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Extending the Theory of Planned Behaviour to Understand Entrepreneurial Intention Among Female University Students in Saudi Arabia: The Role of Entrepreneurship Education

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Abstract

Purpose – This study explored how various factors distinctly affect the entrepreneurial intentions of business female students, by providing theoretical and practical contributions to researchers working in this area and other parties to understand and translate the outcomes from the study into real life situations. Design/methodology/approach–Primary research is conducted through a survey questionnaire distributed to a sample of 243 students in September to October 2024. The study's data were analyzed using the statistical software SPSS 25 and AMOS 25. To measure the internal consistency reliability of the scale, two methods were applied, which are Cronbach's alpha test and the "composite reliability" (CR) index. Findings – The results show that there is significant and positive relationship between attitude and perceived behavioral control and the entrepreneurial intention. Our study confirms the positive effect of Risk-taking, Financial support and entrepreneurial Education on entrepreneurial intention but suggests no relationship between subjective norms and entrepreneurial intentions. Research limitations/implications – Our research of entrepreneurial intentions is limited by the inclusion of entrepreneurial students in our model, who may serve as future entrepreneurs. Future study could apply our model to actual entrepreneurs at various business stages, in keeping with recent studies that emphasize the significance of entrepreneurial life cycles.Originality/value – This study indicates that universities should create educational policies and structures to effectively inspire entrepreneurs. This study founded that providing students with adequate knowledge and motivation towards entrepreneurship will increase the likelihood of young people being involved in venture creation.

Keywords: *Entrepreneurial Intention, Theory of Planned Behavior, Business Female Students, Saudi Arabia, Entrepreneurship Education.*

Introduction

Scholars and decision-makers from all around the world have emphasized the value of entrepreneurship (Al Qudah et al. 2022). Recently, interest in entrepreneurship has surged in several Middle Eastern countries, including Saudi Arabia, boding well for national economic development. The economy of Saudi Arabia is the biggest in the Arabian Peninsula and among the biggest in the world. Saudi Arabia seeks to make entrepreneurship a viable career choice as well as a source of employment, innovation, and economic growth. It is audacious and innovative that research efforts have shifted toward entrepreneurship studies in quickly expanding economies (Aloulou et al. 2021).

Within the student entrepreneurship context, studies focusing on the on entrepreneurial intention has grown substantially in recent years (Xanthopoulou and Sahinidis, 2024), with a notable surge

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since 2006 (Batista-Canino et al. 2023). According to Maheshwari et al. (2023), entrepreneurial intention is regarded as one of the most influential factors driving entrepreneurial activities. According to Elnadi and Gaith (2021) there hasn't been much research done on Saudi Arabian students' entrepreneurial intention, despite the fact that several studies on the early stages of the entrepreneurial process have been carried out in various nations with a particular focus on university students' intentions. Promoting new entrepreneurial ventures has hence received increasing attention from various questions of stakeholders including public policymakers as well as business development agencies. Among other things, these questions are related to better understanding of entrepreneurship in terms of its influencing factors. However, understanding the factors that influence EI, which serves as a critical precursor to entrepreneurial behavior, has become a subject of significant interest in entrepreneurship research (Huang et al. 2024). Hence, there is still a research gap in respect to the entrepreneur itself and, even more specifically, with regard to the entrepreneurial intention of individuals because it is assumed that high intention to become an entrepreneur increases the likelihood that an individual will actually start a firm. This provides a starting point to better understand how intention formation towards entrepreneurship is formed. One possible avenue is to examine intention formation on the basis of behavioral models that were originally developed to investigate the intention formation with respect to different behavior (Tomy, Pardede, 2020).

In this context, the objective of our research is to look into the factors that affect entrepreneurial intention in a community such as Saudi Arabia. How Saudi female students assess and consider business prospects is not well understood. Hence, this study investigates the impact of entrepreneurial attitudes, subjective norms, and perceived behavioral controls, risk taking, financial support and university environment on entrepreneurial intention. Given that students must want to engage in self-employment, or entrepreneurship, this issue is crucial. Furthermore, as Saudi Arabia is a society with strong cultural and social barriers, it is important to comprehend what is approachable to students there and how this influences their desire to start their own business. Also, it is important for policymakers and universities to focus on final-year university students and graduates, urging them to contemplate entrepreneurship as a potential career pathway (Huang et al. 2024), and become job creators rather than job seekers. Hence, the main objective of this study is to examine, based on the theory of planned behaviour (TPB), whether Arabia Saudi university female student have the intention to start their own businesses, and to explore in more depth the factors influencing their entrepreneurial behaviour.

Literature Review

Significance of Studying Entrepreneurial Intention (EI)

Today, entrepreneurial intention is accepted as an important and the first cognitive indicator of entrepreneurial processes, as well as individuals establishing their own businesses. Research on entrepreneurship has shown a great deal of interest in figuring out what influences emotional intelligence (EI), which is a crucial precondition for entrepreneurial behavior.

Intention is most often operationalized as the decision of an individual to start playing the role of an entrepreneur in the future (Cui et al. 2022). According to numerous research (Krueger et al. 2000; Autio et al. 2001; Arasti et al. 2012), one of the most significant indicators of entrepreneurial activities and behaviors is entrepreneurial intention (EI). Therefore, the emphasis of many recent studies has switched from entrepreneurship to (EI) (Yu et al. 2021). Since the early 1990s, more studies have used Entrepreneurial Intention as a research framework, confirming the importance of EI feature in various settings (Liñán and Fayolle 2015). Hence,

the key to entrepreneurship is entrepreneurial intention, referring to the conscious state of mind that precedes action towards business formation. Entrepreneurial intention (EI) is defined as "a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future" (Thompson, 2009). Entrepreneurial intentions include the purposeful plan toward enterprise management; for instance, new venture creation or self-employment (Al-Mamary and Alshallaqi, 2022; Martins et al. 2023)

Despite the efforts made in Saudi Arabia, little is known about the factors that influence undergraduate students' entrepreneurial intentions. It is especially important to comprehend and assess the variables influencing entrepreneurial intention in developing nations like Saudi Arabia (Alshagawi, Ghaleb., 2023).

Hence, understanding the determinants of entrepreneurial intention is important for decision-makers to develop effective programs for entrepreneurial intention development among the youth population. In an effort to develop and nurture an entrepreneurial culture among students, numerous governments across the globe are supporting entrepreneurship initiatives within universities (Harima et al. 2021; Maheshwari and Kha, 2023; Mir et al. 2022; Neneteh, 2019 Yousaf et al. 2022).

In addition, the factors influencing the entrepreneurial intention (EI) of students in higher education have been the subject of numerous studies by academics. According to Nasip et al. (2017), Shah and Soomro (2017), Biswas and Verma (2021), students' intentions towards entrepreneurship are significantly influenced by cognitive and personality characteristics, including self-efficacy, individual attitudes, desire for achievement, and behavioral control. Researchers in the social and environmental sciences have identified factors like prior experience, family context, regional culture, and government support as critical factors influencing students' entrepreneurial intention (Ahamed et Rokhman 2015; Ali et al. 2019; Tiwari et al. 2020). The development of students' entrepreneurial intention is also significantly influenced by entrepreneurial education. Entrepreneurial education in higher education is crucial for improving fundamental entrepreneurial knowledge and a variety of cognitive and no-cognitive skills by encouraging students to engage in entrepreneurial activities (Walter et Block 2016; Brüne et Lutz 2020). According to Galloway and Brown (2002), this will encourage students to start their own business more, enhance the quality of entrepreneurship, and lead to entrepreneurial success.

Numerous theories and models of entrepreneurship have been created to examine the impact of factors on Entrepreneurial Intention of an individual. Among those suggested models, the majority of the research studies in this field employed the theory of planned behavior (TPB) model to examine the students' entrepreneurial intentions (Maheshwari et al. 2023).

The Theory of Planned Behavior (TPB)

Many existing studies (Duong, 2021; Kong et al. 2020; Liu et al. 2022; Tseng et al. 2022) have used the Theory of Planned Behaviour (TPB) to understand the EI and subsequent behaviour. TPB is more widely applied because it is a theory with high reliability and a good predictor of intention to perform actual behavior over many different areas (Pham et al. 2023). Regarding the TPB model by Ajzen(1991), there are three main variables that have a significant impact on entrepreneurial intentions: personal attitude, subjective norms and perceived behavioral control. Hence, numerous studies have examined the impact of TPB antecedents—attitudes, social norms, and perceived behavioral control—on entrepreneurial intentions of students. These

include (Hassan et al. 2020; Maussa Pérez et al. 2020; Mirjana et al. 2018, Al-Jubari et al. 2019; Moriano et al. 2012). Subjective norms are seen as an important antecedent to predicting intention in the TPB model of Ajzen (1991). In contrast, according to Wu and Wu (2008) research, attitude plays a crucial role in influencing entrepreneurial intentions. Furthermore, the research by Solesvik (2013) and Utami (2017), stated that the three antecedents have a direct and substantial influence on entrepreneurial intentions of students. Each of those mentioned predictors is discussed below.

Conceptual Framework and Hypothesis Development

The Influence of Attitudes on Entrepreneurial Intention

According to Ajzen (2002) and Kolvereid (1996) Attitude towards the behavior (Personal Attraction, PA) refers to the degree to which the individual holds a positive or negative personal valuation about being an entrepreneur. It would include not only affective (I like it, it makes me feel good, it is pleasant), but also evaluative considerations (it is more profitable, has more advantages). According to several studies (Kolvereid and Tkachev, 1999; Krueger et al. 2000; Shariff and Saud, 2009; Paço et al. 2011), attitudes have a direct and positive impact on entrepreneurial intentions. This relationship was also found by Moriano et al. (2012) who argue that favourable attitudes influence entrepreneurial intentions.

In contrast, the research of Zhang et al. (2015) showed that no relationship is found between attitudes and entrepreneurial intentions as a result of lack experiences towards entrepreneurship among undergraduate students. Yet the research of Iglesias et al. (2016) highlighted a positive relationship between attitudes and entrepreneurial intentions of students. Furthermore, a comprehensive investigation by Bai et al. (2022) reveals 16 unique characteristics that significantly influence entrepreneurial intention. The two most important factors among these are the expectations surrounding entrepreneurship and the capacity to recognize and assess possibilities. In recent research elaborated by Shabbi (2025) supports TPB's argument that self-attitude is one of the powerful predictors of intention, as revealed by the impact of entrepreneurial self-effort, passion, and persistence for business intentions. In the same line, the study of Liu et al. (2025) extends the theory of planned behavior by empirically demonstrating that a positive attitude is a robust predictor of entrepreneurial intentions among business school students, reinforcing the theoretical framework with new empirical evidence. This suggests that individuals who possess a positive attitude towards entrepreneurship are more likely to exhibit higher levels of entrepreneurial intentions.

Hence, we propose the following hypothesis:

H1: The Attitudes of students are positively correlated with their entrepreneurial intentions.

The Influence of Perceived Behavioral Control on Entrepreneurial Intention

Bandura (1997) defined Perceived Behavioral Control (PBC) as the perception of the easiness or difficulty in the fulfilment of the behavior of interest (becoming an entrepreneur). It is, therefore, a concept quite similar to perceived self-efficacy (SE). Zhang et al. (2015) showed that perceived control behavior generates greater impact on the entrepreneurial intention. In the same line, Iglesias et al. (2016) showed stronger entrepreneurial intention of students with higher perceived behavioural control. In addition the research of Karimi et al. (2017) confirmed the significance impact of perceived behavioral control on Iranian student's entrepreneurial intention. In contrast, there is no correlation between perceived behavioural control and

entrepreneurial intention, according to some authors. For instance, an insignificant correlation between perceived behavioural control and entrepreneurial intention was discovered by Mohammed et al. (2017). Hossain et al. (2023), on the other hand, found a positive correlation between entrepreneurial perceived behavioural control and entrepreneurial intention. Moriano et al. (2012) also discovered similar results . Hence, the following hypothesis is proposed:

H2: The perceived behavioural control of students is positively correlated with their entrepreneurial intentions.

The Influence of Subjective Norms on Entrepreneurial Intention

Perceived Social Norms (SN) would measure the perceived social pressure to carry out -or not to carry out that entrepreneurial behavior. In particular, it would refer to the perception that "reference people" would approve of the decision to become an entrepreneur, or not (Ajzen, 2001). According to the theory of planned behavior (TPB) of Ajzen (1991), subjective norms are seen as an important antecedent to predicting intention and, similarly, predicting behavior. The association between subjective norms and intention has been proven in various fields of research (Pham et al. 2023). However, the findings of how subjective norms affect the desire to launch a business are not entirely consistent (Doan et al. 2021; Zdolsek et al.2021). Subjective norms and entrepreneurial intention were found to be significantly correlated in some studies (Ahmed et al.2020; Maresch et al., 2016), but not in others (Otache et al. 2019; Tung et al.2020). According to Yean et al. (2015), the beliefs of parents, friends, family, and professionals influence a person's decision to engage in a certain action, exerting pressure on them to do so. Similar outcomes were also found by Zhang et al. (2015). In contrast, the research of Maresch et al. (2016) showed a negative impact between subjective norms and entrepreneurial intentions for science and engineering students. In the same line, Khuong and An (2016) discovered in a Vietnamese study that entrepreneurial intention is not influenced by subjective norms. In Iran, Najafabadi et al. (2016) also discovered comparable outcomes. Also, the research of Chen et al. (1998) and Wu et al. (2008) found no relationship between social norms and intentions toward entrepreneurship. In recent studies, Boucif et al. (2025) declare that the subjective norm variable remains the least understood, as most previous studies have shown weak results. However, Iakovleva et al. (2011) stated that subjective norms significantly impacted entrepreneurial intentions of students in developing countries. Recently, the research of Bai et al. (2022) and Pham et al. (2023) found that subjective norms are an important factor in promoting entrepreneurial intention of students. Hence, based on the arguments above, we posit that:

H3: Subjective Norms of students are positively correlated with their entrepreneurial intentions

The Influence of Risk-Taking on Entrepreneurial Intention

Zhao et al. (2005) pointed out that people with a higher risk propensity will be more comfortable facing dangerous situations and will see uncertain circumstances as less risky than other peoples. In light of this, they might feel less anxious to take on entrepreneurial career, fulfil the role, and finish the tasks more easily, resulting in increased entrepreneurial intention. According to research by Gurel et al. (2010), risk-taking tendencies are a strong predictor of entrepreneurial intentions among Turkish and UK tourism students. Zhang et al. (2015) supposed that the presence of TPB antecedents, such as individual attitudes, societal norms, and perceived behavioral control, favorably influences an individual's intentions toward entrepreneurship when they have a short-term risk-taking preference and well-being. According to Zhang and Cain's (2017) research, risk aversion does not directly influence dental school students' intentions to

launch a business. The investigation conducted by Mustafa et al. (2016) found that entrepreneurial intentions are highly influenced by a proactive personality and the perceived university support of Malaysian students. Out of the two motivators, proactive personalities have a greater impact on intentions to work for themselves than does the idea of student development support as viewed by students. Previous studies have discovered a favorable association between risk-taking and entrepreneurship (Ahmed et al. 2020; Nowiński et al. 2020).Therefore, the following hypothesis is proposed:

H4: The Risk-taking of students is positively correlated with their entrepreneurial intentions

The Influence of Financial Support on Entrepreneurial Intention

Few studies specifically show the links between financial availability and entrepreneurial intentions (Urban and Ratsimanetrimanana, 2019).

Numerous studies indicated that access to the necessary financial resources is among the most important factors influencing entrepreneurship (Aghion et al. 2007; Klapper et al. 2010; Vidal-Sune and Lopez-Panisello, 2013; Sayed and Slimane, 2014; Arin et al. 2015). Additionally, it is most difficult for young people and start-ups to get the funding they require. Because they lack a credit history and have few assets that can be utilized to guarantee the loans, lenders view them as dangerous investments, which is why this occurs (UNCTAD, 2015). In their analysis of the effects of capital on students' entrepreneurial ambitions, Zhao et al. (2020) contend that personal financial capital is crucial in fostering entrepreneurial intentions. Also, referring to the necessary financial resources of young business, other studies have pointed out that limited access to capital is seen as a barrier to entering entrepreneurship in the case of students (Mustar and Wright 2010; Wright et al. 2006). The family plays a key role in youth entrepreneurial intentions and through financial security offered. Parents who are entrepreneurs can facilitate the necessary capital to create a new business, facilitating the process of becoming entrepreneurs for youth (Aldrich and Cliff, 2003; Dunn and Holtz-Eakin, 2000). Rusu and al (2022) pointed that the majority of the models examined, the availability of financial support from friends or family has a favorable impact on entrepreneurial intentions. Additionally, female prospective business owners have indicated that the expanded availability of bank and personal savings loans may influence their future decisions to launch a new company. Accordingly, we hypothesis

H5: The Financial Support of students is positively correlated with their entrepreneurial intentions

The Influence of Entrepreneurial Education on Entrepreneurial Intention

Entrepreneurial education refers to education programs that aim to give students with fundamental knowledge and skills to establish a business (Otache et al. 2022). The importance of entrepreneurial education in predicting entrepreneurial intention has been shown in recent studies (Ndofirepi, 2020; Shah, Amjed and Jaboob, 2020). Scholars and policymakers are increasingly interested in the impact that entrepreneurial education plays in shaping start-up intentions (Hoang et al. 2020). The findings of Turker and Selcuk's (2009) study show that the entrepreneurial intentions of students in Turkey are significantly impacted by educational support. In the same line, numerous research show that students' entrepreneurial intention and entrepreneurship education are positively correlated (Hattab 2014; Zhang et al. 2014; Maresch et al. 2016; Nowiński et al. 2019). Zhang et al. (2014) found a direct correlation between entrepreneurial intentions and entrepreneurship education. Additionally, among Chinese university students, the relationship between entrepreneurship education and plans to operate a

firm is significantly positively impacted by gender, study majors, and university type.

The study of Maheshwari et al. (2023) indicated that universities should create educational policies and structures to effectively inspire entrepreneurs. This study founded that providing students with adequate knowledge and motivation towards entrepreneurship will increase the likelihood of young people being involved in venture creation. However, some studies found no relationship between entrepreneurial education and entrepreneurial intentions of students, including the work of Sesen (2013), Chen et al. (2015). Chen et al. (2015) showed that while entrepreneurship courses improve technical undergraduate students' learning and satisfaction, they do not lead to increased intentions to start a firm. According to the study, university-level entrepreneurship classes would assist students in realizing that they might not be cut out for entrepreneurial careers and in applying what they have learnt to future employment rather than pursuing entrepreneurship. Solesvik et al. (2014) demonstrated that while there is a positive correlation between students' participation in entrepreneurship-specific education and high levels of entrepreneurial intention, there is no correlation between increased entrepreneurial intentions and the interactions of entrepreneurship-specific education with perceived desirability, perceived feasibility, and perceived cultural elements. Based on the arguments above, we posit that:

H6: The Entrepreneurial Education of students is positively correlated with their entrepreneurial intentions

Consequently, the research framework illustrated in Figure 1 will explore the factors influencing the entrepreneurial intentions.

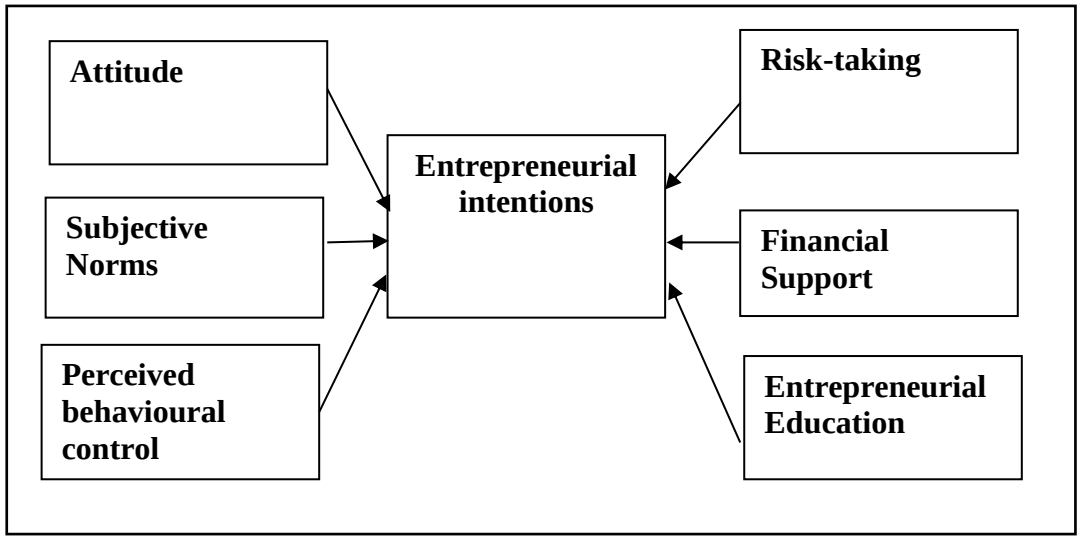

Figure 1. The Research Framework

Research Methodology

This study followed a quantitative research design. This approach is designed to quantitatively test the hypotheses. Structural equation modeling (SEM), which is the best suitable analysis method in social science research, was used to evaluate the hypotheses (Hair et al. 2022).

Instrument and Data Collection

Antonio and Mohd Hizam (2024) claim that university students are an ideal sample for studies on entrepreneurial intention because many of these studies have concentrated on forecasting their entrepreneurial tendencies (e.g., Gazi et al. 2024; Kautonen et al. 2011; Tekic and Tsyrenova, 2024). Building on this framework, this study focused on final year students business. Data were collected from 243 final year students of the College of Business Administration at King Faisal University in Saudi Arabia using a questionnaire. Data were collected from September 15, 2024 to October 12, 2024. These students were selected as a single population for several reasons, including because students enrolled in these institutions are more likely to enter the entrepreneurial field. Also because final year students face crucial choices about their future, whether to stay and wait for a government job or start their own business.

A questionnaire was designed initially in light of the study objectives and questions after reviewing previous studies. The questionnaire was originally written in English, translated into Arabic, and then back-translated to ensure language accuracy and preservation of item meaning (Kreiser et al. 2002). Finally, to increase response rates, the Arabic version was used. A pilot test was conducted prior to final administration to ensure comprehension all items used in study. The questionnaire was divided into three sections: the first contained an introduction and general information about the study's subject, while the second contained demographic information such as age and entrepreneurial motivations. The third section included 32 items that measured 6 factors: Entrepreneurial Intention, Personal Attitude, Perceived Behavioral Control, Subjective Norm, Risk-Taking, Financial support and Entrepreneurial Education. These variables were measured on a five-point Likert scale ranging from "strongly disagree" to "strongly agree". The measurement scales used in the questionnaire are listed in the following table 1.

Constructs	Items	Source
Entrepreneurial Intention	6	Liñán and Chen (2009) ; Liñán et al. (2011) ; Barba-Sanchez et al. (2022)
Personal Attitude	5	Liñán and Chen (2009)
Perceived Behavioral Control	6	Liñán and Chen (2009)
Subjective Norm	3	Liñán and Chen (2009)
Risk-Taking	3	Satar and Natasha (2019) ; Sobaih and Elshaer (2022)
Financial support	5	Hassan et al.(2020)
Entrepreneurial Education	4	Pham et al. (2023)

Table 1: Measurements

Demographic Profile of Respondents

Table 2 displays the study sample's descriptive data. 56.1% of the respondents in our study were older than 20. When asked to select the most significant motivation for investing in a new projet, 26.5% of respondents said that independence was the most significant motivation. This is in line with the question on entrepreneurial motivation. The second entrepreneurial reason mentioned by the respondents (22.3%) was having higher income. Finally based on the findings presented in Table 2, 3.2% of participants concurred that their primary entrepreneurial motivation was the distinct and original concept of their project.

Variable	Category	Frequency	Percent
Age	Under 20	87	35.8
	Over 20 years	156	64.2
Motivation	Independence	45	26.5
	Flexible working hours	23	9.5
	Higher earnings	36	22.3
	Realising my own interests	15	6.2
	Family business	12	5
	Type of entrepreneurial personality	22	9
	Unique business idea	8	3.2
	Willingness to take risks	27	11.1
	Lack of job offers	18	7.4

Table 2: Sample Profile (n= 243)

Research Results

Psychometric Properties of the Employed Measures

The study's data were analyzed using the statistical software SPSS 25 and AMOS 25. To measure the internal consistency reliability of the scale, two methods were applied, which are Cronbach's alpha test and the "composite reliability" (CR) index. It is evident from Table 3 that the CR and Cronbach's alpha values for all constructs surpass 0.70, as suggested by (Nunnally and Bernstein,1994), except for the items intention6; Control6 ; Financial 5which displayed low loadings and was subsequently excluded from further analysis. Hence, the scales for all constructs were deemed to exhibit adequate reliability and reflect the good internal coherence of the scale. To verify construct validity, we calculated Average Variance Extracted (AVE). The results show that the AVE values for all variables surpass 0.50 (Hair et al.2020), indicating that latent variables retain at least 50% variance and giving more evidence that the employed scale has adequate convergent validity.

Construct	Item	λ	α	CR	AVE
Entrepreneurial Intention	Intention1	,824	,899	,834	,868
	Intention2	,903			
	Intention3	,879			
	Intention4	,834			
	Intention5	,777			
Personal Attitude	Attitude1	,892	,916	,846	,874
	Attitude2	,907			
	Attitude3	,915			
	Attitude4	,821			
	Attitude5	,786			
Perceived Behavioral Control	Control1	,900	,908	,852	,886
	Control2	,880			
	Control3	,901			
	Control4	,781			
	Control5	,817			

Subjective Norm	Subjective1	,872	,861	,804	,796
	Subjective2	,876			
	Subjective3	,909			
Risk-Taking	Risk1	,890	,883	,816	,822
	Risk2	,913			
	Risk3	,898			
Financial	Financial1	,828	,891	,829	,889
	Financial2	,880			
	Financial3	,861			
	Financial4	,911			
Entrepreneurial Education	Education1	,846	,901	,882	,864
	Education2	,893			
	Education3	,899			
	Education4	,884			

Table 3: Reliability and validity Statistics.

α: Cronbach's Alpha, λ: Factor Loading, CR: composite reliability

Discriminant validity evaluates the extent to which measures of distinct constructs are unique (Henseler et al. 2015). Using the approach outlined by Fornell and Larcker (1981), discriminant validity was checked by finding the values of the square root of the Average Variance Extracted (AVE), with a purpose to realize the degree to which items of the factors are not interrelated theoretically. Results reveal that discriminant validity is not a problem in our data, as the AVE's square root value is higher than its correlation to other variables.

	Intention	Attitude	Control	Subjective	Risk	Financial	Education
Intention	,931						
Attitude	,782	,934					
Control	,737	,674	,941				
Subjective	,734	,640	,561	,892			
Risk	,717	,530	,502	,702	,906		
Financial	,839	,716	,647	,654	,569	,942	
Education	,860	,681	,638	,634	,598	,800	,929

Table 4: Analysis of Discriminate Validity

The results in Table 4 confirm that the measurement scales accurately represent the intended dimensions. In conclusion, our findings confirm the measurement reliability and validity employed in this research.

Adjustment of the Global Model

To assess the overall quality of model fit, a set of indices was used, as suggested by Hooper et al. (2008), including Standardized Root Mean Square Residual (RMR), Goodness of Fit Index (GFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA).

The results show that the measurement model provided a good fit to the data. The overall fit parameters show to be acceptable, with chi-square/ df = 1,222; RMSEA = 0.030; RMR= 0.027;

GFI = 0.900; NFI = 0.933; CFI = 0.987; TLI = 0.985.

Hypotheses Testing

A final step is to assess the chain relationship in the causal linkage constructs via the structural model (Hair et al. 2010). The average beta coefficient (β), T-statistic, and p-value are used to verify the relationships between the independent and dependent variables. The SEM results are presented in Table 5.

Hypothesis			β	C.R.	P	Decision
Intention	<---	Attitude	,130	2,785	,005	Accepted
Intention	<---	Control	,118	2,749	,006	Accepted
Intention	<---	Subjective	,064	1,000	,317	Rejected
Intention	<---	Financial	,198	2,815	,005	Accepted
Intention	<---	Education	,344	4,425	***	Accepted
Intention	<---	Risk	,200	3,471	***	Accepted

Table 5. Hypotheses Results

Hypothesis H1 states that students' attitudes are positively connected with their entrepreneurial intentions. The findings supported the prediction that attitudes had a significant beneficial impact on entrepreneurial ambitions (β = 0.130; CR = 2.785 > 1.96; p < 0.05).

In testing the research hypotheses, the results of the study indicated that the students' perceived behavioral control factor exerted a significant positive impact on the entrepreneurial intentions (β = 0.118; CR=2.749 > 1.96), thus confirming H2.

On the contrary, our findings did not allow us to show a substantial relationship between students' subjective norms and entrepreneurial intention, despite our proposal that this relationship was positive and significant. The results of this connection are not significant (β = 0,064; CR =1,000 <1.96; p=0.317≥0.05). This permits us to show that hypothesis H3 of our research has not been verified.

Our findings confirm the impact of risk-taking on entrepreneurial intention (β =0,198; CR=2,815>1.96 and p=0.013≤0.05). Our research's Hypothesis H4 has been verified.

The support of hypothesis 5 captures our attention. We found a positive correlation between students' financial support and entrepreneurial intention (β=,344; CR= 4,425>1.96 and p=0.000<0.05).

Similarly, significant positive relationships were found between entrepreneurial education and entrepreneurial intentions, has been supported. The results show a strong positive connection (β = 0.200; CR = 3,471 > 1.96; p = 0.000 < 0.05). Thus, our research results corroborate Hypothesis H6.

Conclusion and Discussion

Drawing from the Theory of Planned Behavior, the key objective of this research was to investigate the effect of entrepreneurial attitudes, subjective norms, perceived behavioral controls, Risk taking, Financial support and Entrepreneurial Education on the Entrepreneurship Intention of business female students of King Faisal University female students in Al-Hasa city

in Saudi Arabia. This research focuses on business school students' entrepreneurial intentions due to their educational background. Additionally, this study explored how various factors distinctly affect the entrepreneurial intentions of business female students. The results indicate reliable support for five of the sixth hypotheses: H1, H2, H4, H5 and H6. However, no support was found for H3 (Table 5). Consequently, this result deviates from the Theory of Planned Behavior, which holds that subjective norms, perceived behavioral control, and individual attitude all influence entrepreneurial goals.

Theoretical Implications

This study has several academic and managerial implications. From a theoretical point of view, we firstly enrich existing literature on attitude and entrepreneurial intention by the outcomes of this study derived from multiple regression analysis conducted on a sample of 243 female students that indicated a significant relationship between Attitudes of students and their entrepreneurial intentions, as evidenced by previous studies (Kolvereid and Tkachev, 1999; Krueger et al. 2000; Shariff and Saud, 2009; Paço et al. 2011; Moriano et al. 2012, Iglesias et al. 2016, Shabbim 2025, Liu et al. 2025). As the theory of planned behavior proposes, attitudes are a critical determinant of intentions, which in turn guide behaviour (Wu and Wu, 2008). This study demonstrate fresh empirical that a positive entrepreneurial attitude is a strong predictor of entrepreneurial intentions among business school students.

Secondly, this study demonstrated a positive and significant relationship between perceived behavioral control and entrepreneurial intention across all sample groups. This study contributes to the literature by providing empirical support for the role of perceived behavioural control in shaping entrepreneurial intentions, specifically within the context of business school students. The finding is not only supported by the present study, but also by numerous scholars who suggest that perceived control behavior generates greater impact on the entrepreneurial intention (Moriano et al. 2012, Karimi et al. 2017, Hussain et al. 2023). This study builds upon these findings by contextualizing perceived control behavior within higher education institutions, demonstrating its significant impact on business school students.

Thirdly, the subjective norm factor was found to lack influence on entrepreneurial intention across all sample groups. In this regard, the subjective norm variable remains the least understood, as most previous studies have shown weak results (Boucif et al. 2025). The finding is not only supported by the present study, but also by numerous scholars who suggest no relationship between subjective norms and intentions toward entrepreneurship (Chem et al. 1998 ; Wu et al. 2008 ; Maresh et al. 2016 ; Boucif et al. 2025). This result deviates from the Theory of Planned Behavior, which holds that subjective norms, perceived behavioral control, and individual attitude all influence entrepreneurial intentions. In the context of this study, students' involvement in entrepreneurship was not substantially impacted by the role of reference groups, such as lecturers, friends from university, and close family. This point to a prevalent culture of uncertainty where students and their families value work over entrepreneurial endeavors, especially in developing nations.

Fourthly, the study confirms the positive effect of Risk-taking on entrepreneurial intention, these findings align with earlier research, (Zhao et al. 2005 ; Gruel et al. 2010 ; Zhang et al. 2017; Ahmed et al. 2020 ; Nowinski al. 2020). The study emphasize that students with a higher risk propensity will be more comfortable facing dangerous situations and will see uncertain circumstances as less risky than other peoples. In light of this, they might feel less anxious to take on entrepreneurial career, fulfil the role, and finish the tasks more easily, resulting in

increased entrepreneurial intention. This research indicate that in an era of rapidly evolving digital technology, entrepreneurs must embrace taking chances and moving outside of their comfort zone because doing so will impact the company's ability to survive.

Fifthly, this study contributes to research on how financial support affects entrepreneurial intention in female business by offering more information on a sample that hasn't been studied previously. This study aims to close the research gap students by arguing that the access to the necessary financial resources is among the most important factors influencing entrepreneurship (Aghion et al. 2007; Klapper et al. 2010 ; Vidal-Sune and Lopez-Panisello, 2013; Sayed and Slimane, 2014; Arin et al. 2015; Rusu et al; 2022). Our study analyses the influences of capital on the students' entrepreneurial intention and argues that individual financial capital plays a significant role in promoting entrepreneurial intentions.

Lastly, this study contributes to the literature by providing empirical support for the role of entrepreneurial education in shaping entrepreneurial intentions, specifically within the context of business school female students. The finding is supported by numerous scholars who suggest that entrepreneurial education generates greater impact on the entrepreneurial intention (Hattab 2014; Zhang et al. 2014; Maresch et al. 2016; Nowiński et al. 2019; Ndofirepi, 2020; Shah et al.2020). This study indicates that universities should create educational policies and structures to effectively inspire entrepreneurs. This study founded that providing students with adequate knowledge and motivation towards entrepreneurship will increase the likelihood of young people being involved in venture creation.

To summarize, theoretical ramifications emphasize the necessity of broadening the Theory of Planned Behaviours' scope to include more aspects of the entrepreneurial ecosystem. Although the theory mainly emphasizes cognitive processes, elements like stakeholder support (Ministry of Higher Education), entrepreneurship education, risk taking and financial support must be included for a comprehensive understanding of entrepreneurial intentions.

5.2. Practical implications for managers and policy makers

The result of our study deviates from the Theory of Planned Behavior, which holds that subjective norms, perceived behavioral control, and individual attitude all influence entrepreneurial intentions. The results show that there is significant and positive relationship between the two antecedents (attitude and perceived behavioral control) and the entrepreneurial intention. Our study suggests no relationship between subjective norms and entrepreneurial intentions. Therefore, the first step in raising the rates of entrepreneurial activity in Saudi Arabia should be to make entrepreneurship a desirable career choice. According to this study, students view entrepreneurship as a feasible career choice, indicating that they are prepared to quickly adapt their present learning methodology to a more hands-on approach that is necessary for the entrepreneurial learning process. However, it is important to note that social factors such as family can't play a significant role in shaping career decisions. In the context of this study, students' involvement in entrepreneurship was not substantially impacted by the role of reference groups, such as lecturers, friends from university, and close family. This point to a prevalent culture of uncertainty where students and their families value work over entrepreneurial endeavors, especially in developing nations.

Our research also demonstrates the beneficial impact of risk-taking on entrepreneurial intention, indicating that the capacity to take chances can occasionally be a crucial component of successful entrepreneurship. However, people frequently refrain from taking chances because

they are afraid of failing. Universities and institutions should collaborate to create a culture that embraces failure as a necessary component of learning in order to overcome this. These settings can allow people to take chances fearlessly by normalizing failure and fostering resilience, which will ultimately spur innovation and entrepreneurial growth.

Policymakers may find value in our research's findings as they help them make choices that encourage and support aspiring business owners by enacting laws that make it easier for start-ups to obtain funding. The findings may also be significant for providers of financial resources since they provide data on how adolescent entrepreneurial inclinations are stimulated by easy access to financing. They might also assist educators modify their courses and extracurricular activities to better support students' aspirations to start their own businesses.

Our study revealed that the Entrepreneurial Education of students is positively correlated with their entrepreneurial intentions. The study's findings highlight the critical role that entrepreneurial education plays in encouraging female business students to pursue entrepreneurial endeavors. From a policy perspective, officials in higher education must give entrepreneurship development top priority and encourage university students to have strong entrepreneurial aspirations. This calls for the thorough incorporation of entrepreneurial principles and expertise into all subject areas' curricula. To foster an entrepreneurial culture, it is also essential to have clear policies regarding entrepreneurship and to have active entrepreneurship on campus.

The insights from this study are relevant to business school female students, policymakers, and career counsellors, and can guide the development of effective interventions to foster entrepreneurial behavior. In order to ensure that students have the necessary cognitive skills and knowledge base, government organizations and educational institutions should take this evidence into account when developing programs meant to foster an entrepreneurial spirit in them. This is critically important given that a high proportion of Saudi Arabia students are likely to eventually engage in entrepreneurial activity at some point in the future, particularly as part of the Vision 2030.

Limitations and Further research

Our work is not without limitations, which offers opportunities for future research.

Firstly, the data analysed was gathered in Al-Ahsa region in Saudi Arabia. Hence, to increase generalizability further studies should expand to other countries in KSA. Moreover, universities' entrepreneurial ecosystems vary greatly, which influences how students develop their entrepreneurial intentions. To obtain thorough understandings that is relevant in a variety of situations. In order to ensure a balanced sample size across all fields of study, future research must incorporate diverse samples from several universities and study programs.

Secondly, our research of entrepreneurial intentions is limited by the inclusion of entrepreneurial students in our model, who may serve as future entrepreneurs. Future study could apply our model to actual entrepreneurs at various business stages, in keeping with recent studies that emphasize the significance of entrepreneurial life cycles (Mbena et al. 2023).

Lastly, future research should go more deeply into the concurrent examination of other elements within the Theory of Planned Behavior framework, such as situational factors, religious values, and structural support, in order to provide a distinct understanding of how each of these influences entrepreneurial intentions.

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The authors declare that they have no competing interests.

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All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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