



Impact of Cognitive and Emotional Bias on Students' Entrepreneurial Intention

Reshma K.J^{1*}, Dr. Ganesaraman K²

^{1*}Ramaiah University of Applied Sciences

²Ramaiah University of Applied Sciences

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ARTICLE INFO	ABSTRACT
	<p>Entrepreneurial Intentions are not expanding as anticipated. In the growing economy, it is difficult to make any rational decision with the available information. The study focuses on understanding the impact of Cognitive and Emotional Bias on student's Entrepreneurial Intention. The primary data was gathered from 370 students from different higher educational institutions in India. PLS-SEM was used to explore the impact of cognitive and emotional bias on entrepreneurial intention among the students. Multilayer Perceptron (MLP) was used to rank the results obtained from SEM based on the normalized importance. The results from the SEM and MLP ascertain that cognitive bias has more impact on EI. The attributes of cognitive bias overconfidence, loss aversion, and representativeness influence the students' entrepreneurial intention. The study found that cognitive and emotional biases help individuals make more informed decisions, assess opportunities realistically, and enhance their overall entrepreneurial intention. The study on Entrepreneurial Intention has a practical implication for higher educational institutions and policymakers. Firstly, this study helps higher education institutions plan their curriculum, specifically addressing cognitive biases, emotional biases, and decision-making in entrepreneurial contexts. Secondly helps the policymakers develop a framework to overcome the cognitive and emotional challenges associated with entrepreneurship.</p> <p>Keywords: Cognitive Bias, Entrepreneurial Intention, Emotional Bias, Higher Educational Institutions, Students.</p>

INTRODUCTION

Entrepreneurship is essential to economic growth (Simon et al., 1999). However entrepreneurial behavior is not expanding as anticipated (Randerson et al., 2020). The Global Entrepreneurship Monitor report states that India is the easiest country to start entrepreneurship with its skilled and experienced people and opportunities still the entrepreneurial intention rate in India has come down to 18.1% from 20.3% in 2020-21 (GEM Global Report, 2022). About 54.1% of youth have reported that they cannot start a business due to fear of failure (GEM, 2022). Entrepreneurs extensively depend on biases in their decision-making process, more than non-entrepreneurs (Abatecola et al., 2022). Biases permeate decisions in entrepreneurship (Zhang & Cueto, 2017b) 65 Biases combine cognitive and emotional factors in decision-making (Shepherd et al., 2015). Analyzing the cognitive and emotional biases of entrepreneurs yields an interesting insight into their Entrepreneurial Intention (Hean Tat Keh Maw Der Foo Boon Chong Lim, 2002) (Zhang & Cueto, 2017). Biases generally have a negative perception in the entrepreneurship literature (Zhang & Cueto, 2017). Cognitively biased thought processes produce false conclusions or presumptions and biased judgments that result in significant errors (Forbes 2005, n.d.). Hence this study specifically looks at the effects of cognitive and emotional biases on entrepreneurial Intention.

In the growing economy, it is difficult to make any rational decision with the available information. In such a situation cognitive bias and emotional bias become relevant in Entrepreneurial Intention creation (Zhao & Xie, 2020). Studies on cognitive biases in several disciplines have stated conflicting results (Kahneman, 2003). Not much attention was given in previous studies to cognitive and emotional biases as these generally had a

negative impact (Krans et al., 2019). But entrepreneurial traits are unique since they are based on independently acquired thought and judgment (Wang et al., 2019). Therefore, there is still room for more research on the variations in entrepreneurial cognition that people exhibit. Without taking into account the origins of cognition, it is inappropriate to utilize cognitive mechanisms to predict who will decide to become an entrepreneur. Perez-Lopez et al. (2019) highlight the crucial significance that contextual factors play in entrepreneurship cognition theory by pointing out that the central focus of the theory should be on cognitive characteristics and how they affect people's attitudes, intentions, and behavior (Zhao & Xie, 2020).

A previous study on Entrepreneurial Intention (EI) considered the theory of planned behavior (Ajzen, 1991). Where entrepreneurship was measured as a planned behavior of the intention and defined EI as "mental representations of a person's propensity to start a business" (Obschonka et al., 2015; Gorgievski et al., 2018). Whereas Bagozzi (1992) points out that attitude theory explains social behavior and considers it as a single-dimensional attitude. However, some studies have discovered that individual decisions are affected by both reason and emotion at different stages of entrepreneurship (Cardon et al., 2012), and there are notable variations in the influence of different types of emotions on the evaluation of entrepreneurial opportunities (Wolfe and Shepherd, 2015). Hence this study has adopted the self-regulating attitude this study proposes Cognitive bias as an "individual's perceptual deviation from rationality when thinking, reasoning, and making decisions" (Alos-Ferrer et al., 2016; Domeier & Sachse, 2016; Marchetti et al., 2019, Zhao & Xie, 2020) Emotional biases stem from impulse or intuition and result from reasoning influenced by feelings (Kumar et al., 2023). Figure 1 displays the conceptual framework for this study.

Literature Review

The basic theory of behavioral bias, the Prospect Theory, was developed by Kahneman and Tversky (1979) (Kahneman and Tversky, 1979). Behavioral bias is an individual's perceptual deviation from rationality when thinking, reasoning, and making decisions (Alos-Ferrer et al., 2016; Domeier & Sachse, 2016; Marchetti et al., 2019, Zhao & Xie, 2020). A behavioral bias is the 'predisposition towards error (H. Shefrin, 2007) (Banerji et al., 2021). There are two types of biases, cognitive and emotional (Pompian, 2011). Cognitive bias happens by wrong reasoning, while emotion bias is by sudden emotions and insights (Heybati, Roodposhti & Moosavo, 2011) (Loebiantoro et al., 2021), Emotional biases stem from impulse or intuition and result from reasoning influenced by feelings (Kumar et al., 2023). The literature on entrepreneurship has a negative perception of bias (Zhang and Cueto, 2017), with many assumptions and inferences. Which may end up in committing the mistakes (Forbes, 2005; Baron, 1998). The present study has attempted to understand whether cognitive bias positively or negatively impacts entrepreneurial intention. In this study, the author has identified different biases confidence, representativeness, and loss aversion, and grouped them under cognitive bias and affection, resistance to stress, risk-taking propensity, insecurity, and individualism into emotional bias. The gap that exists between the literature is that most of the study is done on the investment decision of an individual and considered from an investor's perspective (Sattar et al., 2020). Behavior is defined as "how people act" (Robbins & Coulter, 2007). Biases permeate decisions in entrepreneurship (Zhang & Cueto, 2017b). Cognitive bias plays a distinct role in creating EI (Hahn et al., 2019). According to Kumar et al. (2023), emotional bias is the outcome of reasoning that is influenced by feelings and originates from impulse or intuition. There hasn't been enough focus on the part of entrepreneurial cognitive bias (Zhao & Xie, 2020). Research attempting to understand the possible involvement of emotion in the entrepreneurial process has been less methodical. (Cardon et al., 2012; Hu et al., 2017) (Zhao & Xie, 2020). Hence the study has developed a model by considering two different biases.

Entrepreneurial Intention

Entrepreneurship has been defined as "the creation of new enterprises". This definition reflects a growing awareness that entrepreneurship is a "process of becoming rather than a state of being". Instead of taking a process-oriented stance, earlier studies in entrepreneurship have frequently concentrated on determining the personal qualities or features that set entrepreneurs apart from the general population. The Theory of Planned Behavior (Ajzen, 1991; Shi et al., 2020) and Entrepreneurial Event theory (EET) (Krueger et al., 2000) are the commonly used theories in understanding entrepreneurial intention. Desirability, feasibility, and viability of the opportunities are the three factors that influence Entrepreneurship Intention. Similarly, various studies have identified the factors that impact Entrepreneurial Intention. Entrepreneurial research attempted to understand and identify the motivational factor behind the successful venture (Boyd & Vozikis, 1994). The intention is the successor of behavior (Wegner et al., 2020) But what stops such behavior from becoming an intention is the question. Entrepreneurial Behavior relies upon the insight of "desirability and feasibility". Desirability describes the personal and social attractiveness of starting the business whereas feasibility is the state in which one feels he is capable of initiating a venture (Krueger et al., 2000; Wegner et al., 2020). Studies failed to determine such motivational factors in creating entrepreneurial intention among students.

Cognitive Bias

Past literature has not given much attention to the Cognitive Bias (CB). Most of the studies considered cognitive bias from a negative perspective (Krans et al., 2019). The cognitive bias includes different dimension of bias like overconfident, representativeness and loss aversion. In the rapidly growing economy, it is quite difficult for any decision makers to take the decision based on the available information and grab the opportunities (Hahn et al., 2019). And once the decision is made there is no possibility of getting the same opportunities again. So, in such context cognitive bias plays an important role in the creation of Entrepreneurial intention. Cognitive bias is an individual's perceptual deviation from rationality when thinking, reasoning, and making decisions (Alos-Ferrer et al., 2016; Domeier & Sachse, 2016; Marchetti et al., 2019, Zhao & Xie, 2020). Individuals' perceptions of their internal and external environments will vary due to a variety of cognitive biases, which will ultimately impact their feelings of entrepreneurship. Overconfidence, representativeness and loss aversion are loosely connected to the cognitive bias of Entrepreneurs Kinari (2016). Overconfidence (OC) refers to the tendency to overestimate the chance of positive events (Chaudhary, 2018) (Zhao & Xie, 2020a). Loss Aversion (LA) is related to an individual's stronger desire to avoid losses than experiencing comparable gains (Tversky and Kahneman, 1979) (Chira & Adams, 2008). Representativeness (RP) is the tendency to make a judgment of a probabilistic nature (e.g., chances of a new business being successful) based on a limited set of specific information about the subject being judged, in this case, the new business (Tversky & Kahneman, 1973) (Dias et al., 2019). Even though past studies identifies that cognitive bias is having a negative impact, still we can consider it as a mechanism for making quick decisions, which is required in the entrepreneurship. And the decision made under cognitive bias does not require much time. Hence, we have tried to understand how the cognitive bias with its three subconstructs, overconfidence, representativeness and loss aversion will impact the Entrepreneurial Intention of the students.

Emotional Bias

Emotional Bias talks about the emotions held by the individual on entrepreneurship. (Cardon et al., 2012). It is understood from the previous studies that the emotional bias has not been given much attention and also literatures are lacking in explaining the role of emotion in the process of entrepreneurship (Cardon et al., 2012; Hu et al., 2017). Few studies have identified the impact of emotions in different stages of entrepreneurial Intention (Cardon et al., 2012). The emotions can be positive or negative on entrepreneurship (Doern and Goss, 2013) and these emotions can have a different impact on the outcomes. For the present study, we have considered Affection (AF), Individualism (ID), Insecurity (IS), Risk Taking Propensity (RT) and Resistance to Stress (RS) to measure Emotional Bias. Affection (AF) is defined as an individual's intentional and expression of feelings of closeness, care, and fondness for another (Evans, 2000). Individualism (ID) is defined as the independent, self-directed and having career goals and interests rather than group objectives (Shinnar et al., 2012) (Ali et al., 2023). Insecurity (IS) is defined as a sense of uncertainty, inadequacy and anxiety about ourselves, our performance and our decisions (Joseph P. Forgas, 2023). Risk Taking Propensity (RT) is defined as an individual's tendency to take chances, which researchers have suggested affects decision making (Bracha & Brown, 2012) (Yu & Chen, 2016). Resistance to Stress (RS) is the ability of the individual to handle and manage stress created by ambiguity (Frank Bezzina, 2020).

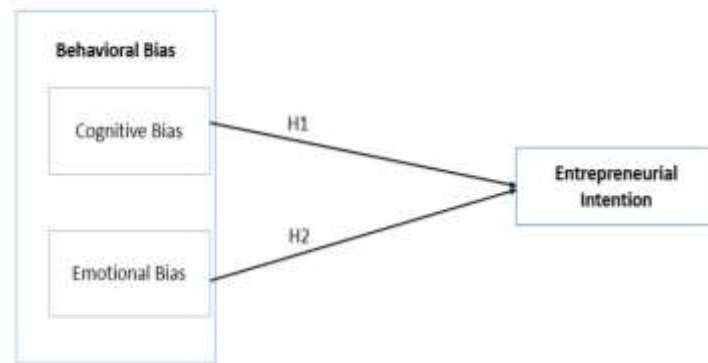
GAP IN THE LITERATURE

The literature analysis gave a general summary of different biases in entrepreneurship, important research gaps, and the necessity of doing in-depth studies on them. Firstly, we identified that Past literature has not given much attention to Cognitive Bias (CB). Most of the studies considered cognitive bias from a negative perspective (Krans et al., 2019). Secondly, it is understood from the previous studies that the emotional bias has not been given much attention and also there is literature lacking in explaining the role of emotion in the process of entrepreneurship. Based on the research gap we have developed the conceptual framework as mentioned in Figure 1.

THEORETICAL FRAMEWORK

After the literature assessment, research gaps were identified, and a theoretical framework covering several aspects of behavioral bias has been derived and presented in Figure 1. This theoretical framework comprises two important constructs namely cognitive and emotional bias leading to entrepreneurial intention.

FIGURE 1
CONCEPTUAL FRAMEWORK



OBJECTIVE, SCOPE, AND METHODOLOGY

The objective aims to identify the impact of cognitive and emotional bias on creating entrepreneurial intention among students of higher educational institutions. This research on the entrepreneurial intention of students has specific questions:

How does cognitive and emotional bias affect Entrepreneurial Intention among postgraduate students?

Considering the importance of entrepreneurial intention among the students the study has proposed the following hypothesis:

H01a Cognitive bias has an impact on students' entrepreneurial intention

Ha1a Cognitive bias has no impact on students' Entrepreneurial intention

H01b Emotional bias has an impact on students' entrepreneurial intention

Ha1b Emotional bias has no impact on students' Entrepreneurial intention

Scope

The study is limited to India because, according to the National Association of Software and Service Companies (NASSCOM, 2022), India is the third-largest start-up hotspot in the world and an emerging economy that is growing rapidly. The opportunities available to start a business in India are higher than in any other country. India has many startups with many opportunities and skilled and experienced people. Entrepreneurship is emerging as the preferred career choice for Indian Students (Tripathi et al., 2022). The country has 398 universities across different states. Since Bangalore is a Silicon Valley, it gained international recognition as a tech start-up hub for its ecosystem and the highest-ranked ecosystem in India (Global Startup Ecosystem Index, 2023). The study's focus is primarily in Bangalore.

Data Source

The data was collected from postgraduate students of different specializations in Bangalore. A random sampling method was adopted in collecting the data. The sample size was calculated by estimating the mean for a finite population considering a 5% margin of error. In total, 370 responses were received and used for the final analysis of CFA. The population of our study was PG students of 21 universities in Bangalore taken from the UGC list. Sample size when estimating mean: Formula to find the sample size for a finite population. The estimated sample size was 219 as per the sample calculation and we have received 370 responses in total and the same was used for further analysis.

Research Instrument

We adopted the structured questionnaire for data collection addressing the objectives as our method of data collection. Before the final survey was completed, a pilot study was carried out to ascertain the issues related to data collecting and to verify the validity and reliability of the questionnaire. This helped us in drafting the final questionnaire addressing the objectives. Based on the expert's opinion the Q sort was validated. The Cronbach's Alpha coefficient was used to evaluate the dataset's internal consistency. The questionnaire contained three sections: Demographic profile, Cognitive bias, and Emotional bias and Entrepreneurial Intention to study the behavioral aspects of entrepreneurial intention.

Data Validation

Q sort approach was implemented for validating the questionnaire. The Q-Sort is typically used with small groups or subject-matter specialists. The Three measurement models involved in Q-Sort are Raw Agreement, Cohen's Kappa Coefficient, and Hit Ratio. The Values obtained were not satisfactory to confirm the validity of the questionnaire in the first round of iteration hence the second round of iteration was run and the results of the second round of iteration were satisfactory and the questionnaire was validated for conducting the survey. Additionally, Cronbach's alpha was used to check the questionnaire's internal consistency. The alpha value for the constructs is mentioned in the below table:

TABLE 1
CRONBACH'S ALPHA

Construct	Cronbach's Alpha
EI	0.91
CB	0.77
EB	0.92

Cronbach's Alpha value for EI, CB, and EB is shown above the EI had an alpha value of .91, CB of 0.77, and EB of 0.92 which is considered excellent (Richard A. Zeller, 2005). All the constructs had an alpha value above the threshold value and were validated. The results confirm the acceptability of the further analysis. A full collinearity test is done by creating a block where all latent variables in the model are incorporated as predictors that point to a single criterion, a random variable (Kock & Lynn, 2012) and the value was less than 3.3 and state results are free of CMB. After these two validations, the researcher moved on to further analysis.

Method of Analysis

To examine the objective on the impact of cognitive and emotional bias on EI among students we have used Structural Equation Modelling analysis which is the common method adopted for casual relationship studies. Further Multilayer Perceptron (MLP) was used to perform the network training to understand the normalized importance of the variable and rank them based on the outcomes derived from PLS-SEM and MLP.

Structural Equation Modelling (SEM)

A process used to estimate the dependencies between a number of concepts or constructs that are represented by several measured variables and incorporated to a multiple variable model. It is a multiple regression and factor analysis combination. SEM is a tool used to examine the structural relationship between latent constructs and measured variables. With SEM, multiple and related dependencies can be examined in a single analysis. The two kinds of variables utilized in SEM are endogenous and exogenous variables. Dependent variables are equated with endogenous variables, and independent variables with exogenous variables. The theory explaining the relationships between the constructs can be represented by the structural model. Since, SEM examines the inter-relationships between elements, it is also known as causal modelling. A multivariate statistical analysis method for examining structural relationships is called PLS-SEM. Maximizing the covariance between the predictor latent variable and the dependent latent variable is the objective of partial least squares (PLS-SEM) analysis (Joe F Hair et al., 2011). A two-step procedure called the measurement model and structural model is used to evaluate the research model. (Joseph F Hair, 2010)

Multilayer Perceptron (MLP)

Based on the values of the predictor variables, the Multilayer Perceptron (MLP) procedure is a predictive model for one or more dependent (target) variables (IBM, 1989). A feedforward architecture is the name given to this configuration. The predictor variables are in the input layer, while the units are in the hidden layer. The value of each hidden unit depends on the predictors in a certain way. The output layer contains the responses. Ten-fold cross-validation was carried out, using 70% of the data for network training and the remaining 30% for testing, or gauging the trained network's prediction accuracy. (Chong et al., 2015; Chong, 2013a; Chong, 2013b; Leong et al., 2013; Sim et al., 2014; Tan, Ooi, Leong et al., 2014)

RESULTS AND DISCUSSION

Preliminary Analysis

First, the data screening was done to understand the normality of the data and then a preliminary Analysis of the variable was followed by a descriptive analysis of EI and then identified the inter-relationship of cognitive and emotional bias factors on EI and the normalized importance for ranking the results.

Data Screening

Before performing any statistical analyses, data must be screened and examined to make sure the distribution of these variables adheres to the various statistical studies' underlying assumptions. The gathered data was

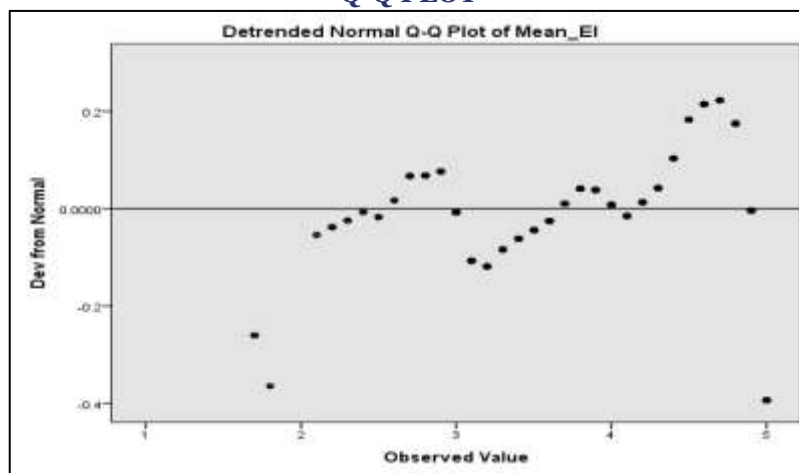
examined for the existence of Missing Values, Outliers, Normality, and Common Method Bias. No missing value was identified, outliers were identified with the box plot, and the outlier's values were replaced with the median value. To ascertain that the data distribution with the hypothesis was accurate, the normality test was performed. The population's normal distribution is the test's null hypothesis. Therefore, the Null Hypothesis is rejected if the P-value is smaller than the selected alpha level. Evidence suggests that the examined data are not normally distributed, and the p-value was below the alpha level.

TABLE 2
SHAPIRO-WILK STATISTICS

Shapiro-Wilk		
Statistic	df	P-Value at $\alpha=0.05$
0.975	380	0.000

Since the p-value in the preceding table is less than .05, the null hypothesis is rejected and concludes that the data is not normally distributed.

FIGURE 2
Q-Q PLOT



Further, it is evident from the above Q-Q plot visualization that the data is not normally distributed, confirming the rejection of the null hypothesis

Demographic Profile

The respondents are distributed based on their, gender, family business, program, and personality. The data are used to understand the frequencies and percentages and to visualize the graphs.

FIGURE 3
DEMOGRAPHIC PROFILE

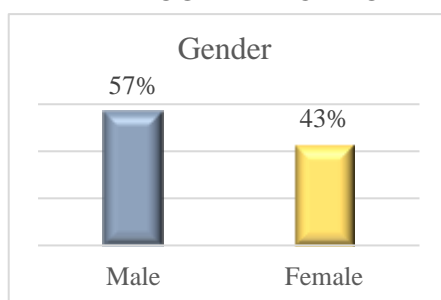
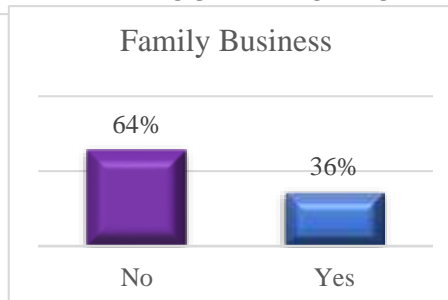
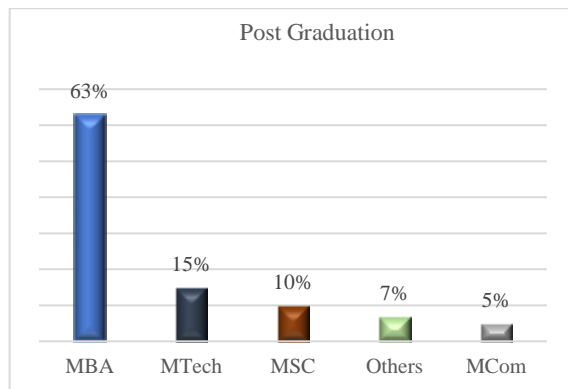


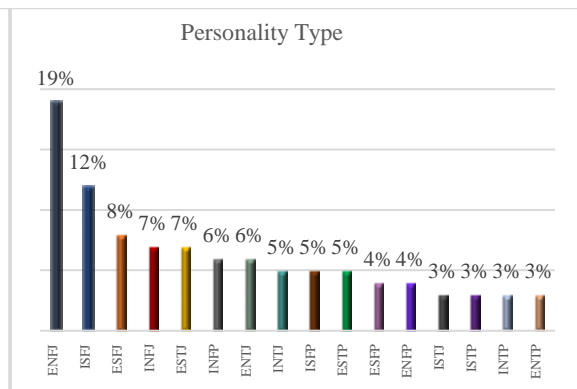
FIGURE 4
DEMOGRAPHIC PROFILE



**FIGURE 5
DEMOGRAPHIC PROFILE**



**FIGURE 6
DEMOGRAPHIC PROFILE**



From the above graphs among the respondents, 57% were male 43% were female 64% of the respondents had a family business and the majority of the students were from MBA and ENFJ was their leading personality type. *Does Cognitive and emotional bias have an impact on Entrepreneurial Intention among Students?*

Using Smart PLS-SEM, we produced the PLS-SEM results to comprehend the causal relationship between the variables. We used the measurement model and the structural model to examine the relationship between them.

ASSESSING THE MEASUREMENT MODEL

This section focuses on the reliability and validity of the measurement model. As per Chin (2010) and Hair et al. (2017), the measurement model assesses the relationship between the latent variables and the observed variable scores and their validity and reliability. The study comprises eight constructs. These constructs are Overconfidence (OC), Representativeness (RP), Loss Aversion (LA), Affection (AF), Individualism (ID), Insecurity (IS), Risk Taking Propensity (RT), Resistance to Stress (RS). These constructs are reflective, because of their high correction with each other. In the reflective measurement model, we look into the reliability and the validity. To check the reliability, we use composite reliability (CR) the average variance extracted value (AVE) (Chin, 2010; Hair et al., 2017).

The current study adopted the measurement model to assess the reliability, internal consistency, convergent validity, and discriminant validity (Hair et al. (2017), In the PLS-SEM measurement model the indicator reliability is assessed by checking the loading of the item associated with each construct is checked and the loadings should be above 0.70 since they show that the construct accounts for more than 50% of the variation of the indicator, giving appropriate items, and if loadings is between 0.4 and 0.7 are considered acceptable if CR and AVE cross the threshold (Hair et al., 2017). The measurement model results shown in Table 3, reflect that most of the indicator loadings were above 0.7. The items loading below 0.7 were considered depending on their content validity (Hair, Hult, Ringle, & Sarstedt, 2022). Table 3 shows that the value of Cronbach's alpha for each of the latent variables is greater than 0.7. in the model. Therefore, the results show that the measurement model is accepted due to its internal consistency and reliability.

The reflective measurement model is validated using convergent and discriminant validity. The variance in the construct is measured using AVE (Chin, 2010). Convergent validity must have AVE values of more than 0.5 for constructs to be deemed acceptable. (Chin, 2010; Hair et al., 2017). Table 3 shows that each of the constructs had an AVE value between 0.51 and 0.90. Therefore, the results show acceptable convergent validity for the latent variables.

TABLE 3**FACTOR LOADINGS, CRONBACH'S ALPHA, AND AVE RESULTS**

Constructs	Items	Factor Loading	Cronbach's Alpha	AVE
Overconfidence	I am confident about my intuitions and skills and my decision are based on faith	0.758	0.81	0.512
	I Overestimate the likelihood of positive events	0.601		
	When I make a decision, I am sure it is the best one	0.761		
	I use some degree of intuition when making decisions	0.737		
	I make decisions without fear of making mistakes	0.639		
	If I start my own business I can be successful in future (Over Confidence Biases)	0.779		
Representativeness	I believe prior Knowledge is good for evaluating a new investment opportunity	0.940	0.892	0.902
	I Judge probabilities based on resemblance	0.959		
Loss Aversion	I Estimate future returns based on risk and take decision	0.796	0.842	0.656
	I am more sensitive to losses than gain	0.791		
	When I experience a wrong decision, the regret feeling occurs	0.770		
	I decide quickly based on available data	0.877		
Affection	I am involved in the decisions that affect me and my work	0.763	0.734	0.549
	I try to get to know everyone on my team and their needs	0.825		
	I worry about others before making a decision	0.762		
	I can say that I make decisions more with my heart than with my head	0.593		
Individualism	I am willing to change it if there are credible objections	0.859	0.901	0.751
	I make decisions without consulting anyone and I try to persuade other people that I am right	0.846		
	I tend to block valuable opportunities for people and the company	0.820		
	I don't listen to others and don't consider their opinions before making a decision	0.936		
Insecurity	When I'm in doubt about the decision I have to take, I turn to people I can trust	0.792	0.889	0.677
	I feel anxious when I perceive a risk in decision-making.	0.760		
	When it comes to strategic decisions, no matter how experienced I am, I seek help or advice from someone more experienced	0.902		
	In some situations, I'm really suspicious and this makes it difficult to find alternative routes	0.794		
	I seek help or advice from someone more experienced for simple decisions	0.857		
Risk-taking Propensity	I am prepared to invest a lot of my own capital to take a business opportunity	0.846	0.9	0.764
	I believe that higher risks are worth taking for higher rewards	0.900		
	I believe the best possible plan is one that is risk free	0.842		
	I regularly take calculated risks to gain potential advantage	0.906		
Resistance to stress	I am less effective in stressful situation	0.582	0.87	0.563
	I am fairly at ease in difficult situations	0.795		
	I can make a decision in situations when there is tension or pressure	0.803		
	It's easy for me to make a decision when it involves one or more criteria	0.784		
	I get nervous in unexpected situations	0.807		
	I enjoy dealing with criticism	0.704		

From above table 3, we can see the results of the factor loading, Cronbach's alpha and average variance extracted. As these values are meeting the threshold value, we perform the next step of the analysis.

TABLE 4**DISCRIMINANT VALIDITY USING THE FORNELL-LARCKER CRITERION**

Items	AF	EI	ID	IS	LA	OC	RP	RS	RT
AF	0.741								
EI	0.506	0.715							
ID	0.037	0.111	0.866						
IS	0.076	0.086	0.618	0.823					
LA	0.018	0.041	0.632	0.585	0.81				
OC	0.703	0.587	0.041	0.084	0.031	0.716			
RP	0.498	0.341	0.064	0.111	0.003	0.539	0.95		
RS	0.03	0.076	0.738	0.58	0.639	0.028	0.036	0.75	
RT	0.009	0.031	0.537	0.631	0.429	-0.005	0.089	0.574	0.874

Discriminant validity is the degree to which each notion in the model is distinct from the others (Hair et al., 2017). The Fornell-Larcker criterion, which states that each construct's square root of the AVE should be greater than the correlation between it and the other constructs in the model, is one of the two most widely used techniques to assess discriminant validity (Hair et al., 2017). Table 4 presents the correlations between the constructions and the square root of the AVE for every construct on the diagonal. Additionally, Table 4 shows that the model exhibits an acceptable standard of discriminant validity. Furthermore, according to Henseler et al. (2015),

TABLE 5**DISCRIMINANT VALIDITY USING HTMT**

Items	AF	EI	ID	IS	LA	OC	RP	RS	RT
AF									
EI	0.579								
ID	0.09	0.104							
IS	0.116	0.088	0.718						
LA	0.066	0.07	0.723	0.667					
OC	0.865	0.657	0.08	0.125	0.083				
RP	0.593	0.375	0.065	0.134	0.038	0.614			
RS	0.104	0.083	0.0875	0.68	0.768	0.087	0.064		
RT	0.077	0.072	0.629	0.7	0.506	0.058	0.095	0.691	

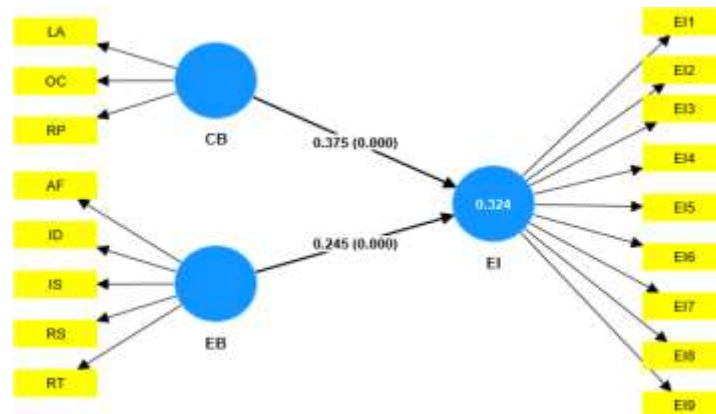
HTMT criterion—which was recently established as the more conservative approach in comparison to more traditional assessment methods—should be lower than 0.9 or 0.85 as a more conservative threshold for establishing discriminant validity. The HTMT is displayed in Table 5 where all constructs are lower than 0.85. As a result, the Fornell-Larcker criterion and the HTMT both show acceptable discriminant validity for the measurement model.

Assessing the Structural Model

The structural model can be examined following the measurement model's successful validation. Finding the coefficient of determination (R^2) for each endogenous latent variable is the first step in assessing the PLS structural equation model Hair et al. (2017). The correlation between the explainable variance and the total variance of a latent variable is computed using R^2 . For the model to be considered to have explanatory power, these values need to be higher. These values depend upon the area of research. The current study is a social science research, so only when some or most of the explanatory factors are statistically significant are values between 0.10 and 0.50 acceptable in social science research (Ozili, 2022). The study R^2 value is 0.32, meaning the model explains about 32% of the variance for Entrepreneurial Intention and is satisfactory.

To determine the predictive significance of models, another criterion known as Stone-Geisser's Q^2 value can be used to evaluate the predictive strength of the model (Hair et al., 2017). A sample for reusing techniques. According to Shmueli et al. (2019), PLS prediction is carried out by estimating the model on a training sample and assessing its predictive performance on a hold-out sample. The predictive relevance is indicated if the Q^2 score is higher than zero. The endogenous construct's Q values in the present study are greater than zero, indicating the model's capacity for prediction. Following that, we proceeded to evaluate the path coefficient and its significance to examine the structural model. The link between the latent variables is represented by the path coefficient. The bootstrapping method is used in determining the path coefficient significance. Significant paths, as indicated by the hypothesized sign, provide empirical support for the proposed causal relationship (Hair et al., 2017).

The strength of the correlation between two latent variables is indicated by the magnitude of a route coefficient. The relevance of the route coefficient can be ascertained using resampling methods (such as bootstrapping). This study used 5000 resamples for bootstrapping as suggested by Hair et al. (2017). Their theories are not supported by pathways that are not noteworthy or that have signals that go against the expected direction. The hypothesized sign indicates significant routes that offer empirical evidence in favor of the theorized causal relationship. (Hair et al., 2017).

FIGURE 7**REPRESENTING THE PATH COEFFICIENT RESULTS**

From the above path model, it is evident that the cognitive and emotional bias has a significant impact on students' entrepreneurial intention. Among both the biases cognitive bias had a higher path value than that the emotional bias.

TABLE 6**REPRESENTING THE HYPOTHESIS RESULTS**

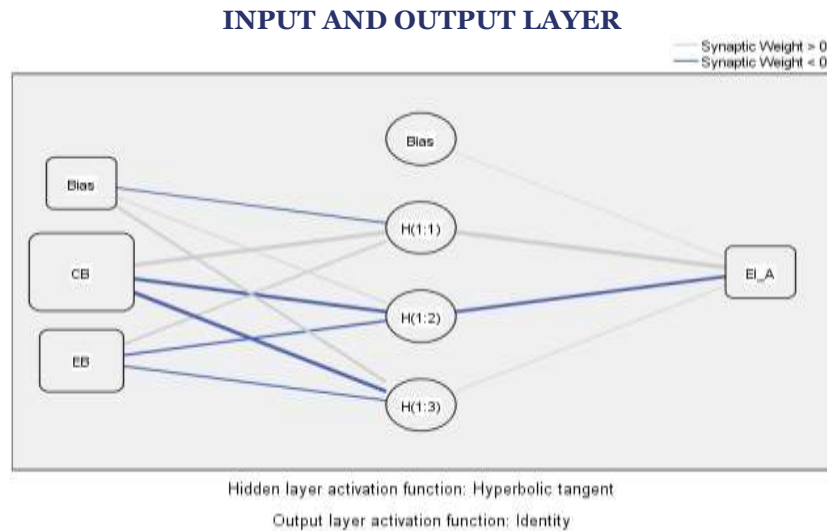
Hypothesis	Relationship	Path Co-efficient	T statistics	P values
H01a	CB -> EI	0.375	6.891	0
H01b	EB -> EI	0.245	4.021	0

Table 6 and Figure 2 show the hypothesis output. This study developed two hypotheses to understand the direct relationship. The results stated there the CB and EB had an impact on EI. Among both CB had a higher path coefficient than EB. As a result, we declare that cognitive and emotional bias significantly influences entrepreneurial intention and reject the null hypothesis.

Neural Network Analysis:

According to Haykin (2001), an artificial neural network (ANN) is "a massively parallel distributed processor made up of simple processing units, which have a neural propensity for storing experimental knowledge and making it available for use". There are different types of ANN the present study has adopted MLP (Chong, Liu, Luo, & Ooi, 2015; Huang, 2010; Negnevitsky, 2011). Based on the values of the predictor variables, the Multilayer Perceptron (MLP) process creates a predictive model for one or more dependant (target) variables (IBM, 1989). This structure is known as a feedforward architecture. The predictor variables are in the input layer, while the units are in the hidden layer. The output layer holds the responses, and the value of each hidden unit is a function of the predictors. One of the most important artificial intelligence techniques, neural network analysis, is combined with SEM in this study's multi-analytical method. Analytical outcomes from the PLS-SEM model are evaluated and verified with the aid of ANN (Duc & Viet, 2022). Results of PLS-SEM and ANN were compared using path coefficient and normalized relative importance, respectively (Ng et al. 2022). Ten-fold cross-validation was carried out, in which the trained network's prediction accuracy was assessed using 30% of the data for testing and 70% for network training (Chong et al., 2015; Chong, 2013a; Chong, 2013b; Leong et al., 2013; Sim et al., 2014; Tan, Ooi, Leong, et al., 2014). For each of the ten neural networks, the averages and standard deviations of the training and testing data sets are calculated, along with the Root Mean Square of Error (RMSE) as a gauge of the model's predictive accuracy. The neural network study that has been specified suggests that cognitive bias is the most important predictor of entrepreneurial intention.

FIGURE 8



As the PLS SEM can only capture the linear relationship we have adopted the ANN as it captures both the linear and nonlinear relationship (Lim et al. 2021). For this study, we have constructed one ANN model to understand the predictive accuracy of the model. For each of the 10 neural networks, the RMSE is determined (Wang et al., 2022). Table 7 depicts the RMSE values have moderate predictive accuracy (Lee et al., 2020). Based on the normalised relevance of the exogenous variable, the study ranked the exogenous using the artificial neural network (ANN) (Lim et al. 2021). shown in table 7.

TABLE 7

RMSE VALUE OF EI		
Network	Training	Testing
ANN1	0.411	0.320
ANN2	0.423	0.420
ANN3	0.391	0.320
ANN4	0.360	0.360
ANN5	0.350	0.350
ANN6	0.380	0.370
ANN7	0.401	0.310
ANN8	0.340	0.370
ANN9	0.340	0.301
ANN10	0.340	0.320
Average	0.374	0.344
SD	0.030	0.035

With 100% normalised relative relevance of EI, CB is the most significant predictor in the ANN model, followed by EB, which is regarded as the second most significant predictor of EI. As a result, the path coefficient and normalised importance were used to compare the outcomes of PLS-SEM and ANN (Ng et al., 2022). The table demonstrates that the outcomes were in accordance with the ANN model.

FIGURE 9
IMPORTANCE OF
CB CONSTRUCTS

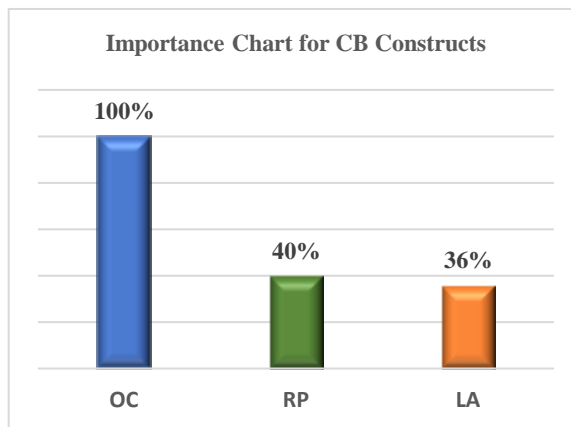


FIGURE 10
IMPORTANCE OF
EB CONSTRUCTS

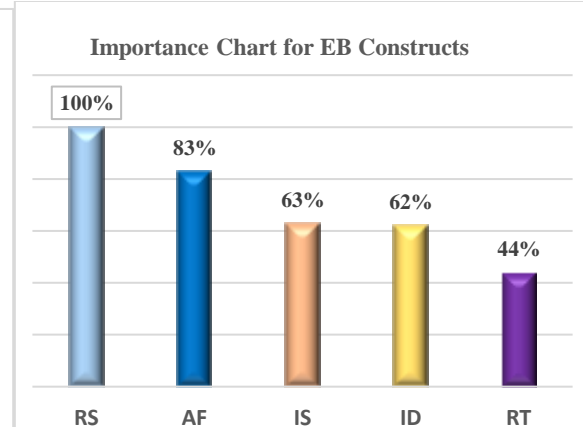


TABLE 8

REPRESENTING THE RESULTS OF PLS-SEM AND MNP

PLS Path	Path Co-efficient	MLP based on Normalized Importance	P values	Ranking PLS-SEM based on Path coefficient	Ranking MLP based on normalized relative importance (%)	Remark
CB -> EI	0.375	100%	0.00	1	1	Match
EB -> EI	0.245	71%	0.00	2	2	Match

DISCUSSION

This study looks into the primary factors that affect entrepreneur intentions to start their own business among students. There were two main constructs in this study to measure the entrepreneurial intention among the students. The main constructs were cognitive and emotional bias. Cognitive bias had three sub-constructs and emotional bias had five sub-constructs. The results from the previous studies confirmed that the cognitive and emotional bias hurts Entrepreneurial Intention (Kahneman, 2003). The present study identified that cognitive and emotional bias has a favourable effect on Entrepreneurial intention. The findings of this research indicate that cognitive factors significantly influence entrepreneurial intention on how students and entrepreneurs want to pursue their entrepreneurial endeavours. Overconfident students believe that starting their own business is a more feasible and achievable option, which could increase their intention to pursue entrepreneurial endeavors. The students who are influenced by loss aversion seem to be more cautious about the potential losses that are associated with Entrepreneurship which makes them move carefully considering the risk mitigation strategies. There is an increased confidence among the students in decision-making as they rely on the familiar patterns and the success stories that are aligned with their preconceptions and this was considered as a motivating factor having an entrepreneurial intention among the students. The study also identified that entrepreneurship requires determination and resilience and the students who feel that they are emotionally supported are more likely to persist in facing the challenges. Affection can serve as a powerful motivator for entrepreneurs and individualistic cultures often encourage them to take the initiative. Students who can resist stress make more rational and informed decisions which is crucial in entrepreneurship where strategic decision-making can significantly impact the success of a venture. The students with a high risk-taking propensity often exhibit higher levels of innovation and creativity. Which can positively influence their entrepreneurial intentions. Hence, we can say that the impact on entrepreneurial intention among the students is positively impacted by cognitive and emotional bias.

CONCLUSION

This study aims to understand the student's entrepreneurial intention from a behavioral bias perspective. This may be a debate in entrepreneurship research. India is the third largest startup hub and is globally recognized with a good ecosystem. The government has been promoting educational institutions by making entrepreneurial education a mandated course to encourage students to start their ventures. Still, the entrepreneurial intention rate in India is not as expected. This study has attempted to understand the factors that impact Entrepreneurial Intention among students from a behavioral perspective. Because it was clear from past studies that the students step back from starting a new venture because of fear of failure. Hence, we decided to look into the Entrepreneurial intention of the students from a behavioral perspective. We chose different biases that previously had a positive or negative impact on intention.

We developed a framework based on the past literature and built a hypothesis considering the impact of cognitive and emotional bias on entrepreneurial intention among the students. In the context of India's higher educational institutions, the positive and significant results of the analysis are valid. This research contributed to building a new model of cognitive and emotional bias that encouraged the student's entrepreneurial intention.

This study attempts to understand the impact of cognitive and emotional bias on entrepreneurial intention among students. These intentions are created among the students from their educational institutions. Higher educational institutions need to focus on how they can contribute to increasing the entrepreneurial intention among the students. From this study we have identified a few policy recommendations for educational institutions to integrate entrepreneurial education that specifically addresses cognitive and emotional bias and their impact on decision-making, to establish a mentorship program that helps the students overcome negative bias, conduct workshops that address specific challenges associated with the fear of failure. Including real-world examples to show how decision-making plays a role in an entrepreneurial context, encouraging the alumni engagement program to offer mentorship and to share real-world experience. Institutions should cultivate the habit of collecting feedback from the students, mentors, and also industry partners to continuous improvement in the curriculum development. Organizing the incubator competition that encourages students to pitch their ideas and offers awards, incentives, and recognition for their efforts can encourage and boost them to have ideas that can lead to a successful venture in the future. These are a few of the policy implications that educational institutions can follow to improve their student's entrepreneurial intention and contribute to the development of our economy

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