enhanced role of private sector investment. Saudi Arabia has immense opportunities towards entrepreneurship development for diversification of the economy across the sectors. According to the 2019 Global Entrepreneurship Monitor report, 73.9% of the adult population in Saudi Arabia has perceived good opportunities to start a business, 32.3 have reported entrepreneurial intention and 61.9% reported high job creation potential. The Kingdom has been investing heavily in start-ups as Saudi Arabia focuses on growing its economy to achieve its Vision 2030 objective and funding for start-ups has risen by 102% in recent years (Merani, 2019; MAGNiTT, 2020). Vision 2030 also aimed at creating opportunities for all by building an education system aligned with market needs and creating economic opportunities for the entrepreneur, the small enterprise as well as the large corporation. The government has launched a number of programs to gauge the entrepreneurial opportunities and promote SMEs in the country such as the Meras program, which provides all the government and private sector services an entrepreneur needs to set up a business in one day and Monsha'at, for removing obstacles, facilitating access to funding, supporting SMEs in marketing and exporting products and services, and enabling national entities to collaborate with relevant stakeholders.

The King Abdulaziz City for Science and Technology (KACST) in Saudi Arabia launched Badir Program for promoting Technology Incubators with a focus on incubation, acceleration, funding facilitation, and entrepreneurship awareness (Thomas, 2021). Similar initiatives shall further boost the entrepreneurial ecosystem in the country leading to economic development through job creation and competitiveness. The Kingdom has introduced significant reforms for the inclusion of females at workplace and eliminated all restrictions on women's employment. According to recent Women, Business and the Law 2021 survey conducted by the World Bank, the inclusion of females in entrepreneurship has been assessed in terms of no discrimination in access to credit based on gender, the woman may sign a contract in the same way as a man, woman register a business in the same way as a man and woman open a bank account in the same way as a man. According to GEM (2017), females were more favourable towards entrepreneurship as a professional choice than males, and consider that starting a new business provides a higher level of status and respect in the society.

A number of studies have analysed the factors affecting start-up and entrepreneurial intention across gender globally (Hattab, 2012; Ahmad *et al.*, 2014; Khan, 2019; Hassan *et al.*, 2020; Sandhu *et al.*, 2021; Gurel *et al.*, 2021). Kemppainen (2019) argued about the focus of the Saudi Vision 2030 on entrepreneurship, innovation, and stronger female participation in the workforce and evaluated the theoretical underpinning from an economic, social, and cultural perspective. Abu Bakar *et al.* (2017) assessed the determining factors of entrepreneurial business start-ups in Saudi Arabia and analyzed a multitude of individual factors into financial resources; social legitimacy; entrepreneurial personality; and entrepreneurial competencies. Ali *et al.* (2019) analysed the effects of the entrepreneurial ecosystem on entrepreneurial intentions among female university students in Saudi Arabia. Bhatti *et al.* (2021) identified different psychological attributes which influence entrepreneurial intention (EI) and the role of entrepreneurial education and training programs to develop these attributes among women in Saudi Arabia. This paper aims at exploring the factors affecting the start-up intention among the female population in Saudi Arabia using the social cognitive theory (SCT).

Conceptual research framework

The intention towards starting a new business has widely been analysed across the world due to enhanced focus on promoting entrepreneurial ventures (Hwee and Shamuganathan, 2010; Frank *et al.*, 2007; Garidis and Rossmann, 2019; Zhang *et al.*, 2019; Ali and Jabeen, 2020; Ali *et al.*, 2021; González-Serrano *et al.*, 2021). Bezerra de Melo (2019) verified the association between gender and the Causation and Effectuation approaches and concluded that there was a positive and statistically significant association between the female gender and the Causation perspective. Aliaga-Isla (2018) examined the impact of informal networks, such as personally knowing other entrepreneurs and having access to business angel investors on start-up entrepreneurs in Spain, which has shown positive relationship. Moreno-Gómez *et al.* (2019) analysed the effect of parental role models in gender entrepreneurial intentions and proved the positive role of parents in entrepreneurship development. Wang *et al.* (2019) analysed entrepreneurial intentions for academic scientists by combining the social cognition theory and theory of planned behaviour. Lin *et al.* (2017) evaluated factors affecting the intention of starting a new business in El Salvador and enlisted cultural and social norms, lifestyle, entrepreneurial aptitudes, perceived opportunities, perceived capabilities as the key factors. Matricano (2016) applied the concept of intellectual capital (IC) in entrepreneurship and tested the effect of IC on start-up expectations among aspiring entrepreneurs.

Several studies have confirmed the pertinence of cognitive approach theory in shaping the behavioural of individuals in entrepreneurial decisions (Krueger, 2000; Mitchell *et al.*, 2002; Gaglio, 2004; Baron, 2004; Kibler *et al.*, 2019; Pham *et al.*, 2021). The cognitive theory tries to understand the growth and development of competencies and to recognize the regulation of the actions of an individual. A successful entrepreneur needs competencies and a planned action towards entrepreneurship (Krueger *et al.*, 2000; Doanh and Bernat, 2019). Some studies have exhibited the effect of cognitive theory on entrepreneurial decision-making and in various actions being taken by the entrepreneur (Mitchell, 1994; Armitage and Conner, 2001; Shane *et al.*, 2003; Ferreira *et al.*, 2012; Ahmad *et al.*, 2014; Yasir *et al.*, 2017; Zhang *et al.*, 2019). Within the cognitive literature, the two vital lines can be differentiated, the study of cognitive structure and the study of cognitive processes. Various studies have strived to identify and made an effort to understand the knowledge structures that the entrepreneurs use for the evaluations, judgments, or in decision makings in evaluating the opportunities and in the creation and the growth and development of business (Mitchell *et al.*, 2000; Gaglio and Katz, 2001; Hwee Nga and Shamuganathan, 2010; Douglas *et al.*, 2021). Many researchers accorded that the government can play a crucial role in creating awareness towards entrepreneurship and also in building the skills and competencies required to be an entrepreneur; however, their performance in this regard is far from perfect (Iqbal *et al.*, 2011; Salem, 2014; Awwad and Al-Aseer, 2021). Salem (2014) identified the vital role played by the Saudi Arabian universities in shaping entrepreneurial intentions among women and concluded that "most universities have not fully integrated entrepreneurship programs" in their curricula.

The most important elements that elucidate one's behaviour towards entrepreneurial activity is decided based on entrepreneurial intentions (Pruett *et al.*, 2009; Altinay *et al.*, 2012; Fayolle and Liñán, 2014; Liñán and Fayolle, 2015; Ruiz-Alba *et al.*, 2019). Entrepreneurial intention speaks about the perceptions of an individual to engage in various kinds of entrepreneurial activities by acquiring the resources and knowledge (Srivastava and Misra, 2017; Obschonka *et al.*, 2017; Urban and Ratsimanetrimanana, 2019). It is argued that for the establishment of a new venture, it needs the full attention and experiences towards the establishment (Soomro and Shah, 2015; Do and Dadvari, 2017; Elnadi and Gheith, 2021) and also exploring the feasible opportunities for the innovative business models for achieving the success (Obschonka *et al.*, 2017). Hisrich *et al.* (2013) argued that entrepreneurship is an intrigued and multistage process of which entrepreneurial intention is one of the complex areas to study. For better acknowledgment regarding the concept of entrepreneurial

intention, Linan and Fayolle (2015) pointed out that more research was required to be conducted. The combination of intent and entrepreneurship is a concept which explains that an individual with a higher level of intention to present and perform the given task and also will accomplish the said task more effectively (Maresch *et al.*, 2016; Arkorful and Hilton, 2021). The literature on entrepreneurship proposes highlights that entrepreneurial intention (EI) is an important component for any individual to become an entrepreneur (Sheeran, 2002; Zhao *et al.*, 2010; Ayodele *et al.*, 2020; Berisha *et al.*, 2021).

Bell (2019) emphasized on factors such as proclivity towards innovation, attitude to take risk, pro-activeness, and self-efficacy to be important attributes of entrepreneurial intention. Similarly, Anabela *et al.* (2013) reported that locus of control, tendency to take risk, self-confidence, need for achievement, endurance to ambiguity, and innovativeness were more vital attributes when predicting entrepreneurial intention. Arkorful and Hilton (2021) investigated the influence of locus of control (internal and external) on entrepreneurial intention among students in Ghana and concluded a positive relationship. The past research has not examined how these attributes can be build up among women, particularly referring to Saudi Arabia (Fayolle and Gailly, 2015; Adekiya and Ibrahim, 2016). Although, serval researchers have analysed the factors affecting entrepreneurial intention among females globally (Mitchelmore and Rowley, 2013; Srivastava and Misra, 2017; Ali and Jabeen, 2020; Ali *et al.*, 2021).

According to social cognitive theory (SCT), human motivation and action are extensively regulated by an individual's capabilities and expectations that might refer to outcomes of undertaking a specific action (Bandura, 2005; Ratten and Ratten, 2007; McMullen *et al.*, 2014; Tran and Von Korflesch, 2016; Kushev *et al.*, 2019). Thus, the theory outlines several crucial factors that influence individual behaviour. The first factor is perceived self-efficacy, which is concerned with people's beliefs in their capabilities to perform a specific action. The second factor is outcome expectancies, which are concerned with people's beliefs about the possible consequences of their actions. These constructs are displayed in Figure 1, which illustrates their interplay throughout the behaviour change process for start-up intention among females in Saudi Arabia. Based on the literature review, the following hypotheses have been formulated and tested in the study:

H1. There is a positive relationship between Self-Efficacy (SE) and Start-up Intention (SI) among females.

H2. There is a positive relationship between Outcome Expectations (OE) and Start-up Intention (SI) among females.

H3. There is a positive relationship between Self-Efficacy (SE) and Outcome Expectations (OE).

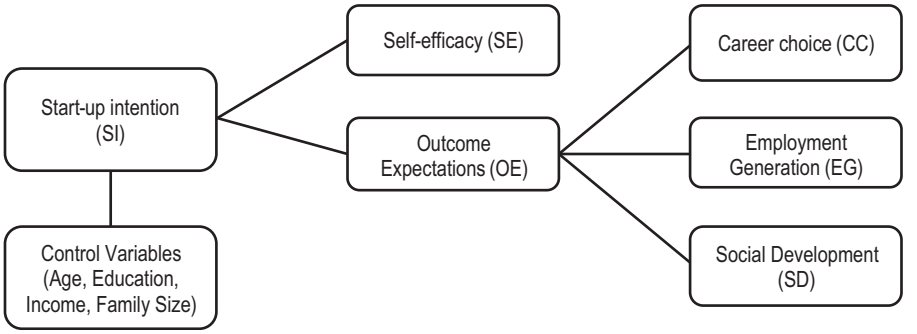

Figure 1.
Start-up intention based on social cognitive theory

H4. Self-Efficacy (SE) has a significant impact on Start-up Intention (SI) among females.

H5. The Outcome Expectations (OE) has a significant impact on Start-up Intention (SI) among females.

Data and methodology

Data source

The Adult Population Survey (APS) conducted under Global Entrepreneurship Monitor (GEM) explores the role of the individual in the lifecycle of the entrepreneurial process starting from business characteristics to people's motivation for starting a business, the actions taken to start and run a business, as well as entrepreneurship-related attitudes. It is one of the most comprehensive databases on the entrepreneurial ecosystem globally. The adult population questionnaire (APS) was applied as a survey for a representative sample of the populations aged 18–64 participating in the monitor each year. The 2017 GEM survey covered 54 economies, which covered 67.8% world's population and 86.0% of the world's GDP. Saudi Arabia participated in GEM for the first time in 2009. Under GEM (2017) APS survey, 4,048 respondents of Saudi Arabia have been covered and 1,835 respondents were female. This study is based on 1,835 female respondents of the APS survey.

Description of variables

Based on the requirement of the theoretical model, variables have been extracted from the Adult Population Survey (APS) of Global Entrepreneurship Monitor (GEM) as depicted in Table 1. The survey indicator on the expectation to start a business in the next three years has been taken as a dependent variable. As the intention to start a business was recorded in "Yes" and "No", this has been converted into binary to estimate a logistics regression. The Social Cognitive Theory (SCT) primarily outlines perceived self-efficacy and outcome expectancies as crucial factors that influence the behaviour of individuals towards an intervention (Segal *et al.*, 2002; Drnovšek *et al.*, 2010; Nasrolahi Vosta and Reza Jalilvand, 2014). Self-efficacy is defined as people's beliefs in their capabilities to perform a specific action required to attain the desired outcome (Arafat and Saleem, 2017; Jin, 2017; Malebana, 2017; Doanh and Bernat, 2019). The self-efficacy (SE) has been captured in the survey with the question on "Do you have the knowledge, skill, and experience required to start a new business?". The outcome expectation (OE) is another core construct of SCT which emphasizes people's beliefs about the possible consequences of their actions. The outcome expectations of an individual from a start-up have been captured with the help of three variables – career choice (CC), employment generation (EG), and social welfare (SW). Individual's response on "In my country, most people consider starting a new business as a desirable career choice", "expects more than 5 employees in next five years in my start-up" and "In my country, you will often see businesses that primarily aim to solve social problems have been used to capture career choice (CC), employment generation (EG) and social welfare (SW)" respectively. A set of control variables have been used in the study to establish a robust relationship between independent and dependent variables. Demographic variables such as age, family size, education, working status, household income have been used as control variables in the study.

Data analysis

Simple statistical tools have been used to analyze the GEM survey data. Descriptive statistics of the dependent, explanatory, and control variables have been calculated to provide a basic analysis of the data used in the study. The Chi-Square Test of Independence has been used to assess the association between adult females with and without start-up intention across various demographic characteristics. The empirical investigation under this study is based

Variables	Code	Description	Minimum	Maximum	Mean	Std. deviation
Dependent variable						
Start-up intention	SI	Reporting expects to start in the next 3 years (Yes = 1, Else = 0)	0.0	1.0	0.3	0.466
Explanatory variables						
Self-efficacy	SE	Do you have the knowledge, skill, and experience required to start a new business? (Yes = 1, Else = 0)	0.0	1.0	0.7	0.472
Career choice	CC	In my country, most people consider starting a new business as a desirable career choice (Yes = 1, Else = 0)	0.0	1.0	0.7	0.456
Employment generation	EG	Expects more than 5 employees in next five years	0.0	1.0	0.0	0.179
Social welfare	SW	In my country, you will often see businesses that primarily aim to solve social problems. (Yes = 1, Else = 0)	0.0	1.0	0.5	0.500
Control variables						
Age	AGE	Age in years	18.0	64.0	34.8	10.441
Family size	FS	Family size (number)	2.0	12.0	5.3	1.899
Education	EDU	Postsecondary education = 1, Else = 0	0.0	1.0	0.7	0.477
Working status	WS	The working status of the respondent (working full or part-time includes self-employment = 1, Else = 0)	0.0	1.0	0.5	0.500
Household income	INC	Belonging to the highest percentile with regard to household income (Yes = 1, Else = 0)	0.0	1.0	0.4	0.488

Table 1.
Variable definition and descriptive statistics

on social cognitive theory (SCT) for predicting start-up intention among the female population in Saudi Arabia. The correlation and logistics regression has been used to finally prove the research hypotheses formulated under the study.

The logistic formulas are stated in terms of the probability that SI = 1, which is referred to as P. The probability that SI is 0 is $1 - P$.

$$\left(\frac{P}{1-P}\right) = a + \beta_i X_i$$

Based on the variables used in the study, the regression equation is further re-written as follows:

$$\mathrm{SI}(P) = \alpha + \beta_1 \mathrm{SE} + \beta_2 \mathrm{CC} + \beta_3 \mathrm{EG} + \beta_4 \mathrm{SW} + \beta_5 \mathrm{AGE} + \beta_6 \mathrm{FS} + \beta_7 \mathrm{EDU} + \beta_8 \mathrm{WS} + \beta_9 \mathrm{INC} + \varepsilon$$

Where SI(P) is the probability of start-up intention in the dependent variable, α is a constant value, β_i is the regression coefficient for a set of independent and control variables as indicated in Table 1.

Result and discussion

Difference in the profile of females with and without start-up intention

Out of 1,835 adult females surveyed under the Global Entrepreneurship Monitor in Saudi Arabia, 568 of them have reported start-up intention. This indicates that about 31.9% of females have reported intention to start a business in the next 3 years. The difference in the profile of females with and without start-up intention has been assessed in terms of age, family size, working status, education level, region, and citizenship to understand the potential group (Table 2). The result of chi-square statistics indicates that there is a significant association between females with and without start-up intention in terms of their age ($\chi^2 = 27.819$, $p < 0.01$), which implies that females with intention of starting a new business are comparatively younger than those without start-up intention. More than 55% of female respondents with start-up intention belong to the age below 35 years. There is also a significant difference in the family size of female respondents with and without start-up intention ($\chi^2 = 9.095$, $p < 0.01$). The female respondents with small family sizes are more likely to start a new business.

It is important to note that female respondents do vary with working status with regard to start-up intention ($\chi^2 = 17.237$, $p < 0.01$) and non-working females have a comparatively

Variables	Start-up intention Yes	%	No	%	Value	df	Sig
Age					27.819**	4	0.000
18–24	88	15.0	194	15.5			
25–34	241	41.1	414	33.1			
35–44	172	29.4	354	28.3			
45–54	49	8.4	211	16.9			
55–64	36	6.1	76	6.1			
Family size					9.095**	1	0.003
<4 members	367	62.6	689	55.2			
>4 members	219	37.4	560	44.8			
Working status					17.237**	2	0.000
Working – Fulltime/Part-time	355	60.7	1,193	65.5			
Not working	192	32.8	486	26.7			
Retired/students	38	6.5	143	7.8			
Education level					33.426**	4	0.000
None	123	21.0	378	20.7			
Some secondary	153	26.2	547	29.9			
Secondary degree	58	9.9	267	14.6			
Post-secondary	236	40.3	595	32.5			
Grad exp	15	2.6	42	2.3			
Annual household income					75.958**	2	0.000
Lowest 33%tile	151	27.1	478	41.9			
Middle 33%tile	87	15.6	264	23.1			
Upper 33%tile	319	57.3	400	35.0			
Regions					171.638**	4	0.000
Jeddah	372	63.5	418	33.5			
Riyadh	137	23.4	374	29.9			
Dammam	20	3.4	214	17.1			
Mecca	32	5.5	133	10.6			
Madinah	25	4.3	110	8.8			
Citizenship					7.428**	1	0.006
Saudi Arab	532	90.8	1,078	86.3			
Non-Saudi Arab	54	9.2	171	13.7			

Source(s): Authors' calculations. **significant at 0.01 level

Table 2. Difference in the profile of females with and without start-up intention

higher intention for a new venture. The profile of respondents with and without start-up intention varies with the level of education ($\chi^2 = 33.426$, $p < 0.01$). Females with Post-Secondary may have more potential to start a new business. The association of location with start-up intention among females seems significant ($\chi^2 = 171.638$, $p < 0.01$). Majority of females in Saudi Arabia with start-up intention belongs to Jeddah region, which clearly indicates that location of residence has important implication with regard to entrepreneurial potential. Finally, the citizenship of the individual does have an association with start-up intention ($\chi^2 = 7.428$, $p < 0.01$). More than 90% of respondents with start-up intention are Saudi nationals and registering and running an enterprise would be easier for them. The analysis of the difference in the profiles of the females with and without start-up intention has helped to understate the characteristics of budding entrepreneurs in Saudi Arabia. It is evident from the analysis that females younger in age belonging to small family size, having non-working status, with more than secondary education, having a higher family income, and Saudi citizen living in the Jeddah region have shown comparatively more intention towards entrepreneurship.

Relationship between variables

Table 3 provides results of the correlation between dependent, independent, and control variables. The start-up intention among females has indicated positive and significant correlation with self-efficacy ($\rho = 0.184$, $p < 0.01$), career choice ($\rho = 0.177$, $p < 0.01$), employment generation ($\rho = 0.108$, $p < 0.01$) and social welfare ($\rho = 0.129$, $p < 0.01$). The correlation coefficient between start-up intention and control variables indicates that age ($\rho = -0.063$, $p < 0.01$), family size ($\rho = -0.098$, $p < 0.01$) and working status ($\rho = -0.064$, $p < 0.01$) have significant and negative relationships while education ($\rho = 0.047$, $p < 0.05$) and income level ($\rho = 0.214$, $p < 0.01$) have a significant and positive relationship.

The social cognitive model postulates that start-up intentions result from self-efficacy beliefs and outcome expectations and an individual is getting influenced accordingly for starting an enterprise (Engle *et al.*, 2010; Liñán *et al.*, 2011; Javadian and Singh, 2012; Pathak *et al.*, 2013; Elali and Al-Yacoub, 2016; Schoenfeld *et al.*, 2017; Nowiński *et al.*, 2019). As there is a positive and significant correlation between start-up intention and self-efficiency, Hypothesis 1 which assumes that there is a positive relationship between Self-Efficacy (SE) and Start-up Intention (SI) among females is accepted. Similarly, all three indicators of Outcome Expectations (OEs) i.e. career choice, employment generation, and social welfare have shown positive and significant correlation with start-up intention. Therefore, Hypothesis 2, which assumes that there is a positive relationship between Outcome Expectations (OEs) and Start-up Intention (SI) among females is also accepted.

Further, self-efficacy (SE) has indicated a positive and significant correlation with career choice ($\rho = 0.244$, $p < 0.01$), employment generation ($\rho = 0.054$, $p < 0.05$), and social welfare ($\rho = 0.078$, $p < 0.01$). Therefore, Hypothesis 3, which assumes that there is a positive relationship between Self-Efficacy (SE) and Outcome Expectations (OEs) is accepted. The result of the correlation between self-efficacy and family size provides a negative and significant relationship ($\rho = -0.062$, $p < 0.05$) which implies that smaller family size is likely to have higher perceived capabilities for starting a business and vice versa, whereas self-efficacy has a positive and significant relationship with income level ($\rho = 0.157$, $p < 0.05$). Thus, the higher income level of the family may like to enhance the perceived capabilities of starting a business. The correlation matrix also provides additional significant relationships across variables.

Factors affecting start-up intention

After computing correlations between variables, a logistic regression analysis has been used to further test the causal relationship between dependent, independent, and control variables

	Start-up intention	Self-efficacy	Career choice	Employment generation	Social welfare	Age	Family size	Working status	Education
Start-up intention	1.000								
Self-efficacy	0.184**	1.000							
Career choice	0.177**	0.244**	1.000						
Employment generation	0.108**	0.054*	0.053*	1.000					
Social welfare	0.129**	0.078**	0.027	−0.026	1.000				
Age	−0.063**	0.016	0.016	0.040	−0.274**	1.000			
Family size	−0.098**	−0.062**	−0.053*	0.000	−0.046*	0.158**	1.000		
Working status	−0.064**	0.041	0.011	0.098**	−0.266**	0.163**	−0.042	1.000	
Education	0.047*	0.009	−0.032	0.073**	−0.021	−0.050*	−0.124**	0.106**	1.000
Income level	0.214**	0.270**	0.157**	0.013	−0.048*	0.070**	−0.070**	−0.013	0.006

Source(s): Authors' calculations. **significant at 0.01 level; *significant at 0.05 level

Table 3.
Correlation matrix

of the social cognitive model (Table 4). Entrepreneurial intention is being influenced by a variety of factors (Wennekers and Thurink, 1999; Ahmad *et al.*, 2014; Kedmenec *et al.*, 2014; Hussain and Hashmi, 2016; Arafat and Saleem, 2017; Khan *et al.*, 2019). The empirical results of the regression analysis aimed at identifying significant variables that help to estimate the likelihood of females intending to start a business venture within three years using social cognitive theory. The goodness-of-fit of the models is assessed by the Omnibus test for model coefficients, the rate of correct prediction, and the pseudo-R^2 statistics. The Omnibus test is always significant ($p < 0.01$), denoting acceptance of the hypothesis that β coefficients are different from zero. The Cox and Snell R^2 and the Nagelkerke R^2 values indicate the amount of variation in the independent variable explained by the model. These are described as pseudo-R^2 statistics. The significance of individual independent variables was tested using the Wald statistics. Demographic variables such as age, family size, education, working status, household income have been used as control variables to enhance the robustness of the relationship between dependent and independent variables.

The influence of self-efficacy (SE) on start-up intention indicates that females with adequate knowledge, skill, and experience are 1.7 times more likely to start a new business ($\beta = 0.059$, $p > 0.01$). Thus Hypothesis 4, which assumes that Self-Efficacy (SE) has a significant impact on Start-up Intention (SI) among females is accepted. Further, all three variables of Outcome Expectations (OEs) have shown a significant impact on start-up intention. Respondents perceiving start-up as a career choice are about 2 times more likely to start a new venture ($p > 0.10$) and those who expect more than 5 employees in the next five years are 3.2 times more likely to have start-up intention ($p > 0.01$). Similarly, females with aims of solving social problems are 1.7 times more likely to start a business that primarily ($p > 0.01$). Therefore, Hypothesis 5, which assumes that the Outcome Expectations (OEs) has a significant impact on Start-up Intention (SI) among females is also accepted.

Variables	Code	Dependent variable = start-up intention among females (Yes = 1, Else = 0) *B*	S.E.	Wald	Exp(*B*)
Independent variables					
Self-efficacy	SE	0.509**	0.127	15.982	1.664
Career choice	CC	0.680**	0.132	26.747	1.975
Employment generation	EG	1.178**	0.281	17.611	3.248
Social welfare	SW	0.515**	0.114	20.324	1.673
Control variables					
Age (Years)	AG	−0.007	0.006	1.485	0.993
Family size (<4 members = 1, >4 members = 0)	FS	−0.091**	0.030	9.037	0.913
Working status (Fulltime = 1, Else = 0)	WS	−0.246*	0.116	4.527	0.782
Education (Postsecondary and above = 1, Else = 0)	EDU	0.197	0.108	3.309	1.217
Household income (Highest percentile = 1, Else = 0)	INC	0.771**	0.112	47.781	2.163
Model fit					
Constant		−1.490**	0.301	24.462	0.225
N		1835			
Model χ^2		219.149**			
Block χ^2		73.636**			
% Of correct predictions		71.3			
−2 Log likelihood		2078.879			
Cox and Snell *R* square		0.113			
Nagelkerke *R* square		0.158			

Source(s): Authors' calculations. **significant at 0.01 level; *significant at 0.05 level

Table 4.
Binary logistic regression models

The effect of control variables such as family size, working status, household income has shown a significant impact on start-up intention among females. The analysis indicates that age has a negative and non-significant influence on female start-up intention, implying that younger female is more likely to start a new business. Similarly, family size and working status have a negative and significant ($p > 0.01$) influence on female start-up intention. However, household income has a positive and significant ($p > 0.01$) influence on starting a new venture by a female.

Overall, the result of the regression analysis showed a proper application of social cognitive theory in predicting the start-up intention amongst females in Saudi Arabia. The availability of knowledge, skill, and experience required to start a new business proved to be an important factor for promoting start-ups. Similarly, the outcome of entrepreneurial initiatives should meet the expectations of the budding entrepreneurs. All three factors related to outcome expectations such as start-up as a career choice, behaviour towards creating jobs than seeking a job, and attitude towards social welfare are important predictors influencing the intention of individuals towards entrepreneurship.

Conclusion and implications

The Kingdom of Saudi Arabia is determined to reinforce and diversify the capabilities of its economy for sustainable growth and development. The Vision 2030 is a powerful strategic direction for achieving the goals of establishing a vibrant society, a thriving economy, and an ambitious nation. Lecanuet (2021) argued that Saudi Arabia is a budding ecosystem for innovation and venture capital and recent reforms by opening up its economy provide massive opportunities to bring in disruptive technology applications. The conducive reforms for enhancing inclusive growth through enhancement of women participation at the workplace, has provided increased opportunities for female entrepreneurship and start-ups. According to GEM (2017) survey, which covered 1,835 adult females, 31.9% have reported start-up intention in the Kingdom of Saudi Arabia. The recent emergence of incubation centres and the introduction of educational course curriculum for entrepreneurship have helped in enhancing the entrepreneurial ecosystem.

An assessment with the profile of females with start-up intention provides interesting insight for preparing a strategic plan to promote entrepreneurship among females. Findings of the study indicate that females younger in age, belongs to small family size, with no working status, post-secondary and above education level, higher household income, belong to Jeddah region, Saudi citizen has reported start-up intention. This insight can provide key input to various stakeholders such as policy-makers, incubation centres, funding agencies, potential entrepreneurs, and researchers to understand the target group better and realize positive outcomes. The correlation coefficient provided encouraging results and supported the application of social cognitive theory (SCT) with a significant and positive relationship between start-up intention (SI) among females and self-efficacy (SE), career choice (CC), employment generation (EG), and social welfare (SW) among female in Saudi Arabia. The regression estimates have strengthened the validity of the social cognitive theory and proved that both the constructs, i.e. self-efficacy and outcome expectations are positive and significant. It is evident from the analysis that the required knowledge and skills among the females help to promote behavioural change toward start-up intention. Entrepreneurship as a career choice with an attitude of becoming a job creator and not a job seeker and concerns for social welfare will help achieve their goals. The stakeholders may take this learning as takeaways for creating a supportive entrepreneurial environment. The findings of this study provide a clear direction on whom to target for promoting start-ups among females in Saudi Arabia, how to enhance the knowledge, skill, and experience required to start a new business, and how to fulfill the expectations of the budding entrepreneurs.

The study has been meticulously undertaken using the Adult Population Survey (APS) conducted under the Global Entrepreneurship Monitor (GEM) covering 1,835 adult female respondents of Saudi Arabia. An appropriate theory, i.e. social cognitive model has also been applied for predicting the start-up intention among the females. However, the study does have some limitations. The data collected under the GEM survey are mainly dichotomous variables, which provides a very little option for using robust techniques. Even, the social cognitive theory may provide better results if scale variables related to self-efficacy and expected outcomes are being used in predicting the start-up intention. Therefore, a primary survey with the help of a structured questionnaire by including variables related to the social, cultural, regional aspects of the respondents may help to get additional insights on entrepreneurial behaviour. This research provides an opportunity for conducting further research on start-up intention based on a structured primary survey with the help of extended theoretical models.

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Further reading

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