Examining the emotion-entrepreneurial intention link using the theory of planned behavior

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Abstract

Purpose – Entrepreneurship is often seen as a journey filled with emotions. However, the literature lacks an empirical framework for how emotions relate to entrepreneurial intention. Drawing upon an extended view of the theory of planned behavior (TPB) that emotions may have a direct and/or indirect effect on intention, this study investigates how positive and negative emotions influence entrepreneurial intention.

Design/methodology/approach – Applying the partial least squares structural equation model in Smart PLS 4, the hypothesized relationships were examined using a sample of 553 survey respondents from Bangladesh during and after the COVID-19 pandemic. All respondents were Bangladeshi nationals.

Findings – This study found that positive emotions have a significant direct and indirect effect, whereas negative emotions only have a significant indirect effect on entrepreneurial intention through personal attitudes and perceived behavioral control. Contrary to the extant understanding, this study found no significant relationship between subjective norms and entrepreneurial intention. Notably, the results did not vary between the during and post-COVID-19 periods.

Originality/value – This study adds valuable insights to the relatively unexplored field of entrepreneurial intention by extending the TPB and demonstrating how emotions relate to entrepreneurial intention.

Keywords Emotions, entrepreneurship, entrepreneurial intention, attitudes, perceived behavioral control, Bangladesh, partial least squares structural equation model, theory of planned behavior.

1. Introduction

Entrepreneurship involves uncertainty and risks (Humphrey *et al.*, 2020; Townsend *et al*., 2018) and is shaped by individual motivation and the sociocultural context in which it occurs (Autio and Rannikko, 2016, Fayolle *et al.*, 2014; Ukil, 2024; Wang *et al.*, 2019). Uncertainty, an unavoidable reality in entrepreneurship, activates emotional states that influence subsequent decision-making (Cohen, 2005; Hayton and Cholakova, 2012; Li *et al.*, 2014; Townsend *et al.*, 2018). Consequently, researchers view entrepreneurship as an inherently emotional process (Cardon *et al.*, 2012; Changle, 2018), wherein one of the most prominent phases is entrepreneurial intention. Mental intention to start a business is perhaps the most frequently studied concept in entrepreneurship research. A person's choice to become an entrepreneur depends on their cognitive appraisal of their motivations, abilities, and social influences (Baughn *et al.*, 2006; Bird, 1988; Ezeh *et al.*, 2020; Farrukh *et al.*, 2018; Florin *et al.*, 2007). Moreover, people experience emotions when appraising the likely effects of events on their goals (Lazarus, 1991), implying they are emotionally attached to their intention to become entrepreneurs. However, the literature lacks an empirically tested theoretical model of the relationship between emotions, cognition, and entrepreneurial intention.

Entrepreneurial intention is the immediate precursor of entrepreneurial behavior (Ayalew, 2020; Krueger and Carsud, 1993; Neneh, 2019). Representing the transition stage wherein people translate their ideas into action, entrepreneurial intention has become central to entrepreneurship research (e.g., Chhabra *et al.*, 2020; Farrukh *et al.*, 2018; Feola *et al.*, 2017; Fragoso *et al.*, 2020; Roy *et al.*, 2017). This, in turn, has greatly advanced our understanding of how cognitive aspects influence entrepreneurial intention. Prior studies have employed a range of theoretical models and frameworks such as, the entrepreneurial event model and the theory of planned behavior (TPB), to examine the cognitive factors that shape entrepreneurial intention (e.g., Ajzen, 1991; Barrios *et al.*, 2022; Bazkiaei *et al.*, 2021; Krueger *et al.*, 2000; Liñán and Chen, 2009; Shapero and Sokol, 1982). Some studies have examined distinct personal attributes, such as locus of control and creativity, to assess their impact on the formation of entrepreneurial intention (Arkorful and Hilton, 2022; Smith et al., 2016). A core understanding of these studies and theoretical models suggests that individuals' attitudes and belief structures significantly influence their intention to pursue entrepreneurship (Ukil *et al.*, 2024a).

These models are well-researched and widely accepted in the entrepreneurship literature (Ezeh *et al.*, 2020; Farrukh *et al.*, 2017; Krueger, 1993: Krueger *et al.*, 2000; Liñán and Chen, 2009; Ridha *et al.*, 2017; Saeed *et al.*, 2015; Soomro *et al.*, 2020). However, they have been criticized for focusing on cognitive components and not capturing all constructs related to behavioral intention (Rapaport and Orbell, 2000; Wolff *et al.*, 2011). Emotions are closely connected to, but distinct from, cognition (Hayton and Cholakova, 2012), influencing decision-making and subsequent behavior (Bagozzi *et al.*, 1999; Cohen, 2005). The association between particular emotions, such as fear, and the decision to become an entrepreneur is evident, albeit to a limited extent (Turulja *et al.*, 2020; Ukil and Almashayekhi, 2024). However, these models lack an understanding of emotional aspects (Wolff *et al.*, 2011). For example, the most commonly used theory to study entrepreneurial intention is the TPB, according to which, the best predictors of intention are three cognitive elements: personal attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). In this study, we endeavor to bridge this gap by incorporating emotion into the TPB and addressing the following research question: *How do emotions relate to cognition and entrepreneurial intention?*

To address our research question, we extend the TPB and present an extensive model of entrepreneurial intention through quantitative exploration. As we find, positive emotions significantly influence entrepreneurial intention while negative emotions do not. Nonetheless, both positive and negative emotions shape entrepreneurial intention via personal attitudes and perceived behavioral control. The insights from this research enrich the growing body of literature in several ways. First, drawing on the literature suggesting a direct influence of emotions on intention (Wolff *et al.*, 2011), we introduce a novel perspective that posits emotions as antecedents of entrepreneurial intention. Second, existing research that extends TPB to study entrepreneurial intention predominantly incorporates additional cognitive factors such as locus of control, risk-taking propensity, creativity, and proactiveness (Barrios *et al.*, 2022; Farrukh *et al.,* 2018; Munir *et al.*, 2019). In contrast, we integrate emotions into the TPB and present a new emotion-cognition-intention perspective. As indicated by Azjen (2011), we propose that emotions indirectly influence intention through behavioral, normative and control beliefs that are well accounted for by the TPB. That is, emotions (positive and negative) influence entrepreneurial intention through personal attitudes, subjective norms, and perceived behavioral control. This idea is particularly relevant to our research because our investigation takes place in a challenging environment (i.e. Bangladesh) wherein entrepreneurs undergo many emotional processes to start and run a business.

2. Theoretical framework and hypotheses development

2.1 Entrepreneurial intention and the TPB

Intentions toward a behavior indicate the ideal prediction of that behavior (Fishbein and Ajzen, 1975; Kim and Hunter, 1993; Mwiya *et al.*, 2019). Researchers regard entrepreneurship as a behavior best projected by intentions rather than beliefs, attitudes, personality traits, or demographic characteristics (Krueger and Carsud, 1993). Entrepreneurial intention is a cognitive state of entrepreneurial behavior that precedes all entrepreneurial actions and represents a person's cognizant belief in creating a new business (Bird, 1988). Therefore, it is the most authentic predictor of entrepreneurial behavior (Krueger and Carsud, 1993; Neneh, 2019).

Scholars have developed and applied various models to explore the cognitive factors that influence entrepreneurial intention (e.g., Barrios *et al.*, 2022; Bazkiaei *et al.*, 2021; Krueger *et al.*, 2000; Liñán and Chen, 2009). One of the models used is the Entrepreneurial Event Model (Shapero and Sokol, 1982), which proposes three precursors to entrepreneurial intention: perceived feasibility, perceived desirability, and propensity to act. Another is the Entrepreneurial Intention Model (Boyd and Vozikis, 1994)—an extension of Bird's (1988) model of entrepreneurial intentionality, which suggests that attitudes and entrepreneurial self-efficacy are the most significant predictors of entrepreneurial intention. The theory most extensively applied to study entrepreneurial intention is the TPB (e.g., Barrios *et al.*, 2022; Ezeh *et al.*, 2020; Farrukh *et al.*, 2018; Marjana *et al.*, 2018; Munir *et al.*, 2019). The TPB posits that behavioral intention depends on three antecedents: personal attitudes, subjective norms, and perceived behavioral control. Although researchers employed distinct approaches to develop and apply these theories, these models have conceptual similarities. For example, perceived desirability and feasibility are respectively considered similar to personal attitudes and perceived behavioral control (Krueger *et al.*, 2000). Moreover, perceived behavioral control and feasibility are regarded as similar to entrepreneurial self-efficacy (Krueger et al., 2000).

In the TPB, personal attitudes denote how positively or negatively a person evaluates their intended actions (Ajzen, 2001). Subjective norms identify the perception of a reference group's approval or disapproval of the decision (Ajzen, 2001), while perceived behavioral control indicates how easy or difficult a person believes it is to perform the behavior (Ajzen, 1991). According to the TPB, the more positive the attitude toward entrepreneurship and the stronger the beliefs about receiving support from a reference group and being able to perform certain entrepreneurial tasks, the higher the entrepreneurial intention. This is reflected in a large body of prior research suggesting that individual attitudes, societal norms, and perceived behavioral control significantly affect entrepreneurial intentions (Barrios *et al.*, 2022; Ezeh *et al.*, 2020; Farrukh *et al.*, 2017, 2018; Kurczewsk and Bialek, 2014; Marjana *et al.*, 2018; Mei *et al.*, 2016; Munir *et al.*, 2019; Ridha *et al.*, 2017). Thus, we hypothesize the following:

H1: *Personal attitudes significantly and positively influence entrepreneurial intention.*

H2: *Subjective norms significantly and positively influence entrepreneurial intention.*

H3: *Perceived behavioral control significantly and positively influences entrepreneurial intention.*

The TPB focuses on the cognitive aspects of behavior and neglects its emotional aspects, which significantly limits the effectiveness of using the theory to study entrepreneurial intention because entrepreneurship is an emotional process (Cardon *et al.*, 2012). Cognitive aspects are important elements of entrepreneurial intention. However, emotional aspects cannot be ignored, because they shape the behavioral response, whether it is an approach or avoidance (Mehrabian and Russell, 1974). In a response to the criticisms that emotions are ignored in the TPB, Ajzen (2011) acknowledged the role of emotions in the TPB and proposed that "emotions can have indirect effects on intentions", which however remained untested. We endeavor to empirically test this extended perspective by incorporating an additional aspect that emotions can directly influence entrepreneurial intention (Cardon *et al.*, 2012). Next, we discuss how emotions relate to entrepreneurial intention.

2.2 Emotions and entrepreneurial intention

Emotions—a widely studied topic in psychology—has attracted significant attention in entrepreneurship research (Baron and Tang, 2011; Byrne and Shepherd, 2015; Cardon *et al.*, 2012; Doern and Goss, 2011; Foo, 2011; Shepherd and Patzelt, 2018). Broadly, scholars define emotion as a phenomenon of expressing subjective feelings of pleasure or displeasure (Barrett *et al.*, 2007; Barsade and Gibson, 1998). In entrepreneurship, emotion refers to a person's mood or feelings and is considered as an antecedent to the entrepreneurial process (Cardon *et al.*, 2012). Several studies have identified the role of emotion in various aspects of the entrepreneurial process, such as its influence on opportunity evaluation, subsequent venture task efforts, and creativity (Baron and Tang, 2011; Foo *et al.*, 2009; Foo, 2011). Entrepreneurial intention is a key phase in the entrepreneurial process and a powerful precursor to entrepreneurial behavior. However, we lack empirical understanding of how emotions relate to entrepreneurial intention precisely.

Mehrabian and Russell (1974) asserted that environmental stimuli induce emotional reactions that shape behavioral aspects, such as approach or avoidance responses. This view is prevalent among researchers studying the relationships between emotions and intentions, such as the influence of emotions on purchase or usage intentions (Bagozzi *et al.*, 2016; Jang and Namkung, 2009; Moons and Pelsmacker, 2012; Yin and Hsu, 2023). Starting a business is a social activity largely influenced by environmental conditions, including access to funding, social support, and networks (Kristiansen and Indarti, 2004; Sesen, 2013). Such sociality may activate people's emotions when they intend to start businesses, implying an association between emotions and entrepreneurial intention. However, not all emotions are the same, and their influences on entrepreneurial intention differ. The literature describes two distinct categories of emotions: positive and negative (Watson and Tellegen, 1985; Tellegen *et al.*, 1999). Positive emotions typically relate to approach- or promotion-focused behavior; and negative emotions to avoidance- or prevention-focused behavior (Watson *et al.*, 1999).

Positive emotions can enhance intrinsic motivation during the entrepreneurial engagement process and induce positive feelings more frequently, causing potential outcomes to appear more attractive. The greater the attractiveness of potential outcomes, the greater the likelihood of engaging in entrepreneurial activity (Jia and Zhang, 2018). Accordingly, individuals who experience high levels of positive emotions are more likely to be interested in entrepreneurial engagement. Positive emotions enable people to seek and obtain new knowledge that reduces uncertainty, strengthens mental beliefs, and fosters decision-making; thus, positive emotions contribute to proactive behavior and can increase the possibility of pursuing an entrepreneurial idea (Grant and Ashford, 2008; Hayton and Cholakova, 2012). Specifically, positive emotions exert a positive influence on behavioral intention (Jang *et al.*, 2020; Lee *et al.*, 2012; Nieves-Pavón *et al.*, 2024).

Thoughts of starting a business stimulate various positive emotions. However, the associated uncertainty and prospect of failure induce negative emotions, such as fear of uncertainty and fear of failure, which influence entrepreneurial intention negatively (Ukil and Jenkins, 2023; Ukil and Almashayekhi, 2024). Similarly, people experience shame, another negative emotion, when others see the adverse consequences of their actions (Agarwal and Duhachek, 2010). Such negative emotions suggest that when circumstances are unfavorable (Carver, 2003), individuals may adopt avoidance behavior that influences subsequent behavioral intentions. For example, negative emotions influence individuals' intention to consume unhealthy food, representing an avoidance behavior (Richards *et al.*, 2021). Specifically, negative emotions are found to have a negative impact on behavioral intention (Londono et al., 2017; Nguyen *et al.*, 2022; Nieves-Pavón *et al.*, 2024). Therefore, we propose the following hypotheses:

H4. *Positive emotions significantly and positively influence entrepreneurial intention.*

H5. *Negative emotions significantly and negatively influence entrepreneurial intention.*

2.3 Role of personal attitudes, subjective norms and perceived behavioral control in the relationship between emotions and entrepreneurial intention

In response to criticism about the absence of emotions in the TPB, Ajzen (2011) argued that emotions can indirectly influence behavioral intention through behavioral (personal attitudes), normative (subjective norms) and control (perceived behavioral control) beliefs, sparking the notion that emotions influence cognitive schemas that, in turn, lead to subsequent judgements or decision making (Fogazzi *et al.*, 2020; Libet, 1985; Velástegui and Chacón, 2021; Zajonc, 1998). Specifically, Ajzen (2011) suggested that personal attitudes, subjective norms, and perceived behavioral control mediate the relationship between emotions and behavioral intention.

Emotions influence various cognitive aspects of entrepreneurial intention, such as entrepreneurial idea perception and self-efficacy, which subsequently influence entrepreneurial intention (Hayton and Cholakova, 2012). However, the effects are not the same for all emotions.

Positive emotions signal that everything is going well; thus, rather than decreasing effort (Foo *et al.*, 2009), they activate cognitive responses (Baron, 2008) and influence various cognitive properties associated with entrepreneurship (Fodor and Pintea 2017). These positively influences entrepreneurial activities, such as cognitive performance, task motivation, effort devoted to entrepreneurial tasks, and opportunity identification (Baron *et al.*, 2012; Foo et al., 2009; Gaglio and Katz, 2001). In contrast, negative emotions signal that one's progress toward their goals is unsatisfactory; thus, individuals activate responses by escalating subsequent efforts (Carver, 2003). Putting more effort into certain tasks may not be sufficient for full competence, but it helps increase people's feelings of control over their perceived behavior. Prior literature suggests that individuals with more positive self-beliefs, optimism, and drive tend toward approach behavior (Martin and Marsh, 2003; Wood and Bandura, 1989), expecting to repair the adverse effects of negative emotions (Mittal and Ross Jr, 1998). Nonetheless, the literature indicates that while positive emotions tend to have a positive impact on cognitive beliefs (such as attitudes, subjective norms, and self-efficacy belief), negative emotions exert an adverse influence on these beliefs, which in turn, shape behavioral intention (Abikari *et al.*, 2023; Hosany *et al.*, 2017; Laviolette *et al.*, 2012; Nieves-Pavón *et al.*, 2024). Based on these arguments coupled with the Ajzen's (2011) proposition, we illustrate our proposed research model in Figure 1 and postulate the following hypotheses:

> ***H6a.*** *Positive emotions significantly and positively influence entrepreneurial intention through personal attitudes. That is, personal attitudes mediate the relationship between positive emotions and entrepreneurial intention.*
>
> ***H6b.*** *Positive emotions significantly and positively influence entrepreneurial intention through subjective norms. That is, subjective norms mediate the relationship between positive emotions and entrepreneurial intention.*

H6c. *Positive emotions significantly and positively influence entrepreneurial intention through perceived behavioral control. That is, perceived behavioral control mediates the relationship between positive emotions and entrepreneurial intention.*

H7a. *Negative emotions significantly and negatively influence entrepreneurial intention through personal attitudes. That is, personal attitudes mediate the relationship between negative emotions and entrepreneurial intention.*

H7b. *Negative emotions significantly and negatively influence entrepreneurial intention through subjective norms. That is, subjective norms mediate the relationship between negative emotions and entrepreneurial intention.*

H7c. *Negative emotions significantly and negatively influence entrepreneurial intention through perceived behavioral control. That is, perceived behavioral control mediate the relationship between negative emotions and entrepreneurial intention.*

<<Insert Figure 1 here>>

3. Methodology

3.1 Sample, context and procedure

To conduct this research, we utilized a sample of general population (with sound knowledge in English as the questionnaire was prepared in English) aged 18–65 living in Dhaka, Bangladesh. We adopted the convenience sampling method and reached out to potential respondents through the authors' social networks owing to the restricted public movement during the COVID-19 pandemic. Through convenience sampling, we sought to meet the selection criteria, such as, respondents' ability to understand English, and to ensure sufficient responses (Fragoso *et al.*, 2020). We also approached specific groups (e.g. female group) within our social networks to warrant sufficiently representative sample.

Data were collected through a two-stage online survey using a self-reported questionnaire. The survey questionnaire was accompanied by a cover letter that outlined the purpose of the study and included the following statements: “The survey is completely anonymous; your participation in this survey is voluntary and has neither any benefits nor any risks; importantly, you have the full rights to withdraw any time you want”. The initial survey was conducted during March-June 2020 when the COVID-19 pandemic appeared to pose a severe threat. During this stage, we circulated the survey questionnaire (online link) among 750 individuals with a request to participate in the survey and obtained 329 complete responses. The second-round survey was conducted three years later, during June-August 2023, when COVID-19 restrictions had been largely lifted, with people returning to normalcy. During this stage, the survey questionnaire (online link) was distributed to 750 additional individuals who did not participate in the first-round survey; only 224 of them completed the survey.

We received a total of 553 complete responses with a 37% response rate. The response rate may have been affected by two main reasons. First, our study concerned negative emotions; this is a sensitive topic, particularly because of the recent COVID-19 outbreak. Research in the Bangladeshi context has found that the mental health of Bangladeshi nationals has been seriously affected by the pandemic (Das *et al.*, 2021; Faisal *et al.*, 2022). Some respondents may not have been able to answer sensitive questions. Second, prior studies have revealed that people are less motivated to respond to sensitive questions (Tourangeau and Yan, 2007).

We estimated the required sample size to warrant at least 95% power of our analysis, applying one-sample t-test using G*Power software. We used a small effect size (d = 0.2) and set

Type I error probability (α) to be 0.05, as previously suggested (Brysbaert, 2019; Cohen, 1962, 1988). The test outcomes showed that we needed a sample of 327 to ensure 95% power of the analysis (1 – β error probability). Hence, our sample of 553 was deemed adequate.

Table I shows the composition of our respondents, indicating a male majority (63.9 %) and an average age of 25.5 years. Approximately one-third of the respondents revealed having entrepreneurs in their families, whereas nearly two-thirds reported being unemployed.

The decision to choose Bangladesh as the study context and the design of conducting surveys at two different times were purposeful. First, emotions are situational dynamics, heavily influenced by contexts (Mesquita and Boiger, 2014; Tracy, 2014). Second, emotions are perceived differently over time depending on individuals' life events (Kuppens and Verduyn, 2017). As such, in addition to minimizing common method variance (CMV; Podsakoff et al., 2003), we administered two surveys at two different times (during and after the COVID-19 pandemic) to analyze whether the impact of emotions on entrepreneurial intention varied over time.

<<Insert Table I here>>

3.2 Measures and instruments

We utilized a self-report questionnaire comprising two sections: one included demographic questions and the other included items used to measure respondents' perception of the variables of analysis. We applied two validated scales to evaluate our study variables. We adopted the 20-item Entrepreneurial Intention Questionnaire (Liñán and Chen, 2009) to assess personal attitudes (e.g., "Among various options, I would rather be an entrepreneur"), subjective norms (e.g., "If I decide to create a firm, my close family will approve of that decision"), perceived behavioral control (e.g., "I can control the creation process of a new firm") and entrepreneurial intention (e.g., 'I have the firm intention to start a business someday"). This scale has been consistently demonstrated to be reliable and valid (e.g., Bullough *et al.*, 2014; Lee-Ross, 2017).

To assess the level of respondents' positive and negative emotions, we adapted Watson et al.'s (1988) Positive and Negative Affect Schedule (PANAS). The PANAS is a 20-item scale comprising of two subscales: positive affect (e.g., "When I think of starting a business, I feel interested") and negative affect (e.g., "When I think of starting a business, I feel distressed"), each featuring ten items. We relied on PANAS as it has been widely used to assess positive and negative emotions (Rush and Hofer, 2014) and has been established as highly valid and reliable across disciplines (e.g., Guo *et al.*, 2019). We modified all items in the PANAS to fit them into our research context, that is, entrepreneurial intention. We added the phrase "When I think of starting a business" into items assessing positive and negative emotions so that respondents can express their emotional states specifically regarding entrepreneurial intention.

All items in the measurement scales were measured using two different Likert scales with terminal response categories ranging from "1-strongly disagree" to "5-strongly agree" and from "1-not true at all" to "5-very much true."

3.3 Data analysis

Prior to the formal data analysis, we conducted two separate statistical examinations (Harman's one factor and collinearity tests) to determine if our data were affected by CMV. This was followed by a test of normality that helps determine an appropriate analysis technique.

By applying the principal component analysis as the estimation method, we then performed the confirmatory composite analysis (CCA) to evaluate the measurement model. We then estimated the variables' descriptive and correlation statistics, as presented in Table II. Next, we examined the hypothesized structural relationships by applying the partial least squares structural equation model with 5000 bootstrap samples. Finally, we performed multigroup analysis to examine whether differences existed between during-COVID-19 and post-COVID-19 respondents and between male and female respondents. We utilized SPSS 25 to conduct Harman's one factor and normality tests and calculate descriptive and correlation statistics; and Smart PLS 4 to conduct CCA, partial least squares structural equation model, and multigroup analysis.

We selected the partial least squares structural equation model for several reasons. First, we proposed an extension to the TPB and hypothesized a mediation model to offer causal explanations between emotions, cognitive beliefs and entrepreneurial intention. The partial least squares structural equation model is considered to be an appropriate technique to examine such an extension and for mediation analysis (Hair et al., 2019; Shmueli et al., 2019). Second, we performed the Kolmogorov-Smirnov test to check whether our data were normally distributed. The test statistics (W) and p value indicated that our data differed significantly from a normal distribution (Positive emotion: W=0.15, p=0.00; Negative emotion: W=0.06, p=0.00; Personal attitudes: W=0.17, p=0.00; Subjective norms: W=0.14, p=0.00; Perceived behavioral control: W=0.08, p=0.05; Entrepreneurial intention: W=0.12, p=0.05). The partial least squares structural equation model is the most suitable technique to analyze data that lack normality (Hair et al., 2019; Manley et al., 2021).

<<Insert Table II here>>

3.4 COVID-19 context

Emotions are non-static and vary depending on individuals' life events over time and across contexts, subsequently influencing behavioral decision/intention (Givon *et al.*, 2023; Mehrabian and Russell, 1974; Mesquita and Boiger, 2014). For example, many individuals experienced heightened negative emotions such as stress and anxiety during the COVID-19 pandemic (e.g., Ahmed *et al.*, 2022). Therefore, we endeavored to examine whether the influence of emotions on entrepreneurial intention differed over time (i.e. when individuals experienced a threat such as the COOVID-19 pandemic versus when they did not).

3.5 Control variables

We included three control variables—gender, community and family entrepreneurial background—to assess the robustness of our research model. Our choice of these variables had justifications. Gender and family entrepreneurial background are well-established factors that are linked to entrepreneurial intention, with studies suggesting that women are generally less likely to start a business while family entrepreneurial background offers individuals with valuable knowledge and useful support to start and run a business (Joensuu et al., 2013; Shirokova et al., 2016). Additionally, we controlled for community type, as our respondents came from both urban and rural communities.

3.6 CMV and collinearity issues

We implemented multiple strategies to reduce potential threat of CMV before conducting the surveys. First, we conducted the surveys anonymously to minimize CMV (Chang et al., 2010; Podsakoff et al., 2003). Second, we made the participation voluntary, as forced participation may enhance psychological reactance and dampens respondents' motivation to provide accurate answers (McKenzie and Podsakoff, 2012). Third, we used two separate response categories ("strongly disagree – strongly agree" and "not true at all – very much true") to disrupt unwanted response patterns such as straight-line responses (MacKenzie and Podsakoff, 2012). Lastly, we ensured respondents of the confidentiality of their data to mitigate suspicions (MacKenzie and Podsakoff, 2012).

Moreover, to empirically confirm that the data were not affected by CMV, we performed the Harman's one-factor test applying principal component analysis, where we set the number of extracted factors as "1" (Podsakoff et al., 2012). The results implied that the one factor could explain only 28.4% of the variance. Data are assumed to be affected by CMV if the one factor explains more than 50% of the variance (Podsakoff and Organ, 1986). This analysis provided evidence that the data collected were not affected by CMV.

Additionally, we conducted a collinearity test by determining the variance inflation factor (VIF) score of each measurement item. The VIF scores were ranged between 1.20 and 3.56, which are less than the threshold of 4 (O'Brien, 2007).

4. Results

4.1 Assessment of the measurement model

As our hypothesized research model consisted of reflective variables, we evaluated the measurement model by (a) estimating factor loadings and assessing (b) variables' internal consistency using Cronbach's alpha coefficient and composite reliability, (c) convergent validity using average variance extracted (AVE), and (d) discriminant validity using Fornell-Larcker criteria and heterotrait-monotrait (HTMT) ratio (Sarstedt *et al.*, 2021). The cut-off criteria for the indicators were as follows: (i) factor loading>0.50; (ii) Cronbach's alpha and composite reliability>0.07; (ii) AVE>0.05; (iii) Fornell-Larcker criteria: square root of the AVEs>intervariable correlation coefficients; (iv) HTMT ratio<0.85 (Chin, 1998; Fornell and Larcker, 1981; Hair et al., 2019; Henseler *et al.*, 2015; Kline, 2011: Sarstedt *et al.*, 2021).

The CCA results revealed a good fit for our measurement model (SRMR = 0.071). The results of the measurement model assessment are presented in Tables III, IV and V. Factor loadings along with the reliability and convergent validity statistics for personal attitudes, subjective norms, perceived behavioral control and entrepreneurial intention in Table IIII; and for positive and negative emotions are exhibited in Table IV. The discriminant validity statistics are displayed in Table V.

As can be seen from Tables III and IV, factor loadings of all items were greater than 0.50 (Hair et al., 2019). The Cronbach's alpha and composite reliability values were much higher than the suggested threshold value of 0.70 (Byrne, 2010; Sarstedt *et al.*, 2021), indicating that the internal consistency of each variable was adequate. The AVEs of all constructs ranged between 0.50 and 0.70 and fulfilled the criterion for adequate convergent validity (Fornell and Larcker, 1981; Sarstedt *et al.*, 2021). The square roots of the AVE values were greater than their inter-variable correlation coefficients; thus, discriminant validity was reasonably well-established (Hair *et al.*, 2006; Kline, 2011). The HTMT values were also well below the recommended cutoff value of 0.85, which further endorsed discriminant validity (Henseler *et al.*, 2015; Kline, 2011; Sarstedt *et al.*, 2021).

<<Insert Table III here>>

<<Insert Table IV here>>

<<Insert Table V here>>

4.2 Structural model

The structural model was assessed by determining the values of (a) VIF; (b) R^2; (c) f^2; (d) Q^2; and (e) PLSpredict (Sarstedt *et al.*, 2021). VIF scores are used to determine multicollinearity; R^2—commonly known as the coefficient of determination—indicates the in-sample predictive power of endogenous variables; f^2—referred to as the effect size—indicates the predictive ability of each independent variable; Q^2—referred to as blindfolding—indicates the out-sample predictive power; and PLSpredict is also used to estimate out-sample predictive power (Hair Jr *et al.*, 2020). The threshold criteria of these indicators are as follows: (i) VIF<3; (ii) R^2: 0.75=substantial, 0.50=moderate, 0.25=weak; (iii) f^2: 0.35=large, 0.15=medium, 0.02=small; (iv) Q^2: 0.50=substantial, 0.25=moderate, >0=meaningful; (v) PLSpredict: all indicators have root mean squared error (RMSE) lower than linear regression model (LM) benchmark=high predictive power, majority of the indicators have RMSE lower than the LM=medium predictive power, minority of the indicators have RMSE lower than the LM=low predictive power (Hair Jr *et al.*, 2020; Sarstedt *et al.*, 2021).

The results suggest that the hypothesized structural model achieved a good fit (SRMR = 0.076) according to all relevant indicators outlined above. The VIF scores (inner model) were ranged between 1.05 and 1.59, less than the cut-off criteria of 3 (Hair Jr *et al.*, 2020). The R^2 value of entrepreneurial intention (0.60) indicates that the model had moderate explanatory power. The f^2 values implied that personal attitudes (f^2=0.308) and perceived behavioral control (f^2=0.266) exerted a medium effect and positive emotion (f^2=0.008) exerted a small effect on entrepreneurial intention. The Q^2 values (Eentrepreneurial intention =0.255; personal attitudes=0.280; perceived behvioral control=0.219; subjective norms=0.096) indicated the model to have a moderate predictive relevance. The results of PLSpredict also suggested that the hypothesized research model had moderate predictive power as majority of the endogenous indicators (14 out of 20) had RMSE lower than their corresponding LM.

4.3 Results of hypotheses testing

The model demonstrated significant structural effects for three direct paths at $p<0.05$ (see Table VI). Personal attitudes ($\beta=0.440$; $p<0.001$), perceived behavioral control ($\beta=0.399$; $p<0.001$) and positive emotion ($\beta=0.079$; $p<0.05$) significantly and positively influence entrepreneurial intention. Thus, H1, H3, and H4 are supported. Neither subjective norms ($\beta=0.010$, $f^2=0.000$; $p=0.848$) nor negative emotion ($\beta=-0.025$, $f^2=0.001$; $p=0.417$) significantly and directly influence entrepreneurial intention. Therefore, H2 and H5 were rejected.

We also analyzed the mediating effects of personal attitudes, subjective norms and perceived behavioral control on the relationship between emotions (positive and negative) and entrepreneurial intention. Table VII displays the results of the mediation analysis. The results indicate that personal attitudes ($\beta=0.223$; CI: 0.165, 0.285) and perceived behavioral control ($\beta=0.259$; CI: 0.119, 0.205) significantly mediate the relationship between positive emotions and entrepreneurial intention as the corresponding CIs did not contain "zero", supporting H6a and H6b. These mediating effects are considered to be only partial as positive emotions have a significant direct influence on entrepreneurial intention. Personal attitudes ($\beta=-0.046$; CI: –0.091, –0.004) and perceived behavioral control ($\beta=-0.077$; CI: –0.119, –0.042) also significantly mediate the relationship between negative emotions and entrepreneurial intention, given that the corresponding CIs included no "zero" values, confirming H7a and H7c. These relationships indicate full mediation, as negative emotions do not have a significant direct influence on entrepreneurial intention. Contrarily, subjective norms do not mediate the relationships between positive emotions and entrepreneurial intention (β=0.002; CI: –0.017, 0.019) or between negative emotions and entrepreneurial intention (β=–0.001; CI: –0.012, 0.011), as the corresponding CIs included “zero”, rejecting H6b and H7b.

<<Insert Table VI here>>

<<Insert Table VII here>>

4.4 Multigroup analysis

The multigroup analysis revealed no significant differences between during-COVID-19 and post-COVID-19 respondents. The beta differences (∆β) for all direct effects were insignificant (H1: ∆β=0.046, p=615; H2: ∆β=–0.018, p=0.809; H3: ∆β=0.002, p=0.981; H4: ∆β=–0.021, p=0.812; H5: ∆β=–0.057, p=0.441). Similarly, the beta differences for the indirect effects were also negligeable and all insignnificant (H6a: ∆β=0.093, p=0.155; H6b: ∆β=–0.004, p=0.806; H6c: ∆β=0.005, p=0.904; H7a: ∆β=–0.019, p=0.783; H7b: ∆β=0.003, p=0.882; H7c: ∆β=–0.029, p=0.568).

4.5 Robustness check

Lastly, we tested the robustness of our findings by incorporating three control variables: gender, community and family entrepreneurial background. The results of the robustness tests were consistent to those from the hypotheses testing. As shown in Table VIII, the robustness tests confirmed that personal attitudes (H1), perceived behavioural control (H3) and positive emotions (H4) were positively and significantly related to entrepreneurial intention. Moreover, the indirect effects of positive and negative emotions on entrepreneurial intention remined significant through personal attitudes (H6a, H7a) and perceived behavioral control (H6c, H7c).

<<Insert Table VIII here>>

5. Discussion

Emotions have become an important area of entrepreneurship research (Baron, 2008; Byrne and Shepherd, 2015; Cardon *et al.*, 2012; Doern and Goss, 2011; Shepherd and Patzelt, 2018). Several studies on emotions in entrepreneurship have focused on entrepreneurial ideas, opportunities (Foo, 2011; Gaglio and Katz, 2001), and actions (Baron and Tang, 2011; Foo *et al.*, 2009). Entrepreneurial intention represents the transition stage in which people translate their ideas and opportunities into actions, involving several emotions. Research on the relationship between emotion and intention has been noteworthy in many other disciplines (Jang and Namkung, 2009; Moons and Pelsmacker, 2012; Smith and Reynolds, 2008). Therefore, we adopted a cross-disciplinary view of emotion-intention to investigate this domain, drawing on an extended perspective of the TPB, suggesting that emotions directly and indirectly influence entrepreneurial intention.

We found partial support for the extended TPB. Our findings suggest that personal attitudes and perceived behavioral control significantly and positively influence entrepreneurial intention (H1, H3), whereas the impact of subjective norms is not significant (H2). Although the three antecedents of TPB are well accounted for in predicting intentions across disciplines (Davis *et al.*, 2002; Godin and Kok, 1996; Greaves *et al.*, 2013; Kaiser and Gutscher, 2006; Parker *et al.*, 1992;

Prapavessis *et al.*, 2015; Quintal *et al.*, 2010; Sussman and Gifford, 2018; Warner and Åberg, 2006), prior evidence on entrepreneurial intention research indicates mixed outcomes. Personal attitudes and perceived behavioral control have consistently been significant predictors of entrepreneurial intention (Arafat *et al.*, 2020; Bazkiaei *et al.*, 2021; Feola *et al.*, 2017; García-Rodríguez *et al.*, 2013; Lee-Ross, 2017; Su *et al.*, 2021). However, the relationship between subjective norms and entrepreneurial intention varies, with many studies showing no significant association (Arafat *et al.*, 2020; García-Rodríguez *et al.*, 2013; Lee-Ross, 2017; Moriano et al., 2012; Su *et al.*, 2021).

These results may not be new; nevertheless, they are surprising, given that the cultural context in Bangladesh is based on strong social and family bonding, where parents interfere much in their children's career decisions. Although the effect of subjective norms on entrepreneurial intention varies across cultures (Moriano et al., 2012), one plausible explanation could be that individuals having sufficient positive perceptions and self-beliefs to start a new business ignore parental or societal interference, assuming their decision to start a business may not be approved. The COVID-19 pandemic may also have had an impact on youth behavior. The pandemic has transformed the world of work and has placed a heavy burden on available support systems. This may have been the catalyst for young people realizing the importance of coping with change and taking control of their lives. In two separate studies conducted in India, a cultural context similar to Bangladesh, Arafat *et al.* (2020) found no significant relationship between subjective norms and entrepreneurial intention, whereas Roy et al. (2017) found a significant but weak relationship. A similar finding was evident in another study using an Iranian sample, indicating that the effect of subjective norms on entrepreneurial intention was as low as 0.08, whereas personal attitudes and self-efficacy effects accounted for 38% and 44%, respectively (Najafabadi *et al.*, 2016). Another reason may be that subjective norms are antecedents of personal attitudes and perceived behavioral control and better predict entrepreneurial intention through personal attitudes and perceived behavioral control (Heuer and Liñán, 2013). Our findings are aligned with the concepts and research on entrepreneurial intention, which consider personal attitudes and perceived behavioral control/entrepreneurial self-efficacy to be the most authentic predictors of entrepreneurial intention (Barrios *et al.*, 2022; Boyd and Vozikis, 1994; Kurczewsk and Bialek, 2014; Marjana *et al.*, 2018; Munir *et al.*, 2019).

The results confirm the theoretical underpinnings that emotions are antecedents of intention (Wolff *et al.*, 2011) and the entrepreneurial process (Cardon *et al.*, 2012). Our results suggest a significant positive association between positive emotions and entrepreneurial intention (H4). This finding aligns with prior research suggesting that emotions influence people's judgments and decisions (Forgas, 1995; Forgas and Ciarrochi, 2001; Lerner *et al.*, 2015; Mayer *et al.*, 1992; Shepherd, 2011), and positive emotions influence decision-making (Zhu, 2015) and behavioral intention (Jang *et al.*, 2020). Contradictory to our hypothesis (H5), we found no significant relationship between negative emotions and entrepreneurial intention.

Furthermore, this study builds on the theoretical understanding that emotions can influence behavioral intention through behavioral, normative and control beliefs (Ajzen, 2011; Forgas, 1995; Gendolla, 2000; Hayton and Cholakova, 2012). We provide a fresh perspective on this phenomenon by uncovering that the behavioral (personal attitudes) and control (perceived behavioral control) beliefs mediate the relationship between emotions and entrepreneurial intention (H6a, H6c, H7a, H7c), whereas the normative belief (subjective norms) does not (H6b, H7b). Prior studies investigated the mediating role of personal attitudes and perceived behavioral control in the relationship between various cognitive factors and entrepreneurial intention, suggesting that they mediate the effects of creativity, locus of control, moral judgement and big five personality traits on entrepreneurial intention (Bazkiaei *et al.*, 2021; Rosique-Brasco *et al.*, 2018; Ukil *et al.*, 2024b). However, we provide a new perspective that personal attitudes and perceived behavioral control mediate the effect of positive emotions on entrepreneurial intention positively and negative emotions negatively. This may be because negative emotions signal insufficient information, activating a reactive response (Foo *et al.*, 2009) that may encourage potential entrepreneurs to try harder, which, in turn, strengthens their intentions to become entrepreneurs.

5.1 Theoretical contributions

Our study makes important contributions to entrepreneurial emotions and entrepreneurial intention research. Entrepreneurship encompasses many behaviors (Allinson *et al.*, 2000; Krueger, 1993) and involves various decision-making processes before and after the creation of ventures (Shephard *et al.*, 2015). Regarding start-up decisions signaling entrepreneurial intentions, most existing research focuses heavily on the various cognitive factors influencing such decision-making processes (e.g., Bazkiaei *et al.*, 2021; Chhabra *et al.*, 2020; Farrukh *et al.*, 2018; Feola *et al.*, 2017; Ferreira *et al.*, 2012; Fragoso *et al.*, 2020; Liñán and Chen, 2009; Munir *et al.*, 2019; Sesen, 2013). Although entrepreneurship is recognized as an emotional process (Cordon *et al.*, 2012), this aspect is under-acknowledged in the extant literature. Relying solely on current theories to analyze entrepreneurial intention has severe limitations. Thus, we incorporated emotions into the cognition and entrepreneurial intention realm, combining two perspectives: (i) emotion is an antecedent to entrepreneurial intention and process (Cardon *et al.*, 2012; Hayton and Cholakova, 2012), and (ii) emotions can directly and indirectly influence intention (Ajzen, 2011; Wolff *et al.*, 2011). By reflecting on these concepts, our first contribution is establishing emotions as antecedents of entrepreneurial intention.

Second, we empirically established an emotion-cognition-intention model (Figure 2), confirming that emotions can indirectly influence entrepreneurial intention through individuals' cognitive beliefs, such as personal attitudes and perceived behavioral control. Most extant studies investigate personal attitudes and perceived behavioral control as precursors to entrepreneurial intention. We build upon this insight (Ajzen, 2011) and introduce personal attitudes and perceived behavioral control as mediators between emotions and entrepreneurial intention While prior use of these specific cognitive evaluations as mediators is evident in the extant literature (Barrios *et al.*, 2022; Bazkiaei *et al.*, 2021; Farrukh *et al.*, 2018; Munir *et al.*, 2019; Rosique-Brasco *et al.*, 2018; Ukil *et al.*, 2024b), our approach is novel, drawing on the emotion-cognition-intention perspective. This finding provides robust evidence of how one can deal effectively in deciding to start a business, particularly when experiencing negative emotions.

Third, although we found no direct association between negative emotions and entrepreneurial intention, our findings provide an interesting insight that negative emotions do influence entrepreneurial intention; however, such influence is contingent on two other cognitive factors: personal attitudes and perceived behavioral control. This exploration has important theoretical implications, implying that negative emotions concerning a specific activity trigger reactive response (Foo *et al.*, 2009) and lead individuals to search for potential mechanisms to repair damages, subsequently impacting their intention to engage in that activity.

<<Insert Figure 2 here>>

5.2 Implications for practice

Starting a business stimulates various emotions, including positive feelings, toward becoming a business owner. However, business ownership is permeated by uncertainty and the potential for failure (Carter, 2021; Duchek, 2018; Otar 2018; Townsend *et al.*, 2018), which may induce negative emotions. Therefore, an emotion regulation mechanism is crucial to help entrepreneurs develop emotional regulation skills, enabling them to handle negative emotions effectively. Individuals proficient in emotional regulation can control their emotions and protect themselves from negative emotional interference (He *et al.*, 2018). Similar to other skills, emotion regulation can be improved through training and practice (Carrol *et al.*, 2023; Larsson *et al.*, 2020; LeBlanc *et al.*, 2017). Therefore, we recommend that governments, support agencies, and educational institutions initiate skill development programs for potential entrepreneurs. Potential entrepreneurs may also benefit from business-to-business learning. Direct engagement with active entrepreneurs aids in first-hand learning of how to control negative emotions and navigate challenging business situations. This form of experiential learning offers valuable insights and practical strategies for emotional management during the entrepreneurial journey.

Furthermore, we recommend that educational institutions discuss the results of this study in the context of their entrepreneurial courses to ensure that budding entrepreneurs are aware of the impact of both positive and negative emotions on their entrepreneurial intention. Teaching entrepreneurship helps raise entrepreneurial options and educates entrepreneurs on the importance of maintaining a careful balance sheet of business ownership, which can bolster an individual's entrepreneurial decision-making (Saridakis, 2020). Educational institutions should ensure choosing entrepreneurially motivated educators to train potential entrepreneurs and provide them with the necessary skills (Greene and Saridakis, 2007, 2008). This holistic approach can better prepare individuals for emotional challenges intertwined with entrepreneurship and foster a more resilient and well-informed entrepreneurial community.

6. Conclusion

This study reveals that the two TPB constructs, personal attitudes and perceived behavioral control positively impact entrepreneurial intention, whereas subjective norms do not. Moreover, positive emotions directly and indirectly impact entrepreneurial intention through personal attitudes and perceived behavioral control. In contrast, negative emotions do not directly influence entrepreneurial intention; the impact of negative emotions on entrepreneurial intention is contingent on individuals' cognitive beliefs, such as personal attitudes and perceived behavioral control. Notably, the results did not vary between the during-COVID-19 and post-COVID-19 periods. Our findings suggest that individuals experiencing positive emotions are more likely to start a business. However, the experience of emotions (both positive and negative) concerning the decision to start a business activates cognitive cues regarding the perception of entrepreneurship and the capability of undertaking entrepreneurial activities, which subsequently influence their entrepreneurial intention.

These results make two significant contributions to the literature. First, the finding that positive emotions significantly and directly influence entrepreneurial intention establishes emotions as antecedents of entrepreneurial intention. This outcome underscores the importance of considering emotional states in understanding and predicting entrepreneurial behavior. Second, we found that the impact of emotions on entrepreneurial intention is best predicted through two other cognitive factors; both positive and negative emotions are effective in this way. This outcome empirically confirms our proposed emotion-cognition-intention model. These novel perspectives are consistent with Ajzen's (2011) theoretical underpinnings and corroborate research suggesting that emotions influence people's judgments and decisions (Forgas, 1995; Forgas and Ciarrochi, 2001; Lerner *et al.*, 2015; Mayer *et al.*, 1992; Shepherd, 2011). These findings advance our understanding of the intricate interplay among emotions, cognition, and entrepreneurial intention.

The findings of this study have specific implications for governments, support agencies, and educational institutions. We suggest that emotion regulation can serve as an effective mechanism for coping with negative emotions. Emotional regulation influences how individuals experience and express emotions (Gross, 1998), facilitating decision-making in situations of risk and uncertainty (Heilman *et al.*, 2010) with the potential to change the trajectory of learning behavior (He *et al.*, 2018). Therefore, we recommend that relevant stakeholders initiate emotional regulation skill development programs tailored to potential entrepreneurs. Moreover, educational institutions can play a pivotal role in developing courses on entrepreneurship by incorporating discussions into our findings. This can strengthen individuals' entrepreneurial mindsets, equipping them with a more comprehensive understanding of the emotional dynamics involved in entrepreneurship.

6.1 Limitations and direction for future research

Although this study offers fresh perspectives in multiple ways, it is not without limitations, providing avenues for future research. We expected negative emotions to have a significant negative influence on entrepreneurial intention, but this was not supported. We recommend further investigation in this regard. One significant limitation of this study pertains to the low response rate. Although our response rate (37%) is slightly higher than the average rate (33%) for sample sizes ranging from 701 to 2500 (Wu et al., 2022), it may still cause non-response bias, where those who chose to not participate may differ in their perceptions than those who do. Moreover, 36% of our respondents reported being employed. Given the possibility that some of them might be self-employed, we did not distinguish employed respondents from self-employed respondents who might hold different perspectives on the emotion-cognition-intention nexus. Exploring how perceptions of the emotion-cognition-entrepreneurial intention relationship differ between employed and self-employed respondents could be an interesting area of future investigation.

Furthermore, this study applied a convenience sampling technique. The lack of a probabilistic sampling technique may involve risks of sampling bias wherein certain segments of a population may be overrepresented or underrepresented in the sample. We received fewer responses from people over 40 years, resulting in a sample with an average age of 25.5 years, predominantly representing a younger demographic. Entrepreneurship research commonly uses young respondents, but this limits the generalizability of the results (Díaz-García and Jiménez-Moreno, 2010). To overcome such sample distribution patterns, future studies should accommodate a more balanced variety of backgrounds and age groups to investigate the relationship between emotions and entrepreneurial intention. Large-scale investigations may be appropriate for generalizing our results. Future researchers can also use our study as a reference to examine the emotion-intention link across different socioeconomic contexts.

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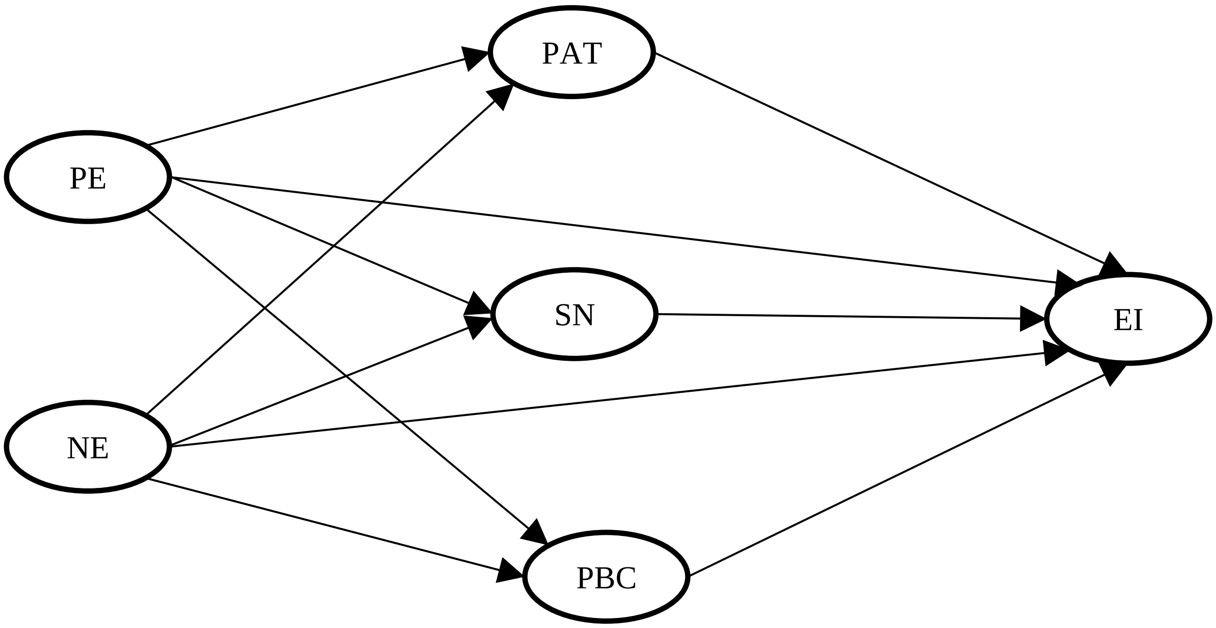

Figure 1. Proposed research model.

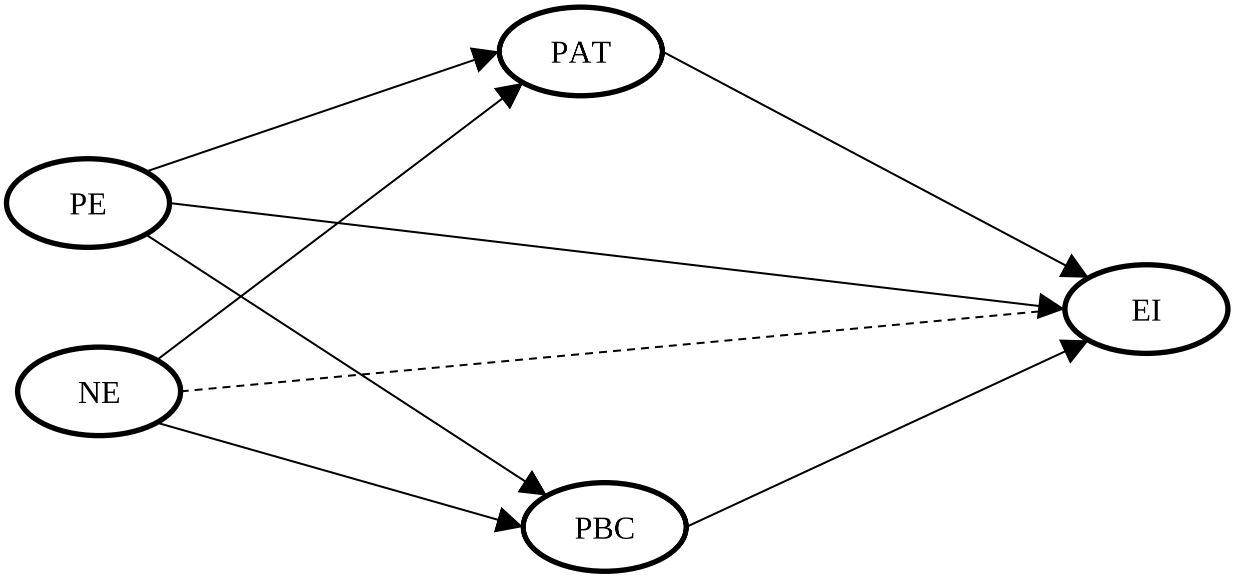

Figure 2. Entrepreneurial emotion-intention model (EEIM).

Table I. Sample properties.

Characteristics	Sample statistics
N (sample size)	553
Female (%)	36.1
Age, Mean (in years)	25.5
Age, SD	3.6
Age, Minimum (in years)	22
Age, Maximum (in years)	48
Had/have entrepreneur(s) in family (%)	36.2
Employed (%)	36.3
Grown up in urban communities (%)	61.1

Note: SD=Standard deviation.

Source: Authors' creation

Table II. Descriptive statistics and correlation matrix.

Variables	Mean	S.D.	PE	NE	PAT	SN	PBC
PE	3.84	0.73	1				
NE	2.41	0.78	-0.19**	1			
PAT	3.97	0.70	0.52**	-0.19**	1		
SN	3.51	0.74	0.29**	-0.21**	0.33**	1	
PBC	3.27	0.71	0.43**	-0.29**	0.45**	0.22**	1
EI	3.64	0.85	0.48**	-0.24**	0.66**	0.27**	0.63**

Note: ** indicates correlation is significant at the 0.01 level (2-tailed). PE=Positive emotion; NE=Negative emotion; PAT=Personal attitudes; SN=Subjective norms; PBC=Perceived behavioural control; EI=Entrepreneurial intention.

Source: Authors' creation

Table III. Item loadings, and reliability and convergent validity statistics (PAT, SN, PBC and EI)

Variables/items	Factor Loadings	Alpha	CR	AVE
Personal attitudes		*0.85*	*0.90*	*0.64*
PAT1	0.54			
PAT2	0.85			
PAT3	0.81			
PAT4	0.89			
PAT5	0.85			
Subjective norms		*0.70*	*0.84*	*0.63*
SN1	0.69			
SN2	0.85			
SN3	0.84			
Perceived behavioral control		*0.83*	*0.88*	*0.54*
PBC1	0.68			
PBC2	0.77			
PBC3	0.72			
PBC4	0.79			
PBC5	0.75			
PBC6	0.70			
Entrepreneurial intention		*0.91*	*0.93*	*0.70*
EI1	0.77			
EI2	0.85			
EI3	0.84			
EI4	0.88			
EI5	0.88			
EI6	0.80			

Note: PAT=Personal attitudes; SN=Subjective norms; PBC=Perceived behavioural control; EI=Entrepreneurial intention; CR=Composite reliability; AVE=Average variance extracted.

Source: Authors' creation

Table IV. Item loadings, and reliability and convergent validity statistics (PE and NE)

Variables/items	Factor Loadings	Alpha	CR	AVE
Positive emotion		*0.90*	*0.92*	*0.53*
PE1	0.69			
PE2	0.77			
PE3	0.55			
PE4	0.75			
PE5	0.67			
PE6	0.74			
PE7	0.80			
PE8	0.70			
PE9	0.81			
PE10	0.74			
Negative emotion		*0.89*	*0.91*	*0.50*
NE1	0.61			
NE2	0.73			
NE	0.64			
NE4	0.59			
NE5	0.64			
NE6	0.72			
NE7	0.77			
NE8	0.74			
NE9	0.79			
NE10	0.79			

Note: PE=Positive emotion; NE=Negative emotion; CR=Composite reliability; AVE=Average variance extracted.

Source: Authors' creation

Table V. Discriminant validity statistics.

Variables	PE	NE	PAT	SN	PBC	EI
			Fornell-Larcker Criteria			
PE	*0.72*					
NE	–0.22	*0.70*				
PAT	0.53	–0.22	*0.80*			
SN	0.29	–0.21	0.34	*0.79*		
PBC	0.44	–0.28	0.46	0.22	*0.74*	
EI	0.49	–0.25	0.67	0.27	0.65	*0.84*
			HTMT ratio			
PE						
NE	0.26					
PAT	0.60	0.24				
SN	0.36	0.26	0.43			
PBC	0.50	0.33	0.54	0.28		
EI	0.53	0.28	0.75	0.34	0.73	

Notes: PAT=Personal attitudes; SN=Subjective norms; PBC=Perceived behavioural control; PE=Positive emotion; NE=Negative emotion; EI=Entrepreneurial intention; Italic diagonal values represent the square roots of the average variance extracted; HTMT ratio=Heterotrait-monotrait ratio.

Source: Authors' creation

Table VI. Result of direct path analysis.

Hypotheses	Structural Paths	β	t-Statistics	*p*-value	Remark
H1	PAT → EI	0.440	9.875	0.000	Supported
H2	SN → EI	0.007	0.193	0.847	Not Supported
H3	PBC → EI	0.400	10.231	0.000	Supported
H4	PE → EI	0.077	1.957	0.050	Supported
H5	NE → EI	–0.026	0.816	0.415	Not Supported

Note: PAT=Personal attitudes; SN=Subjective norms; PBC=Perceived behavioural control; PE=Positive emotion; NE=Negative emotion; EI=Entrepreneurial intention.

Source: Authors' creation

Table VII. Results of mediation analysis.

Hypotheses	Structural Paths	β	t-Statistics	95% Bootstrap CI		Remark
				Lower CI	Upper CI	
H6a	PE → PAT → EI	0.223	7.281	0.165	0.285	Partial mediation
H6b	PE → SN → EI	0.002	0.189	–0.017	0.019	No mediation
H6c	PE → PBC → EI	0.159	7.274	0.119	0.205	Partial mediation
H7a	NE → PAT→ EI	–0.046	2.094	–0.091	–0.004	Full mediation
H7b	NE → SN → EI	–0.001	0.182	–0.012	0.011	No mediation
H7c	NE → PBC → EI	–0.077	3.947	–0.119	–0.042	Full mediation

Note: PAT=Personal attitudes; SN=Subjective norms; PBC=Perceived behavioural control; PE=Positive emotion; NE=Negative emotion; EI=Entrepreneurial intention; CI=Confidence interval.

Source: Authors' creation

Table VIII. Results of the robustness tests

Hypotheses		Gender		Community		Family En Back	
		β	t	β	t	B	t
H1	PAT ➔ EI	0.432	9.560***	0.440	9.891***	0.440	9.892***
H2	SN ➔ EI	0.010	0.294	0.006	0.182	0.007	0.190
H3	PBC ➔ EI	0.394	10.215***	0.401	10.291***	0.393	9.969***
H4	PE ➔ EI	0.081	2.033*	0.073	1.939*	0.076	1.938*
H5	NE ➔ EI	–0.026	0.795	–0.002	0.804	–0.026	0.791
H6a	PE ➔ PAT ➔ EI	0.219	7.149***	0.223	7.291***	0.223	7.292***
H6b	PE ➔ SN ➔ EI	0.003	0.288	0.002	0.178	0.002	0.186
H6c	PE ➔ PBC ➔ EI	0.157	7.282***	0.159	7.308***	0.156	7.215
H7a	NE ➔ PAT ➔ EI	–0.046	2.091*	–0.046	2.096*	–0.046	2.093*
H7b	NE ➔ SN ➔ EI	–0.002	0.277	–0.001	0.172	–0.001	0.179
H7c	NE ➔ PBC ➔ EI	–0.076	3.968***	–0.078	3.945***	–0.076	3.919***

Note: *** p<0.001; * p<0.05; PAT=Personal attitudes; SN=Subjective norms; PBC=Perceived behavioural control; PE=Positive emotion; NE=Negative emotion; EI=Entrepreneurial intention; Family En Bank=Family entrepreneurial background; β=Beta.

Source: Authors' creation