



# **Predicating entrepreneurial behavior on the basis of Theory of planned behavior: A PLS-SEM Approach**

**Dr. Tushar Chaudhari**

Associate Professor,

Seth Kesarimal Porwal College of Science and Arts and Commerce  
Kamptee.

## **Abstract**

Entrepreneurs are key for socio-economic prosperity of the country. It is necessary that the college students do take entrepreneurship as a career option. The perception of college students towards entrepreneurial behavior is the key for economic prosperity. This study is an attempt to implement TPB in university students. Previous researches were undertaken to investigate the effect of TPB variables on entrepreneurial intent. This paper does not restrain itself on entrepreneurial intent but entrepreneurial behavior was duly considered. For this purpose, a sample of six hundred and five students was taken. PLS-SEM was employed for scrutiny of the conceptual model. Findings revealed that attitude towards behavior, perceived behavioral control, and subjective norms have a

significant influence on entrepreneurial intention as well as on entrepreneurial behavior.

Keywords:- Entrepreneurial Behavior, TPB, PLS-SEM

## 1 Introduction

Entrepreneurs are the one who has the responsibility of fastening economic growth. According to (Chaudhari, 2021) Entrepreneurs act as promoter for economic development of a country. With globalization, an urge to create or promote entrepreneurs has elevated. Governments across the globe are making valiant efforts to promote entrepreneurs. The Indian government has also shown keen interest in this area. (Gordon, E, 2017) pointed out that a person aspiring to become an entrepreneur must have a set of behavioral traits and mental aptitude. (Ruiz et al., 2020) suggest that Entrepreneurship is a method to helping social, cultural and economic changes in the modern world, inclined by technological advancement. In their research (Ali & Jabeen, 2022) have concluded that attitude towards entrepreneurship, SN and PBC have great influence over founding startups. In the latest years, entrepreneurship has emerged as the most vibrant field (Audretsch, 2012). Entrepreneurship has been the topic of research for many academicians, researchers and Government institution. (Cooper et al., 1988) believes that when an entrepreneur starts a business personalities he believe it to be risky. (Aboud, 1971) recited that there are certain characteristics which differentiates successful entrepreneurs from others. These characteristics can be measured by

specialized test. In the revelation of (J. N. F. Krueger & Carsrud, 1993) many renowned Community psychologists and marketing investigators have been exploiting the Ajzen-Fishbein behavioral intention model of with abundant triumph in applied and basic research. The young ignited minds have the responsibility to become entrepreneurs and activate the social and economic movement.

The theory of planned behavior is a foundation to analyses an entrepreneurship intention, and behavior. During research, it was found that most of the researchers have restricted themselves to entrepreneurial intention. Research to evaluate entrepreneurship behavior on TPB are very less. Hence this research has adopted a cognitive approach towards studying the theory of planned behavior also evaluating its effect not only on entrepreneurial intention but also entrepreneurial behavior. College students are the base on which entrepreneurship invader is based. The present study is built on data collected from college students. The assembly of research paper is; the theoretical background and hypotheses are stated in the opening segment, In the second portion conceptual model is build it will also contain the description of measures and analysis. The findings are demonstrated in the next segment. The paper ends with limitations and scope for further study.

## 2. Theoretical Foundations and hypotheses development

### Theory of planned behavior

(Zhang, 2018) signposted the fact that the theory of planned behavior (TPB), has come from TMA i.e. theory of multi attribute attitude & TRA i.e. theory of reasoned action. (Noermijati et al., 2018) specified that theory of planned behavior is addition of Theory of Reasoned Action. (George, 2014) pointed out that TRA has the helplessness in dealing with behaviors over which individual have incomplete volatile regulation. In judgment of (Sanne et al., 2018) Theory of planned behavior propagated by Ajzen in 1991, adapts the theory of reasoned action by accumulation of perceived behavioral control (PBC) which increases the capability of model in clarifying variations in behavior which is not utterly voluntary. (Columbia et al., 2007) stated that the Theory of planned behavior demonstrates that proximal cause of volitional behavior is individual's intentions to engage. Assessment of (Chatzisarantis et al., 2007) suggest The theory of planned behavior leads to an intentional behavior model which yields to the fruitful expectation of social behavior in several contexts. In the conviction of (Kautonen et al., 2013) The Theory of TPB is renowned socio-psychology theory consumed to describe numerous human behavior allied portent. The theory of planned behavior has arisen as the momentous and widespread conceptual model employed for analysis of human actions (ICEKAJZE, 2002). (Manstead & Parker, 1995) pointed out that the theory of planned behavior, suggest that behavioral intention is an instant constituent of human behavior.

(Bosnjak et al., 2020) mentioned that in our theory there are three kinds of consideration viz i) behavioral belief i.e. belief in likely consequences; ii) normative belief i.e. belief in normative concessions of other individual; iii) control belief i.e. belief of occurrence of factors which may expedite act of performance. The theory of planned behavior believes that the best part of conduct is persistence which is influenced by factors viz attitude, subjective norm, and perceived behavioural control (White et al., 2015). The theory of Planned Behaviour model is the impact on direct as well indirect behaviours through behavioural intentions (Williams & Conners, 2018).

## 2.1 Attitude

In the words of (T. T. H. Nguyen et al., 2019) attitude towards particular behavior is the notch to which the specific person has favorable/unfavorable perception towards it. In their research (Aydın & Burnaz, 2016) states that when one finds something useful in a particular thing he develops favorable attitude towards it. They also went on to state that these individual uses the product which benefits they want to avail. In the words of (Yousafzai et al., 2007) attitude is the outcome of beliefs of a person. In their research constructed on TPB (Maes et al., 2014) states that personal attitude is the valuation of the consequences of individual intended behavior which denotes whether he likes or may dislike that particular behavior. (Kejela & Porath, 2022) pointed out that attitude is a basic pillar of decision making. (Ajzen & Fishbein, 1977) indicated that it is logical that a person possessing a favourable attitude executes favourable behaviour and vice versa. The theory of planned

behavior states that attitude is point to which an individual has a favorable/unfavorable appraisal to a precise behavior (Ajzen, 1991b). (N. F. Krueger et al., 2000) reported that attitude influences actions by their impact on intentions, while intention as well as attitude depends upon the situation and person. In their research (Robinson et al., 1991) propagated that attitude is the better tool to describe an entrepreneur than any demographic characteristics.

There are several previous researches which were conducted to mandate to evaluate entrepreneurial intention based on TPB. Among those some of the prominent (Wang et al., 2020);(Murugesan & Jayavelu, 2015); (Robledo et al., 2015);(Munir et al., 2019);(Amofah & Saladrighes, 2020); (Anwar et al., 2020);(Kautonen et al., 2013); (Al-Mamary et al., 2020); (do Paço et al., 2011); (Shah & Soomro, 2017) have verified the significant relationship between attitude towards entrepreneurship and entrepreneurial attitude. While empirical research by (do Paço et al., 2011) disclosed a noteworthy influence of personal attitude and PBC on EI. In order to validate if the same relation is found in the current set of data following hypotheses are formulated

**H<sub>1</sub> There is a significant relationship between attitude towards behavior and entrepreneurial intention.**

**H<sub>2</sub> There is a significant relationship between attitude towards behavior and Perceived Behavioral Control**

## 2.2 Perceived Behavioral Control

(Ajzen, 2014) pointed out that Perceived behavioral control denotes the apparent comfort or distress in an accomplishment of certain behavior. It also suggests that past experience as well as anticipation affects PBC. Perceived behavior control signifies control over execution of behavior (Ghany et al., 2009). In the judgement of (J. N. F. Krueger & Carsrud, 1993) perceived behavioral control, replicates behavior which is generally controllable. In their determination to find the moderating effect of PBC in theory of planned behavior (Castanier et al., 2013) stated that the perceived behavioral control has two basic component viz “perceived control or controllability” and “perceived difficulty”. The theory of planned behavior is supposed to be better version of theory of modified theory as it takes into consideration perceived and actual control over behavior (Ajzen, 1985). In the opinion of (ICEKAJZE, 2002) perceived behavioral control segment was advanced so as to tackle the situation where people may lack control over behavior. (Cristea & Gheorghiu, 2016) revealed that in theory of planned behavior; PBC is too a primary indicator. Research based on theory of planned behavior conducted by (De Groot & Steg, 2007); (Otchengco Jr. & Akiate, 2021); (Soomro et al., 2018); (Tseng et al., 2022); (Kautonen et al., 2013); (Anwar et al., 2020); (Robledo et al., 2015); (Maes et al., 2014) found the significant relationship between perceived behavioral control and entrepreneurial behaviour. The research conducted by (Shah & Soomro, 2017); (do Paço et al., 2011) showed the adverse results. Based on this debate the following hypothesis is formulated

**H<sub>3</sub> There is a significant relationship between Perceived behavior control and entrepreneurial Behavior.**

## **2.3 Subjective Norm**

SN is apparent pressure from society to accomplish or not to accomplish certain performance (Ajzen, 1991b). Subjective norm can boost enactment of the behavior of people having control. According to (Conner, 2020) subjective norms assess social pressures which individual felt while performing or not performing certain task. (Chatzisarantis & Biddle, 1998) believes that subjective norm is an example of an inner psychological occurrence that represents control and not independence. In the words of (Ryan E. Rhodes et al., 2002) subjective norms involve person's trust about whether people substantial to him thinks about him performing certain task. (Ajzen, 1985) mentioned that subjective norms are normative beliefs. In their research (Armitage & Conner, 2001) concluded that subjective norm paradigm is usually establish a feeble forecaster of intentions. Some significant empirical research based on TPB viz (Al-Mamary et al., 2020); (Kautonen et al., 2013); have established a positive relationship between subjective norms and entrepreneurial intention. In the empirical research carried out by (Robledo et al., 2015); (Wang et al., 2020); (Shah & Soomro, 2017); (do Paço et al., 2011); (Conner, 2020); (Krithika & Venkatachalam, 2014); (Yousaf et al., 2015) have recognized the positive relationship between subjective norms and entrepreneurial intention. While the research piloted by (Al-Mamary et al., 2020); (Fenech, 2019); have illuminated

undesirable effect. (Lortie & Castogiovanni, 2015); (do Paço et al., 2011); have found significant relationship between subjective norms and attitude towards behaviour. On the other hand, (Ryan E. Rhodes et al., 2002); have found adverse relationship between subjective norms and attitude towards behavior. In the research carried by eminent scholars all around the globe (Robledo et al., 2015); (Ryan E. Rhodes et al., 2002);(Wang et al., 2020); (do Paço et al., 2011); (Lortie & Castogiovanni, 2015); have found the significant relationship between subjective norms with Perceived Behavior control. In Sports and exercise research, the researcher (R E. Rhodes & Courneya, 2003) found a threshold of positive response between Subjective Norms and Perceived Behavioral Control. Based on above discussion following hypotheses were framed

**H<sub>4</sub> There is a significant relationship between subjective norms and entrepreneurial intention.**

**H<sub>5</sub> There is a significant relationship between attitude towards behavior and subjective norms.**

**H<sub>6</sub> There is a significant relationship between perceived behavioral control and subjective norms.**

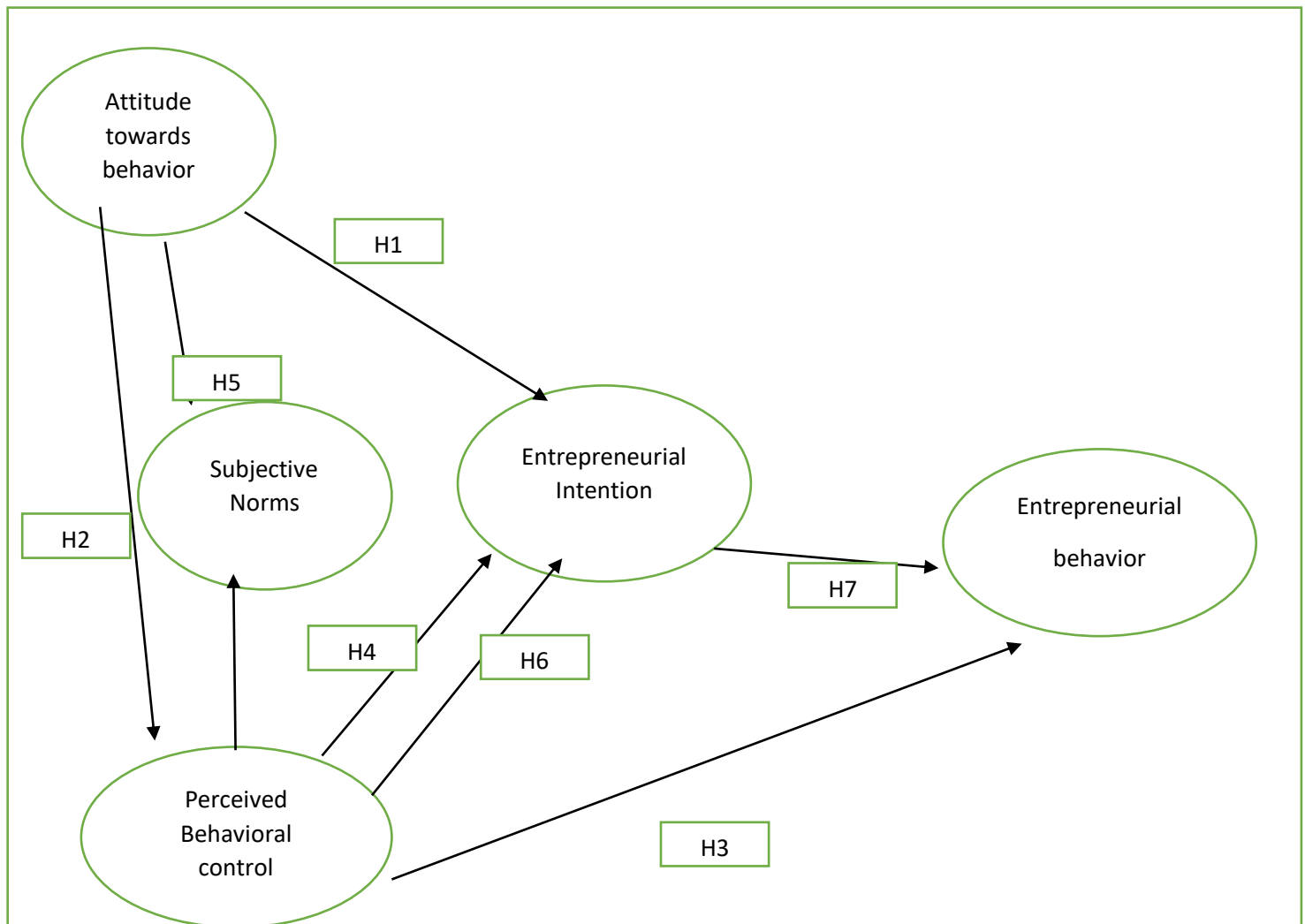
## 2.4 Entrepreneurial behavior

In one of the critical research (Manstead & Parker, 1995) have concluded that in spite of considerable success of TPB many things have to be resolved while predicting rapport between intention and behavior. Also (Armitage & Conner, 2001) has stated that TPB is effective in establishing the relationship between Entrepreneurial Intention and Entrepreneurial Behavior. Research conducted by (Farooq, 2018) has driven the conclusion that Entrepreneurial behavior is an outcome of the high degree of entrepreneurial attitude, subjective norms, social support, perceived behavioral control. (T. T. Nguyen, 2020); (Kautonen et al., 2013); (Farooq, 2018); have found strong relationship between EI and EB. Hence the following hypothesis is formulated

**H<sub>7</sub> There is a significant relationship between Entrepreneurial Intention and Entrepreneurial Behavior**

## 3 Research Methodology

A diagrammatic illustration of the Theory of planned behavior is given in Figure 1. According to this hypotheses were framed. (Hair Jr et al., 2021) pointed out that the smart PLS enables researcher to estimate complex relationship among multiple dependent and independent variables . Hence smart PLS 4.0 is utilized for data investigation and hypothesis testing.



Source :- (Ajzen, 1991a)

The research is based on exploratory research. For the said research questionnaire was distributed among the colleges of the following universities. In the opinion of (Weston & Gore, 2006) SEM requires minimum of two hundred respondents. The strata sampling method was utilized for the same. Details of the primary data collection is given in Table 1.1.

**Table no. 1**

Name of the university	Number of distributed questionnaires	Valid questionnaire
RashtraSant Tukdoji maharaj Nagpur university	240	232
Gondwana University	200	185
Sant Gadge Baba Amaravati university	200	188
Total	640	605

Source :- Primary data collection

**Table No. 2**

The demographic profile of respondents is as follows

Variables	Demographic information	Frequency	Percentage
Gender	Male	429	71
	Female	176	29
Age	0-20	387	64
	22-24	193	32
	24 and above	25	04
Education Level	Graduate	485	80
	Post Graduate	105	17
	Above Post Graduate	15	03

Field of studies	Science	124	20
	Arts and Humanities	189	31
	Commerce	220	36
	Agriculture	14	02
	Medicine	21	03
	Engineering	30	05
	Others	07	03
Residence	Rural	354	58
	Urban	251	42

Source :- Constructed by author

The demographic profile suggest that the majority of responses are from the conventional educational background i.e. arts, commerce and science. It is often found that these students are not keen to take entrepreneurship as a career.

#### 4 Results and Discussion

(Henseler et al., 2009) stated that the measurement model is applied for augmentation of constructs' reliability as well as validity. Appraisal of the measurement model is accomplished through the valuation of the reflective measurement model. The said appraisal embraces composite reliability to assess internal consistency, outer loadings, reliability, and Average variance extracted are being utilized to calculate convergent validity. Whereas to assess discernment validity Fornell-Larcker criterion and cross loadings are being used.

## 4.1 Convergent reliability

The first step used in the evaluation of composite reliability is a measurement of internal constancy. In observation of (Hair et al., 2014) Cronbach's provides an appropriate measure of internal consistency. In the opinion of (Bujang et al., 2018) the anticipated level of Cronbach's alpha ought to be a minimum 0.7. Table number 1 shows the said value surpass level of benchmark 0.7. Also results of convergent reliability are shown in the Table 3. In the assessing models, loading of every indicator linked with latent variable have been calculated and equated with inception value. The indicator reliability should be higher than 0.7 then only then it is acceptable (Hair et al., 2014). The table shows that most of the indicator loadings on their respective latent variable are more than 0.7. (Hair et al., 2014) CR coefficient is also applied for assessing paradigm reliability which has to be more auxiliary than 0.7. The following table displays CR for an entire latent variable in the measurement model is higher than 0.7. According to (Vinzi et al., 2010) AVE of latent variable should be 0.5. The table number 3 appearance points that AVE of constructs were upper than this perimeter. So, the convergent validity is accepted.

**Table No 3**

	Cronbach's alpha	rho_A	Composite reliability	Average variance extracted (AVE)
Attitude towards behaviour	0.939	0.940	0.951	0.765
Entrepreneurial Intent	0.910	0.913	0.93	0.689
Entrepreneurship Behaviour	0.940	0.942	0.954	0.806
Perceived Behavioural Control	0.899	0.907	0.922	0.665
Subjective norms	0.886	0.887	0.929	0.814

Source :- Constructed by author

Convergent validity was assessed by means of three standards suggested by Fornell & Larcker (1981): (1) All factor loadings should be substantial having valuation more than 0.7, (2) construct consistencies should score further than 0.7, and (3) AVE ought to be extra than 0.5.

## 4.2 Discriminant validity

(Hair et al., 2014) stated that DV shows how much a particular construct is dissimilar to other constructs. In understanding of (Fornell & Larcker, 1981) Discriminant validity is level to which particular latent

variable classifies from extra dormant variables. (Nchise, 2012) pointed out that in the mandate to gain lawful discriminant validity square root of AVE for all construct should be further than connection among construct. (Wan, 2013) pointed out that for the discriminant validity the two measures are widely used viz square root of AVE and the association of a latent construct.

### 4.3 Fornell-larcker Criterion

(Ab Hamid et al., 2017) signifies that Fornell –Larcker criterion is used for comparison of AVE i.e. Average Variance extracted (AVE) with the correlation of latent constructs. In vision of (Hilkenmeier et al., 2020) Fornell–Larcker can be developed to distinguish dearth of uniqueness in the multidimensional instruments. The Fornell-Larcker criterion establishes discriminant validity square root of AVE of each construct should ideally be superior than correlation with any other construct in the understood framework (Rasoolimanesh, 2022). The following table number 4 shows the desire results.

**Table Number 4**

	Attitude towards Behaviour	Entrepreneu rial Behaviour	Entrepreneu rial Intention	Perceiv ed Behavio ur Control	Subjecti ve Norms
Attitude towards Behaviour	0.875				
Entrepreneu rial Behaviour	0.83	0.898			
Entrepreneu rial Intention	0.684	0.738	0.830		
Perceived Behaviour Control	0.756	0.803	0.809	0.816	
Subjective Norms	0.779	0.793	0.691	0.771	0.902

Source :- Constructed by author

#### 4.4 HTMT

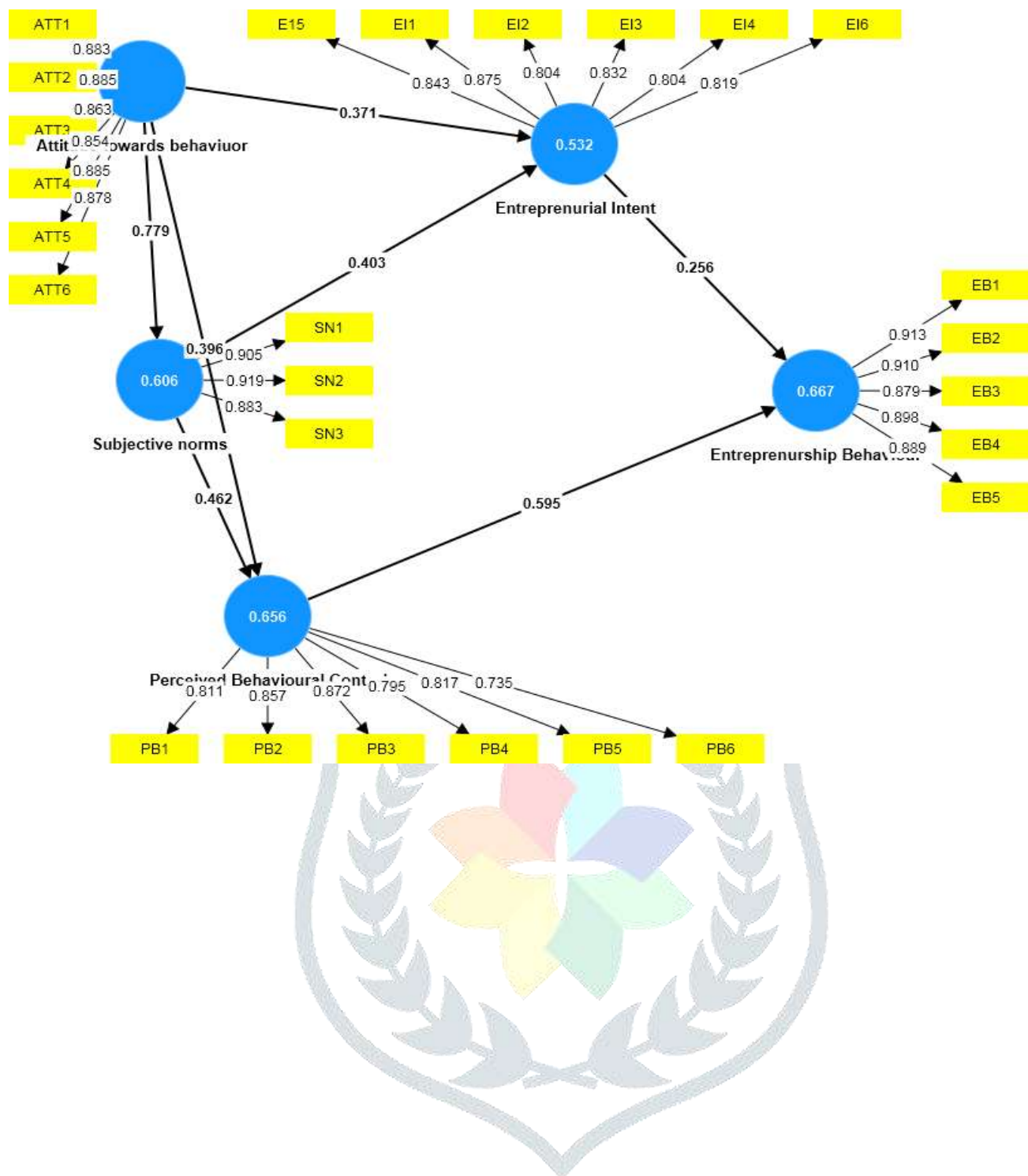
(Ab Hamid et al., 2017) has concluded that HTMT is used to see that the elucidation of casual effect in the demonstrating analysis is not

ambiguous. In their research (Voorhees et al., 2016) propagated that HTMT values closes to 1.0 reflects that there is volition of the discriminant validity. They also state that HTMT values should range from 0.85 to 0.90.

**Table number 5**

	Attitude towards Behaviour	Entrepreneu rial Behaviour	Entrepreneu rial Intention	Perceiv ed Behavio ur Control	Subjecti ve Norms
Attitude towards Behaviour					
Entrepreneu rial Behaviour	0.881				
Entrepreneu rial Intention	0.737	0.792			
Perceived Behaviour Control	0.816	0.865	0.896		
Subjective Norms	0.851	0.867	0.767	0.857	0.874

Source :- Constructed by author



**Table number 6 Path Analysis**

Hypothesis		Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values	Remarks
H1	Attitude towards Behaviour -> Entrepreneurial Intention	0.371	0.369	0.058	6.413	0.00000	Supported
H2	Attitude towards Behaviour -> Perceived Behaviour Control	0.396	0.368	0.03	25.052	0.00000	Supported
H3	Perceived Behaviour Control ->	0.595	0.597	0.049	12.03	0.00000	Supported

	Entrepreneurial Behaviour						
H4	Subjective Norms -> Entrepreneurial Intention	0.403	0.404	0.056	7.218	0.00000	Supported
H5	Attitude towards Behaviour -> Subjective Norms	0.779	0.778	0.055	8.286	0.00000	Supported
H6	Perceived Behaviour Control -> Subjective Norms	0.462	0.462	0.055	7.693	0.00000	Supported
H7	Entrepreneurial Intention -> Entrepreneurial Behaviour	0.256	0.256	0.047	5.498	0.00000	Supported

Source :- Constructed by author

The figure clicked from SMART PLS 4.0 and table shows that all the hypothesis were accepted. There is evidence that attitude towards behavior is significantly related with an entrepreneurial intention ( $\beta$ : 0.371), attitude towards behavior is significantly related with PBC ( $\beta$ : 0.396), PBC is significantly related with Entrepreneurial behaviour ( $\beta$ : 0.595), subjective norms is significantly related with entrepreneurial intention ( $\beta$ : 0.403), Attitude towards behaviour is significantly related with the subjective norms ( $\beta$ : 0.779), Perceived Behavioural control is significantly related with the subjective norms ( $\beta$ : 0.462) and entrepreneurial intention is also significantly related with the entrepreneurial behaviour ( $\beta$ : 0.256). Attitude is the fundamental requirement for conducting any process. The same holds true with an attitude towards behaviour and entrepreneurial attitude. This research shows the similar result as of (Ferreira et al., 2012); (Boubker et al., 2021); (Gieure et al., 2020). Like (Otchengco Jr. & Akiate, 2021) this research has found the positive relationship between the attitude towards behavior and perceived behavioral control. Researchers have dissimilarities in opinion about the relationship between perceived behavior control and entrepreneurial behavior. However, the current research found the significant relationship between these two. The research conducted by (Yousaf et al., 2015) have found the significant relation between attitude towards behavior and subjective norms. The same result was validated in current research. This research endorses the

result yield by (Shah & Soomro, 2017) where they found the positive relationship between attitude towards behavior and subjective norms.

## 5 Conclusion

The said research is conducted to answer questions related to aspects determining entrepreneurial behaviour. For this purpose, The Theory of planned behaviour was utilized. The empirical analysis done in this research is in tune with the theory of Planned behaviour and other research in the same segment stating attitude towards behaviour, subjective norms and PBC are significant predictors of entrepreneurial intention. These results will be useful to get insight into college level students behavior toward entrepreneurship. The conclusion drawn by (Manstead & Parker, 1995) stating that the theory of planned behavior is an expedient model for assessing the social behaviour is hereby deep-rooted in current research.

## 6 Limitations and scope for further research

The first drawback which comes across is a geographical limitation. Same research with the extensive geographical location will have more insight into the existing field of knowledge. The sample contains both urban and rural population. Further studies can be evolved which will concentrate on rural young ignited minds. Also research on types of entrepreneurs like agricultural entrepreneurs can be undertaken.

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