Entrepreneurial intention: the role of psychological factors and cognitive process in entrepreneurship

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Abstract

Purpose – This study pioneers examining the relationships between psychological factors, cognitive processes and entrepreneurial mindset to enhance an understanding of the underlying mechanisms contributing to successful entrepreneurship.

Design/methodology/approach – Amos software applied a quantitative approach to analyze the fit indices for the hypothesized model, while SPSS conducted descriptive and factor analysis. Eventually, the primary survey technique was performed with quantitative research, collecting 413 numerical data through a structured, closed-ended Likert scale questionnaire delivered to the target respondents.

Findings – Results have shown that data analysis verifies the positive relationships between psychological factors and the entrepreneurial mindset (hypothesis H1) and cognitive processes and the entrepreneurial mindset (hypothesis H2). These findings contribute to understanding the mechanisms underpinning the entrepreneurial mindset and have implications for entrepreneurship development and support initiatives. The study findings also underscore the importance of understanding the covariance between psychology and cognition in the context of the entrepreneurial mindset – a complex and engaging aspect of the research that is crucial for a comprehensive understanding of entrepreneurship.

Research limitations/implications – It is important to note that the measuring tools used to evaluate these characteristics may have issues with common technique biases, self-report biases or limitations in fully reflecting their complexity. Awareness of these potential challenges is crucial for future research in this area.

Originality/value – This study's findings have significant practical implications for entrepreneurship training, education and policy-making initiatives. Their practicality will equip the reader with the necessary knowledge to succeed in entrepreneurship.

Keywords Self-efficacy, Motivation, Risk propensity, Decision-making, Problem-solving, Cognitive processes

Paper type Research paper

1. Introduction

Entrepreneurship is not solely a product of economic factors or market opportunities; it is deeply intertwined with the psychological and cognitive factors of the entrepreneur (Mitchell *et al.*, 2007). However, this study, conducted in Dhaka, Bangladesh, in 2024, investigates the crossing point between particular psychological factors and cognitive forms that shape entrepreneurial intentions among students. This quantitative investigative plan examines the connections between key psychological factors – self-efficacy, risk-taking propensity and motivation – and significant cognitive processes, such as decision-making and problem-

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solving. Together, these developments contribute to advancing an entrepreneurial intention, characterized here as a collection of demeanors, abilities and behaviors that drive a person towards opportunity acknowledgment, skill and adaptability within the interest of entrepreneurial objectives (Kuratko, Fisher, & Audretsch, 2021). Understanding the entrepreneurial mindset requires delving into psychological traits like self-efficacy, motivation, risk propensity (Jiatong *et al.*, 2021) and cognitive processes, such as decision-making and problem-solving (Amabile, 1988; Bandura, Freeman, & Lightsey, 1999). The entrepreneurial mindset has emerged as a critical area of exploration within entrepreneurship, highlighting the significance of psychological and cognitive factors in shaping entrepreneurial behavior and outcomes (Kuratko *et al.*, 2021; Wardana *et al.*, 2020). This intersection of psychology and cognition in entrepreneurship study has obtainable valued intuitions into the underlying processes and factors that drive entrepreneurial success and innovation (Lynch & Corbett, 2023). Entrepreneurship is no longer solely viewed as a product of external economic factors or market opportunities (Handayati, Wulandari, Soetjipto, Wibowo, & Narmaditya, 2020); the entrepreneur's mindset, encompassing their psychological traits and cognitive processes, is crucial in entrepreneurial decision-making, opportunity recognition and overall venture performance (Lehner & Kaniskas, 2012; Lynch & Corbett, 2023). This research is vital for anyone interested in understanding and fostering successful entrepreneurship. Self-efficacy refers to an individual's belief in their capabilities to successfully execute entrepreneurial tasks, overcome challenges and achieve desired outcomes (Bandura *et al.*, 1999). Conversely, motivation drives individuals to pursue entrepreneurial goals with determination and perseverance (Cardon, Wincent, Singh, & Drnovsek, 2009). Entrepreneurs with high motivation are more likely to persist in facing setbacks. Furthermore, risk propensity, an individual's willingness to take risks, has influenced behavior (Frese, Kring, Soose, & Zempel, 1996). Successful entrepreneurs exhibit a balanced risk-taking behavior, carefully evaluating potential rewards and losses associated with their actions (Sarasvathy, Dew, Velamuri, & Venkataraman, 2010). Additionally, cognitive processes such as decision-making and problem-solving are vital for entrepreneurs to identify and exploit opportunities while navigating uncertainties and complexities (Mitchell *et al.*, 2007).

This study explicitly emphasizes that whereas prior studies have studied psychological and cognitive components independently, limited research analyzes their combined effect on entrepreneurial intention. To fill this knowledge gap, this study integrates both areas to comprehend how their interactions affect entrepreneurial behavior and results.

Dhaka, Bangladesh, was selected as the research location because of its increasing startup ecosystem, fast urbanization and favorable policy climate for entrepreneurship – qualities that define this emerging entrepreneurial center in South Asia. The socioeconomic and cultural variety of the city offers a rich environment for researching the psychological and cognitive processes influencing entrepreneurial inclinations. In addition, developing a comprehensive framework emphasizes establishing a new, all-encompassing model that bridges the theoretical gap in the literature by connecting these variables to entrepreneurial success. Thus, by reviewing and synthesizing existing literature, this study seeks to advance entrepreneurial theory and practice while offering implications for researchers, educators and practitioners in their efforts to nurture and support entrepreneurial endeavors. Therefore, this research contributes to understanding the mechanisms behind entrepreneurial success by demonstrating how psychological and cognitive elements interact synergistically.

Indeed, the following area examines critical writing, centering on psychological factors and the cognition process in entrepreneurship. The strategy segment points to the quantitative approach, test determination, information collection and explanatory methods utilized, including structural equation modeling (SEM). The coming-about area presents the findings of the SEM examination, followed by a discourse on their implications for hypothesis and honing. The final area concludes with an outline of commitments and recommendations for future inquiries.

2. Literature review

The field of entrepreneurship has gained significant attention over the years as individuals seek to understand the factors that drive entrepreneurial success and innovation. It examines the entrepreneurial mindset, which focuses on the cognitive and psychological processes underlying entrepreneurial behavior (Duong *et al.*, 2022; El-Awad, 2018).

2.1 Psychological factors

A psychological trait characterized by a strong desire to excel and accomplish challenging goals has been linked to entrepreneurial behavior (McClelland, 1961; Pérez-Fernández, Delgado-García, Martín-Cruz, & Rodríguez-Escudero, 2022). Individuals with a high need for achievement are more likely to engage in entrepreneurial activities, set ambitious goals and persist in facing obstacles (Duong *et al.*, 2022). It is driven by the desire for personal accomplishment, recognition and action from achieving challenging targets (Chatterjee & Das, 2015). In "*The Achieving Society*" (1961), McClelland presented the concept of motivation and contended that people with high requirements are expected to lock in entrepreneurial activities to exceed expectations and fulfill challenging objectives (Chang, Wu, & Ye, 2022). Therefore, this foundational theory supports considering motivation as a key psychological figure in understanding the entrepreneurial mindset (Pérez-Fernández *et al.*, 2022).

Self-efficacy: Several studies have highlighted the importance of self-efficacy, which refers to an individual's belief in their ability to perform entrepreneurial tasks successfully (Deliana, 2023). The concept of self-efficacy could be a great beginning. Be that as it may, to ground this discussion in seminal writing, it is vital to quote Albert Bandura's prior foundational work on self-efficacy (Bandura, 1993). However, it presented the concept of self-efficacy, highlighting its significance in establishing human behavior by affecting individuals' motivation and capacity to overcome challenges. Entrepreneurs with high self-efficacy are more likely to persist in facing challenges and setbacks, take calculated risks and exhibit a proactive approach to problem-solving (Hoang, Le, Tran, & Du, 2021). High self-efficacy levels are associated with excellent entrepreneurial intentions, venture creation and persistence in facing challenges (Hoang *et al.*, 2021). Therefore, individuals with high self-efficacy perceive themselves as capable of handling the uncertainties and complexities of entrepreneurship, leading to higher entrepreneurial success (António Porfírio, Augusto Felício, Carrilho, & Jardim, 2023; Nowiński & Haddoud, 2019).

Risk-taking propensity: McClelland's theory first connected psychological traits to being an entrepreneur, strengthening the discussion of motivation and achievement (McClelland, 1961). Entrepreneurship inherently involves taking risks, and an individual's risk-taking propensity is crucial in entrepreneurial decision-making. It recognizes the differences between quantifiable dangers and unmeasurable vulnerabilities and is foundational in understanding the concept of hazard in business (Abdali, Hourani, Abuerrub, & Shambour, 2013). Research suggests that successful entrepreneurs exhibit a balanced risk-taking behavior, carefully weighing potential rewards against potential losses (Herdjiono, Puspa, Maulany, & Aldy, 2017; McClelland, 1961). A moderate risk-taking propensity is associated with entrepreneurial performance, as overly cautious or reckless behavior can lead to suboptimal decision-making (Antoncic *et al.*, 2018). Entrepreneurs with higher risk-taking trends tend to identify and pursue high-growth opportunities (Ndofirepi, 2020). Therefore, risk propensity, the willingness to take risks, is another psychological trait commonly associated with entrepreneurship (Antoncic *et al.*, 2018; Ndofirepi, 2020). However, a successful entrepreneur balances risk-taking behavior, carefully evaluating potential rewards and losses (Ilevbare, Ilevbare, Adelowo, & Oshorenua, 2022; Lynch & Corbett, 2023). In addition, the foundational knowledge of risk-taking in business enterprise contends that business people are characterized by their willingness to expect risks in the interest of questionable rewards (Moore, 1986). These speculations legitimize the study's focus on risk-taking as a principal psychological development impacting entrepreneurial intention.

Motivation: Entrepreneurial motivation refers to a solid and compelling demonstrative attachment to the entrepreneurial process and venture (Sun, Shi, & Zhang, 2023). It is composed of two proportions: harmonious motivation, characterized by an autonomous and self-determined desire to engage in entrepreneurship and obsessive motivation, driven by uncontrollable and intrusive thoughts about entrepreneurship (McClelland, 1961; Rahmi, Handayati, Djatmika, & Ismanto, 2022; Sun *et al.*, 2023). The study uses the harmonious and obsessive motivation framework because it gives a complete picture of how entrepreneurs stay motivated and keep overall well-being. The framework in Figure 1 is not directly related to hypothesis structuring, but it does help understand the two types of motivation that entrepreneurs face. Harmonious motivation encourages long-term engagement, while obsessive motivation may lead to burnout. This has implications for programs that teach and support entrepreneurs. The concept of motivation is used as a dimension of psychological factors (Figure 1). Entrepreneurial motivation has positively impacted entrepreneurial persistence, creativity and performance (Rahmi *et al.*, 2022). Empirical studies have consistently demonstrated that students with advanced levels of self-efficacy are more inclined to persist in the presence of challenges, establish ambitious objects and eventually attain superior academic accomplishments (Zhao, Hills, & Seibert, 2005). In addition, scholars' self-efficacy influences their decision-making, position of trouble and emotional responses to academic assignments (Zimmerman, 2000). Motivation, another crucial psychological factor, drives entrepreneurs to pursue their goals and persist in adversity (Lin, Yu, & Sadat, 2022; Pérez-Macías, Fernández-Fernández, & Vieites, 2022).

2.2 Cognitive processes

Cognitive process theory conferred positively and statistically proved how decision-making and problem-solving foster the formation of entrepreneurial goals by drawing on social cognitive processes (Lin *et al.*, 2022; Pérez-Macías *et al.*, 2022).

Decision-making style: Entrepreneurial decision-making involves evaluating and selecting alternative courses of action (Lin *et al.*, 2022). Simon's theory of confined wisdom is especially significant to entrepreneurial decision-making, where business people frequently work under vulnerability (Horide, 2003). Intuitive decision-making relies on gut feelings and quick judgments, while analytical decision-making involves systematically evaluating options (Chatterjee & Das, 2015). Effectual decision-making, commonly observed in entrepreneurs,

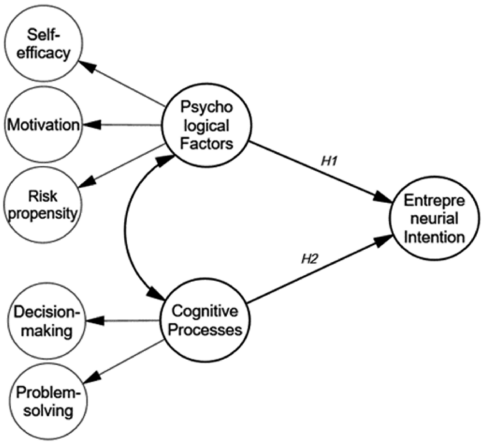

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Figure 1. Conceptual framework

emphasizes leveraging available resources, networking and adapting to emerging opportunities (Hayton & Cholakova, 2012; Klusmann, Spieth, & Klein, 2021; Wu & Li, 2011). The choice of decision-making style influences the quality and outcomes of entrepreneurial decisions (Wu & Li, 2011). As a result, it affects cognitive decision-making patterns, making it possible to contribute to the entrepreneurial intention of cognitive biases in the new business venture formation (Klusmann *et al.*, 2021; Sun *et al.*, 2023). Simon's theory is helpful in understanding how business people make decisions under uncertainty and asset constraints, which are common in entrepreneurial decisions (Simon, 1997). Therefore, decision-making and problem-solving are basic cognitive forms that empower business visionaries to explore complex and undecided situations. This concept underpins the study's center on these cognitive forms as essential components of entrepreneurial intentions.

Problem-solving ability: Effective problem-solving skills are crucial for entrepreneurs to overcome challenges and create innovative solutions (Kickul & Lyons, 2016). Problem-solving involves identifying and framing problems, generating alternative solutions and implementing the most appropriate one (García-Rodríguez, Gil-Soto, Ruiz-Rosa, & Gutiérrez-Taño, 2017; Kickul & Lyons, 2016). Entrepreneurs with solid problem-solving abilities exhibit a systematic approach, creative thinking and the ability to adapt and find solutions in complex and dynamic environments (Kickul & Lyons, 2016; Wu & Li, 2011). Allen Newell and Herbert Simon give a point-by-point examination of the cognitive forms included in problem-solving (Gerwin & Tuggle, 1978). This work is crucial to understanding how business visionaries explore complex situations and produce inventive arrangements. The ability to tackle challenges head-on while maintaining a can-do attitude is essential for success in entrepreneurship (García-Rodríguez *et al.*, 2017). The entrepreneurial mindset is a collection of motivations, abilities and thought processes that differentiate entrepreneurs from those who are not (Davis, Hall, & Mayer, 2016; Nowiński & Haddoud, 2019).

2.3 Entrepreneurial intentions

Entrepreneurial intentions refer to individuals' inclination and motivation to engage in entrepreneurial activities (Kowang *et al.*, 2021). Entrepreneurial intentions promote entrepreneurial behavior, foster innovation and drive economic growth (Mahfud, Triyono, Sudira, & Mulyani, 2020). This literature review explores key determinants and outcomes of entrepreneurial intentions, providing insights into the factors influencing individuals' propensity to become entrepreneurs (Anjum, Farrukh, Heidler, & Tautiva, 2021). Several studies have examined the role of personality traits in shaping entrepreneurial intentions (Barba-Sánchez, Mitre-Aranda, & Brío-González, 2022). Ajzen's theory of planned behavior has been exceedingly powerful in understanding the cognitive variables that impact entrepreneurship and emphasizes the role of self-efficacy in entrepreneurship intention (Horide, 2003; Krueger, Reilly, & Carsrud, 2000). Therefore, the theory is vital when discussing how conditions of mind, behavioral control and subjective standards impact the purposeful locking of an enterprise.

Similarly, high levels of openness to experience have been linked to higher entrepreneurial intentions, as individuals with this trait tend to be creative, curious and open to new opportunities (António Porfírio *et al.*, 2023). While perceived feasibility, entrepreneurship relates to individuals' assessment of their capability to engage in entrepreneurial activities (Pérez-Fernández *et al.*, 2022). Research has shown that higher levels of perceived desirability and feasibility positively relate to entrepreneurial intentions (Jiatong *et al.*, 2021). Individuals who perceive entrepreneurship as an attractive and viable career option are more likely to express intentions to become entrepreneurs (António Porfírio *et al.*, 2023). Experience is related to entrepreneurship, which can positively influence their intentions to become entrepreneurs (Duong *et al.*, 2022). Exposure to successful entrepreneurs and entrepreneurial role models increases individuals' perceptions of the feasibility and desirability of entrepreneurship, thereby enhancing their entrepreneurial intentions (Duong *et al.*, 2022;

Kuratko *et al.*, 2021). Including entrepreneurship education in formal educational systems positively impacted individuals' entrepreneurial intentions (Wardana *et al.*, 2020). Successful entrepreneurs who have previous entrepreneurial experience are more likely to express intentions to start their businesses (Sun *et al.*, 2023). Exposure to entrepreneurial role models provides individuals with tangible examples of entrepreneurial success (Pérez-Macías *et al.*, 2022; Sun *et al.*, 2023). Therefore, to support the dialog on entrepreneurial intention, it is paramount to incorporate Icek Ajzen's work and "theory of planned behavior" (1991), which states that willingness is the foremost quick indicator of planned behavior, such as beginning a business (Tsordia & Papadimitriou, 2015). Indeed, it gives a basic system for understanding entrepreneurial intention, recommending that self-efficacy and motivation impact one's deliberate engagement in business (Chen, Greene, & Crick, 1998).

2.4 Research hypotheses

A statement of an expectation or prediction to prove research is known as a research hypothesis (Kolb, 2021; Ronchi, 2018). Based on the literature above, the following hypotheses have been developed to achieve the research goal, and the relationships are presented in Figure 1.

H1. A positive relationship exists between psychological factors (self-efficacy, motivation and risk propensity) and the entrepreneurial mindset.

Here are the mathematical equations for the hypothesis H1: Psychological factors (X1) → Entrepreneurial mindset (Y). $Y = \lambda X1*X1 + \varepsilon Y$, where X1 represents the latent construct of psychological factors, $\lambda X1$ represents the path coefficient representing the relationship between psychological factors (X1) and the entrepreneurial mindset (Y) and εY defines the error term associated with the entrepreneurial mindset (Y).

H2. Cognitive processes (decision-making and problem-solving) positively influence the entrepreneurial mindset.

Here are the mathematical equations for the hypothesis H2: Cognitive processes (X2) → Entrepreneurial mindset (Y). $Y = \lambda X2*X2 + \varepsilon Y$, where X2 represents the latent construct of cognitive processes, $\lambda X2$ represents the path coefficient representing the relationship between cognitive processes (X2) and the entrepreneurial mindset (Y) and εY defines the error term associated with the entrepreneurial mindset (Y).

Moreover, the path coefficients (λ) represent the strength and direction of the relationship between the independent latent constructs (psychological factors and cognitive processes) and the dependent latent construct (entrepreneurial mindset). The error term (εY) accounts for any unexplained variance or measurement error in the entrepreneurial mindset construct.

3. Research methodology

A cross-sectional research design was selected for this study based on the nature of the research objective since it permits information collection from an expansive test at a single point in time while distinguishing connections between factors (Baoshan, Wang, & Dong, 2009). This plan is cost-effective and time-efficient, and it is especially suitable for testing speculations and looking at relationships in social science investigations (Engle *et al.*, 2010). The authors refined scales to the origin of the items, such as self-efficacy (Bandura *et al.*, 1999; Chen *et al.*, 1998), risk-taking propensity (Sitkin & Pablo, 1992; Stewart & Roth, 2001), motivation (Shane, Locke, & Collins, 2003), decision-making (Baron, 2004), problem-solving ability (Heppner & Petersen, 1982) and entrepreneurial intentions (Ajzen, 1991; Krueger *et al.*, 2000). In contrast, the instrument validation was checked with exploratory factor analysis by a cut-off value ≥ 0.50 (McNeish, 2017). Furthermore, Dhaka's particular difficulties – limited resources and a risk-averse cultural attitude – make it an essential setting for appreciating the dynamics of entrepreneurship. The target population for this study is constituted of individuals

involved in entrepreneurial activities. Therefore, the target respondents for this study typically include individuals who have direct experience in entrepreneurship, such as entrepreneurs, aspiring entrepreneurs, entrepreneurship program students and incubator participants. Focusing on this group ensures related informed responses, providing valuable perceptivity into the factors driving entrepreneurial behavior intentions (Fuller, Liu, Bajaba, Marler, & Pratt, 2018; Mobaraki, 2012). While aspirant entrepreneurs and students demonstrate entrepreneurial goals, entrepreneurs and incubator participants display entrepreneurial actions. This difference allows the research to investigate the psychological and cognitive aspects affecting both intention and behavior. Targeting respondents with direct experience or involvement in entrepreneurship is essential to gather relevant and meaningful data for the study (Mia, Rizwan, *et al.*, 2022). The choice of survey strategy is also fitting since it can reach a vast number of members rapidly, encouraging the collection of reactions of different extents.

Consequently, sampling data collection and stratified sampling were applied, and the study confirmed representation among important subgroups within the target population – including entrepreneurs (23.9%), aspiring entrepreneurs (26.1%), students in entrepreneurship programs (37.0%) and incubator participants (13.0%). Variables used for the stratification include those based on gender, entrepreneurial experience and participation in entrepreneurial ecosystems. The sample came from Dhaka's universities, incubators and entrepreneurship centers. There were 288 men (69.7%) and 125 women (30.3%) in the sample. A stratified simple random sampling technique was selected because, in the context of stratified sampling, the process involves the sampling of elements within each respective stratum (Sharma, 2017; Mia, Zayed, *et al.*, 2022), ensuring the validity and reliability of the measurement instrument through different testing and appropriate statistical analyses (Hair, Gabriel, & Patel, 2014). This survey was conducted through a physical study using a data collection method.

This strategy minimizes testing predisposition and guarantees that the findings can be generalized over diverse entrepreneurial settings. Furthermore, stratified examination takes steps to correct the results by decreasing sampling errors (Engle *et al.*, 2010). Quantitative research methodology is used in empirical research to collect and analyze numerical data to test hypotheses (Petscher, Schatschneider, & Compton, 2013). It involves systematically collecting, measuring and interpreting data using statistical and mathematical techniques (Hair *et al.*, 2014). Amos is particularly useful for covariance-based studies to get model fit indices (Hair *et al.*, 2014; Mia, Majri & Abdul Rahman, 2019a; Mia, Majri, & Rahman, 2019b). In addition, quantitative strategies highlight the inquiry about points to test particular theories and connections between variables (Mohajan, 2020). Furthermore, quantitative investigation proves hypothesis testing and advancement, adjusting to the study's targets (Adu, Owusu, Martin-Yeboah, Pino Gavidia, & Gyamfi, 2022).

This study selected the SEM because it is especially well suited for examining complex connections between different factors. Therefore, Amos statistical software is particularly suited since it encourages covariance-based SEM, which is ideal for testing theories about the connections among factors in a hypothetically grounded model (Schlaegel & Koenig, 2014; Wei, 2014).

4. Data analysis

Closed-ended five-point Likert scale questionnaires were distributed among 519 potential respondents, and 438 completed the questionnaires. Finally, 413 pieces of data were finalized for further analysis after screening. Indeed, 288 respondents identified as male, or roughly 69.7%, and the remaining 125 respondents, or 30.3%, were female, as presented in Table 1.

4.1 Exploratory factor analysis (EFA)

The Kaiser–Meyer–Olkin (KMO) metric assesses whether the data fits factor analysis (Mia *et al.*, 2019b; Watkins, 2018). The KMO value is between 0 and 1, where a number closer to

Table 1. Gender frequency

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Male	288	69.7	69.7	69.7
	Female	125	30.3	30.3	100
	Total	413	100	100	

Source(s): Survey data analysis by SPSS

one often denotes adequate sampling (Watkins, 2018). The KMO score in this instance is 0.865, which is a respectably high value presented in Table 2 (Watkins, 2018). The test is statistically significant because the *p*-value is 0.000 (Christmann & Van Aelst, 2006). The factor loadings were obtained from a factor analysis with varimax rotation, represented by the rotated component matrix executed. While loadings close to 0 show a weak or no relationship, those close to 1 or −1 suggest a strong association. In contrast, all factor loadings are more than 0.50 to reach the minimum of each factor loading, as presented in Table 3 (McNeish, 2017).

4.2 Reliability and validity test

Table 4 summarizes statistical measures related to a questionnaire with 30 items (Q1 to Q30). The mean is the average score for each survey question and displays the predominant pattern of each question's responses (Heale & Twycross, 2015). A higher standard deviation indicates more significant response variability (Hair *et al.*, 2017). The investigation used a standardized questionnaire created by the authors in 2024. The tool has been widely used in related research and was initially intended to measure constructs. Internal consistency was reported above a threshold of 0.70, suggesting satisfactory dependability (Schjoedt & Craig, 2017). Therefore, content and construct validation were performed to ensure the questionnaire's validity. Higher correlations imply that the object and the overarching construct are closely aligned (Heale & Twycross, 2015). Higher Cronbach's alpha values (closer to 1) typically denote better internal consistency (Heale & Twycross, 2015). The corrected item-total correlations range from 0.50 to 0.82. According to these numbers, most factors have only moderately strong connections with the final score (Hair *et al.*, 2017). These numbers suggest that the questionnaire has a generally high level of internal consistency. An alpha value of 0.70 or above is deemed acceptable for research purposes (Hair *et al.*, 2017; Heale & Twycross, 2015). In earlier research, construct validity was verified using exploratory and confirmatory factor analyses, which firmly fit the theoretical framework (Facer *et al.*, 2014). This specific instrument was chosen because of its strong psychometric qualities and wide usage in other studies (Akhtar, Hongyuan, Iqbal, & Ankomah, 2020; Schjoedt & Craig, 2017).

4.3 Confirmatory factor analysis (CFA)

Confirmatory factor analysis (CFA) is a statistical method used in psychometrics and the social sciences to verify the conceptual underpinnings of a measurement scale or questionnaire (Hair *et al.*, 2017). In CFA, standard fit indices include the comparative suitable index (comparative

Table 2. KMO and Bartlett's test

Kaiser–Meyer–Olkin measure of sampling adequacy		0.865
Bartlett's test of sphericity	Approx. chi-square	6622.221
	df	435
	Sig	0.000

Source(s): Survey data analysis by SPSS

Table 3. Rotated component matrix[a]

	Components					
	1	2	3	4	5	6
Q1	0.68					
Q2	0.71					
Q3	0.85					
Q4	0.84					
Q5	0.87					
Q6		0.66				
Q7		0.78				
Q8		0.83				
Q9		0.77				
Q10		0.83				
Q11			0.81			
Q12			0.87			
Q13			0.84			
Q14			0.78			
Q15			0.69			
Q16				0.63		
Q17				0.82		
Q18				0.85		
Q19				0.80		
Q20				0.73		
Q21					0.67	
Q22					0.82	
Q23					0.84	
Q24					0.80	
Q25					0.74	
Q26						0.65
Q27						0.79
Q28						0.85
Q29						0.81
Q30						0.73

Note(s): Extraction method: Principal component analysis
Rotation Method: Varimax with Kaiser normalization
[a]Rotation converged in 6 iterations
Source(s): Survey data analysis by SPSS

fit index (CFI)), adjusted goodness-of-fit index (AGFI), GFI, Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA) and the Chi-square degree of freedom [minimum discrepancy of confirmatory factor analysis/degrees of freedom (CMIN)/ degrees of freedom (DF)] (Hair, Black, Babin, & Anderson, 2010; Mia *et al.*, 2019b). However, the GFI is accepted in the measurement model when the values of that parameter reach each of them with p-value ≤0.05, CFI ≥0.90, AGFI ≥0.85, GFI ≥0.90, TLI ≥0.90, RMSEA ≤0.08 and CMIN/df ≤ 5 (Conne, Ronchetti, & Victoria-Feser, 2010; Hair *et al.*, 2017; Sharma, Mukherjee, Kumar, & Dillon, 2005).

Figure 2 presents a good fit for the model because the CMIN/DF ratio is only 1.514 times larger than the DF (Bentler, 1990). The proposed CFA model explains around 91.4% of the variance in the observed data, according to a GFI value of 0.914. Even though it is not a perfect fit, this is still quite excellent (Bentler, 1990; Hair *et al.*, 2021). The AGFI of 0.897 indicates that the model fits the data reasonably well (Bentler, 1990; Zhang, Dawson, & Kline, 2021). The suggested CFA model exhibits excellent data fit, as indicated by a CFI value of 0.969 (Bentler, 1990; Cheah, Memon, Richard, Ting, & Cham, 2020; Zhang *et al.*, 2021). Compared to a baseline model, the suggested model has a perfect fit, as indicated by the TLI of 0.965. The

Table 4. Reliability and validity test

	Mean (μ)	Std. Deviation (σ)	Corrected item-total correlation	Cronbach's alpha (α)		No of items	*N*
Q1	4.27	0.72	0.57	0.89	0.89	5	413
Q2	4.27	0.88	0.79	0.85			413
Q3	3.98	0.92	0.76	0.86			413
Q4	4.15	0.94	0.77	0.85			413
Q5	4.08	0.92	0.75	0.86			413
Q6	4.31	0.72	0.68	0.83	0.87	5	413
Q7	4.25	0.75	0.78	0.81			413
Q8	4.28	0.73	0.75	0.82			413
Q9	4.23	0.79	0.66	0.84			413
Q10	4.29	0.73	0.55	0.87			413
Q11	4.09	0.89	0.71	0.89	0.90	5	413
Q12	4.29	0.92	0.64	0.90			413
Q13	4.18	0.93	0.81	0.87			413
Q14	4.24	0.90	0.82	0.87			413
Q15	4.21	0.89	0.80	0.87			413
Q16	3.95	0.80	0.51	0.83	0.83	5	413
Q17	4.16	0.74	0.68	0.79			413
Q18	4.26	0.72	0.73	0.77			413
Q19	4.32	0.72	0.67	0.79			413
Q20	4.09	0.85	0.60	0.81			413
Q21	3.96	0.80	0.51	0.84	0.84	5	413
Q22	4.15	0.74	0.70	0.79			413
Q23	4.25	0.71	0.74	0.78			413
Q24	4.33	0.72	0.68	0.80			413
Q25	4.10	0.85	0.60	0.82			413
Q26	3.95	0.81	0.50	0.85	0.84	5	413
Q27	4.15	0.75	0.70	0.80			413
Q28	4.26	0.73	0.76	0.78			413
Q29	4.34	0.74	0.70	0.80			413
Q30	4.11	0.85	0.61	0.82			413

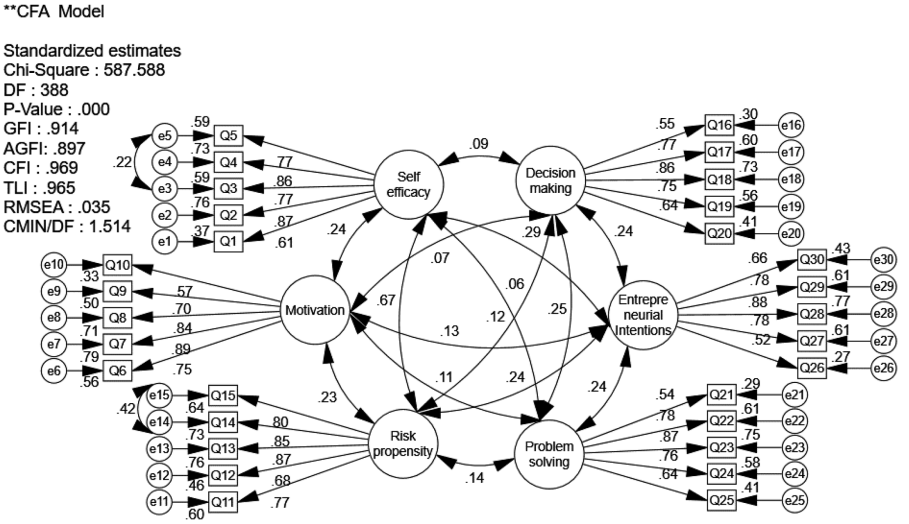
Source(s): Survey data analysis by SPSS

model explains a sizeable portion of the variance in the observed data (Hair *et al.*, 2021). The RMSEA score of 0.035 indicates a perfect match for the model (Cheah *et al.*, 2020; Hair *et al.*, 2021). This RMSEA score, lower than 0.06, indicates a very close fit. Eventually, the measurement model demonstrated the fit indices well, allowing for further SEM tests.

4.4 Structural equation model (SEM)

An SEM is a statistical modeling approach that combines multiple regression and component analysis to look at intricate correlations between observed and latent variables (Hu & Bentler, 1999). Calculating connections between observed and latent variables and the associations between the latent variables themselves enables researchers to evaluate a theoretical framework (Tabri & Elliott, 2012). Fit indices used in SEM are the TLI, the GFI, the AGFI, the CFI and the RMSEA to identify the statistically significant SEM model (Kline & Kenny, 2005; Tabri & Elliott, 2012). Table 5 is presented for the covariance-based structural equation model (CB-SEM) results, which are explained below:

Self-efficacy <— Psychological factors: A perfect positive correlation between self-efficacy and psychological variables is indicated by a regression weight 1. In this instance, psychological factors have a direct impact on self-efficacy. Since the weight is 1, an increase in psychological components corresponds to one-unit increase in self-efficacy.



Source(s): Survey data analysis by Amos software

Figure 2. CFA model

Table 5. Hypotheses estimates

	Estimate	S.E.	C.R.	*p*-value	Level
Self-efficacy <— Psychological factors	1	*Regression weight*			
Motivation <— Psychological factors	0.301	0.068	4.438	***	Accepted
Risk propensity <— Psychological factors	0.989	0.144	6.881	***	Accepted
Decision-making <— Cognitive processes	1	*Regression weight*			
Problem-solving <— Cognitive processes	0.978	0.283	3.456	***	Accepted
Entrepreneurial intentions <— Psychological factors	0.238	0.074	3.225	0.001	H1 Accepted
Entrepreneurial intentions <— Cognitive processes	0.891	0.285	3.132	0.002	H2 Accepted

Note(s): *** means *p*-value less than 0.001
Source(s): Survey data analysis by Amos software

Motivation <— Psychological factors: The regression weight of 0.301 indicates a favorable correlation between psychological variables and motivation. The composite reliability (CR) of 4.438 and the *p*-value of less than 0.001 show that this association is statistically significant (Hair *et al.*, 2021).

Risk propensity <— Psychological factors: Risk propensity and psychological components are strongly positively correlated, as indicated by the regression weight of 0.989. The association is highly significant, with a CR of 6.881 and a *p*-value of less than 0.001 (Zhang *et al.*, 2021).

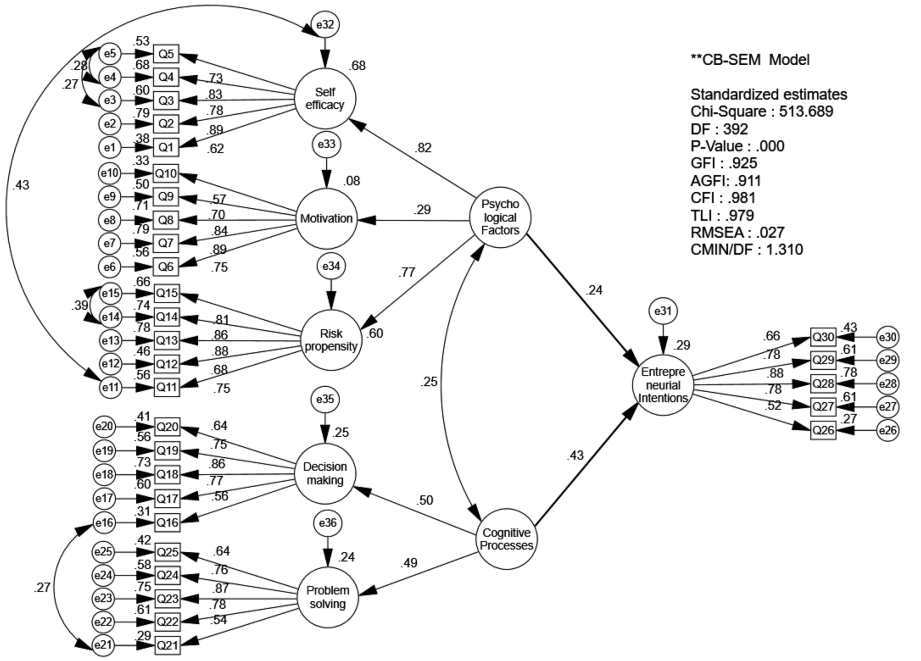
Decision-making <— Cognitive processes: The regression weight 1 indicates a positive correlation between cognitive processes and decision-making. Cognitive processes have a direct impact on the decision-making process.

Problem-solving <— Cognitive processes: Problem-solving and cognitive processes have a positive association, according to the regression weight of 0.978. This association is statistically significant, with a *p*-value of less than 0.001 and a CR of 3.456 (Zhang *et al.*, 2021).

Entrepreneurial intentions <— *Psychological factors:* A good correlation between psychological factors and entrepreneurial inclinations is indicated by the regression weight of 0.238 (Hu & Bentler, 1999). With a CR of 3.225 and a *p*-value of 0.001, this link is statistically significant (Cheah *et al.*, 2020; Hair *et al.*, 2021; Zhang *et al.*, 2021), and hypothesis H1 is supported.

Entrepreneurial intentions <— *Cognitive processes:* Entrepreneurial intentions rise by 0.891 units for every unit increase in cognitive processes. With a CR of 3.132 and a *p*-value of 0.002, this association is statistically significant (Cheah *et al.*, 2020; Hair *et al.*, 2021; Zhang *et al.*, 2021), indicating that hypothesis H2 also is supported. Therefore, the theoretical model established with second-order covariance-based SEM is associated with first-order constructs with 0.25 (Hu & Bentler, 1999).

Figure 3 presents the fit indices for the CB-SEM. The model's chi-square test has a *p*-value of 0.000, indicating that it is statistically significant at normal levels typically set at 0.05 (Hu & Bentler, 1999). With a GFI of 0.925, the model may explain about 92.5% of the variation in the observed data. The value of 0.925 denotes an excellent match, and GFI levels above 0.90 are typically acceptable (Hair *et al.*, 2021). Considering its complexity, the model nevertheless exhibits a respectable fit to the data with an AGFI at 0.911. Given that values above 0.95 are typically seen as suggestive of a business fit, a CFI score of 0.981 denotes a perfect fit (Hu & Bentler, 1999), corroborated by the 0.979 TLI, a different CFI (Zhang *et al.*, 2021). As values below 0.08 typically indicate a solid fit by RMSEA, the model exhibits a perfect fit at 0.027 (Cheah *et al.*, 2020). The model's chi-square degrees of freedom is 1.310; values around or below 2 are frequently accepted as a good fit when the sample size is large (Cheah *et al.*, 2020; Hair *et al.*, 2021; Hu & Bentler, 1999). In addition, various degrees of these relationships' intensity were noted as follows:



Source(s): Survey data analysis by Amos software

Figure 3. CB-SEM model

Psychological factors and entrepreneurial intention: The research findings indicate a robust positive association between psychological factors, including self-efficacy, motivation, risk inclination and entrepreneurial intention (Hypothesis H1). The entrepreneurial intention (regression weights = 1 and 0.978, respectively) exhibited high positive correlations with self-efficacy and cognitive processes; the connection for motivation was modest (0.301). Self-efficacy, for instance, displayed a very positive association (regression weight = 1), indicating that higher psychological traits considerably boost entrepreneurial inclinations (Brandstätter, 2011; Chye Koh, 1996).

Cognitive processes and entrepreneurial mindset: The entrepreneurial mentality was positively connected with cognitive processes such as problem-solving and decision-making (Hypothesis H2). The regression weights for problem-solving and decision-making indicate a substantial positive link, 1 and 0.978, respectively. This shows that entrepreneurial behavior is more likely in those with higher decision-making and problem-solving skills (Åstebro *et al.*, 2014). The statistical significance of these associations lends weight to the concept that psychological and cognitive factors have a major influence on entrepreneurial success (Allen, Stevenson, O'Boyle, & Seibert, 2021). The strong relationships between these variables highlight their importance in shaping entrepreneurs' thinking and behavior (Åstebro *et al.*, 2014; Brandstätter, 2011).

5. Discussion and conclusion

The research examined the connections between psychological elements, cognitive processes and entrepreneurial outcomes using Amos software for CB-SEM analysis.

Hypothesis H1, *Psychological factors (X1) → Entrepreneurial mindset (Y):* The empirical data analysis supports the premise that a favorable correlation exists between psychological factors and entrepreneurial intention. These psychological variables influence the ability to recognize possibilities, take measured risks, endure in the face of difficulties and display an inventive and proactive orientation towards entrepreneurial activities. The derived coefficients demonstrate a significantly favorable impact of the psychological elements on entrepreneurial mentality. The path coefficients ($Y = \lambda X1*X1 + \varepsilon Y$) indicate the strength of the association. The findings provide credence to ideas and models that stress the significance of psychological traits in promoting successful entrepreneurship.

The second hypothesis, H2, is that cognitive functions like problem-solving and decision-making favor having entrepreneurial intentions. The results suggest that people with good cognitive skills in decision-making and problem-solving have a better-developed entrepreneurial mindset. Therefore, statistical analysis of SEM reveals a significant positive relationship between the measured cognitive processes and the entrepreneurial mindset. The path coefficients (λ), $Y = \lambda X2*X2 + \varepsilon Y$, indicated the strength and direction of the relationship, and the obtained coefficients demonstrate a substantial positive effect of cognitive processes on the entrepreneurial mindset. These outcomes suggest that individuals with more potent cognitive abilities in decision-making and problem-solving are more likely to demonstrate an entrepreneurial mindset. Therefore, the findings align with existing research highlighting the significance of cognitive processes in entrepreneurship. It confirms the positive relationships between psychological factors and the entrepreneurial mindset (H1), as well as between cognitive processes and the entrepreneurial mindset (H2). These findings contribute to understanding the underlying mechanisms that shape the entrepreneurial mindset and have implications for fostering entrepreneurship development and support initiatives.

Theoretical implications: The study theoretically fits fundamental theories such as McClelland's accomplishment motivation theory (1961), Simon's limited rationality model (1997) and Bandura's self-efficacy theory (1993). However, this study is especially valuable since it places these connections in the developing entrepreneurial ecosystem of Dhaka, Bangladesh.

Contextual implications: Dhaka's entrepreneurial culture, which mixes risk aversion and creativity, might significantly alter the observed associations. These elements ought to be investigated as possible mediators of the interactions between psychological factors and cognitive processes and entrepreneurial intentions.

Comparison with existing literature: The study results indicate significant geographical differences, while nevertheless complementing worldwide studies on the psychological and cognitive aspects affecting entrepreneurship. For instance, whereas self-efficacy has been generally acknowledged as a predictor of entrepreneurial success in Western settings (Bandura, 1993), this study implies that its influence may be more prominent in developing economies like Bangladesh, where entrepreneurs face more uncertainty. Similarly, the impact of cognitive processes such as decision-making and problem-solving aligns with findings from Lynch & Corbett's (2023) results.

Limitations: Measurement bias: The hypotheses rely on accurately measuring psychological factors, cognitive processes and the entrepreneurial mindset. However, measurement instruments used to assess these constructs may suffer from common method biases, self-report biases or limitations in capturing the full complexity of these constructs. The findings related to the hypotheses may be context-specific and not generalizable to all entrepreneurial contexts or populations. Alternative explanations and reverse causality cannot be ruled out without further longitudinal or analytical research. While the present study does not segment these categories, future studies could compare subgroups to expose variations in these links.

Originality or value: The originality of these hypotheses lies in integrating psychological factors and cognitive processes to understand the entrepreneurial mindset. By examining internal psychological factors and cognitive processes, the study contributes to a more comprehensive understanding of the underlying mechanisms that shape entrepreneurial thinking and behavior. Furthermore, the hypotheses contribute to the existing theoretical frameworks and models related to entrepreneurship and psychology. While acknowledging the limitations, the originality and value of these hypotheses lie in their potential to enhance the understanding of the complex relationships between psychological factors, cognitive processes and the entrepreneurial mindset.

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