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Testing the Theory of Planned Behaviour on Entrepreneurial Intention among Odisha Graduates: A PLS-SEM Approach

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Entrepreneurial Intention; Theory of Planned Behaviour; Attitude toward Entrepreneurship

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Abstract: This research investigates the factors influencing entrepreneurial ambition (intentions) among graduate students in Odisha via the lens of the Theory of Planned Behaviour (TPB). The research examines three primary predictors: attitude toward entrepreneurship, subjective norms, and perceived behavioural control. It also assesses the impact of such predictors on entrepreneurial intention through Partial Least Squares Structural Equation Modelling (PLS-SEM). The research utilises primary data gathered from 408 graduate students from institutions in the Khordha and Cuttack districts of Odisha, employing a structured questionnaire and a five-point Likert scale. The measurement and structural models were evaluated using SmartPLS 4 to determine reliability, validity, and path connections. The findings demonstrate that attitude toward entrepreneurship significantly positively affects entrepreneurial intention ($\beta = 0.141$, $p = 0.025$), while subjective norms and perceived behavioural control were identified as statistically unimportant predictors. The model accounts for 7.6% of the variance in entrepreneurial intention ($R^2 = 0.076$), signifying limited predictive capability and implying that more variables may be necessary to more comprehensively elucidate entrepreneurial intention among students. The results indicate that the entrepreneurial intentions of graduates in Odisha are predominantly shaped by personal views rather than social pressures or perceived control over entrepreneurial actions. The study holds significant implications for policymakers and educational institutions, indicating that entrepreneurship education programs should prioritise attitude development, entrepreneurial exposure, and experiential learning over just skill-based training. The study emphasises the necessity of enhancing the entrepreneurial environment, encompassing access to financing, incubation assistance, and institutional mentoring, to foster entrepreneurial intention among students in Odisha.

1. Introduction

Entrepreneurship has transformed a common business activity into a meaningful contributor to youth empowerment, innovativeness, and job creation. This change is of extreme importance in the Indian context. Despite the rapid growth of higher education, graduate unemployment continues to rise, leading to curiosity about why some educated young people choose job-seeking and instead pursue an entrepreneurial career. This is the dominant atmosphere that causes the researchers and policymakers to discover the psychological, contextual motivation in influencing the entrepreneurial intention of the young graduates. The Theory of Planned Behaviour (TPB), developed by Ajzen (1991), gives an effective theoretical background to learn the development of entrepreneurial intentions. Intention is a resultant state of behavior as per the TPB framework, which is a result of three important constructs,

such as attitude to the behaviour, subjective norms, and perceived control of behaviour. As time passed, TPB is currently widely used and improved in different fields, including the study of entrepreneurship. It describes the role played by beliefs, social expectations, and perceived capabilities in influencing the decision any individual makes to become an entrepreneur. TPB is specifically applicable to the emerging economies such as India, whose socio-cultural environment and institutional support systems are significantly different and evolve entrepreneurial mindsets at different levels. The progress in the industry and the employment rate in Odisha has been remarkable in recent years. According to the Odisha economic survey 2024-25, the growth in the industrial sector in the state is 6.1% for the year 2024-25. The share of the manufacturing sector in the state's GDP has increased from 42.6% in the year 2012-13 to 52.6% in the year 2024-25. Another survey report on the periodic labour force survey by the Ministry of Statistics and Program Implementation, Government of Odisha, states that in total 58.9 lakh people are employed in the industrial sector in Odisha. The most revealing fact is that the construction sector employs the highest number of people (70%) in Odisha. This is the picture that raises the research question for this paper. The construction sector's expansion and associated employment opportunities primarily contribute to the industrial sector's growth. The manufacturing and other entrepreneurial growth is not visible in the state of Odisha. This paper aims to highlight that intrapreneurial growth in Odisha is not as remarkable as the projections for startups had anticipated. Why is the inclination toward entrepreneurship not prominent? This study focuses on the applicability of the theory of planned behaviour among the graduating students of Odisha. Being a very vast state, an appropriate sample selection is vital for the success of the study. For the selection of the samples, we have selected the degree colleges of the districts of Khordha and Cuttack; these two districts are the perfect forum for a study of this theoretical prototype. These are urban and semi-urban areas in a mixed form with variations in the extent of exposure to entrepreneurship education, institutional framework, and social-cultural stimulation to individual employment. More importantly, as the educational hub of Odisha, students from all corners of the state come to the educational institutions of these districts. This renders them a perfect choice in determining the functioning of TPB constructs working under different contextual influences. The empirical studies carried out recently also emphasize this relevance. As an example, Lakra (2023) discovered that perceived behavioral control has been established to be the most significant predictor of entrepreneurial intention as compared to attitude and subjective norms, which did not always show significant relevance among Berhampur University students. In the same way, the comparative analysis of the entrepreneurship learning in Odisha reveals that non-state organizations and extracurricular entrepreneurial behaviors are also very good at enhancing the students' entrepreneurial intention, which in many cases supersedes the demographic factors of entrepreneurship education, like gender or socio-economic status. Along with these insights, there is also one major research gap: little research has been conducted to assess how the TPB model applies specifically in the case of graduate students in Khordha and Cuttack, where, in comparison to other areas, the institutional exposure, the levels of urbanization, and the socio-cultural expectations are also different. Furthermore, the previous studies tended to stress individual factors rather than using a sound statistical framework to test the interconnectedness of all the TPB constructs at the same time. To fill this gap, the present study uses the Partial Least Squares tool within the Structural Equation Modelling framework (PLS-SEM) to test the impact of the attitude of the respondent, subjective norms, and the perceived behavioural control on the entrepreneurial intention among graduate students in these two districts in a systematic and logical manner. The study will be able to produce evidence-based outcomes following the analysis of the strength of these relationships that may be used in policy formulation, curriculum design and development, and specific interventions in various areas. These results are projected to make significant contributions to the current state and institutional activities to change the minds of Odisha graduates into more active job creators instead of mere job-seekers. Based on the above backdrop, the study is done with the objective, (i) to study the impact of components of the Theory of Planned Behavior (TPB) with respect to entrepreneurial intention creation in Odisha, and (ii) to evaluate the applicability and explanatory power of the TPB model in predicting entrepreneurial intentions among graduating students in Odisha, with a specific focus on the Khordha and Cuttack districts.

2. Literature Review

2.1. Entrepreneurial Intention

The construct of entrepreneurial intention is highly accepted as one of the important factors that result in entrepreneurial behavior. In line with Kabir et al. (2017), the concept of entrepreneurial intention predicts the motivation or the diligence portrayed by individuals to develop attributes that required for entrepreneurship. According to the scholars, entrepreneurship is not accidental or random; it is the outcome of a series of actions and behaviors that are carefully designed and trained throughout the development of such intention as entrepreneurship (Zimbroff and Jorgensen, 2019). In the same line of thought, Owoseni and Akambi (2010) outline that entrepreneurial activities tend to be influenced by the presence of strong entrepreneurial intentions, and the present study is aimed at investigating factors that affect the determinants of the entrepreneurial intention in graduates in Khordha and Cuttack districts by considering the entrepreneurial intention as the dependent variable in the study.

2.2. Theory of Planned Behavior (TPB)

Among the most influential models that would explain human behaviour, in the context of entrepreneurship, is the Theory of Planned Behaviour (TPB). According to Ajzen, a set of three fundamental elements that include attitude towards a behaviour, subjective norms, and the perceived behavioural control that TPB uses to explain the behavioural intentions in an individual, and that the intentions have a very strong predictive validity upon actual behaviour (Ajzen, 1991, 2015). TPB expands TRA with the introduction of the so-called perceived behavioral control into the Theory of Reasoned Action (TRA) by Ajzen and Fishbein (1980) to explain that there are cases when a person might not possess full control over his or her conscious actions (Sheppard et al., 1988).

TPB has gained acceptance over the years and has been proven valid by various studies related to research in the entrepreneurship course. Its strength has been shown consistently by scholars regarding the ability to forecast among the students within various contexts the so-called entrepreneurial intention (Khalifa and Dhiaf, 2016; Malebana, 2014; Mahmoud et al., 2020; Rasli et al., 2013). The validity of its applicability is also supported by empirical literature; as it was revealed by Rengiah and Sentosa (2017) and Taha (2018), TPB offers one of the most valid conceptual frameworks to explore the concept of entrepreneurial intention in higher education. Similaly, TPB has been noted to be the most encompassing model when compared to other theoretical frameworks of entrepreneurial action (Ogundipe et al., 2012). It is against this good empirical evidence that the current research uses TPB as its theoretical backbone to determine the factors that affect entrepreneurial intention among graduate students.

Recent study on entrepreneurship utilizing the Theory of Planned Behaviour consistently identifies attitude toward entrepreneurship and perceived behavioural control as the most significant determinants of entrepreneurial intention, but subjective norms have inconsistent impacts. Entrepreneurship education indirectly influences intention through attitudes and perceived behavioral control. Incorporating self-efficacy, risk perception, and digital orientation enhances the model's explanatory power across various contexts (Haddoud et al., 2022; Nabi et al., 2023; Al-Jarrah et al., 2024).

2.3. Attitude and Entrepreneurial Intention

Attitude has been considered as one of the most important determinants of entrepreneurial intention in the realms of the Theory of Planned Behaviour (TPB). Ajzen (1991) believes that there is a direct and positive relationship between attitude and intention. This assists in determining the intention of individuals to join events of entrepreneurship. Attitude is usually represented as the evaluative tempering nature an individual acquires, which is based on individual feelings, beliefs, and his/her behavioural inclinations toward definite social objectives and group-related happenings (Ryu et al., 2010). In the entrepreneurial paradigm, the attitude to behaviour depicts the favorable or unfavorable

assessment of initiating a venture (Linan et al., 2011), usually the gut or the emotional reaction of the person towards entrepreneurship (Tadesse and Batra, 2015).

Empirical research enhances the emphasis of attitude as a predictor of entrepreneurial intention. In fact, Malebana (2014) established that positive attitudes of students have a significant effect on the entrepreneurial intention in South Africa. Taha (2018) found in a study of students from the Universitas Malaysia Perlis (UniMap) and Universitas Utara Malaysia (UUM) that their attitudes have a significant positive relationship with the intention to become entrepreneurs. The attitude also positively affected students' entrepreneurial intention in Nigeria, according to Mahmoud and Garba (2019).

Research combining the Theory of Planned Behavior with supplementary constructs, including innovation self-efficacy and entrepreneurial knowledge, demonstrates that a positive entrepreneurial attitude markedly increases the intention to pursue entrepreneurial endeavors, even when other predictors, such as subjective norms, are not statistically significant (Relente & Capistrano, 2024). Research involving Romanian engineering students indicates that attitude, along with perceived behavioral control and curiosity, positively influences entrepreneurial intention, highlighting the psychological underpinnings of intention formation (Balgiu & Simionescu-Panait, 2024). Recent empirical evidence highlights that attitude is a primary determinant of entrepreneurial intention, corroborating the Theory of Planned Behavior's assertion that favorable personal assessments of entrepreneurship are essential in motivating individuals toward future entrepreneurial endeavors (Relente & Capistrano, 2024; Balgiu & Simionescu-Panait, 2024).

Although there are available international indications, there is little empirical research on the same conducted within the Indian context, meaning that there is a significant gap in the literature. To fill this gap, the current research paper presents the following hypothesis:

H_1: There is a positive relationship between attitude and Entrepreneurial intention.

The relationship between subjective norms and Entrepreneurial intention

Subjective norms are the perceived social pressure or support that influences the behaviour of an individual to participate in a certain activity, including entrepreneurship. According to Hassan et al. (2021), subjective norms are the social inspiration and encouragement that will define the entrepreneurial decision of an individual. Similar statements have been made by Farrukh et al. (2018), indicating that one of the most potent factors influencing human behaviour is subjective norms, implying that the process of making entrepreneurial decisions is not beyond the social stimuli. Empirical evidence is, however, divided on this. Indicatively, Mahmoud et al. (2020) concluded that subjective norms failed to positively influence the intention of students to be entrepreneurs, which indicates the effect of cultural and situational factors on the relevance of the construct. The influence of the familial background on the formation of entrepreneurial decisions appears to be particularly topical in the Indian context, since most young entrepreneurs are children of families with a history of business activities, which reinforces the theoretical hypothesis concerning the social impact. Similar results were obtained in one of the studies carried out at Debre Tabor University in Ethiopia, wherein it was stated that family background was the most influential factor in determining the entrepreneurial intention amidst 348 students (Students, 2021).

Empirical evidence indicates that subjective norms influence entrepreneurial intention via serial mediation mechanisms that include attitude toward entrepreneurship and entrepreneurial self-efficacy, implying that social approval enhances personal evaluations and perceived capability (Pham et al., 2023). Research among university students in Southeast Asia indicates that subjective norms have a

positive yet comparatively weak direct impact on entrepreneurial intention, highlighting the conditional influence of family, peers, and societal expectations in entrepreneurial decision-making (Othman et al., 2023). Supporting this perspective, recent behavioral research differentiates between descriptive norms and injunctive norms, revealing that perceptions of others' entrepreneurial involvement positively influence entrepreneurial intention, with anticipated regret serving as a crucial psychological mediator (Zhang et al., 2023).

The results of such studies indicate that subjective norms, especially those that are based on family and small social groups, can be a significant factor in promoting entrepreneurial goals. In accordance with these, the current research paper falls under the following hypothesis:

H_2: There is a positive relationship between subjective norms and Entrepreneurial intention.

The relationship between perceived behavioral control and Entrepreneurial intention

Perceived behavioural control (PBC), as proposed by Ajzen (1991), can be defined as how one thinks that it is easy or difficult to engage in each situation. The more one thinks an action is easy, the higher the PBC and believability, and vice versa. In the study of entrepreneurship, PBC has been constantly determined as an imperative factor that influences entrepreneurial intention. As an example, Shabbir et al. (2016) discovered that PBC was significant in mediating the relationship between the personal abilities of an entrepreneur and different levels of entrepreneurial intention among Pakistani IT professionals in Punjab. Equally, Malebana (2014) said that PBC positively affects the entrepreneurial intention of university students in South Africa. The cross-cultural evidence also confirms this correlation; Linan et al. (2013) provided evidence that the British undergraduates had a higher PBC than the Spanish students, which is then superimposed on their entrepreneurial intention to the beneficial effect. Similarly, Kuttim et al. (2014) found that PBC is a vast predictor of entrepreneurial intention among students in 17 European countries.

Research from higher-education samples indicates that perceived behavioral control (PBC) exerts a direct, significant positive influence on entrepreneurial intention and frequently serves as a crucial mechanism connecting upstream factors such as proactive personality, entrepreneurship education, and opportunity perception to intention outcomes (Huang et al., 2024). In sustainable entrepreneurship contexts, supportive environments, such as university assistance and associated facilitators, enhance students' perceived behavioral control (PBC), subsequently elevating sustainable entrepreneurial intentions. This indicates that institutional contexts can enhance perceived control and, subsequently, intention (Sharma et al., 2023). Recent research that integrates the Theory of Planned Behavior (TPB) with effectuation theory indicates that Perceived Behavioral Control (PBC) not only directly predicts entrepreneurial intention but also functions through effectual decision-making processes, such as experimentation and pre-commitment, which convert perceived capability into intention, thereby underscoring PBC's pivotal explanatory role in modern entrepreneurship frameworks (Mumi, 2025).

Nonetheless, the works are not uniform in all situations. As an example, Mahmoud et al. (2020) noted that PBC was negatively related to entrepreneurial intention, which indicates the possibility of cultural or study design variation. Direct empirical research on the relation between PBC and entrepreneurial intention is not customary in the context of India. However, the rationale based on a larger scope of international evidence indicates that perceived behavioral control (PBC) plays a crucial role in defining the entrepreneurial goals of students. Thus, the hypothesis of the current study is as follows:

H_3: There is a positive relationship between perceived behavioural control and entrepreneurial intention.

3. Research Methodology

The current research paper follows the quantitative, cross-sectional design relying on the Theory of Planned Behaviour (TPB) to investigate the review of entrepreneurial intention of graduate students of Odisha between January and July 2025. The data gathered through the primary source is analyzed using the data collected with the help of a structured questionnaire. Latent constructs were the TPB variables, including attitude-towards-entrepreneurship, subjective norms, perceived behavioral control, and entrepreneurial intention, which were all measured using multi-item scales based on previous research TPB scales. The questionnaire adopted a five-point Likert scale to capture the perception of the respondents so that there would be the same scale of response.

The research population comprised graduate colleges in the districts of Cuttack and Khordha, Odisha, which were chosen based on various factors such as socio-economic factors and institutional factors. The total population of these two districts is around 4.8 million, according to the 2011 census, which constitutes 11.62% of the total population of the state of Odisha. As previously mentioned, students from all corners of the state make up these two districts. Therefore, these two districts are chosen as an ideal representatives of students of Odisha. To finalize an adequate sample size, this research refers to the criteria proposed by Morgan and Krejcie (1970). They justify a sample size of 384 for a population of 10,000 units. In this case, the total population is around 5 million; therefore, a sample size greater than 400 would justify the study. After all the effort and refining of the responses received from various respondents, this research study finalized a total sample unit of 408 obtained through stratified random sampling to represent all disciplines in academia, genders, and types of colleges situated in the districts of Cuttack and Khorda. Using electronic methods (google form), data was obtained that was guaranteed to capture all the responses.

The analysis used the Smart PLS 4 application because it can examine complex frameworks with multiple latent variables by implementing Partial Least Squares within the Structural Equation Modelling framework (PLS-SEM). Such a method was suitable because it has predictive modelling strength and the capability of dealing with the non-normal distribution of data that is present in behavioural studies. The model specification involved direct relationships between attitude, subjective norms, and perceived behavioural control, and the entrepreneurial intention and evaluation of construct reliability, construct validity, and model fit. Figure 1 shows the suggested conceptual model that has been used in the research.

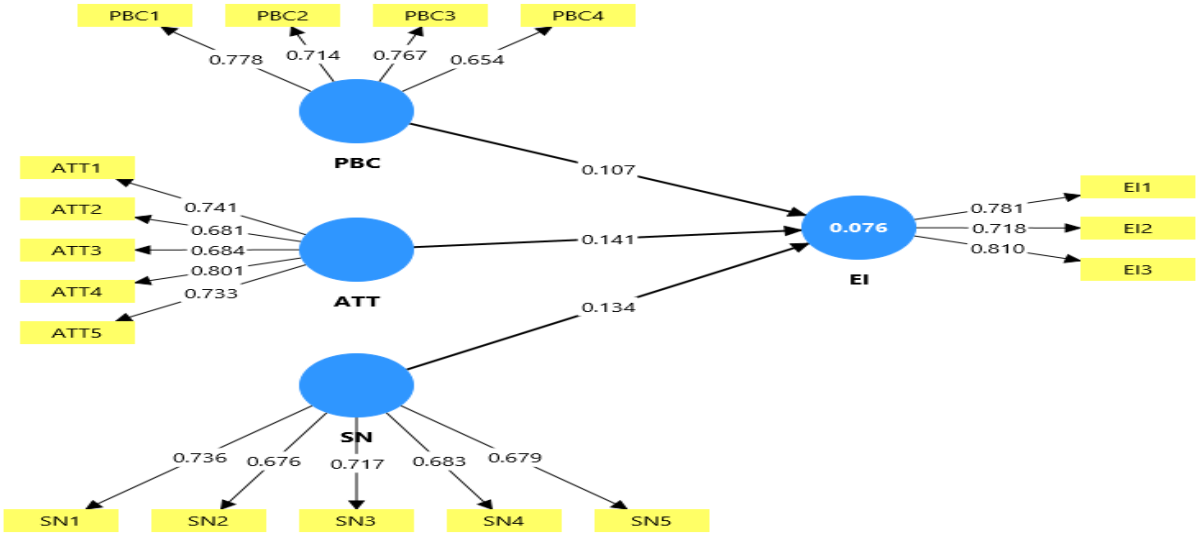


Figure 1: The Proposed Model

Source: Authors' Work.

4. Data Analysis and Interpretations

4.1. Descriptive Statistics

Table 1: Descriptive Statistics of the Respondents

Details	Subsections	(n)	(%)
Gender	Male	228	55.9
	Female	180	44.1
Age	17–18 years	72	17.6
	19–20 years	168	41.2
	21–22 years	168	41.2
Graduation Stream	Arts/Humanities	120	29.4
	Commerce	132	32.4
	Science	156	38.2
Entrepreneurial Background	Yes	102	25.0
	No	306	75.0
Family Income (Annual)	Rs. 100,000 – Rs. 200,000	96	23.5
	Rs. 200,001 – Rs. 300,000	144	35.3
	Rs. 300,001 – Rs. 400,000	108	26.5
	Rs. 400,001 – Rs. 500,000	60	14.7

Source: Self-compiled.

The sample of 408 graduate students exhibits a high degree of balance in both demographic and socio-economic aspects. Most of the respondents were males (55.9%), with women making up 44.1%. Age distribution indicated that there was a high percentage of young population, where 82.4% fell under the (19-22) year group, with an equivalent percentage (41.2% each) between the 19-20 and (21-22) year intervals; 17.6% were aged 17-18 years.

Regarding the academic background of the graduating students, the overwhelming majority (38.2 percent) are in the science stream, which is in turn outnumbered by commerce (32.4 percent) and arts/humanities (29.4 percent), meaning that there is a diversified academic composition of the respondents. A quarter of the participants (25 percent) said they had a familial background of an entrepreneur, implying that most of them (75 percent) did not have direct experience of the entrepreneurial world.

The family income profile indicated that most respondents are representatives of lower-to-middle-income families. The annual incomes of 58.8% fell in the range of Rs. 100,000-300,000, with only 14.7% in the top income range consisting of 400,001-500,000. It could be indicative of mediocre economic status and is indicative of the possible effect of financial background on entrepreneurial preparedness.

4.2. Outer Loadings of Construct Items

Table 2: Outer Loadings of Construct Items

Items	ATT	EI	PBC	SN
ATT 1	0.741			
ATT 2	0.681			
ATT 3	0.684			
ATT 4	0.801			
ATT 5	0.733			
EI1		0.781		
EI2		0.718		
EI3		0.810		
PBC1			0.778	

Items	ATT	EI	PBC	SN
PBC2			0.714	
PBC3			0.767	
PBC4			0.654	
SN1				0.736
SN2				0.676
SN3				0.717
SN4				0.683
SN5				0.679

Source: Analysis results of the study.

The outcomes of the measurement model prove that all the constructs, Attitude (ATT), Entrepreneurial Intention (EI), Perceived Behavioural Control (PBC), and Subjective Norms (SN), are reflected by sufficiently loaded indicators (Table 1). For Attitude (ATT), the outer loadings range from 0.681 for ATT2 to 0.801 for ATT4, indicating acceptable reliability, with ATT4 being the best measure of the construct. The factor loadings of entrepreneurial intention (EI) items are also high and range between 0.718 (EI2) and 0.810 (EI3), meaning that they are strong variables in measuring the latent construct. In the same manner, similar indicators displayed under the title of Perceived Behavioural Control (PBC) depict satisfactory loadings ranging from 0.654 (PBC4) to 0.778 (PBC1), which suggest that though PBC4 represents a relatively low contribution, nonetheless, the loadings are within acceptable ranges of research under exploration. Lastly, Subjective Norms (SN) items display loadings ranging between 0.676 (SN2) and 0.736 (SN1), which proves their reliability and their role in the measurement of the construct.

Table 3: Reliability of the Constructs and Validity

	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
ATT	0.784	0.811	0.850	0.532
EI	0.656	0.661	0.814	0.594
PBC	0.711	0.725	0.820	0.533
SN	0.740	0.746	0.826	0.488

Source: Self-compiled.

The results of the measurement model give satisfactory levels of internal consistency and convergent validity of the four constructs: Attitude (ATT), Entrepreneurial Intention (EI), Perceived Behavioural Control (PBC), and Subjective Norms (SN) (Table 3). The Attitude (ATT) has a high degree of reliability, where the Cronbach alpha (0.784) and the composite reliability (rc = 0.850) are above the recommended limits (reliability must not be below 0.70), and the AVE of 0.532 shows good convergent validity. There is medium reliability in respect to entrepreneurial intention (EI), and Cronbach's alpha (0.656) is slightly below the level of 0.70, but its composite reliability (0.814) and AVE (0.594) demonstrate that it is a robust construct to be measured. Perceived behavioural control (PBC) has good psychometrics with a 0.711 Cronbach's alpha, 0.820 composite reliability, and an AVE of 0.533 that exceeds the criterion values. Finally, Subjective Norms (SN) show acceptable reliability, with a Cronbach alpha of 0.740 and a composite reliability of 0.826, but an AVE of 0.488 is slightly lower than the 0.50 mark, indicating weak convergent validity, which can be accepted by considering the reliability parameters (Fornell & Larcker, 1981).

4.3. Discriminant Validity of the Model

Table 4: Heterotrait-Monotrait Ratio (HTMT) – Matrix

	ATT	EI	PBC	SN
ATT				
EI	0.248			
PBC	0.257	0.287		
SN	0.238	0.296	0.682	

Source: Self-compiled.

The inter-construct correlations point out the crucial data on the discriminant validity of the model (table-4). Attitude (ATT) has low levels of correlation with Entrepreneurial intention (EI = 0.248), perceived behavioural control (PBC = 0.257), and subjective norms (SN = 0.238). These values indicate that although ATT is connected to the other constructs, the correlation is not too high, which favours uniqueness. Entrepreneurial intention (EI) indicates a slightly higher relationship with PBC (0.287) and SN (0.296), suggesting that there are meaningful contributions of these constructs in the creation of intention. The highest correlation exists between PBC and SN (0.682), indicating a significant overlap that can be explained by theoretical reasons, as social pressures tend to shape people's perception of control.

Table 5: Fornell-Larcker Criterion

	ATT	EI	PBC	SN
ATT	0.729			
EI	0.186	0.770		
PBC	0.193	0.200	0.730	
SN	0.176	0.211	0.488	0.698

Source: Self-compiled.

The results of Table 5 show the results of the Fornell-Larker criterion to determine the discriminant validity of the constructs. ATT (0.729), EI (0.770), PBC (0.730), and SN (0.698) are the square roots of the AVE values, as evident in the diagonal. These values exceed their corresponding correlation between constructs in most cases, thereby supporting the discriminant validity. As one example, the AVE square root of ATT (0.729) is higher than its correlation with EI (0.186), PBC (0.193), and SN (0.176), which proves the uniqueness of the concept. In the same way, the EI (0.770) has a higher value when compared to its correlation with ATT (0.186), PBC (0.200), and SN (0.211). PBC (0.730) is also stronger than the correlation of this variable with ATT (0.193), EI (0.200), and SN (0.488).

Table 6: Collinearity Statistics (VIF)

Items	VIF
ATT 1	1.572
ATT 2	1.369
ATT 3	1.535
ATT 4	1.501
ATT 5	1.498
EI 1	1.348
EI 2	1.193
EI 3	1.370
PBC 1	1.398
PBC 2	1.375

PBC 3	1.374
PBC 4	1.314
SN 1	1.341
SN 2	1.380
SN 3	1.394
SN 4	1.281
SN 5	1.410

Source: Self-compiled.

Table 6 presents the statistics of collinearity (VIF values) of all measurement items of all four constructs. The findings indicate that the VIF values are within the range of 1.193 to 1.572, which is less than the conservative 5.0 and 3.3 (that is, the stricter threshold) limits of PLS-SEM. This implies that multicollinearity is not a cause for concern in this measurement model. In the case of Attitude (ATT), the value of VIF is between 1.369 (ATT2) and 1.572 (ATT1), with moderately acceptable inter-item correlations. The weakest values of VIF (1.193 (EI2) and 1.370 (EI3)) can be observed among the indicators of entrepreneurial intention, which indicates a low level of multicollinearity. In the same way, the values that are obtained by using Perceived Behavioural Control (PBC) items (0.314 (PBC4) and 0.398 (PBC1)) indicate a stable level of collinearity. Lastly, there are Subjective Norms (SN) indicators with a range of 1.281 (SN4) to 1.410 (SN5), yet again proving that there is no problematic multicollinearity.

Table 7: Inner Model VIF

Models	VIF
ATT -> EI	1.048
PBC -> EI	1.333
SN -> EI	1.325

Source: Self-compiled.

Table 7 represents the path from Attitude (ATT) to EI and shows the lowest VIF (1.048), indicating almost no collinearity with other predictors. The paths from “Perceived behavioural control” (PBC) to EI (1.333) and from Subjective Norms (SN) to EI (1.325) also fall within the safe range, confirming that the predictors are sufficiently independent of one another.

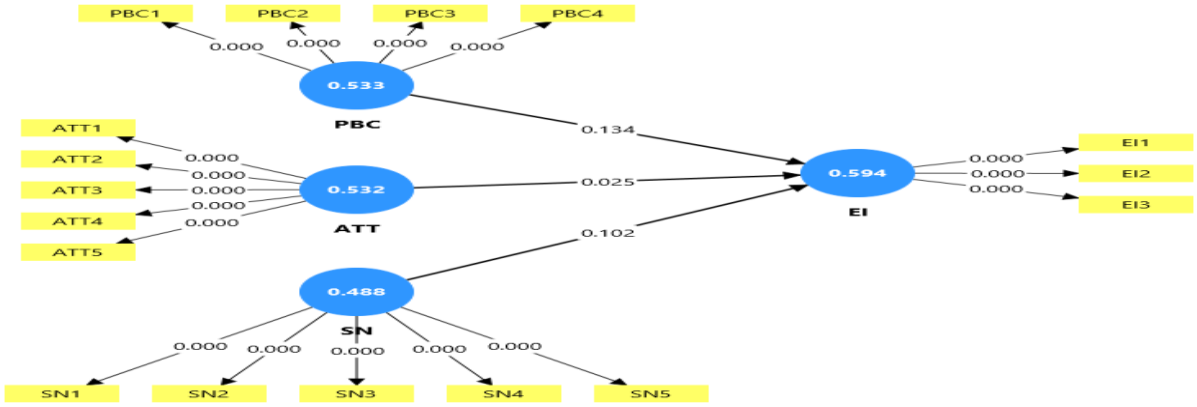
Table 8: Model Fit Summary

	Saturated Model	Estimated Model
SRMR	0.072	0.072
d_ULS	0.787	0.787
d_G	0.184	0.184
Chi-square	444.683	444.683
NFI	0.930	0.910

Source: Self-compiled.

Table 8 contains the model fit summary of both the saturated and the estimated models. Both cases have the SRMR = 0.072, which is lower than the acceptable level of 0.08, which shows a good fit between the hypothesised model and the observed data. The d_ULS value (0.787) and d_G (0.184) values are low, which additionally implies that the deviation between the observed and predicted model correlation matrix is not significant. The chi-square value (444.683), although meaningful in most of the instances because of the sensitivity of the statistic to the sample size, is not the major influence in PLS-SEM. The Normed Fit Index (NFI) presents 0.930 (saturated) and 0.910 (estimated), which is just higher than 0.90, which is a recommended value, and attests that the model is at an acceptable level of fit.

4.4. Hypothesis Testing



Source: Authors' Work.

4.5. Bootstrapping Results

Table 9: Path Coefficients among the Constructs

	Original Sample (O)	Sample Mean (M)	Standard Deviation	T Statistics (|O/STDEV|)	P-values
ATT -> EI	0.141	0.152	0.063	2.243	0.025
PBC -> EI	0.107	0.113	0.071	1.499	0.134
SN -> EI	0.134	0.141	0.082	1.634	0.102

Source: Self-compiled.

The output of the structural model gives the data on the role of Attitude (ATT), Perceived Behavioural Control (PBC), and Subjective Norms (SN) in influencing the Entrepreneurial Intention (EI). The transition between ATT and EI is positive and statistically significant (b = 0.141, t = 2.243, p = 0.025), proving that positive attitudes positively influence the Entrepreneurial intention of students. This observation highlights the role of individual attitudes and assessments of entrepreneurship in shaping intentions. Conversely, the PBC (B=0.107, t=1.499, p=0.134) and SN (B=0.134, t=1.634, p=0.102) to EI paths are positive but inconsistent with the 5% level of significance. It means that the perceived ability to control entrepreneurial behaviour, as well as social pressures, is not decisive in intention in this model.

The study's findings reveal that attitude significantly positively affects entrepreneurial intention, but perceived behavioural control and subjective standards do not serve as major indicators of entrepreneurial intention among students. This indicates that students' self-assessment and perception of entrepreneurship are more significant than societal pressure or the perceived capability to initiate a firm. This outcome in Odisha might be ascribed to restricted access to financial resources, insufficient entrepreneurial infrastructure, apprehension regarding company failure, and a desire for stable employment, such as government positions. Despite possessing favourable attitudes toward entrepreneurship, students may lack confidence in their capacity to initiate a business due to financial and institutional obstacles. In Odisha, familial and social networks generally favour secure employment over entrepreneurship, hence diminishing the impact of subjective standards on entrepreneurial intentions. Consequently, the entrepreneurial ambition of students in Odisha is predominantly influenced by personal attitude rather than social pressure or perceived behavioural control.

Table 10: R-Square Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P-values
EI	0.076	0.102	0.050	1.513	0.130

Source: Self-compiled.

Table-10 shows the R-square of Entrepreneurial Intention (EI). The initial sample R^2 is 0.076, the sample mean is 0.102, and the standard deviation is 0.050. The t-value of 1.513 and the p-value of 0.130 are lower, suggesting that the explained value is statistically insignificant at the 5% level. The implication of the result is that the predictors, attitude, perceived behavioural control, and subjective norms provide an explanation of 7.6% EI variation, which is regarded as a weak explanatory power. The implication of this is that even though the model explains a portion of the variance in the entrepreneurial intention, a significant portion is yet to be explained.

Table 11: PLS Predict LV Summary

	Q^2 Predict	RMSE	MAE
EI	0.031	0.999	0.738

Source: Self-compiled.

Table 11 gives the predictive ability of the model for entrepreneurial intention (EI). The Q^2 predicted value of 0.031 is positive, and this implies that the model possesses some small level of forecasting abilities of EI, but the effective impact is modest. Any value with a positive sign in PLS-SEM is an indication of a model that is doing better than the naive benchmarks, but when the values are near to zero, the model has limited predictive power. Root Mean Square Error (RMSE = 0.999) and Mean Absolute Error (MAE = 0.738) also help to understand the characteristics of the prediction better. Both values indicate that the error in prediction is still high, which means that the model is not very precise in predicting the results of EI.

5. Conclusion

The research investigated the antecedents of the "Entrepreneurial Intention" (EI) in graduate students in Odisha via what is known as the Theory of Planned Behaviour (TPB). It was observed that the measurement model provided resultant accepted reliability and validity of the latent constructs: Attitude (ATT), Perceived Behavioural Control (PBC), Subjective Norms (SN), and "Entrepreneurial Intention" (EI). The outer loadings, composite reliability, and discriminant validity scores were mostly within reasonable standards, which test the reliability of the constructs.

Only attitude had a statistically significant relationship with "entrepreneurial intention" (b = 0.141, p = 0.025), and it means that the more the students had positive attitudes toward entrepreneurship, the more likely they were to express entrepreneurial intention. Nevertheless, PBC and SN had negligible effects, indicating that control perceptions and social influence do not significantly determine outcomes in this scenario. The model accounted for 7.6 per cent of the variance in EI (R^2 = 0.076), which indicated a weak prediction performance.

The results of the study indicate that attitude is the only significant predictor of entrepreneurial intention, while subjective norms and perceived behavioural control are not significant. However, the model explains only 7.6% of the variance in entrepreneurial intention, indicating weak predictive power; therefore, conclusions should be interpreted cautiously. The results suggest that in the Odisha context, students' entrepreneurial intentions are influenced more by personal attitudes rather than social pressure or perceived control over entrepreneurial behaviour. This may be due to limited entrepreneurial infrastructure, lack of financial support, inadequate incubation facilities, and a traditional preference for salaried employment in the region. The low R^2 value further suggests that other important factors, such as entrepreneurial education, access to finance, institutional support, personality traits, and risk-taking ability, may play a significant role in shaping entrepreneurial

intention. Therefore, future research should incorporate these variables to develop a more comprehensive model of entrepreneurial intention.

The findings highlight the necessity of campaigns promoting a constructive attitude toward entrepreneurship among students. To have a favourable impact on the attitudes of students, the educational institutions and policymakers must work on establishing experiential learning settings and an entrepreneurial exposure programme. The insignificance of the PBC and SN would mean that students may view entrepreneurship as a personalised decision and a personal drive, but not directed by the factors of social or perceived controls. This observation can transform the design of the programmes to be more ideation-centred and mindset-centred.

The study carries several limitations, even though it makes its contributions. The students were taken randomly from two districts of Odisha, and the findings' external validity is restricted to a wider geographical or cultural setting. The cross-sectional research also does not allow drawing a causal conclusion. Also, the low explanatory power ($R^2 = 0.076$) indicates that other important predictors, including personality traits, access to resources, role models, or entrepreneurial education, were not used in the model.

The future research may broaden the sample to other geographical areas and fields of study to make it wider in application. It is possible to enhance the study by including more TPB extensions, such as entrepreneurial self-efficacy, innovativeness, risk-taking propensity, and perceived barriers. The longitudinal designs would be capable of measuring how the entrepreneurial intention changes with time when there is an educational intervention or a change in socio-economic conditions. Moreover, the qualitative approaches can reveal the hidden factors of motivation and hindrances that are absent in quantitative models.

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