



Understanding Entrepreneurial Intentions and Behaviors: A Study of College Students through an Extended Theory of Planned Behavior Framework

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ABSTRACT

This study examined the relationships between entrepreneurial attitude, subjective norms, perceived behavioral control, situational factors, implementation intention, and entrepreneurial intention and behavior among college students. Using a mixed-methods sequential exploratory design, data were collected via a structured questionnaire and analyzed through structural equation modeling (SEM). The measurement model demonstrated strong reliability and validity, with Cronbach's alpha ranging from 0.901 to 0.957, composite reliability from 0.902 to 0.957, and average variance extracted between 0.833 and 0.888. Model fit indices indicated good fit (SRMR = 0.038, CFI = 0.938, TLI = 0.926). Findings revealed that entrepreneurial subjective norms ($\beta = 0.515$, $P = 0.000$) and perceived behavioral control ($\beta = 0.458$, $P = 0.000$) significantly influenced entrepreneurial intention. Entrepreneurial situational factors ($\beta = 0.275$, $P = 0.000$) and implementation intention ($\beta = 0.332$, $P = 0.000$) had strong positive effects on entrepreneurial behavior. Moreover, entrepreneurial intention significantly mediated the effects of subjective norms ($\beta = 0.160$, $P = 0.001$) and perceived behavioral control ($\beta = 0.142$, $P = 0.000$) on behavior, confirming the theory of planned behavior framework. These results highlight the critical roles of social influence, perceived self-efficacy, supportive environments, and planning processes in shaping students' entrepreneurial outcomes. Implications for educational institutions, policymakers, and future research are discussed, emphasizing the promotion of social support, skills development, and structured entrepreneurial programs to enhance entrepreneurial behavior.

Keywords: Entrepreneurial Intention, Entrepreneurial Behavior, Perceived Behavioral Control, Situational Factors, Implementation Intention, Structural Equation Modeling

JEL Classifications: L26, D91, A23, M13, J24

1. INTRODUCTION

The exploration of factors influencing entrepreneurial intentions among college students is increasingly recognized as vital in fostering a culture of entrepreneurship. As economies worldwide grapple with rising unemployment rates, particularly among youth, understanding the motivations and barriers to entrepreneurial ventures is essential. This study aims to investigate the various elements that shape the entrepreneurial intentions (EI) of college students, providing insights that can inform educational practices and policy-making to promote entrepreneurship. Self-efficacy emerges as a significant determinant of entrepreneurial intention.

It refers to an individual's belief in their capability to execute behaviors necessary to produce specific performance attainments. Research indicates that students with higher self-efficacy are more likely to engage in entrepreneurial activities, as they feel more competent in their abilities to navigate the challenges of starting a business.

This study examines how self-efficacy interacts with other factors, such as educational support and peer influence, to shape students' entrepreneurial intentions. In addition to self-efficacy, social support networks play a crucial role in influencing students' entrepreneurial intentions. Family encouragement, peer support,

and institutional backing can significantly enhance a student's confidence and willingness to pursue entrepreneurial endeavors. This research will explore how these support systems contribute to the development of entrepreneurial intentions among college students, highlighting the importance of a supportive environment in fostering entrepreneurship. Educational factors are also critical in shaping entrepreneurial intentions. The presence of entrepreneurship education within college curricula can equip students with the necessary skills and knowledge to consider starting their own businesses.

This study assesses the effectiveness of current educational programs in promoting entrepreneurial thinking and behavior among students, as well as the impact of experiential learning opportunities, such as internships and workshops, on their entrepreneurial intentions. Finally, the study will consider contextual factors, including socio-economic conditions and cultural attitudes towards entrepreneurship, which can either facilitate or hinder students' intentions to start their own businesses. By analyzing these diverse influences, the research aims to provide a comprehensive understanding of the factors affecting entrepreneurial intentions among college students. The findings will contribute to the development of targeted interventions and policies designed to encourage entrepreneurship among young people, ultimately supporting economic growth and innovation.

2. LITERATURE REVIEW

2.1. Theoretical Foundations and Hypothesis Development

2.1.1. *Entrepreneurial attitude*

An entrepreneurial attitude refers to an individual's overall evaluation of entrepreneurship as a career choice. Attitude plays a primary role in initiating an entrepreneurial intention toward starting a new business or company. Students who believe that entrepreneurship is a desirable and rewarding career choice tend to demonstrate a strong entrepreneurial intention towards starting their new business (Cabral et al., 2024). Several local studies on entrepreneurial attitude have reflected these findings. For instance, Obias et al. (2025) and Roxas (2014) found that Filipino students who had positive attitudes toward entrepreneurship significantly predicted their entrepreneurial intentions. Similarly, Laguador (2013) found that students who had positive perceptions of entrepreneurship are more inclined towards establishing their own businesses. These findings validate the existing relationship between the entrepreneurial attitude and the entrepreneurial intention in the conceptual framework of this study. Together, these studies strengthen the argument that:

H₁: Entrepreneurial attitude has a positive effect on entrepreneurial intention.

2.1.2. *Entrepreneurial subjective norms and entrepreneurial intention*

Subjective norms represent the perceived social pressure from significant others—such as family, friends, peers, or mentors—to engage or not engage in entrepreneurial activities. Studies have consistently shown that subjective norms play a significant role in shaping entrepreneurial intentions. For instance, Hagger et al.

(2002) demonstrated that individuals are more likely to pursue entrepreneurial ventures if they perceive that important people in their social environment support or approve of entrepreneurship. Similarly, Ratkovic et al. (2025) found that students who received encouragement from family, mentors, or peers exhibited higher intentions to start a business, highlighting the importance of social influence in entrepreneurial decision-making. The influence of subjective norms can also be understood through cultural and educational contexts. In collectivist societies, where the opinions of family and community hold greater weight, subjective norms tend to exert a stronger effect on entrepreneurial intentions (Liñán et al., 2011). Moreover, educational interventions and mentorship programs have been shown to enhance the perceived social support for entrepreneurship, thereby increasing students' entrepreneurial intentions (Souitaris et al., 2007). Overall, the literature suggests that when individuals perceive positive social pressure from their reference groups, they are more motivated to form entrepreneurial intentions and eventually engage in entrepreneurial behavior. Therefore, it can be posited that:

H₂: Entrepreneurial subjective norms have a positive effect on entrepreneurial intentions among college students.

2.1.3. *Entrepreneurial perceived behavioral control*

The entrepreneurial perceived behavioral control is another factor that influences entrepreneurs. It reflects individuals' beliefs that they can carry out or accomplish a particular behavior. The variable of perceived behavioral control shows several similarities with the concept of entrepreneurial self-efficacy, which reflects an entrepreneur's belief in their ability to carry out entrepreneurial tasks (Farrukh et al., 2017). Perceived behavioral control is a significant predictor of an entrepreneur's intention towards entrepreneurship (Ajzen, 1991). Similar results were showcased by researchers such as Martins et al. (2023), who demonstrated that entrepreneurs who believe that they are well equipped and capable of managing various business challenges tend to be inclined towards pursuing entrepreneurship as their career choice. A similar finding was revealed by Relente and Capistrano (2025) and Lacap (2018) regarding the Filipino student population. These findings also corroborate the conceptual framework, which demonstrates the relationship between perceived behavioral control and entrepreneurial intention. Therefore, it can be posited that:

H₃: Entrepreneurial perceived behavior control has a positive effect on entrepreneurial intention.

2.1.4. *Entrepreneurial situational factors*

External environmental factors that affect people's choices and behaviors when they decide to start their own business. These elements include market opportunities, government regulations, entrepreneurial education, institutional support, and access to financial and technological resources. These outside factors have the power to either encourage or discourage people from pursuing entrepreneurial endeavors. People are more likely to develop entrepreneurial intentions and act in an entrepreneurial manner when they work in an environment that supports innovation and provides the resources they need (Farrukh et al., 2018).

The importance of situational factors in influencing entrepreneurial outcomes has been highlighted in earlier research. Students

who attended universities with robust innovation ecosystems, mentorship programs, and business incubators demonstrated greater levels of entrepreneurial intentions and were more likely to participate in entrepreneurial activities, according to Leite et al. (2021). The university environment also had a significant impact on Filipino students' entrepreneurial behaviors, according to Go et al. (2024), underscoring the significance of institutional support systems in fostering entrepreneurship. These results show that training programs, policy support, and access to entrepreneurial resources are all important ways that educational institutions promote entrepreneurship.

Moreover, situational factors have an impact on the development of entrepreneurial intentions in addition to directly influencing entrepreneurial behavior. Students' motivation, self-assurance, and perception of the viability of launching a business can all be improved by a supportive entrepreneurial ecosystem, which will further solidify their aspirations to become business owners. On the other hand, students may be deterred from engaging in entrepreneurial endeavors by a lack of institutional support and restricted access to resources. According to the literature as a whole, situational factors are important determinants that affect both the intentions and actual behavior of entrepreneurs. Thus, the following hypotheses are also proposed:

H₄: Entrepreneurial situational factors have a positive effect on entrepreneurial intentions among college students.

H₅: Entrepreneurial situational factors have a positive effect on entrepreneurial behavior among college students.

2.1.5. Entrepreneurial implementation intention

Entrepreneurial implementation intention refers to the specific planning processes that enable individuals to translate entrepreneurial aspirations and motivations into concrete actions. It involves strategies such as goal setting, action planning, and commitment to execute entrepreneurial tasks. Implementation intentions serve as a bridge between motivation and actual behavior, ensuring that individuals do not only intend to engage in entrepreneurship but also take deliberate steps to implement their plans (van Gelderen, et al., 2018).

Previous studies have emphasized the importance of implementation intentions in entrepreneurial contexts. Van Gelderen et al., (2018) demonstrated that structured planning processes significantly facilitate the conversion of entrepreneurial motivation into real entrepreneurial behavior. Similarly, Bazan et al. (2019) reported a significant relationship between implementation intention plans and students' positive learning and entrepreneurial behaviors, highlighting the role of experiential learning and mentoring programs in strengthening students' capacity to apply entrepreneurial skills in practice.

Moreover, empirical evidence from the Philippine context supports the significance of implementation intention in fostering entrepreneurial outcomes. Laguador (2013) found that students exposed to entrepreneurship training and practical learning opportunities demonstrated increased entrepreneurial competence and engagement in entrepreneurial activities. These findings suggest that implementation intention plays a crucial role in

translating entrepreneurial intentions into actual entrepreneurial behavior, particularly when supported by educational and mentoring interventions. Thus, the following hypotheses are proposed:

H₆: Entrepreneurial implementation intention has a positive effect on entrepreneurial behavior among college students.

H₇: Entrepreneurial implementation intention has a positive effect on entrepreneurial intentions among college students.

2.1.6. Mediating role of entrepreneurial intention

Entrepreneurial intention is widely recognized as a key mediator between psychological or contextual factors and actual entrepreneurial behavior. According to the theory of planned behavior (Ajzen, 1991), attitudes, subjective norms, and perceived behavioral control influence intentions, which in turn predict behavior. This framework suggests that individuals are more likely to engage in entrepreneurial behavior when their intentions are strengthened by personal and social factors. When individuals perceive strong approval and support from their social environment, they are more likely to form intentions to engage in entrepreneurial activities, which subsequently increases the likelihood of entrepreneurial behavior. Previous studies have demonstrated that subjective norms indirectly influence entrepreneurial behavior through entrepreneurial intentions, highlighting the mediating role of intention (Liñán and Chen, 2009; Hagger et al., 2002). Similarly, other empirical research has shown that attitude is one of the strongest predictors of entrepreneurial intention and indirectly influences entrepreneurial behavior through intention (Krueger et al., 2000; Ajzen, 1991). Thus, entrepreneurial intention serves as a psychological mechanism through which subjective factors and attitudes are translated into actual entrepreneurial actions. The following mediation hypothesis are proposed;

H₈: Entrepreneurial intentions mediate the relationship between entrepreneurial implementation intention and entrepreneurial behavior.

H₉: Entrepreneurial intention mediates the relationship between entrepreneurial subjective factors and entrepreneurial behavior among college students.

H₁₀: Entrepreneurial intention mediates the relationship between entrepreneurial attitude and entrepreneurial behavior among college students.

Entrepreneurial subjective norms reflect the perceived social pressure from significant others, regarding engagement in entrepreneurial activities. Prior studies have shown that social support and approval significantly influence individuals' entrepreneurial decision-making processes. Schlaegel and Koenig (2014) reported that individuals are more likely to pursue entrepreneurship when they perceive encouragement from their social environment. Similarly, Liñán and Chen (2009) found that subjective norms influence entrepreneurial outcomes primarily through their effect on entrepreneurial intention. These findings indicate that social influence does not always directly lead to entrepreneurial behavior but instead shapes individuals' motivational and cognitive readiness, which subsequently results in entrepreneurial action. Thus, entrepreneurial intention plays a mediating role in translating subjective norms into entrepreneurial behavior.

Empirical research has also demonstrated that EPBC affects entrepreneurial behavior through entrepreneurial intention, indicating that intention serves as a mechanism that converts perceived capability into actual entrepreneurial action (Liñán et al., 2011). Therefore, entrepreneurial intention is considered a key mediating variable in the relationship between perceived behavioral control and entrepreneurial behavior.

Based on the reviewed literature, entrepreneurial intention is proposed as a mediating variable in the relationships between subjective norms, perceived behavioral control, and entrepreneurial behavior. Accordingly, the following hypotheses are also formulated:

- H₁₁: Entrepreneurial intention mediates the relationship between entrepreneurial subjective norms and entrepreneurial behavior among college students.
- H₁₂: Entrepreneurial intention mediates the relationship between entrepreneurial perceived behavioral control and entrepreneurial behavior among college students.

In summary, the research hypotheses are illustrated in a conceptual framework as presented in Figure 1.

3. RESEARCH METHOD

3.1. Research Design

The study employed a mixed-methods sequential exploratory design to investigate the relationships between the traditional and extended factors of the theory of planned behavior (TPB) and their influence on entrepreneurial intentions and behaviors among college students.

3.2. Data and Sample

The target population consisted of college students enrolled in the Bachelor of Science in Business Administration program at North Eastern Mindanao State University. A sample of 1,107 students was selected using stratified random sampling to ensure representation based on gender and year level, and this sample size was chosen to provide adequate statistical power for analysis. Participants must be currently enrolled, aged 18 years and above, and to have been exposed to entrepreneurial education or activities at some point in their academic journey. The study was conducted at the

Cantilan Campus of North Eastern Mindanao State University. The table below summarizes the students' demographic and academic profiles.

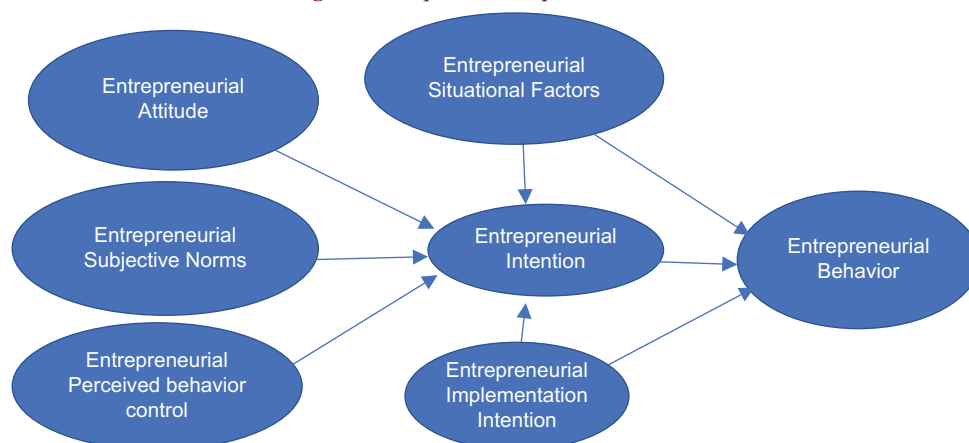
Table 1 shows that most students' ages ranged from 18 to 21 years old, suggesting that the sample is composed mainly of traditional college-aged students (75.30%). However, 227 participants are aged 22-25 years (20.60%), while only a small proportion of respondents are older, with 26-29 years (1.90%), 30-33 years (1.20%), and 34-36 years (0.90%). The study also included descriptive statistics on students' sex, as presented in the table. Most participants were female (73.10%), while only 297 were male (26.90%). These results align with the study of Duong et al. (2020), which found that students in the 19-29 age group were college students. Specifically, the college students identified are predominantly female, which aligns closely with the 56.7% female percentage predicted by NCES for 2020.

These data are divided by year level; the most significant proportion of participants is 1st-year students (40.80%), followed by 2nd-year (25.30%), 3rd-year (18.60%), and 4th-year (12.60%). A small percentage (2.60%) is categorized as "Other," possibly referring to irregular or nontraditional enrollees. A longitudinal study by Kamer and Ishitani (2019) revealed that the highest risk of departure occurred during the 1st year of enrollment among nontraditional students who were first-generation, enrolled full-time, and from low-income backgrounds. In the 2nd year, students from middle-income backgrounds were most at risk. The participants' courses are considered alongside these results. Bachelor of Science in Hospitality Management accounts (46.20%), nearly half of the participants. Meanwhile, the Bachelor of Science in Tourism Management accounts for 231 (20.90%), the BSBA Human Resource Development Management accounts for 200 (18.10%), and the BSBA Financial Management accounts for 164 (14.80%).

3.3. Instrument

In addition to the basic demographic questionnaire, a theory of planned behavior (TPB)-based questionnaire (Hagger et al., 2002; Ratkovic et al., 2025), widely used internationally for investigating entrepreneurial intentions, was employed. The questionnaire consisted of seven subscales and a total of 22

Figure 1: Proposed conceptual framework



items, as shown in Table 2. The first subscale, attitude toward entrepreneurship, assessed the respondents' positive or negative evaluation of engaging in entrepreneurial activities. The second subscale, subjective norms, measured the perceived social pressure from family, friends, or peers to engage or not engage in entrepreneurship. The third subscale, perceived behavioral control, evaluated the respondents' confidence in their ability to perform entrepreneurial behaviors, including their perceived skills, resources, and opportunities. Finally, the fourth subscale, entrepreneurial intentions, assessed the respondents' self-reported likelihood or commitment to start entrepreneurial activities in the future. Each item was rated on a Likert-type scale, allowing

quantitative measurement of the factors influencing entrepreneurial intentions and enabling statistical analysis to determine their relative impact.

3.4. Data Gathering Procedure

The survey questionnaire was administered by the researchers through Google Forms, with access provided via a link disseminated in November 2025 across various communication platforms, including email and messaging applications. Prior to distribution, the researchers strictly followed the ethical guidelines, ensuring adherence to all protocols throughout the data collection process. Participants were informed about the study's objectives, procedures, potential risks and benefits, and their right to withdraw at anytime. Informed consent was obtained electronically, and only those participants who signed the digital consent form were granted access to the survey. All responses were treated with the highest level of confidentiality and were used exclusively for research and publication purposes. The data collected were subsequently analyzed using appropriate statistical techniques to address the study's objectives.

3.5. Data Analysis

The study employed structural equation modeling (SEM) to examine both the measurement and structural models, allowing for simultaneous assessment of the relationships among latent variables and their observed indicators. For the measurement model, several statistical tools were used to ensure reliability and validity of the constructs. Model fit was assessed using Chi-square (χ^2), standardized root mean square residual (SRMR), normed fit index (NFI), comparative fit index (CFI), and Tucker-Lewis index (TLI), with SRMR values below 0.08 and CFI/TLI/NFI values above 0.90 indicating acceptable fit. Factor loadings were examined to evaluate convergent validity, with loadings

Table 1: Demographic and academic profile of the participants by age, sex, year level, and degree program (n=1107)

Variable	Subgroup	Frequency	Percent
Age	18-21 years old	833	75.30
	22-25 years old	227	20.60
	26-29 years old	22	1.90
	30-33 years old	13	1.20
	34-36 years old	10	0.90
Sex	Male	297	26.90
	Female	808	73.10
Year Level	1 st year	451	40.80
	2 nd year	280	25.30
	3 rd year	206	18.60
	4 th year	139	12.60
	Other	29	2.60
Course	BSBA Financial Management	164	14.80
	BSBA Human Resource Development Management	200	18.10
	Bachelor of Science in Tourism Management	231	20.90
	Bachelor of Science in Hospitality Management	510	46.20

Table 2: The instrument's constructs, with associated items and references

Construct	Item code and statement	No. of items
Entrepreneurial intention	EI1. I think I will pursue entrepreneurship in the future	3
	EI2. I think I will pursue entrepreneurship if there is an opportunity.	
	EI3. I think I have strong entrepreneurial intentions.	
Entrepreneurial attitude	EA1. I wish I could accumulate money and wealth.	5
	EA2. I am longing for social acceptance.	
	EA3. I wish I could realize my ideas.	
	EA4. I wish I could contribute to society and my country.	
	EA5. I wish I could have an accomplished career.	
Entrepreneurial subjective norms	ESN1. I think successful entrepreneurs affect my choice of entrepreneurship.	3
	ESN2. I think my friends and relatives support my entrepreneurship.	
	ESN3. I think my teachers and the college support my choice of entrepreneurship.	
Entrepreneurial perceived behavior control	EPB1. I think I have strong professional abilities.	4
	EPB2. I think I am capable of entrepreneurship.	
	EPB3. I think I already have entrepreneurial experiences.	
	EPB4. I think my personality traits are suitable for entrepreneurship.	
Entrepreneurial situational factors	ESF1. I think the social environment promotes entrepreneurial behavior.	3
	ESF2. I think government policies promote entrepreneurial behavior.	
	ESF3. I think college education promotes entrepreneurial behavior. I am longing for social acceptance.	
Entrepreneurial implementation intention	EII1. I have made the 1-month plan about when, where and how to attend entrepreneurial activities.	3
	EII2. I have completed my entrepreneurial activities at a planned location, time and in the planned way in the past month.	
	EII3. I achieved my expected goals about attending entrepreneurial activities in the past month.	
Entrepreneurial behavior	EB1. Do you ever have entrepreneurial behavior?	1

above 0.70 considered satisfactory, while Cronbach’s alpha and composite reliability (CR) values above 0.70 confirmed internal consistency and construct reliability. Average Variance Extracted (AVE) values exceeding 0.50 further supported convergent validity, and the Heterotrait-Monotrait ratio (HTMT) was employed to establish discriminant validity, ensuring that each construct measured a distinct concept. For the structural model, path coefficients (β), effect sizes (f^2), standard errors (SE), and P-values were analyzed to test the hypothesized relationships, with P-values below 0.05 indicating statistical significance. Additionally, mediation analysis was conducted using the indirect paths in SEM to determine whether entrepreneurial intention mediated the effects of independent variables such as entrepreneurial subjective norms and perceived behavioral control on entrepreneurial behavior. All analyses were performed using SmartPLS, which is appropriate for complex mediation models and partial least squares SEM, providing a robust approach to evaluate the predictive and explanatory power of the conceptual framework.

4. RESULTS

4.1. Assessment of Measurement Model

Model fit assessment evaluates how well a statistical model represents the observed data, using fit indices to compare the model’s implied relationships with actual data patterns, especially in structural equation modeling (SEM). Table 3 below captures model fit indices for the SEM from the given latent variables.

The model chi-square statistic, $\chi^2 = 3829.53$, with a $P=0.000$, suggests the model does not significantly vary from the observed data. However, because the chi-square test is sensitive to sample size, it often yields significant results in large samples. These data indicate a poor model fit, but before concluding that the model is a bad fit, the study considers the SRMR, NFI, CFI, and TLI.

A popular measure of model fit in structural equation modeling (SEM) is the standardized root mean square residual (SRMR) (Beribisky and Cribbie, 2025). The study considers looking into the standardized root mean square residual (SRMR) results to support the analysis. The analysis showed that the SRMR value of 0.038 falls below the conventional threshold of 0.08, indicating a good fit. This information suggests that the model’s predicted values correspond well with the observed data. However, the normed fit index (NFI) is 0.885, slightly below the commonly accepted cutoff of 0.90 for acceptable fit. Thus, these results suggest that it does not fully meet the stricter criteria for “good” fit. Even though the NFI does not indicate a good fit, it is also essential to examine the comparative fit index (CFI) of the study. The results provide a relatively strong fit compared to a null model, as the CFI value of 0.938 surpasses the 0.90 threshold and closes the more rigorous 0.95 standard. While CFI suggests a strong fit, the Tucker-Lewis index (TLI) (0.926) indicates a strong fit. The analysis appears

Table 3: Fit indices of the model

χ^2	P-value	SRMR	NFI	CFI	TLI
3829.53	0.000	0.038	0.885	0.938	0.926

well-constructed and well-fitting. The study also explores the distribution of loadings for entrepreneurial attitude, entrepreneurial subject norms, and entrepreneurial perceived behavior control, as presented in Table 4.

Table 4 discusses the indicators’ factor loadings (FL) within each construct. The entrepreneurial attitude as EA, entrepreneurial subjective norms as ESN, and entrepreneurial perceived behavior control as APB. Factor loadings for EA indicators range from 0.881 to 0.940, indicating strong item reliability and suggesting that each item contributes substantially to the latent construct. Convergent validity is revealed by each item loading, suggesting that the items as a whole assess a single underlying aspect of entrepreneurial attitude.

However, FL for ESN ranged from 0.909 to 0.917, indicating values above the minimum acceptable level and reflecting excellent internal consistency of the latent construct. Factor loading for APBC varies from 0.888 to 0.939. These results imply that the items are highly reliable indicators of the construct. The hypothetical expectation that perceived behavioral control is a multifaceted but cohesive construct, with each item meaningfully contributing to its measurement, is supported by the strong loadings. Also, the study investigates the distribution of loadings for entrepreneurial situational factors, entrepreneurial intention, and entrepreneurial implementation intention, as summarized in Table 5.

The range of entrepreneurial situational factors (ESF) is 0.940-0.945. These values are very high, exceeding both the stricter 0.90 threshold and the established 0.70 threshold. This suggests that the measurement model consistently captures situational factors and that the items are highly reliable indicators of the latent construct, demonstrating strong convergent validity.

Table 4: Loadings distribution of entrepreneurial attitude, entrepreneurial subject norms, and entrepreneurial perceived behavior control

Entrepreneurial attitude		Entrepreneurial subject norms		Entrepreneurial perceived behavior control	
Items	Loadings	Items	Loadings	Items	Loadings
EA1	0.922	ESN1	0.917	EPBC1	0.893
EA2	0.881	ESN2	0.909	EPBC2	0.930
EA3	0.937	ESN3	0.914	EPBC3	0.939
EA4	0.935	-	-	EPBC4	0.888
EA5	0.940	-	-	-	-

Table 5: Loadings distribution of entrepreneurial situational factors, entrepreneurial intention, and entrepreneurial implementation intention

Entrepreneurial situational factors		Entrepreneurial intention		Entrepreneurial implementation intention	
Items	Loadings	Items	Loadings	Items	Loadings
ESF1	0.945	EI1	0.951	EII1	0.934
ESF2	0.940	EI2	0.934	EII2	0.955
ESF3	0.941	EI3	0.924	EII3	0.937

Table 6: Cronbach’s alpha, composite reliability, and average variance extracted (AVE)

Construct	Cronbach’s alpha	Composite reliability (CR)	Average variance extracted (AVE)
Entrepreneurial attitude	0.957	0.957	0.852
Entrepreneurial implementation intention	0.937	0.937	0.888
Entrepreneurial intention	0.930	0.930	0.877
Entrepreneurial situational factors	0.937	0.937	0.887
Entrepreneurial subject norms	0.901	0.902	0.835
Entrepreneurial perceived behavior control	0.933	0.936	0.833

CR>0.70 (Byrne, 2016)

The study supports the findings of Schlaegel et al. (2021), who found that broad personality qualities had a highly contextual impact in entrepreneurial outcomes. Additionally, the role of limited features demonstrates some contextuality, which, for example, calls for additional theorizing. At the same time, risk-taking predisposition is a trait relevant in all contexts, while innovativeness and proactiveness are more appropriate in different institutional environments. Moreover, the narrow traits that impact entrepreneurial intention and status differ considerably; for instance, innovation is particularly relevant for entrepreneurial status but less so for entrepreneurial intention.

Entrepreneurial intention (EI), on the other hand, ranges from 0.924 to 0.951 and continues to capture highly reliable indicators of the latent construct. Meanwhile, entrepreneurial implementation intention (EII) ranges from 0.934 to 0.955, indicating that the items remain powerful indicators of the construct. Entrepreneurial intention (EI), on the other hand, ranges from 0.924 to 0.951 and continues to capture highly reliable indicators of the latent construct. Meanwhile, entrepreneurial implementation intention (EII) ranges from 0.934 to 0.955, indicating that the items remain powerful indicators of the construct. While factor loadings indicate how strongly each observed variable is associated with a latent factor, the study must also analyze Cronbach’s alpha, composite reliability, and average variance extracted (AVE) for entrepreneurial intention and entrepreneurial behavior in college students. Thus, Table 6 below is presented.

Cronbach’s alpha (CA) is essential to ensure that measurement tools reliably capture the intended constructs across contexts and over time (Izah et al., 2023). Hence, the results of this study indicate that the Cronbach’s alpha values for all latent variables range from 0.901 to 0.957, exceeding the conventional threshold of 0.70. The highest reliability is observed in entrepreneurial attitude (0.957), while the lowest, though still strong, is in Entrepreneurial Subject Norms (0.901). Meanwhile, Cronbach’s alpha and composite reliability (CR) are identical for EA, EII, and EI, with minimal deviation for ESN and EPBC. The highest Composite reliability is still marked at entrepreneurial attitude (0.957), while the lowest is indicated at ESN (0.902). All values surpass the recommended cutoff of 0.70 (Byrne, 2016), providing further evidence of construct reliability.

Haji-Othman and Yusuff (2022) suggest using average variance extracted (AVE) to establish convergent validity, as recommended by Hair et al. (2013). AVE is expressed as the mean value of the squared loadings of the items associated with a specific construct. It measures the sum of the squared loadings divided by the number of items in the construct. Regarding this study, the highest AVE is

Table 7: Discriminant validity (HTMT)

	EA	EB	EII	EI	ESF	ESN	EPBC
EA							
EB	0.760						
EII	0.639	0.752					
EI	0.942	0.797	0.716				
ESF	0.937	0.799	0.738	0.923			
ESN	0.991	0.787	0.699	0.959	0.963		
EPBC	0.905	0.839	0.797	0.941	0.964	0.970	

Heterotrait-monotrait (HTMT) <0.90 (Gold et al., 2001)

observed for EII (0.888), while the lowest, though still excellent, is for EPBC (0.833). Accordingly, the minimum acceptable value of AVE is 0.50, as an AVE of 0.50 indicates that the construct explains more than half of the variance in its items. If AVE is <0.50, it means that, on average, more errors are associated with the items than the variance explained by the construct (Hair et al., 2013). Thus, the AVE values in this study are all significantly higher than the minimum threshold of 0.50, ranging from 0.833 to 0.888. These findings demonstrate strong convergent validity, indicating that each construct’s items account for a significant portion of the variance in the corresponding latent variables. The study also examined the Heterotrait-Monotrait ratio of correlations (HTMT), which compares the average correlations between indicators of different constructs. The results are presented in Table 7.

Afthanorhan et al. (2021) cited that Discriminant validity is the extent to which the measure is indeed novel and not simply a reflection of other constructs. Thus, this study uses the Heterotrait-Monotrait Ratio (HTMT) as one way to assess discriminant validity, providing evidence that the constructs involved in the study are not merely empirically reflecting one another, so that the information used to explain the measurement theory does not overlap.

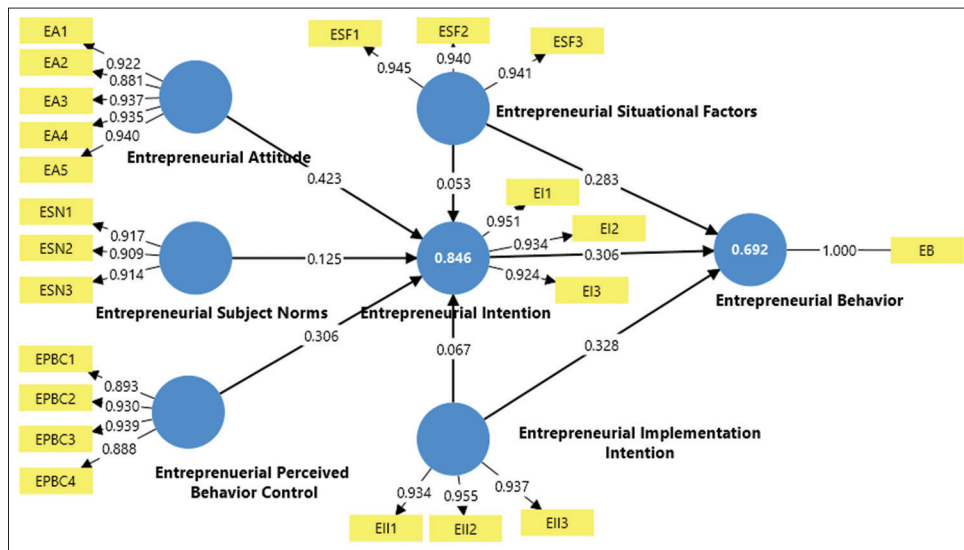
4.2. Structural Assessment Model

A structural assessment model (SAM) assesses the interrelations among variables in a structural equation model (SEM). Table 8 shows the outcomes of hypothesis testing derived from the given sample statistics. Furthermore, Figure 2 shows the structural pathways among entrepreneurial attitude, entrepreneurial subject norms, entrepreneurial perceived behavioral control, entrepreneurial situational factors, entrepreneurial implementation intention, entrepreneurial intention, and entrepreneurial behavior. Hair et al. (2021b) reported that the extent and significance of the path coefficients for the constructs were used to assess the structural model’s predictive ability. As noted by Munawar (2023), nonsignificant paths do not support previous hypotheses, whereas significant paths empirically support the proposed causal relationship.

Table 8: Assessment of structural model

Hypothesis	Structure	β	f^2	Standard error	P-value	Remark
H ₁	EA=>EI	0.111	0.145	0.112	0.340	Not significant
H ₂	ESN=>EI	0.515	0.011	0.105	0.000	Significant
H ₃	EPBC=>EI	0.458	0.076	0.100	0.000	Significant
H ₄	ESF=>EI	-0.139	0.002	0.096	0.142	Not significant
H ₅	ESF=>EB	0.275	0.061	0.066	0.000	Significant
H ₆	EII=>EB	0.332	0.176	0.031	0.000	Significant
H ₇	EII=>EI	0.047	0.012	0.030	0.079	Not significant
H ₈	EII=>EI=>EB	0.015		0.010	0.092	Not significant
H ₉	ESF=>EI=>EB	-0.043		0.032	0.156	Not significant
H ₁₀	EA=>EI=>EB	0.035		0.036	0.347	Not significant
H ₁₁	ESN=>EI=>EB	0.160		0.042	0.001	Significant
H ₁₂	EPBC=>EI=>EB	0.142		0.045	0.000	Significant

Figure 2: Structural model



The algorithm outputs for EA and EI indicate that the path coefficient (β) is 0.111, with an effect size (f^2) of 0.145, a standard error of 0.112, and a $P = 0.340$. The statistical outcome indicates that the hypothesized relationship is not significant, as the P-value exceeds the conventional 0.05 threshold; thus, Hypothesis 1 is not supported. Also, a favorable correlation between ESN and EI indicates that the second hypothesis is supported ($\beta = 0.515$, $f^2 = 0.011$, $SE = 0.105$, $P = 0.000$). Additionally, the values showed a significant difference between EPBC and EI ($\beta = 0.458$, $f^2 = 0.076$, $SE = 0.100$, $P = 0.000$); thus, hypothesis 3 was supported. Regarding ESF and EI, the results indicated ($\beta = -0.139$, $f^2 = 0.002$, $SE = 0.096$, $P = 0.142$). Also, the path for EII and EI ($\beta = 0.047$, $f^2 = 0.012$, $SE = 0.030$, $P = 0.079$) indicates that the hypothesized relationship is not significant for hypothesis 4.

The results for H₇, H₈, H₉, and H₁₀ suggest that EII, ESF, and EA cues may exist, but they do not translate meaningfully into EB even when mediated through EI. These results were supported by the data, with the path coefficients for the indirect paths being $\beta = 0.047$ ($P = 0.079$) for H₇, $\beta = 0.015$ ($P = 0.092$) for H₈, $\beta = -0.043$ ($P = 0.156$) for H₉, and $\beta = 0.035$ ($P = 0.347$) for H₁₀, which were statistically non-significant. In this case, EI appears to be more strongly shaped by factors such as subjective norms, situational factors, and perceived behavioral control than by attitude alone.

This finding challenges the assumption derived from the Theory of Planned Behavior, which asserts that attitudes toward a behavior are a primary antecedent of intention (Chen and Slade, 2025).

However, H₅ and H₆ show a significant positive relationship between ESF and EB ($\beta = 0.275$, $f^2 = 0.061$, $SE = 0.066$, $P = 0.000$), EII and EB ($\beta = 0.332$, $f^2 = 0.176$, $SE = 0.031$, $P = 0.000$). Also, H₁₁ and H₁₂ are significant, indicating that ESN and EPBC influence EB through EI, as supported by the path coefficients for the indirect paths being $\beta = 0.160$ ($P = 0.001$) for H₁₁ and $\beta = 0.142$ ($P = 0.000$) for H₁₂.

5. DISCUSSION

The model fit indices show that the suggested structural model adequately represents the observed data. The standardized root mean square residual (SRMR) of 0.038 is well below the accepted threshold of 0.08. This indicates a strong alignment between the predicted and actual correlations among the constructs (Hu and Bentler, 1999; Beribisky and Cribbie, 2025). It suggests that the residuals in the model are minimal and that the differences between the observed and predicted covariance matrices are negligible. The comparative fit index (CFI) of 0.938 is above the recommended cutoff of 0.90 and approaches the stricter standard of 0.95. This

means the model fits the data much better than a null model where variables are considered uncorrelated (Bentler, 1990; Hair et al., 2013). Likewise, the Tucker-Lewis index (TLI) of 0.926 exceeds the 0.90 threshold, further confirming a good model fit (Tucker and Lewis, 1973; Byrne, 2016). Together, these fit indices show that the structural relationships outlined in the model, including the pathways from entrepreneurial attitude, subjective norms, perceived behavioral control, situational factors, and implementation intentions to entrepreneurial intention and behavior, are well-represented in the data. The solid fit of the model builds confidence in the validity of the hypothesized relationships. It supports using this SEM framework to examine the factors influencing entrepreneurial intentions and behaviors among college students.

The evaluation of the measurement model shows strong reliability and validity for all constructs in the study. Cronbach's alpha values ranged from 0.901 to 0.957, exceeding the accepted threshold of 0.70 (Nunnally and Bernstein, 1994). This indicates that the items within each construct consistently measure the intended latent variables. The highest reliability was found in entrepreneurial attitude (0.957), while Entrepreneurial Subjective Norms had a solid value of 0.901, which was the lowest among the constructs. Composite reliability (CR) values ranged from 0.902 to 0.957, confirming that the constructs have internal consistency with minimal measurement error. This reinforces the reliability of the latent variables (Byrne, 2016; Hair et al., 2013). Additionally, the average variance extracted (AVE) values ranged from 0.833 to 0.888, surpassing the minimum threshold of 0.50 recommended by Hair et al. (2013). This suggests strong convergent validity. A substantial portion of the variance in the observed items is explained by their underlying constructs. Overall, these findings confirm that the instruments used in this study provide a highly reliable and valid assessment of entrepreneurial attitudes, subjective norms, perceived behavioral control, situational factors, intentions, and implementation intentions. The strong reliability and validity of the constructs enhance trust in the following structural analysis and the interpretation of relationships among the latent variables.

The analysis of the structural model showed a strong and significant positive relationship between entrepreneurial subjective norms (ESN) and entrepreneurial intention (EI). The path coefficient is $\beta = 0.515$ with a $P = 0.000$. This indicates that social influence is a key factor in students' intentions to pursue entrepreneurial activities. In practical terms, the expectations, encouragement, and support from peers, family members, mentors, and significant others greatly motivate students to consider entrepreneurship as a viable career or personal pursuit. This finding aligns with earlier studies, such as Schlaegel and Koenig (2014), which showed that subjective norms significantly impact entrepreneurial intentions in various cultural contexts, and Avila and Valdez (2022), who found that the social environment in the Philippines strongly affects students' entrepreneurial choices. The result highlights that entrepreneurial programs and initiatives should focus not only on skill development but also on building supportive social networks and mentorship opportunities that reinforce positive entrepreneurial behaviors. This evidence shows the importance of using social influence to strengthen entrepreneurial intentions among college students.

The results also show a positive and significant relationship between entrepreneurial perceived behavioral control (EPBC) and entrepreneurial intention (EI), with a path coefficient of $\beta = 0.458$ and a $P = 0.000$. This finding suggests that students' perceptions of their ability to perform entrepreneurial tasks, including their self-efficacy, access to necessary resources, and relevant skills, play an important role in shaping their intention to engage in entrepreneurial activities. Essentially, when students feel confident in effectively facing entrepreneurial challenges, their motivation and intention to pursue entrepreneurial ventures increase. This outcome aligns with the theory of planned behavior, which states that perceived behavioral control is a crucial factor in intention (Ajzen, 1991). Similar findings by Liñán, et al (2013) and Kushwah (2025) emphasized that higher levels of perceived entrepreneurial control predict intention to start a business. Zhao et al. (2005) also highlighted that self-efficacy and perceptions of control directly influence decisions to become an entrepreneur. These results underline the need to provide students with the necessary skills and resources to boost their perceived control, ultimately fostering stronger entrepreneurial intentions.

The analysis also showed a significant direct relationship between entrepreneurial situational factors (ESF) and entrepreneurial behavior (EB), with a path coefficient of $\beta = 0.275$ and a $P = 0.000$. This indicates that external conditions, such as available institutional support, access to resources, market opportunities, and a supportive entrepreneurial environment, significantly shape students' actual entrepreneurial actions. Interestingly, while situational factors may not strongly influence the development of entrepreneurial intentions, they impact translating those intentions or ideas into tangible entrepreneurial behaviors. This aligns with the findings of Martins et al. (2023), who noted that contextual and environmental factors heavily affect entrepreneurs' decisions to act on their intentions. Similarly, Maheshwari et al. (2023) demonstrated that students in innovation-friendly university environments were more likely to engage in entrepreneurial activities. These findings stress the need to create supportive environments that promote entrepreneurship, as favorable situational factors can motivate students to take action, regardless of their initial intention level.

Furthermore, the results indicate a strong and significant positive relationship between entrepreneurial implementation intention (EII) and entrepreneurial behavior (EB), with a path coefficient of $\beta = 0.332$ and a $P = 0.000$. This finding emphasizes the importance of planning and goal-setting in turning entrepreneurial intentions into actual actions. Students who use implementation strategies, like setting specific goals, creating actionable plans, and anticipating potential obstacles, are more likely to show real entrepreneurial behavior. This supports the idea that intention alone cannot drive behavior and that structured implementation processes are needed to link thought and action (Gollwitzer, 1999). Similarly, Bazan et al. (2019) found that Malaysian students who took part in experiential learning and mentoring programs showed higher levels of entrepreneurial activity due to improved implementation intentions. In the Philippine context, Laguador (2013) reported similar results, showing that students' intentional planning and preparatory actions greatly increased their chances of executing

entrepreneurial activities. These findings highlight the need for implementation-focused interventions within entrepreneurship education to ensure that intentions effectively turn into behavior.

The analysis of the mediated effects shows that entrepreneurial intention (EI) significantly mediates the relationship between both entrepreneurial subjective norms (ESN) and entrepreneurial perceived behavioral control (EPBC) on entrepreneurial behavior (EB). Specifically, the indirect effect of ESN on EB through EI is significant ($\beta = 0.160$, $P = 0.001$), and the indirect effect of EPBC on EB through EI is also significant ($\beta = 0.142$, $P = 0.000$). These findings suggest that social influences, such as expectations from peers, family, and mentors, along with students' perceived control over entrepreneurial tasks, are translated into actual entrepreneurial behavior mainly through their impact on intentions. This supports the theory of planned behavior (Ajzen, 1991), which states that intentions act as a critical link between antecedent factors and actual behavior. Consistent with earlier research, Zhao and Seibert (2006) pointed out that intention is the strongest predictor of entrepreneurial behavior and mediates the influence of cognitive and environmental factors. Go et al. (2024) found that Filipino students' intentions significantly channeled the impact of social norms and self-efficacy into entrepreneurial engagement. Overall, these findings reinforce the importance of nurturing supportive social environments and perceived behavioral control while cultivating strong entrepreneurial intentions to ensure motivation translates into action.

6. CONCLUSION

This study looked at what drives entrepreneurial behavior among college students, focusing on entrepreneurial attitude, social norms, perceived control, situational factors, and implementation intentions based on the Theory of Planned Behavior. The results showed that social influence and perceived control are key factors in driving entrepreneurial intentions. This underscores the role of family, peers, mentors, and students' confidence in their skills and access to resources. Furthermore, situational factors and implementation intentions have a direct impact on entrepreneurial behavior. This suggests that support from the environment, available resources, and action-oriented planning are crucial for turning intentions into real entrepreneurial activities.

The study also found that entrepreneurial intention acts as a mediator between social norms and perceived control on behavior. This reinforces the importance of intention as suggested by the theory of planned behavior. Although some expected relationships, such as those between entrepreneurial attitude and certain situational influences on intention, were not significant, the overall model shows that social, cognitive, and contextual factors work together to shape entrepreneurial outcomes for students.

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