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RESEARCH

An empirical investigation on the relationship between individual traits and entrepreneurial business intentions: measuring a mediation effect of entrepreneurial self-efficacy through partial least squares structural equation modeling

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Abstract
Human psychology and the embryological cycle are synonymous with business start-ups and its later phases and stages. To explore the linkage between human and business, this paper examines the empirical investigation on the relationship between individual traits and entrepreneurial business intentions with the mediation effect of entrepreneurial self-efficacy. Drawing on a field survey of 259 international students from five Jiangsu province universities of China, using convenience sampling technique, this study provides evidence for the argument that entrepreneurial education, emotional intelligence, need for cognition, proactive personality, and rebelliousness has a positive impact on entrepreneurial self-efficacy expect risk-taking propensity has negative and insignificant impact on entrepreneurial self-efficacy. Moreover, this study found that entrepreneurial education, emotional intelligence, the need for cognition, and rebelliousness has a positive impact on entrepreneurial business intentions expect proactive personality and risk-taking propensity has a negative and insignificant impact on entrepreneurial business intentions. Furthermore, this study provides evidence that entrepreneurial self-efficacy has a mediation effect between entrepreneurial educations, emotional intelligence, the need for cognition, proactive personality, rebelliousness, and entrepreneurial business intentions. Entrepreneurial self-efficacy has no mediation effect between risk-taking propensity and entrepreneurial business intentions. The findings shed light on the mechanism that individual traits contribute an immense role to the literature on the key components of the entrepreneurial self-efficacy and entrepreneurial business intentions among students.

Keywords Entrepreneurial education · Emotional intelligence · Need for cognition · Proactive personality · Rebelliousness · Risk-taking propensity · Entrepreneurial self-efficacy · Entrepreneurial business intentions

Introduction

Entrepreneurship is an emerging research field, and within a few decades, it has experienced rapid growth and made a significant contribution around the globe. It is viewed that many developing, emerging, and developed economies as a blessing in disguise and kick start for the launch of many small to large-scale start-ups (Wu et al., 2019). It implies that entrepreneurship ideological framework has become close to the heart of masses and currently the majority of the population is not curious indeed examining how, by whom, and with what effects new opportunities can be explored, likewise future goods and services to be launched, evaluated, and exploited. In this study, we have proposed a framework for the vast field of entrepreneurship that helps in explaining and predicting a

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set of individual traits and entrepreneurial business intentions that is not yet explored in the existing theoretical frameworks (Küttim et al., 2014).

Besides this, in the last decade, Arend (2014) has significantly contributed in the field of entrepreneurship and become the cynosure in entrepreneurial literature by proposing the four entrepreneurial dimensions which include (1) the concept of entrepreneurship as unique for scholarly research; (2) defining of entrepreneurship as a process in contrast to an event or either epitome of personality types; (3) defining the node of opportunities and individuals; and (4) exploring new combinations, innovations, and relationships (Demil et al., 2015).

Keeping in view the above-discussed dimensions, this study will primarily focus on investigating the nexus of opportunities and individuals using both the theoretical and empirical findings. Researchers believe that bringing entrepreneurial ventures into existence is like human embryological phenomena. Firstly, two individuals seek a good match with whom they want to spend time and later if they both developmental and physical compatibilities will result in the intention of creating an intimate relationship that generally translates into germinating the seed of new creation in the shape of children. This phenomenon explains the negation of scholarly arguments that personality traits have less significance or either no relevance indeed individual persona and attributes help in shaping the entrepreneurial intention (de Mol et al., 2015; Gartner, 1985; Fayolle & Liñán, 2014).

Therefore, from the inducement of sperm to developing of fetus later delivering a tiny baby requires patience, persistence, and intensive care; this is how the newborn becomes very close to the heart of the parents. Similarly, individuals hunt for multiple opportunities and at some point, they find a prospect that is very near or somewhat close to what they have envisioned based on their traits that aid in start focusing on that particular sperm. It will undergo many processes, phases, and stages. This initial period will help in defining the entrepreneurial species. Thus, entrepreneurial traits will vary from individual to individual like the human species that possess the unique dermal ridges (every individual fingerprint is unique). It explains that every individual has unique traits that complement in starting with distinctive entrepreneurial processes and activities (Klotz & Neubaum, 2016; Baum et al., 2014a, 2014b).

The differences in every individual behavior have an extrapolative effect on entrepreneurial intention. This study has significant importance due to four main reasons. Firstly, the current study will contribute to the existing literature by analyzing some of the individual traits that are not yet explored in-depth but could be of significance in the existing literature such as emotional intelligence, proactive personality, risk-taking propensity, cognitive ability, rebelliousness, and entrepreneurial education. Secondly, most of the existing literature, such as Wurthmann (2014) and Williams and Williams (2014), have a primary focus on start-up intention, whereas there is limited literature available on entrepreneurial business intentions. As every individual has different innate abilities and has different resources (social, economic, political, environmental, technological, and legal) before they decide to exploit an entrepreneurial opportunity. Moreover, individuals who decide to pursue entrepreneurial ventures have different risk propensities are risk-averse and some are risk lovers in nature. Therefore, due to varied risk propensities and heterogeneity in an individual's assets, there may exist different preferences concerning having entrepreneurial start-ups as both the components are the considerable ingredient to establish any type of entrepreneurial venture.

Thirdly, the existing literature primarily focuses on investigating the relationship between individual psychological traits and entrepreneurial intention that is only looking into one side of the coin by determining their direct effect between them (Batchelor et al., 2014; Cardon & Kirk, 2015). Still, few studies are examining the mediating mechanisms between individual traits and entrepreneurial intentions. In the present study, we will focus on investigating whether entrepreneurial self-efficacy such mediating mechanisms for exploring entrepreneurial business intentions. There are very few researches conducted that provide evidence on the effect of risk propensity on the entrepreneurial intention with the mediation of entrepreneurial self-efficacy (Leutner et al., 2014; Biraglia & Kadile, 2017). Moreover, Saeed et al.'s (2015) research also highlighted that less research is conducted in this domain to provide theoretical justification to the role of entrepreneurial self-efficacy that will somehow play an important role in explaining the linkage between the previous experiences and entrepreneurial behavior (Shinnar, Hsu, and Powell, 2014, b).

Fourthly, besides the above-mentioned theoretical contributions, the current study will also make a methodological contribution. As after reviewing the literature, we have identified that almost all studies conducted in the domain of entrepreneurial intention had collected quantitative data on both the predictor and criterion variable available on the self-reported ratings. Although, management and psychology literature explored that self-reported ratings and observer ratings of individual traits may predict different validities as observer rating of individual traits reveal incremental validity beyond self-reported ratings of individual traits (Oh et al., 2014; Kluemper, McLarty, and Bing, 2015). The current study is structured as follows. Firstly, the paper has developed theoretical foundations based on theories and after that, the paper builds a conceptual model and formulate hypotheses. Thirdly, the paper has discussed the material and methods, measurement scales, and data analysis. Fourthly, the paper has presented all the results and discussed whether there is respective supportive evidence for each stated hypothesis. Lastly, the paper has presented detail discussions for current and future implications, limitations, and directions for upcoming researches.

Literature review, theoretical foundation, and hypotheses development

First, the paper discusses the theories which are associated with individual traits, entrepreneurial intentions, and entrepreneurial self-efficacy. To support our model fit theory (FT), attraction-selection-attrition (ASA) model, implementing entrepreneurial idea (IEI), model of the entrepreneurial events (EES), theory of planned behavior (TPB), social learning theory (SLT), and emotional intelligence their (IET) are the appropriate theories for theoretical perspective. The fit theory has been considered by numerous researchers (Milliman et al., 2017; Gorgievski & Stephan 2016) for more than ten decades. The fit theory is related to concerning person-environment (PE) interactions which defined a situation where individual and their work characteristics are well-matched with the environment. Seong et al. (2015) explained the four spheres of fit which are person supervisor, person group, person organization, and person job. Person supervisor fit deliberate to the relationship between supervisors and subordinates to perform a specific task in the organization. Person group is associated with the individual and their workgroup in the organization. Person-organization fit refers to the relationship between a person and the entire organization. Person-job fit refers to the individuals and their requirements to perform job and inducement provided to perform it (Demir et al., 2015).

Therefore, the ASA model is proposed by Schneider, Smith, and Paul (2001); normally, individual traits are attracted to the entrepreneurial form of employment rather than other jobs. Moreover, individuals who have traits fit regarding entrepreneurial intentions may find the job itself as well as inherently start their own business to become an entrepreneur. As refers to these theories, the paper discusses further entrepreneurial intentions that are associated with one's intent to start a new business. For the development of entrepreneurial intention, three theoretical models, namely IEI, EES, and TPB, have been explained by Bird (1988), Shapero and Sokol (1982), and Ajzen (1987). First model IEI refers to implementing entrepreneurial ideas when the entrepreneurial intention is formed by the individual's thorough personal history, personality traits, capabilities, social links, political and economic background toward entrepreneurial intentions leads to entrepreneurial actions. Later, ISE model is revised by Boyd and Vozikis (1994) with the new addition of self-efficacy because it is related to the social support, role models contribution, and past experiences influenced the awareness of entrepreneurial self-efficacy.

The second model EES denotes a model of the entrepreneurial events and entrepreneurial intentions are made based on perceived desirability, perceived feasibility, and propensity to act upon opportunities (Krueger & Brazeal, 1994). Perceived desirability refers to individual senses appealed to become entrepreneurs as well as apples individual preferences for entrepreneurial behavior. Perceived feasibility is defined as individuals have the confidence to start their own business to become entrepreneurs as being feasible. The propensity to act upon opportunities is linked with the individual textures capable to start their own business whenever they get opportunities.

Third model TBP refers to the theory of planned behavior which has three entrepreneurial intentions (Krueger, Reilly, & Carsrud, 2000) subjective norms, attitude toward action, and perceived feasibility. Subjective norms are linked with the individual's life thinking about entrepreneurial venture creation. Attitude toward act refers to the evaluation of the individual's desirability of making a new venture. Perceived feasibility refers to the ability of individuals to initiate a new venture which is essentially identical with entrepreneurial self-efficacy. Further to support the theoretical model, this paper discusses social learning theory which is established in psychology but has wide implications in management and entrepreneurship fields. Social learning theory proposed for self-efficacy, which refers to people's belief in their abilities to organize the inspiration and actions to control overs actions in their lives. Akers and Jensen, (2017) explained that social learning theory is an inspirational construct which affects the individual selection, goal choices, as well as a wide range of performance contexts.

According to theory, individual perception of self-efficacy can be inclined through four processes, namely emotional encouragement, performance achievement, vicarious experience, and verbal influence. Emotional intelligence theory was proposed by numerous researchers (Cabello et al., 2016; Siegling, Saklofske, & Petrides, 2015) as a composite of abilities verbal and nonverbal that facilitates a person to create, consolidate, express, and assess their own and other emotions that successfully manage with environmental demands. Presently, emotional intelligence and entrepreneurship inspire a stream of research and getting attention from researchers and practitioners in the field of management. Entrepreneurs high on emotional intelligence incline to be stronger when facing obstacles and to be more efficiently working with their employees and customers. The paper already deliberated earlier in fit theory if a person who has a high level of emotional intelligence is likely to become an entrepreneur and suitably fit with the job demand of entrepreneurship (Figs. 1, 2, and 3).

Literature review

Previous researchers acknowledged that entrepreneurial education, emotional intelligence, entrepreneurial self-efficacy, need for cogitation, proactive personality, rebelliousness, and risk-taking propensity have significant and positive impact on entrepreneurial intention (Bandura, 2010; Carver & Scheier 2001; Piperopoulos, Dimov, 2015; Halder, Roy, &

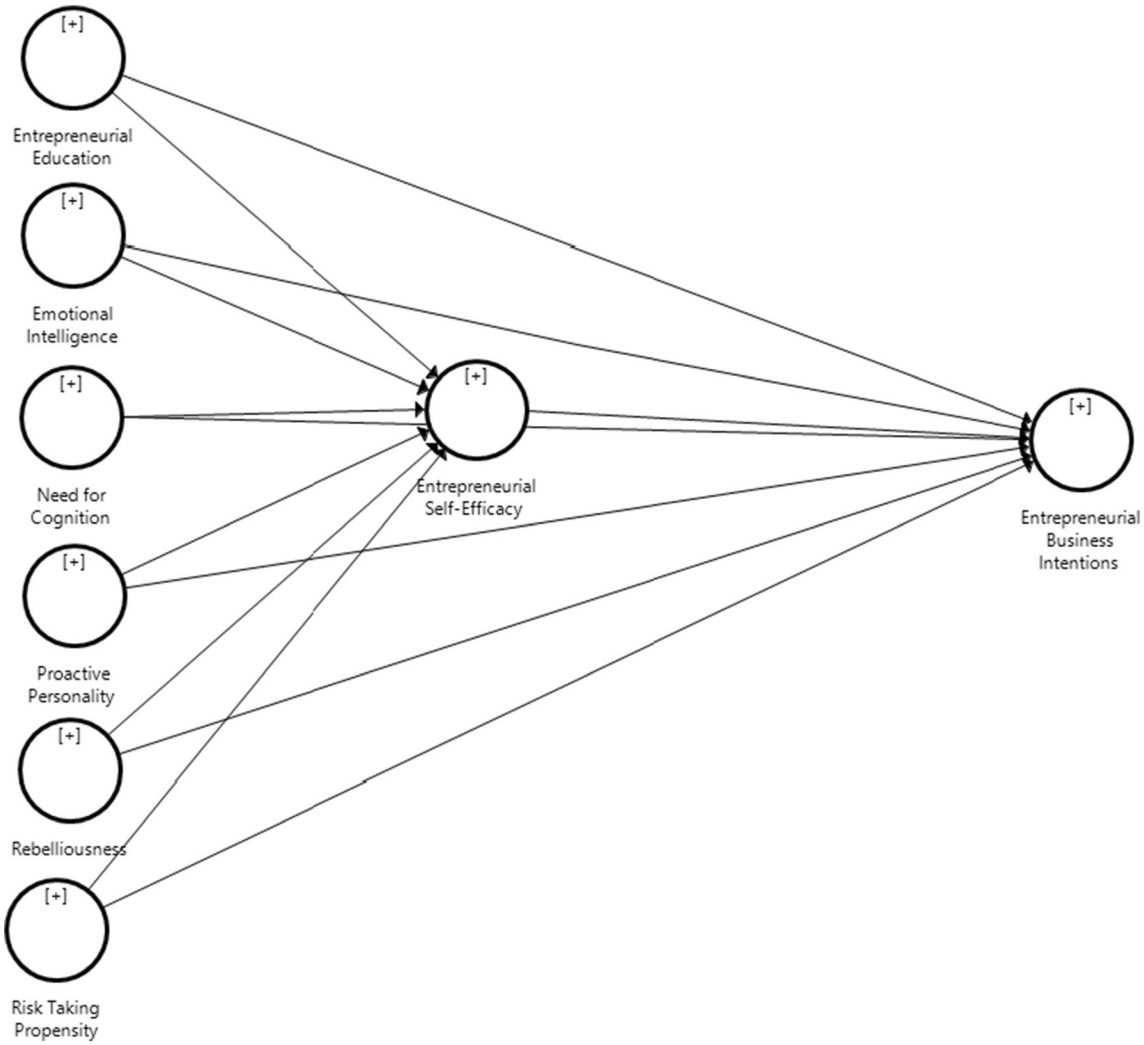

Fig. 1 Model confirmatory factor analysis

Chakraborty, 2017; Wang et al., 2016; Schwartz & Malach-Pines, 2009; Karabulut, 2016). According to Nabi et al. (2017), entrepreneurial education is aid of knowledge transfer and gaining the relevant skills in the field of entrepreneurship as well as has a significant impact on entrepreneurial intention and self-efficacy. Moreover, Humphrey (2013) stated that emotional intelligence positively or negatively influences entrepreneurial intention. The study claimed that those individuals having a regular baseline in the positive half are going to revert to normal behavior after a certain unhappy event in comparison to those who lie in the negative half. An existing study Bullough, Renko, and Myatt (2014) found that entrepreneurial self-efficacy has a significant and positive impact on entrepreneurial intention; individuals with a high level of self-efficacy have more intention to start a new business. Similarly, Wu, Parker, and De Jong (2014) and Halder, Roy, and Chakraborty (2017) explained that the need for cognition is positively related to openness to experience, as individuals high in need for cognition are more likely to create business ventures in the future. Furthermore, Mustafa et al. (2016) discussed proactive personality individuals could recognize the existing opportunities and exploit them, whereas the baseline of entrepreneurial career requires to get maximum entrepreneurial success. Therefore, researchers studying entrepreneurship has associated breaking the rules synonymous to innovation and creativeness, and these two are considered perilous dimensions in influencing the probability of being a successful entrepreneur, indeed challenging the status quo is considered an integral element to become a successful entrepreneur (Zhang and Arvey, 2009a, b). Thus, numerous researchers such as Leutner et al. (2014), Espíritu-Olmos and Sastre-Castillo (2015), and Rauch and Frese (2007) stated that entrepreneurial self-efficacy has a positive and significant mediator while explaining the individual traits and entrepreneurial intentions. Hence, this present study tries to put some effort to investigate the impact of individual traits on entrepreneurial business intentions with the mediating effect of entrepreneurial self-efficacy.

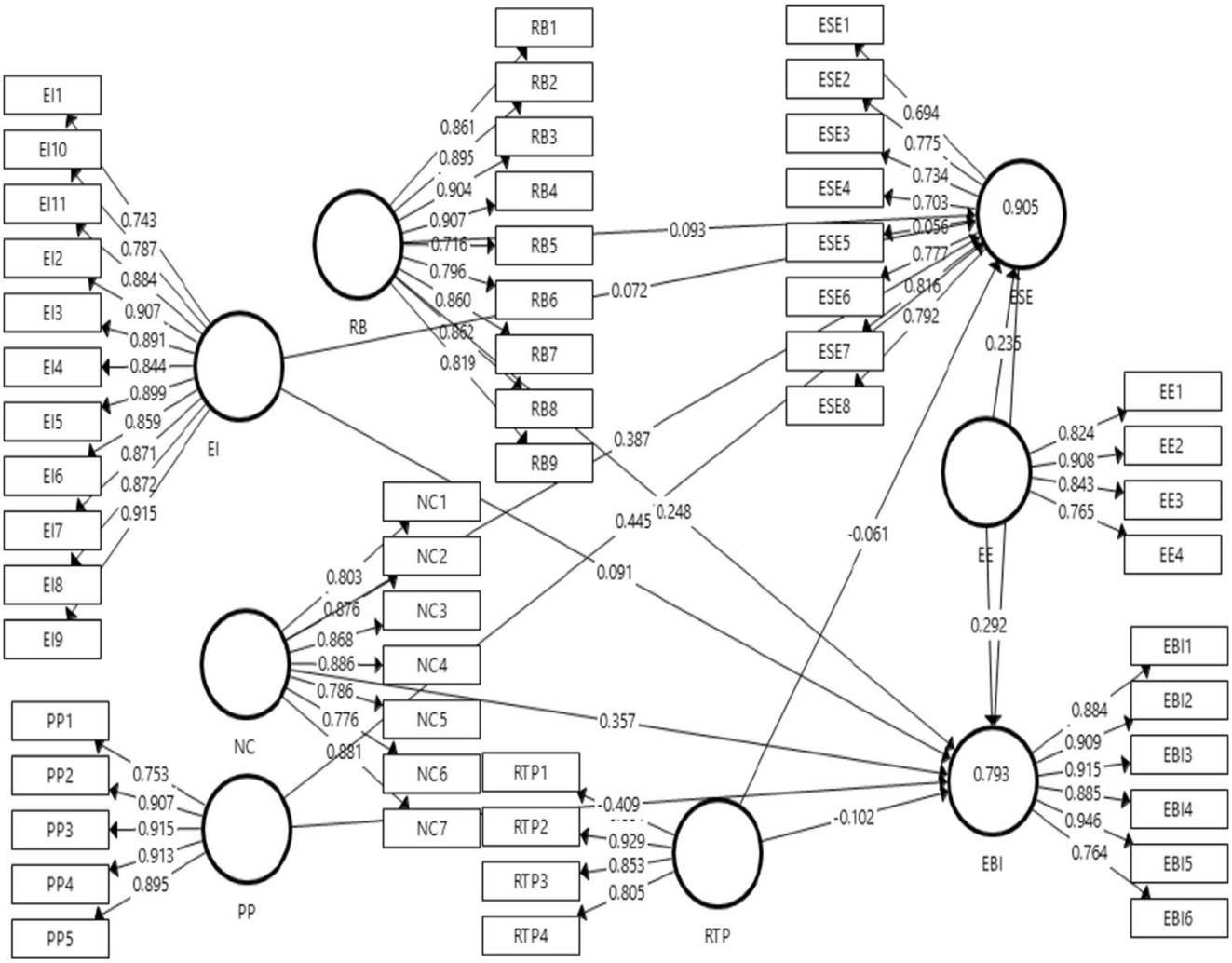

Fig. 2 Confirmatory factor analyses

Hypothesis development

The above section provides a detail review and discussion of the theoretical foundations that further leads toward the four generic theoretical conclusions. Firstly, individuals who possess the innate ability and certain psychological traits have a higher tendency to end up becoming entrepreneurs due to the inbuilt desirable traits and likewise demand of an entrepreneurial job. Secondly, it is observed and supported by EES and TPB that individuals with high-perceived feasibility toward entrepreneurship are more likely to become an entrepreneur. As perceived feasibility is largely considered as a close ally of entrepreneurial self-efficacy (ESE), therefore ESE should positively affect the entrepreneurial business intentions (EBI). Thirdly, social learning theory has presented four view processes that aid in shaping the individual's perception of ESE. Now, individual traits translate into mapping the perception of ESE through the four processes. Fourthly, the existing literature also provides evidence that motivation, for instance, ESE is hypothesized as an important mediating mechanism while explaining the relationship between individual traits and entrepreneurial outcomes (Saeed et al., 2015). Therefore, ESE can also mediate the relationship between individual traits and EBI. Based on these theoretical grounds, the following sections provide detail of the hypothesis tested for this study.

Entrepreneurial education and entrepreneurial business intentions

The existing literature provides sufficient evidence by the diverse scholars in the domain of entrepreneurship education. As entrepreneurial studies are widely considered as the stimulating factor which inform the student's intentions along with challenging the students to start with new business ventures as a future career choice. Both the empirical and theoretical research findings provide significant evidence and positive impact between the student's participation in the entrepreneurial education (EE) program and EBI. As students get involved in experiential and existential lifelong learning practices along

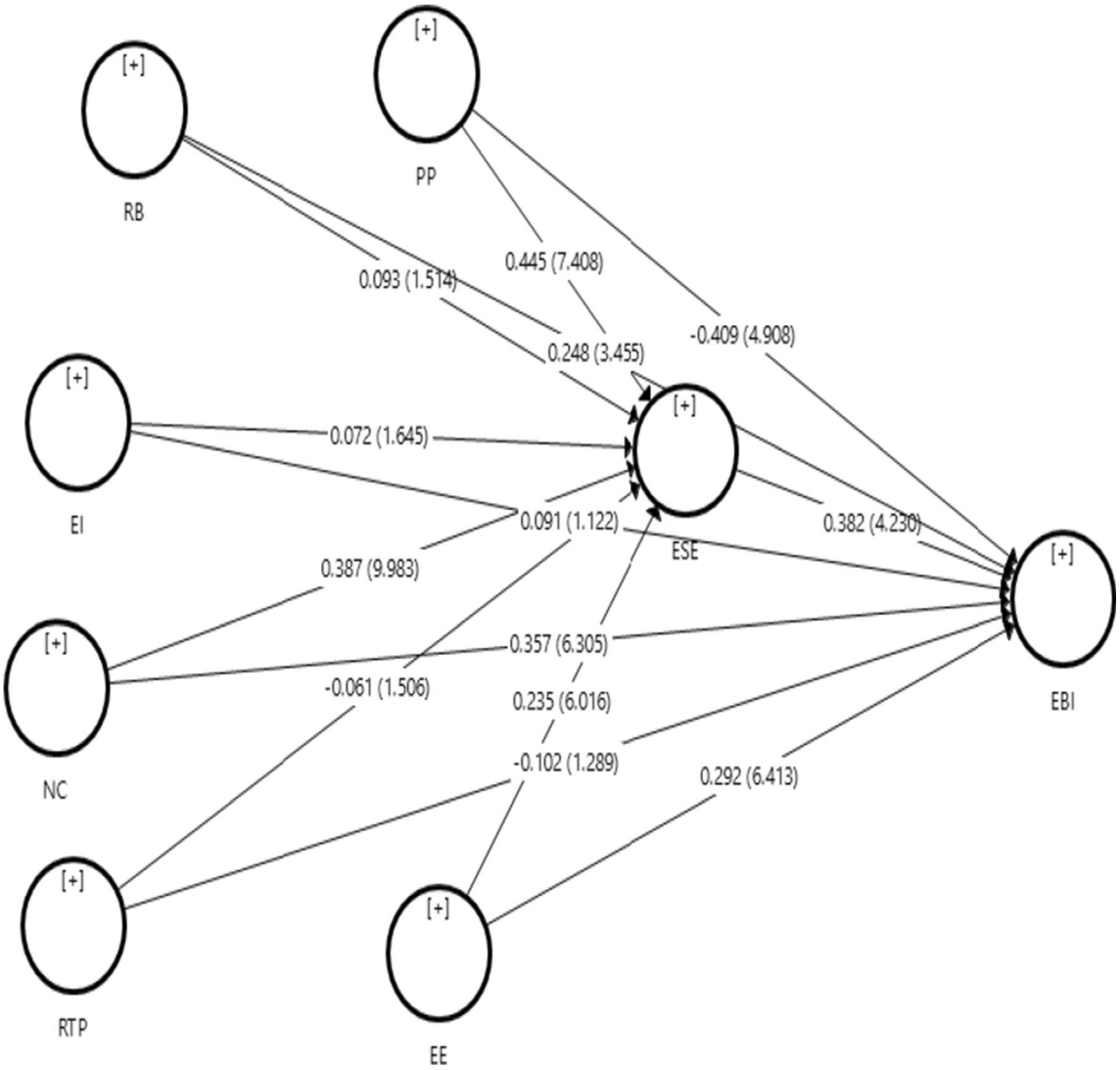

Fig. 3 Structural path modeling

with grasping the real jest of action, reflection, and experience while getting EE (Shabbir, Shariff, & Shahzad, 2016; Hussain & Norashidah, 2015). It further helps in improving the student's overall achievement orientation, personal control in challenging situations, and developing self-esteem (Liñán & Fernandez-Serrano, 2014).

Besides this, Nabi et al. (2017) have classified EE programs under four domains. Firstly, "Entrepreneurial Awareness Education" that primarily aims at enhancing the knowledge bank about entrepreneurship that further influences attitudes that may affect business intentions. The second domain is referred to as "Education for Start-Up"; such programs are designed to boost the morale of those participants from society who possess the prior knowledge about entrepreneurship; indeed, they only require the grooming to become self-employed. Third, domain refers to "Education Entrepreneurial Dynamism"; these individuals are already entrepreneurs and their focus is on bringing dynamic changes after their respective start-up phase. Lastly, there is "Continuing Education for Entrepreneurs" which particularly depicts the lifelong learning experiences and lessons from successful entrepreneurs. It explains that with the aid of knowledge transfer and gaining the relevant skills in the field of entrepreneurship, there is a significant impact on entrepreneurial self-efficacy (Bandura, 2010) which later translates into entering the initial phase of nascent entrepreneurial ventures. Besides, academicians and researches have provided significant evidence that entrepreneurial education is closely linked to ESE that further helps in improvising the EBI.

EE positively/negatively influences EBI

Entrepreneurial education and entrepreneurial self-efficacy

Establishing business over the years is synonymous with upbringing the children from the infancy phase to toddler then to

adulthood. Thus, the process of growing entrepreneurial venture overtime has an emotional aspect. Moreover, when the students gain the entrepreneurial education, it helps to formulate the student entrepreneurial identity, which inculcates the entrepreneurial passion that helps in shaping the strong entrepreneurial experience, and identity (Donnellon, Ollila, & Middleton, 2014). Furthermore, the self-regulation theory by Carver and Scheier (2001) explains the fundamental self-regulatory process, which includes the human activities and the responsive action is consistent with entrepreneurial thinking. Thus, an entrepreneur identifies the opportunities that lie between the individual and the environment.

EE is positively/negatively influencing ESE

Emotional intelligence and entrepreneurial business intentions

Salovey et al. (2003) presented four branches of emotional intelligence (EI) (emotional intelligence model).

According to him, EI refers to an individual's capacity to (1) recognize emotions, (2) use of emotions to facilitate mind mapping, (3) perceiving emotions, and (4) managing emotions. Likewise, Ashkanasy, Humphrey, and Huy (2017) have put forth the five-level model of emotion that encapsulates the idea of emotional intelligence at level two (i.e., between individual levels) of this model. This level presented that individual traits define the frequency, concentration, and duration of the experience with a mix-match of positive and negative emotions. Likewise, the individual decision-making and response activity is also affected by the affective event theory by (Weiss & Cropanzano, 1996) have forecasted that each individual has certain average mood level where in some situation one individual can respond positively and other negatively. Likewise, these mood levels can further elevate or diminish according to the events and certain situations.

EI positively/negatively influences EBI

Emotional intelligence and entrepreneurial self-efficacy

The paper has argued that EI influences positively and significantly, the entrepreneurial self-efficacy (ESE) with the aid of emotions. Moreover, this logic is also supported by social learning theory that explains individuals will have a high degree of ESE when unsympathetic behavior is not considered a threat to them (Javed et al., 2016). As explained above, emotionally intelligent individuals possess the ability to be less responsive to aversive conduct in comparison to individuals who have weak emotional intelligence they generally end up getting anxiety, depressed, and disappointed when experiencing the unlikely situations as they are unable to overcome their own emotions that further cause stress.

EI positively/negatively influences ESE

Entrepreneurial self-efficacy and entrepreneurial business intentions

Entrepreneurial self-efficacy refers to an individual's belief in one's capacity to successfully perform the desired action and attain one's goal (Piperopoulos & Dimov, 2015; Naktiyok, Karabey, & Gulluce, 2010; Zhao, Seibert, & Hills, 2005). Now, individuals with a high level of self-efficacy belief will be more prone to react positively in any emerging situation in contrast to those who have low self-efficacy believe they will always remain hesitant to any new environment. Therefore, research findings posit the positive relationship between ESE and entrepreneurial business intentions (EBI) (Bullough, Renko, & Myatt, 2014; Barnir, Watson, & Hutchins, 2011).

ESE positively/negatively influences EBI

Need for cognition and entrepreneurial business intentions

The need for cognition refers to as "someone's capacity to engage in and enjoy effort zone rather than comfort zone to attain cognitive accomplishments" (Halder, Roy, & Chakraborty, 2017). Likewise, the study by Wu, Parker, and De Jong (2014) explained that the element of need for cognition is positively related to openness to experience, as individuals high in need for cognition are more likely to enjoy cognitive activities. Moreover, the meta-analysis findings also indicate a positive and significant relationship between openness to experience and cognitive ability as well as the need for cognition (Turner & Croucher, 2014).

NC positively/negatively influences EBI

Need for cognition and entrepreneurial self-efficacy

As explained above, the variable need for cognition is relevant to creativity and participants possessing the germs of high need for cognition are the one who enjoys the cognitive endeavors (Halder, Roy, & Chakraborty, 2017; Jauk, Benedek, & Neubauer, 2014). Therefore, individuals having a high degree of need for cognition are more prone to be an entrepreneur due to their high intensity of creative abilities. In addition, the job of entrepreneur is different from traditional work routines and is more complex, unscheduled, and risky in nature; therefore, it requires persistence to stay intact in cognitive

endeavors for instance by learning new skills and thinking out of the box to attain level that unleashes opportunities in most efficient manner (Hill et al., 2016).

NC positively/negatively influences ESE

Proactive personality and entrepreneurial business intentions

It is of general belief that individuals with high proactive personality are more likely to find effective solutions to the complexities around them as they possess the high propensity to influence their respective surrounding environment and likewise more likely to identify the root cause of infection points and finding its optimal solutions (Mustafa et al., 2016). Moreover, few individuals recognize the existing opportunities and best exploit them whereas the baseline of entrepreneurial career requires one to not only recognize indeed identifies the prevalent avenues (Wang et al., 2016; Delle, & Amadu, 2015). Therefore, individuals with proactive personality (PP) should fit into the entrepreneurial career as discussed above. Based on the above discussion, hereby formulate the following hypotheses.

PP positively/negatively influences EBI

Proactive personality and entrepreneurial self-efficacy

Based on the SEE and TPB, a rationale is developed that PP positively influences ESE via performance achievements mechanism of social learning theory and perceived feasibility. The existing literature provides evidence that individuals possessing a high level of proactive personality are more likely to best capture, exploit opportunities, and bring fruitful outcomes and desired change in the environment (Fuller et al., 2018; Lin et al., 2014). Therefore, proactive individuals are best suited for an entrepreneurial career and its related jobs. Based on the above rationale, the following hypothesis is proposed.

PP positively/negatively influences ESE

Rebelliousness and entrepreneurial business intentions

Rebelliousness stems from the psychological trait, which also plays an essential part in building and defining an entrepreneur. As they are mostly associated to deviate from traditional and conventional social norms, doing differently by surpassing the rules and provides new definitions and crafting the prevalent frameworks under the ambit of their respective way of thinking (Miao & Coombs, 2015; Schwartz & Malach-Pines, 2009). Moreover, breaking the rules and norms reflects the two motives of an individual, which includes the need for independence and autonomy. Besides this, unconventional rebelliousness is also cited which explains the entrepreneur's behavioral mode because entrepreneurs have a high tendency and strong desire to exercise power and have control over the existing environment. This logical rationale put forth by existing scholars sums up that doing something different from traditional behavior and mindset and breaking the rules, challenging the status quo is what defines entrepreneurs and all these characteristics are under the domain of rebelliousness (Heath, Cloninger, & Martin, 1994). Thus, the following hypothesis has been derived.

RB positively/negatively influences EBI

Rebelliousness and entrepreneurial self-efficacy

This study predicts that rebelliousness is positively associated with entrepreneurial self-efficacy, which is also supported by the driving mechanism of the perceived feasibility of SEE and TPB. Rebelliousness individuals function one breaking the rules and feel privileged in taking risks and challenging the prevalent social norms (Adegun, 2013; Lee, & Bichard, 2006). Moreover, they are also considered creative rule breakers, as they feel excited in revamping the prevalent frameworks and redesigning the new way of understanding (Webb, Ireland, & Ketchen, 2014). Therefore, it is difficult for them to cope with traditional organizational life and structures. As these individuals exert the power to have control over the environment, therefore entrepreneurial career is the most desirable option for them to best exert their productive capacities and be their boss. As the perceived feasibility is identical with ESE, therefore the following hypothesis has been formulated.

RB positively/negatively influences ESE

Risk-taking propensity and entrepreneurial business intentions

Risk-taking propensity refers to one's willingness and ability to make decisions or follow certain courses of action that have the probability of getting success or failure (Karabulut, 2016; Espíritu-Olmos & Sastre-Castillo, 2015). The tendency to risk-propensity is precarious feature relevant to entrepreneurs, and it is considered a benchmark of the entrepreneurial personality (Zhang, Wang, & Owen, 2015). Therefore, risk propensity is of significance as individuals who are more prone to take risks are more interested in becoming entrepreneurs.

RTP positively/negatively influences EBI

Risk-taking propensity and entrepreneurial self-efficacy

As there are three types of risk individuals, including risk-averse, risk-seeker, and risk-

neutral, among them, those individuals, who came under the category of risk seekers (i.e., individuals with high risk-taking propensity) have higher probability of gaining positive outcomes, overestimate the prevalent opportunities, and undervaluing the existing threats (Yu & Chen, 2016; Densberger, 2014). Among the four dimensions, one that influences entrepreneurial self-efficacy is based on social learning theory. Risk propensity exerts the highest effect on emotional stimulation (Khuong & An, 2016). Moreover, social learning theory also explains that an individual relies on his/her physiological stimulus to regulate his/her perception of self-efficacy, and an individual is likely to be more self-efficacious, if not affected by negative provocation.

RTP positively/negatively influences ESE

Mediating effect of ESE in EE, EI, NC, PP, RB, RTP, and EBI

Entrepreneurial self-efficacy is referring to an individual's strength and belief that he/she possesses the ability to successfully perform the roles and tasks of an entrepreneur. It is among the essential explanatory variable in crafting the EBI and likewise the probability of entrepreneurial action. Although, there are very few empirical findings so far conducted to support the relationship except for one (Zhao, Seibert, & Hills, 2005) has illustrated the relationship between risk propensity and entrepreneurial intentions that are mediated by entrepreneurial self-efficacy. As both the entrepreneurial self-efficacy and need for cognition are classified under motivations (Fleischhauer et al., 2010). Likewise, the paper predicts that ESE will have a mediating relationship between individual traits and EBI. Based on this rationale following hypothesis is constructed.

ESE positively/negatively mediates the relationship between EE, EI, NC, PP, RB RTP, and EBI

Materials and methods

This paper aimed to investigate the individual traits influencing entrepreneurial business intentions with the mediated effect of entrepreneurial self-efficacy. The study was investigated in the Jiangsu Province university management department students to know their entrepreneurial business intentions after completion and during the study. The paper followed a quantitative methodology to address the empirical nature of a question.

Measurement of scales

For the measurement of the model, the paper adopted scales from the already published studies by the researchers based on reliability and validity. In the model, the paper has six exogenous variables, one mediator, and one endogenous variable. The first exogenous variable EE was measured through 04 items and adopted from the study of Li and Wu (2019). The Cronbach's alpha for EE was 0.856. A sample item is "my school education made me interested to become entrepreneurs." The second exogenous variable is EI was measured through 16 items and 04 items were deleted due to low factor loading. The paper adopted EI measurement scale from the study of Wong and Law (2002). The Cronbach's alpha for EI was 0.965. A sample item is "I have a good sense of why I have certain feelings most of the time." The third exogenous variable is need for cognition (NC) measured through 7 items and adopted from the study of Hill (2013). The Cronbach's alpha for EE was 0.930. A sample item is "I like to have the responsibility of handling a situation that requires a lot of thinking." The fourth exogenous variable has PP measured 5 items and 3 items were deleted due to low factor leading. The scale was adapted from the study of Seibert, Crant, and Kraimer (1999). The Cronbach's alpha for PP was 0.925. A sample item is "I am constantly on the look for new ways to improve my life." The fifth exogenous variable is rebelliousness (RB) adopted from the study of Klabbers et al. (2009). The paper measured 9 items scale with the sample item "When you are told that you are breaking a rule (e.g., No smoking) is your favorite reaction to." The Cronbach's alpha for RB was 0.951. Our seventh exogenous variable is risk-taking propensity RTS we measured through 4 items and adopted from the study of Isaga (2018). The Cronbach's alpha for risk-taking propensity (RTP) was 0.883. A sample item is "Taking risks bothers me even if the gains involved are potentially high." The mediator variable is entrepreneurial self-efficacy ESE measured through 8 items adapted from the study of Herath and Mahmood (2014). The Cronbach's alpha for EE was 0.835. A sample item is "Have the ability to see new market opportunities for new products and services." The endogenous variable is entrepreneurial business intentions EBI measured through 6 items and we adopted the scale from the study of Liñán and Chen (2006). The Cronbach' alpha for EBI was 0.884. A sample item is "My professional goal is becoming an entrepreneur." The paper used 5 points Likert scale (1–5) ranging from "strongly degree" to "strongly agree" to measure the constructs for evaluating the student responses (Table 1).

Sample description

The sample students were drawn from the Management Department of Jiangsu Province Universities, China. The paper considered only five universities for the data collection purpose. The respondents were selected using a non-probability convenience sampling technique from the whole population. This technique was adopted due to limitless population size and it was conveniently available for data collection required for research. Moreover, only management students were taken into consideration due to ease of availability in collecting the sample. Also before proceeding with further research, a pilot testing was conducted to check the rationale of the model on 40 participants from under two different settings. The results from pilot testing provide logical reasoning to conduct further research. A formula was developed by Mason (2010), for calculating sample size Z2 * p(1 – p)/e2, where z = 1.6384, p = 0.25, and e2 = 0.0016. According to this formula, approximately sample size is 350 respondents; therefore, 360 questionnaires were sent to management department students through in-person class visits for data collection among different universities in Jiangsu Province, China. A total of 270 questionnaires were returned out of 300 questionnaires with a good response. Further, the study has conducted the process of data screening and discard those questionnaires which were not properly marked by the respondents were added. Finally, this paper used 259 questionnaires with proper filling and analyzed through PLS-software to identifying the validity and reliability measurement test.

Table 2 shows the sample description of the respondents; concerning gender, there were 171, 66% males while females are 88, 34% of the target population. Regarding age group, the study categorized in four parts, 15–20 years 69 (26.6%), 21 to 25 years 136, (52.5%), 26 to 30 years 41, (15.8%), 31 to 35 years 13, (5%). Concerning education the study categorized into three parts, undergraduate students 98 (37.8%), master students 140 (54.1%), and Ph.D. students 21 (8.1%) who participated in a survey.

Measurement model testing

To test hypotheses, structural equation modeling (PLS-SEM) was used for analysis to estimate the theoretical and causal modeling analysis. The paper has applied the convergent validity test as well as composite reliability (CR) using factor loading, average variance extract (AVE) for the measurement of the model. All the construct values of composite reliability and average variance extract were found more than 0.50, which is acceptable and is shown in a given table (Table 3).

Table 1 List of universities for data collection

University name	City	Sample size
Nanjing University	Nanjing	56
Hohai University	Nanjing	56
Nanjing University of Finance and Economics	Nanjing	56
Jiangsu University of Science and Technology	Zhenjiang	28
Jiangsu University	Zhenjiang	63
Total		**259**

Table 2 Sample description of respondents

Gender	Frequency	Percent
Male	171	66.0%
Female	88	34.0%
Age		
15-20 years	69	26.6%
21-25 years	136	52.5%
26-30 years	41	15.8%
31-35 years	13	5.0%
Education		
Undergraduate	98	37.8%
Masters	140	54.1%
Ph.D.	21	8.1%

Discriminant validity

To measure the factor loading, Fornell-Larcker criterion test was applied to estimate the disarmament validity; the approach developed by Fornell and Larcker (1981) was acceptable for developing the hypotheses. It is further shows in Table 4.

Results

Structural model

The paper analyzes results using partial least squares (PLS-SEM) techniques to estimate the relationship among variables. Hypothesis H1 demonstrates a relationship between EE and EBI. The study found that EE positively influences EBI (β = 0.292, t = 6.413, p = 0.000). H2 is associated with the EE and ESE. The paper found that EE has a significant impact on ESE (β = 0.235, t = 6.016, p = 0.000). H3 determines a relationship between EI and EBI. The study found that EI has an insignificant impact on EBI (β = 0.091, t = 1.122, p = 0.261). H4 is linked with the EI and ESE. The study found that EI has an insignificant impact on ESE (β = 0.072, t = 1.645, p = 0.101). H5 is associated with the ESE and EBI. The paper found that ESE positively influences EBI (β = 0.382, t = 4.230, p = 0.000). H6 is related to NC and EBI. The results found that NC is positively influenced by EBI (β = 0.357, t = 6.305, p = 0.000). H7 demonstrates the relationship between NC and ESE. The results revealed that NC has a positive impact on ESE (β = 0.387, t = 9.983, P =

Table 3 Confirmatory factor analysis

Construct		Factor loading	Alpha	AVE	CR
Entrepreneurial business intentions	EBI 1	0.884	0.944	0.785	0.956
	EBI 2	0.909			
	EBI 3	0.915			
	EBI 4	0.885			
	EBI 5	0.946			
	EBI 6	0.764			
Entrepreneurial education	EE 1	0.824	0.856	0.700	0.903
	EE 2	0.908			
	EE 3	0.843			
	EE 4	0.765			
Emotional intelligence	EI 1	0.743	0.965	0.744	0.970
	EI 2	0.907			
	EI 3	0.891			
	EI 4	0.844			
	EI 5	0.899			
	EI 6	0.859			
	EI 7	0.871			
	EI 8	0.872			
	EI 9	0.915			
	EI 10	0.787			
	EI 11	0.884			
Entrepreneurial self-efficacy	ESE 1	0.694	0.835	0.502	0.878
	ESE 2	0.775			
	ESE 3	0.734			
	ESE 4	0.703			
	ESE 5	0.056			
	ESE 6	0.777			
	ESE 7	0.816			
	ESE 8	0.792			
Need for cognition	NC 1	0.803	0.930	0.707	0.944
	NC 2	0.876			
	NC 3	0.868			
	NC 4	0.886			
	NC 5	0.786			
	NC 6	0.776			
	NC 7	0.881			
Proactive personality	PP 1	0.75	0.925	0.772	0.944
	PP 2	0.907			
	PP 3	0.915			
	PP 4	0.913			
	PP 5	0.895			
Rebelliousness	RB 1	0.861	0.951	0.720	0.958
	RB 2	0.895			
	RB 3	0.904			
	RB 4	0.907			
	RB 5	0.716			
	RB 6	0.796			
	RB 7	0.860			
	RB 8	0.862			
	RB 9	0.819			
	RTP 1	0.851			
Risk taking propensity	RTP 2	0.929	0.883	0.741	0.919
	RTP 3	0.853			
	RTP 4	0.805			

0.000). H8 is associated with PP and EBI. The study found that PP has a negative and significant impact on EBI ($\beta = -0.409$, $t = 4.908$, $p = 0.000$). H9 indicating a relationship between PP and ESE. The paper found that PP positively influences ESE ($\beta = 0.445$, $t = 7.408$, $p = 0.000$). H10 is demonstrating a relationship between RB and EBI. The study found that RB has a significant impact on EBI ($\beta = 0.248$, $t = 3.455$, $p = 0.001$). H11 is related to RB and ESE. The paper found that RB has an insignificant impact on ESE ($\beta = 0.093$, $t = 1.514$, $p = 0.131$). H12 demonstrating an influence of RTP on EBI. The study found that RTP has a negative and insignificant impact on EBI ($\beta = -0.102$, $t = 1.289$, $p = 0.198$). H13 is linked with the RTP and ESE. The paper found that RTP has a negative and insignificant impact on ESE ($\beta = -0.061$, $t = 1.506$, $p = 0.133$) (Table 5).

Table 6 shows the mediation effect of ESE between EE, EI, NC, PP, RB, and RTP on EBI.

In H14, we found that ESE mediates the association between EE and EBI ($\beta = 0.090$, $t = 3.188$, $p = 0.002$). ESE has a partial mediation impact between EI and EBI ($\beta = 0.027$, $t = 1.706$, $p = 0.089$). ESE mediates the association between NC and EBI ($\beta = 0.148$, $t = 4.029$, $p = 0.000$). ESE mediates the association between PP and EBI ($\beta = 0.170$, $t = 3.942$, $p = 0.000$). ESE has a mediation effect between RB and EBI ($\beta = 0.035$, $t = 1.271$, $p = 0.204$). ESE also have no mediation effect between RTP and EBI ($\beta = -0.023$, $t = 1.557$, $p = 0.120$).

Discussion

The study examines the relationship between individual traits and entrepreneurial business intentions: measuring a mediation effect of entrepreneurial self-efficacy through partial least squares structural equation modeling. Although entrepreneurship traits and entrepreneurial intentions have been extensively studied, there is limited research is available on individual traits and entrepreneurial business intentions. The study contributes to the existing knowledge in the domain of individual traits, self-efficacy, and entrepreneurial business intentions. H1 entrepreneurial education is significantly and positively influences entrepreneurial business intentions. The results are in line with prior research of Li and Wu (2019); entrepreneurial education generally shows the acquisition of knowledge and progress of opportunity recognition skills through education to create entrepreneurial business intentions in students. H2 entrepreneurial education is significantly and positively associated with entrepreneurial self-efficacy. The study results are consistent with the earlier studies of (Chowdhury, Endres, & Frye, 2019) which indicate that entrepreneurial education is necessary to achieve entrepreneurial self-efficacy.

H3 demonstrates that emotional intelligence has an insignificant association with entrepreneurial business intentions. Prior study by Mortan et al. (2014) found that emotional intelligence has a significant and positive impact on entrepreneurial business intentions. Therefore, this is a certain difference between the results of previous findings; so this study delivers new results in existing research and sets the foundation for further research. Further H4 explored the influence of emotional intelligence on entrepreneurial self-efficacy. The study found that emotional intelligence has an insignificant

impact on self-efficacy. But prior studies (Khalid & Zubair 2014) found that emotional intelligence has a significant and positive impact on entrepreneurial self-efficacy. Therefore, this is a certain difference between the results of prior findings, so this study delivers new findings in existing research and sets the foundation for further research.

H5 is associated with entrepreneurial self-efficacy and entrepreneurial business intentions. The findings show that there is a significant and positive association between entrepreneurial self-efficacy and entrepreneurial business intentions. The study supports the previous findings of Pfeifer et al. (2016) and Shinnar, Hsu, and Powell (2014, b), wherein self-efficacy is helpful to take actions to manage the future situation for entrepreneurial outcomes. H6 is linked with the need for cognition and entrepreneurial business intentions. Need for cognition deals with motivation to assume effortful cognitive actions. The study findings are in line with the prior research of Molaei et al. (2014) that the need for cognitive helps to make a relationship with entrepreneurial business intentions.

H7 discusses the need for cognition and entrepreneurial self-efficacy. The study found that the need for cognition has a significant impact on entrepreneurial self-efficacy. The results are consistent with the previous research of Wang, Chang, Yao, and Liang (2016) that entrepreneurs are logical risk-takers because of their motivation to involve in the need for cognition before they make decisions. H8 is related to proactive personality and entrepreneurial business intentions. The study indicates that proactive personality negatively and significantly influences business intentions. The findings support the earlier research of Espíritu-Olmos and Sastre-Castillo (2015) that proactive personality students have proactive behavior which identifies differences among people in the extent to which they take action to affect their environment. H9 demonstrates a relationship between proactive personality and entrepreneurial self-efficacy. The study found that proactive personality is positively nfluenced self-efficacy and the study findings in line with the prior research of (McGeown et al., 2014).

H10 explains the association between rebelliousness and entrepreneurial business intentions; the study found that there is a positive relationship between rebelliousness and entrepreneurial business intentions. The study finding supports the prior study by Miao & Coombs, (2015) that entrepreneurs have anti-social and rule-breaking propensities as well as less supportive attitude. H11 predicts rebelliousness has insignificant but positively associated with entrepreneurial self-efficacy. The study results are in line with prior research of Klabbers (2009) that rebelliousness people are open resistance against the orders of established authority. H12 linked with the risk-taking propensity and entrepreneurial business intentions. The paper found that risk propensity has insignificant and negatively associated with entrepreneurial business intentions. It confirms earlier research by Karabulut (2016) that entrepreneurs generally take more risk to prone the environment for creating opportunities around them.

H13 also predicts that risk propensity has a negative and insignificant impact on entrepreneurial self-efficacy. The paper's findings are consistent with the previous study of Ozaralli and Rivenburgh (2016)that those entrepreneurs are risk lovers and willing to take chances concerning the risk of loss. H14 is associated with the mediation effect of entrepreneurial self-efficacy between entrepreneurial educations, emotional intelligence, need for cognition, proactive personality, rebelliousness, and risk-taking propensity. The study found that entrepreneurial self-efficacy mediates the relationship between entrepreneurial educations, emotional intelligence, need for cognition, proactive personality, and rebelliousness.

The paper's finding is consistent with previous research by Do Paço (2015) that self-efficacy perception will affect and increasing individual confidence to become an entrepreneur as well as influence business intentions. Moreover, the study also found that entrepreneurial self-efficacy positively but insignificantly influences on the relationship between emotional intelligence and entrepreneurial business intentions. This finding of full mediation corroborates the importance of emotion theory and social learning theory for the entrepreneurship field by showing that emotionally intelligent individuals are resilient and can better regulate their emotions to tackle aversive emotional arousal (Meisler, 2014). Further, the study found that entrepreneurial self-efficacy negatively and insignificant mediation effect between risk propensity and entrepreneurial business intentions because individuals generally feel confident to handle risky situations and accordingly have a greater sense of control over outcomes of becoming an entrepreneur; hence, they are more inclined to engage in entrepreneurial activities due to their high-risk tolerance (Zhang, Wang, & Owen, 2015; Kannadhasan, Aramvalarthan, & Kumar, 2014).

Table 4 Discriminant validity

	EBI	EE	EI	ESE	NC	PP	RB	RTP
EBI	0.886							
EE	0.826	0.837						
EI	0.362	0.365	0.863					
ESE	0.757	0.756	0.534	0.708				
NC	0.845	0.832	0.363	0.790	0.841			
PP	0.347	0.353	0.531	0.767	0.373	0.879		
RB	0.408	0.361	0.547	0.750	0.404	0.914	0.849	
RTP	0.303	0.295	0.849	0.460	0.362	0.458	0.501	0.861

Conclusion

In conclusion, the paper presented a model regarding individual traits and entrepreneurial business intentions for business school students of Jiangsu Province universities sample (Nanjing and

Table 5 Path Coefficients and T-test

Hypotheses	Relationship	Standardized beta	Standardized error	STDEV	*T* value	*p*	Decision
H1	EE → EBI	0.292	0.289	0.045	6.413	0.000	Supported
H2	EE →ESE	0.235	0.238	0.039	6.016	0.000	Supported
H3	EI → BI	0.091	0.095	0.081	1.122	0.261	Supported
H4	EI →ESE	0.072	0.069	0.044	1.645	0.101	Supported
H5	ESE →EBI	0.382	0.379	0.090	4.230	0.000	Supported
H6	NC → EBI	0.357	0.361	0.057	6.305	0.000	Supported
H7	NC →ESE	0.387	0.387	0.039	9.983	0.000	Supported
H8	PP →EBI	− 0.409	− 0.413	0.083	4.908	0.000	Not Supported
H9	PP → ESE	0.445	0.442	0.060	7.408	0.000	Supported
H10	RB →EBI	0.248	0.255	0.072	3.455	0.001	Supported
H11	RB → ESE	0.093	0.094	0.061	1.514	0.131	Supported
H12	RTP → EBI	− 0.102	− 0.109	0.079	1.289	0.198	Not supported
H13	RTP → ESE	− 0.061	− 0.059	0.040	1.506	0.133	Not supported

Zhenjiang). The study contributes to the literature on individual traits, education, emotional intelligence, need for cognition, proactive personality, rebelliousness, risk-taking propensity, self-efficacy, and entrepreneurial intentions. The study found that education, need for cognition, proactive personality, and rebelliousness play a vital role among business school students who expect emotional intelligence and risk-taking propensity. On the other hand, entrepreneurial self-efficacy mediates the relationship between educations, need for cognition; a proactive personality expects emotional intelligence, risk-taking propensity, and rebelliousness.

Implications

The theoretical contribution is by the existing theories taken into consideration. Moreover, the results provided in this study have a significant contribution to entrepreneurial education, entrepreneurial business intentions, entrepreneurial self-efficacy, emotional intelligence, need for cognition, proactive personality, rebelliousness, and risk-taking propensity existing literature as results are following economic rationale. The empirical findings support the argument that greater emphasis on entrepreneurial education leads to better formation of entrepreneurial start-ups intentions. This is reflected in developed as well emerging economies because they have undergone the similar practical implications by having intensive policies and incentives given to promote entrepreneurial education and forming its favorable environment. Likewise, emotional intelligence is also considered to have positive impact on forming entrepreneurial intentions although due to small sizes it might produce insignificant results. Moreover, cognitive essentials also play a major role in formulating the entrepreneurial intentions. Therefore, greater emphasis is placed on human cognitive development especially in developed economies where a regular mental health check is made of individuals from diverse sectors and capacities. In addition, proactive personalities are likely to possess higher entrepreneurial intentions if mediated by entrepreneurial self-efficacy. Based on empirical findings, it is hence proposed to develop an effective methodological design for students that further polish their respective personalities, enlighten their mind by observing positive energy for better outcomes, and reduce their respective rebelliousness and risk-taking propensities. Furthermore, this study provides many guidelines and future directions for an academic research group. As this study is by theoretical findings, it explains its significance and application in

Table 6 Indirect Effects

Hypotheses	Relationship	β	SE	STDEV	*T* value	*p*	Decision
H14	EE → ESE → EBI	0.090	0.091	0.028	3.188	0.002	Supported
	EI → ESE → EBI	0.027	0.025	0.016	1.706	0.089	Supported
	NC → ESE → EBI	0.148	0.146	0.037	4.029	0.000	Supported
	PP → ESE → EBI	0.170	0.167	0.043	3.942	0.000	Supported
	RB → ESE → EBI	0.035	0.037	0.028	1.271	0.204	Supported
	RTP → ESE → EBI	−0.023	−0.021	0.015	1.557	0.120	Not Supported

contemporary times especially in the global context which has a strong adherence to building a well-coordinated dynamic environment that promotes entrepreneurial venture creation. After having global reforms and opening up as proposed in this study, there is higher probability that many innovations and entrepreneurial policy incentives been taken by the regulatory authorities at the highest state level to lower the provincial level would help in forming solid material foundation. Therefore, the entrepreneurial studies designed covering broader spectrum such as constructs of need for cognition, emotional intelligence, determine proactive personalities, and entrepreneurial self is of significance for young minds for having a sustainable future.

Limitations and future research

The study has some limitations and future research directions for upcoming researchers. The first limitation of this study is based on the cross-sectional design and this study had analyzed entrepreneurial self-efficacy as a mediator variable with personality traits and entrepreneurial business intentions. In the future, researchers can take other variables of entrepreneurship study and can employ a longitudinal research design. Second, this study is limited to Jiangsu province's two cities Nanjing and Zhenjiang because of time constraints and inadequate resources. For future researchers, they can take other cities of China province business school students to identify their entrepreneurial business intentions. Third, limitation relates to the entrepreneurial business intentions which are our endogenous variables; in many variables, there still exist gap according to the theory and empirical evidence; therefore, future research incorporates the cross-sectional and longitudinal studies on the entrepreneurial intentions with other individual traits. Fourthly, future research may also investigate on the personality traits, or big 5 model influences on entrepreneurial career success and entrepreneurial organizational performance.

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References

Adegun, O. A. (2013). Entrepreneurship education and youth empowerment in contemporary Nigeria. *Journal of Emerging Trends in Educational Research and Policy Studies, 4*(5), 746–751.

Ajzen, I. (1987). Attitudes, traits, and actions: Dispositional prediction of behavior in personality and social psychology. In *Advances in experimental social psychology* (Vol. 20, pp. 1-63). Academic Press.

Akers, R. L., & Jensen, G. F. (2017). The empirical status of social learning theory of crime and deviance: The past, present, and future. In *Taking stock* (pp. 37–76). Routledge.

Arend, R. J. (2014). Promises, premises... An alternative view on the effects of the Shane and Venkataraman 2000 AMR Note. *Journal of Management Inquiry, 23*(1), 38–50.

Ashkanasy, N. M., Humphrey, R. H., & Huy, Q. N. (2017). Integrating emotions and affect in theories of management. *Academy of Management Review, 42*(2), 175–189.

Bandura, A. (2010). Self- efficacy. *The Corsini encyclopedia of psychology*, 1–3.

Bar Nir, A., Watson, W. E., & Hutchins, H. M. (2011). Mediation and moderated mediation in the relationship among role models, self-efficacy, entrepreneurial career intention, and gender. *Journal of Applied Social Psychology, 41*(2), 270–297.

Batchelor, J. H., Abston, K. A., Lawlor, K., & Burch, G. F. (2014). The job characteristics model: An extension to entrepreneurial motivation. *Small Business Institute Journal, 10*(1), 1–10.

Baum, J. R., Frese, M., & Baron, R. A. (2014a). Born to be an entrepreneur? Revisiting the personality approach to entrepreneurship. In *In The psychology of entrepreneurship* (pp. 73–98). Psychology Press.

Baum, J. R., Frese, M., & Baron, R. A. (2014b). *The psychology of entrepreneurship*. Psychology Press.

Biraglia, A., & Kadile, V. (2017). The role of entrepreneurial passion and creativity in developing entrepreneurial intentions: Insights from American homebrewers. *Journal of Small Business Management, 55*(1), 170–188.

Bird, B. (1988). Implementing entrepreneurial ideas: The case for intention. *Academy of Management Review, 13*(3), 442–453.

Boyd, N. G., & Vozikis, G. S. (1994). The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice, 18*(4), 63–77.

Bullough, A., Renko, M., & Myatt, T. (2014). Danger zone entrepreneurs: The importance of resilience and self–efficacy for entrepreneurial intentions. *Entrepreneurship Theory and Practice, 38*(3), 473–499.

Cabello, R., Sorrel, M. A., Fernández-Pinto, I., Extremera, N., & Fernández-Berrocal, P. (2016). Age and gender differences in ability emotional intelligence in adults: a cross-sectional study. *Developmental Psychology, 52*(9), 1486–1492.

Cardon, M. S., & Kirk, C. P. (2015). Entrepreneurial passion as mediator of the self–efficacy to persistence relationship. *Entrepreneurship Theory and Practice, 39*(5), 1027–1050.

Carver, C. S., & Scheier, M. F. (2001). Optimism, pessimism, and self-regulation. *Optimism and pessimism: Implications for theory, research, and practice, 31*, 51.

Chowdhury, S., Endres, M. L., & Frye, C. (2019). The influence of knowledge, experience, and education on gender disparity in entrepreneurial self-efficacy. *Journal of Small Business and Entrepreneurship, 31*(5), 371–389.

de Mol, E., Khapova, S. N., & Elfring, T. (2015). Entrepreneurial team cognition: A review. *International Journal of Management Reviews, 17*(2), 232–255.

Delle, E., & Amadu, I. M. (2015). Proactive personality and entrepreneurial intention: employment status and student level as moderators. *International Journal of Small Business and Entrepreneurship Research, 1*(4), 1–13.

Demil, B., Lecocq, X., Ricart, J. E., & Zott, C. (2015). Introduction to the SEJ special issue on business models: business models within the domain of strategic entrepreneurship. *Strategic Entrepreneurship Journal, 9*(1), 1–11.

Demir, M., Demir, S. S., & Nield, K. (2015). The relationship between person-organization fit, organizational identification and work outcomes. *Journal of Business Economics and Management, 16*(2), 369–386.

Densberger, K. (2014). The self-efficacy and risk-propensity of entrepreneurs. *Journal of Enterprising Culture, 22*(04), 437–462.

Do Paço, A., Ferreira, J. M., Raposo, M., Rodrigues, R. G., & Dinis, A. (2015). Entrepreneurial intentions: is education enough? *International Entrepreneurship and Management Journal, 11*(1), 57–75.

Donnellon, A., Ollila, S., & Middleton, K. W. (2014). Constructing entrepreneurial identity in entrepreneurship education. *The International Journal of Management Education, 12*(3), 490–499.

Espíritu-Olmos, R., & Sastre-Castillo, M. A. (2015). Personality traits versus work values: Comparing psychological theories on entrepreneurial intention. *Journal of Business Research, 68*(7), 1595–1598.

Fayolle, A., & Liñán, F. (2014). The future of research on entrepreneurial intentions. *Journal of Business Research, 67*(5), 663–666.

Fleischhauer, M., Enge, S., Brocke, B., Ullrich, J., Strobel, A., & Strobel, A. (2010). Same or different? Clarifying the relationship of need for cognition to personality and intelligence. *Personality and Social Psychology Bulletin, 36*(1), 82–96.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50.

Fuller, B., Liu, Y., Bajaba, S., Marler, L. E., & Pratt, J. (2018). Examining how the personality, self-efficacy, and anticipatory cognitions of potential entrepreneurs shape their entrepreneurial intentions. *Personality and Individual Differences, 125*, 120–125.

Gartner, W. B. (1985). A conceptual framework for describing the phenomenon of new venture creation. *Academy of Management Review, 10*(4), 696–706.

Gorgievski, M. J., & Stephan, U. (2016). Advancing the psychology of entrepreneurship: A review of the psychological literature and an introduction. *Applied Psychology, 65*(3), 437–468.

Halder, S., Roy, A., & Chakraborty, P. K. (2017). The influence of personality traits on information seeking behaviour of students. *Malaysian Journal of Library & Information Science, 15*(1), 41–53.

Heath, A. C., Cloninger, C. R., & Martin, N. G. (1994). Testing a model for the genetic structure of personality: a comparison of the personality systems of Cloninger and Eysenck. *Journal of Personality and Social Psychology, 66*(4), 762–775.

Herath, H. M. A., & Mahmood, R. (2014). Dimensions of Entrepreneurial Self-Efficacy and Firm Performance. *Global Journal of Management and Business Research, 14*(4), 1–9.

Hill, B. D., Foster, J. D., Elliott, E. M., Shelton, J. T., McCain, J., & Gouvier, W. D. (2013). Need for cognition is related to higher general intelligence, fluid intelligence, and crystallized intelligence, but not working memory. *Journal of Research in Personality, 47*(1), 22–25.

Hill, B. D., Foster, J. D., Sofko, C., Elliott, E. M., & Shelton, J. T. (2016). The interaction of ability and motivation: Average working memory is required for need for cognition to positively benefit intelligence and the effect increases with ability. *Personality and Individual Differences, 98*, 225–228.

Humphrey, N. (Ed.). (2013). *Social and emotional learning: A critical appraisal*. SAGE Publications Limited.

Hussain, A., & Norashidah, D. (2015). Impact of entrepreneurial education on entrepreneurial intentions of Pakistani Students. *Journal of Entrepreneurship and Business Innovation, 2*(1), 43–53.

Isaga, N. (2018). The relationship of personality to cognitive characteristics and SME performance in Tanzania. *Journal of Small Business and Enterprise Development, 25*(4), 667–686.

Jauk, E., Benedek, M., & Neubauer, A. C. (2014). The road to creative achievement: A latent variable model of ability and personality predictors. *European Journal of Personality, 28*(1), 95–105.

Javed, F., Ali, R., Hamid, A., Shahid, M., & Kulosoom, K. (2016). Role of social networks, emotional intelligence and psychosocial characteristics in developing entrepreneurial intentions of students. *Sukkur IBA Journal of Management and Business, 3*(1), 54–81.

Kannadhasan, M., Aramvalarthan, S., & Kumar, B. P. (2014). Relationship among cognitive biases, risk perceptions and individual's decision to start a venture. *Decision, 41*(1), 87–98.

Karabulut, A. T. (2016). Personality traits on entrepreneurial intention. *Procedia-Social and Behavioral Sciences, 229*, 12–21.

Khalid, S., & Zubair, A. (2014). Emotional intelligence, self-efficacy, and creativity among employees of advertising agencies. *Pakistan Journal of Psychological Research, 29*(2).

Khuong, M. N., & An, N. H. (2016). The factors affecting entrepreneurial intention of the students of Vietnam national university—a mediation analysis of perception toward entrepreneurship. *Journal of Economics, Business and Management, 4*(2), 104–111.

Klabbers, G., Bosma, H., Van den Akker, M., van Boxtel, M. P. J., Kempen, G. I. J. M., McDermott, M. R., & Van Eijk, J. T. M. (2009). Measuring rebelliousness and predicting health behaviour and outcomes: An investigation of the construct validity of the social reactivity scale. *Journal of Health Psychology, 14*(6), 771–779.

Klotz, A. C., & Neubaum, D. O. (2016). Article commentary: Research on the dark side of personality traits in entrepreneurship: Observations from an organizational behavior perspective. *Entrepreneurship Theory and Practice, 40*(1), 7–17.

Kluemper, D. H., McLarty, B. D., & Bing, M. N. (2015). Acquaintance ratings of the Big Five personality traits: Incremental validity beyond and interactive effects with self-reports in the prediction of workplace deviance. *Journal of Applied Psychology, 100*(1), 237–248.

Krueger Jr., N. F., & Brazeal, D. V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice, 18*(3), 91–104.

Krueger Jr., N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing, 15*(5-6), 411–432.

Küttim, M., Kallaste, M., Venesaar, U., & Kiis, A. (2014). Entrepreneurship education at university level and students' entrepreneurial intentions. *Procedia-Social and Behavioral Sciences, 110*, 658–668.

Lee, M. J., & Bichard, S. L. (2006). Effective message design targeting college students for the prevention of binge-drinking: Basing design on rebellious risk-taking tendency. *Health Communication, 20*(3), 299–308.

Leutner, F., Ahmetoglu, G., Akhtar, R., & Chamorro-Premuzic, T. (2014). The relationship between the entrepreneurial personality and the Big Five personality traits. *Personality and Individual Differences, 63*, 58–63.

Li, L., & Wu, D. (2019). Entrepreneurial education and students' entrepreneurial intention: Does team cooperation matter? *Journal of Global Entrepreneurship Research, 9*(1), 35.

Lin, S. H., Lu, W. C., Chen, M. Y., & Chen, L. H. (2014). Association between proactive personality and academic self–efficacy. *Current Psychology, 33*(4), 600–609.

Liñán, F., & Chen, Y. W. (2006). Testing the entrepreneurial intention model on a two-country sample.

Liñán, F., & Fernandez-Serrano, J. (2014). National culture, entrepreneurship and economic development: different patterns across the European Union. *Small Business Economics, 42*(4), 685–701.

Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. *Forum qualitative Sozialforschung/Forum: qualitative social research, 11*(3).

McGeown, S. P., Putwain, D., Simpson, E. G., Boffey, E., Markham, J., & Vince, A. (2014). Predictors of adolescents' academic motivation: Personality, self-efficacy and adolescents' characteristics. *Learning and Individual Differences, 32*, 278–286.

Meisler, G. (2014). Exploring emotional intelligence, political skill, and job satisfaction. *Employee Relations, 36*(3), 280–293.

Miao, C., & Coombs, J. E. (2015). Biological factors, individual traits, and entrepreneurial intentions: The mediating role of entrepreneurial self-efficacy and need for cognition (summary). *Frontiers of Entrepreneurship Research, 35*(4), 8.

Milliman, J., Gatling, A., & Bradley-Geist, J. C. (2017). The implications of workplace spirituality for person–environment fit theory. *Psychology of Religion and Spirituality, 9*(1), 1–12.

Molaei, R., Reza Zali, M., Hasan Mobaraki, M., & Yadollahi Farsi, J. (2014). The impact of entrepreneurial ideas and cognitive style on students entrepreneurial intention. *Journal of Entrepreneurship in Emerging Economies, 6*(2), 140–162.

Mortan, R. A., Ripoll, P., Carvalho, C., & Bernal, M. C. (2014). Effects of emotional intelligence on entrepreneurial intention and self-efficacy. *Revista de Psicología del Trabajo y de las Organizaciones, 30*(3), 97–104.

Mustafa, M. J., Hernandez, E., Mahon, C., & Chee, L. K. (2016). Entrepreneurial intentions of university students in an emerging economy: The influence of university support and proactive personality on students' entrepreneurial intention. *Journal of Entrepreneurship in Emerging Economies, 8*(2), 162–179.

Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education, 16*(2), 277–299.

Naktiyok, A., Karabey, C. N., & Gulluce, A. C. (2010). Entrepreneurial self-efficacy and entrepreneurial intention: the Turkish case. *International Entrepreneurship and Management Journal, 6*(4), 419–435.

Oh, I. S., Charlier, S. D., Mount, M. K., & Berry, C. M. (2014). The two faces of high self- monitors: Chameleonic moderating effects of self-monitoring on the relationships between personality traits and counterproductive work behaviors. *Journal of Organizational Behavior, 35*(1), 92–111.

Ozaralli, N., & Rivenburgh, N. K. (2016). Entrepreneurial intention: antecedents to entrepreneurial behavior in the USA and Turkey. *Journal of Global Entrepreneurship Research, 6*(1), 3.

Pfeifer, S., Šarlija, N., & Zekić Sušac, M. (2016). Shaping the Entrepreneurial Mindset: Entrepreneurial Intentions of Business Students in C roatia. *Journal of Small Business Management, 54*(1), 102–117.

Piperopoulos, P., & Dimov, D. (2015). Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self- efficacy, and entrepreneurial intentions. *Journal of Small Business Management, 53*(4), 970–985.

Rauch, A., & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta- analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of Work and Organizational Psychology, 16*(4), 353–385.

Saeed, S., Yousafzai, S. Y., Yani-De-Soriano, M., & Muffatto, M. ([2015]). The role of perceived university support in the formation of students' entrepreneurial intention. *Journal of Small Business Management, 53*(4), 1127–1145.

Salovey, P., Mayer, J. D., Caruso, D., & Lopes, P. N. (2003). Measuring emotional intelligence as a set of abilities with the Mayer-Salovey-Caruso Emotional Intelligence Test. In S. J. Lopez & C. R. Snyder (Eds.), Positive psychological assessment: A handbook of models and measures (pp. 251–265).

Schneider, B., Smith, D. B., & Paul, M. C. (2001). P–E fit and the attraction-selection-attrition model of organizational functioning: Introduction and overview. In M. Erez, U. Kleinbeck, & H. Thierry (Eds.), Work motivation in the context of a globalizing economy (pp. 231–246).

Schwartz, D., & Malach-Pines, A. (2009). Entrepreneurship education for students: How should universities prepare for the challenge of teaching entrepreneurship? *Industry and Higher Education, 23*(3), 221–231.

Seibert, S. E., Crant, J. M., & Kraimer, M. L. (1999). Proactive personality and career success. *Journal of Applied Psychology, 84*(3), 416–427.

Seong, J. Y., Kristof-Brown, A. L., Park, W. W., Hong, D. S., & Shin, Y. (2015). Person-group fit: Diversity antecedents, proximal outcomes, and performance at the group level. *Journal of Management, 41*(4), 1184–1213.

Shabbir, M. S., Shariff, M. N. M., & Shahzad, A. (2016). A conceptual development of entrepreneurial skills and entrepreneurial intentions: A case of IT employees in Pakistan. *International Journal of Academic Research in Business and Social Sciences, 6*(3), 65–78.

Shapero, A., & Sokol, L. (1982). The social dimensions of entrepreneurship. *Encyclopedia of entrepreneurship*, 72–90.

Shinnar, R. S., Hsu, D. K., & Powell, B. C. (2014). Self-efficacy, entrepreneurial intentions, and gender: Assessing the impact of entrepreneurship education longitudinally. *The International Journal of Management Education, 12*(3), 561–570.

Siegling, A. B., Saklofske, D. H., & Petrides, K. V. (2015). Measures of ability and trait emotional intelligence. In *In Measures of personality and social psychological constructs* (pp. 381–414). Academic Press.

Turner, J. S., & Croucher, S. M. (2014). An examination of the relationships among United States college students' media use habits, need for cognition, and grade point average. *Learning, Media and Technology, 39*(2), 199–214.

Wang, J. H., Chang, C. C., Yao, S. N., & Liang, C. (2016). The contribution of self-efficacy to the relationship between personality traits and entrepreneurial intention. *Higher Education, 72*(2), 209–224.

Webb, J. W., Ireland, R. D., & Ketchen, D. J. (2014). Toward a greater understanding of entrepreneurship and strategy in the informal economy. *Strategic Entrepreneurship Journal, 8*(1), 1–15.

Weiss, H. M., & Cropanzano, R. (1996). Affective events theory. *Research in Organizational Behavior, 18*(1), 1–74.

Williams, N., & Williams, C. C. (2014). Beyond necessity versus opportunity entrepreneurship: some lessons from English deprived urban neighbourhoods. *International Entrepreneurship and Management Journal, 10*(1), 23–40.

Wong, C. S., & Law, K. S. (2002). The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study. *The Leadership Quarterly, 13*(3), 243–292.

Wu, C. H., Parker, S. K., & De Jong, J. P. (2014). Need for cognition as an antecedent of individual innovation behavior. *Journal of Management, 40*(6), 1511–1534.

Wu, W., Wang, H., Zheng, C., & Wu, Y. J. (2019). Effect of narcissism, psychopathy and Machiavellianism on entrepreneurial intention-the

mediating of entrepreneurial self- efficacy. *Frontiers in Psychology, 10*, 360.

Wurthmann, K. (2014). Business students' attitudes toward innovation and intentions to start their own businesses. *International Entrepreneurship and Management Journal, 10*(4), 97–711.

Yu, J., & Chen, S. (2016). Gender moderates firms' innovation performance and entrepreneurs' self-efficacy and risk propensity. *Social Behavior and Personality: An International Journal, 44*(4), 679–691.

Zhang, Z., & Arvey, R. D. (2009a). Effects of personality on individual earnings: Leadership role occupancy as a mediator. *Journal of Business and Psychology, 24*(3), 271–280.

Zhang, Z., & Arvey, R. D. (2009b). Rule breaking in adolescence and entrepreneurial status: An empirical investigation. *Journal of Business Venturing, 24*(5), 436–447.

Zhang, P., Wang, D. D., & Owen, C. L. (2015). A study of entrepreneurial intention of university students. *Entrepreneurship Research Journal, 5*(1), 61–82.

Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology, 90*(6), 1265–1272.