How to Cite This Article: Bukhari, S. R. H., Nazir, S., & Rebhi, T. (2025). The Impact of Entrepreneurial Education, Entrepreneurial Alertness, and Entrepreneurial Passion on Entrepreneurial Intentions of University Students in Khyber Pakhtunkhwa, Pakistan. *Journal of Social Sciences Review*, 5(4), 151-164. https://doi.org/10.62843/jssr.v5i4.627

Volume 5, **Issue** 4 (Fall 2025)
Pages: 151-164
ISSN (Online): 2789-4428
DOI: 10.62843/jssr.v5i4.627
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JOURNAL OF SOCIAL SCIENCES REVIEW (JSSR)

The Impact of Entrepreneurial Education, Entrepreneurial Alertness, and Entrepreneurial Passion on Entrepreneurial Intentions of University Students in Khyber Pakhtunkhwa, Pakistan

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Abstract: *Entrepreneurship is an important driver of economic growth, innovation, and job creation. For developing countries like Pakistan, understanding what influences students' intentions to start a business can help strengthen the entrepreneurial culture. This study examines how entrepreneurial education, entrepreneurial alertness, and entrepreneurial passion shape the intentions of university students in Khyber Pakhtunkhwa (KP) to pursue entrepreneurship A quantitative, cross-sectional design was used. Data came from 295 final-year business and commerce students in 17 public universities across KP. A structured questionnaire based on established scales from Linan and Chen (2006), Kaish and Gilad (1991), Phan et al. (2002), and Cardon et al. (2013) measured the core variables. SPSS v26 was used for descriptive analysis, correlations, and multiple regression. Reliability scores ranged from 0.70 to 0.87. Entrepreneurial education ($\beta = 0.53$, $p < .001$) and entrepreneurial passion ($\beta = 0.50$, $p < .001$) both showed strong positive effects on entrepreneurial intentions. Entrepreneurial alertness ($\beta = 0.21$, $p < .05$) had a smaller but positive impact. Together, the three predictors explained 48.8% of the variance in intentions ($R = 0.699$; $R^2 = 0.488$). Findings show that entrepreneurship education and the development of passion are key to encouraging students toward entrepreneurial careers, while alertness adds supportive influence. Universities should integrate practical experience and motivation-building elements to strengthen students' readiness to become entrepreneurs.*

Keywords: Entrepreneurial Education, Entrepreneurial Alertness, Entrepreneurial Passion, Entrepreneurial Intentions, University Students, Khyber Pakhtunkhwa, Pakistan

Introduction

One of the most interpersonal occupations is teaching and it involves educators dealing with multifaceted emotional interactions with pupils, their peers, and administrators. Such regular contacts usually cause stress and misunderstandings that have to be worked out to maintain a positive learning environment. The most important aspect of this process is emotional intelligence (EI), which is the possibility to perceive, understand, and control emotions (Goleman, 1998; Fernández et al., 2022). The educators that demonstrate high emotional competencies are more effective at communicating, manage stress more resiliently, and have more positive conflict management behaviors (Noreen & Kazim, 2021).

Education as both social and emotional business demands that teachers should negotiate various student needs and institutional demands. The teachers in the context of Pakistan encounter the lack of resources, big classes, and hierarchical systems of management, which increases the level of stress at work (Valente & Lourenco, 2020). In such circumstances, the skills of using emotional intelligence are critical to uphold motivation and avoiding the eruption of interpersonal conflicts. The studies of organizational behavior prove that emotional competence is a psychological resource which helps to minimize stress and increase the performance of the tasks (Javeed & Siddique, 2024).

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Background

Entrepreneurship is universally known to be one of the most important forces in economic development, job creation, and social change. In emerging economies like Pakistan where unemployment rate amongst the youth is still high, it has become a strategic agenda to support entrepreneurial motives among the students in a bid to grow and innovate in a sustainable manner. Entrepreneurial education when incorporated into the university programs was found to increase entrepreneurial awareness, skills, and motivation among students (Fayolle and Gailly, 2015; Pan and Lu, 2022). Nevertheless, although many studies advertise entrepreneurship education, the empirical findings in the new economies are inconclusive, specifically on how the education is converted into an entrepreneurial intention, that is, the psychological processes involved, which encompass entrepreneurial alertness and passion (Buana et al., 2017; Sriyakula and Kittisak, 2019).

Entrepreneurial education (EE) means organized academic experience that provides learners with knowledge of the cognitive and practical skills required to act as an entrepreneur (Anwar et al., 2023). It is broadly used in tertiary schools to promote self-employment, innovation, and creativity (Araujo et al., 2023). Pakistan has a few universities that now provide entrepreneurship courses to encourage youth to participate in the economy and be self-sufficient (Rahim et al., 2015). Nevertheless, a significant number of graduates are still inclined to occupy themselves with traditional jobs, which points to the possibilities of the disconnection between knowledge acquisition and entrepreneurial action (Global Entrepreneurship Monitor, 2016).

Entrepreneurial alertness (EA) and entrepreneurial passion (EP) are the new psychological determinants of entrepreneurial behavior becoming important. The cognition of recognizing, interpreting and exploiting business opportunities is expressed in alertness (Tang, Kacmar, and Busenitz, 2012). Passion, in its turn, is the strong positive feelings associated with entrepreneurial activity and identity (Cardon et al., 2009). According to recent research, the two factors not only affect intention but have the potential to mediate the impact of education on the formation of an entrepreneurial behavior (Youseff et al., 2021; Hoang et al., 2021). Nevertheless, their effect on each other simultaneously in terms of developing countries is understudied.

Cultural and institutional forces within social-economic contexts of Pakistan tend to slow down the pursuit of entrepreneurial risk-taking, preferring job security and wage-paid employment (Khan, 2022). Therefore, it is necessary to learn the interaction between educational exposure, cognitive alertness, and emotional passion in influencing the entrepreneurial intention. This paper then examines three fundamental predictors, such as entrepreneurial education, entrepreneurial alertness and entrepreneurial passion and their synergistic impact on the entrepreneurial intentions of the students in the tertiary institutions of Khyber Pakhtunkhwa (KP).

The proposed research is based on the Theory of Planned Behavior (Ajzen, 1991) that presupposes the fact that intention can be influenced by attitudes, perceived control, and the social norms. The proposed research shapes the conceptualization of entrepreneurial intention as a voluntary willingness to become involved in the activities of creating the new ventures. By enlarging the theory to include emotional and cognitive aspects, the study provides an integrative concept of the effects of learning experiences and the personality traits together to develop entrepreneurial motivation.

The research adds value to the literature and policy in three aspects. First, it offers empirical evidence in a developing-country setting, which contributes to cross-cultural interpretation of the results of entrepreneurship training. Second, it shows the relative impact of education, alertness and passion on intention, in curriculum development. Third, it provides useful information to the university administration and policymakers to create an ecosystem to foster the entrepreneurial skills and interest in young people.

Literature Review and Theoretical background.

Entrepreneurship and Entrepreneurial Intentions

Entrepreneurship is also being viewed as a driver of economic growth, innovation and creation of jobs. It entails identification, analysis, and utilization of opportunities to generate value by forming new businesses (Jonsson, 2017). Entrepreneurial intention is the aware attitude that comes before

entrepreneurial action the state of consciousness that guides individuals to the business formation (Ajzen, 1991; Liang and Fayolle, 2015). The Theory of Planned Behavior (TPB) considers the intention to be the result of behavioral attitudes, subjective norms, and perceived control (Feng and Chen 2020). Therefore, entrepreneurial intention is the best forecast of entrepreneurial behavior, especially between university students who are the future professionals (Elnadi and Gheith, 2023).

The empirical data indicates that intention does not necessarily turn into action, but it is an action that needs cognitive, affective, and contextual facilitators (Ediagbonya, 2023). They are entrepreneurial education, knowledge and self-efficacy development; entrepreneurial alertness, recognition of opportunities; and the entrepreneurial passion, persistence, and motivation (Cardon et al., 2013; Hoang et al., 2021). A combination of these constructs combines to create a full picture of the interactions between education and psychology in determining entrepreneurial behavior.

Entrepreneurial Education

Entrepreneurial education (EE) is a set of academic and experiential programs that enable students to have knowledge, skills, and desire to be entrepreneurs (Anwar et al., 2023). It motivates the students to be creative, seek opportunities, and translate ideas into viable businesses (Ekpoh and Edet, 2011). Researchers agree that EE is a key factor to consider in entrepreneurial intention and self-employment desire (Martin et al., 2013; Walter et al., 2016).

The research indicates that EE improves self-efficacy, innovativeness, and opportunity-seeking behavior of students and this is likely to increase venture-initiation probability (Ayo-Sobowale, 2021). Business simulation and mentorship initiatives that include startup incubation can have an important impact on preparing students to work in entrepreneurial fields (Biswas and Verma, 2022). In Pakistan, entrepreneurship has been integrated into management courses in public universities, which is correlated with the national priorities to foster innovation and decrease unemployment (Rahim et al., 2015; Yusoff et al., 2015). Nevertheless, the results of such efforts have not stopped many graduates, who prefer to be risk-averse and to work in traditional jobs rather than in self-employment (Global Entrepreneurship Monitor, 2016). This inconsistency suggests there is a discrepancy between the distribution of knowledge and entrepreneurial intention - meaning that EE is not enough; it needs to be supported by psychological and contextual variables.

The existing literature also indicates that the success of EE can be conditional on its ability to develop more psychological aspects of entrepreneurial alertness and passion. Therefore, this research analyzes how EE directly affects intentions, as well as its relationship with these motivational and cognitive characteristics.

Entrepreneurial Alertness

Entrepreneurial alertness (EA) is a cognitive ability of a person to recognize, perceive and exploit a potential opportunity that has not been recognized by others (Tang, Kacmar, and Busenitz, 2012). It involves environmental scanning, linking of information as well as appraisal of opportunities based on creative thinking (Edigbo et al., 2021). Kirzner (1997) defined the concept of alertness as a condition of mind preparedness that enables entrepreneurs to find profit opportunities without searching.

EA involves three dimensions of information scanning, association, and evaluation and all contribute to the increasing capacity of an individual to see entrepreneurial opportunities (Campos, 2017). It has been shown that highly alert individuals tend to show increased entrepreneurial intentions and adopt an opportunity-driven behavior (Li et al., 2022; Khan and Khan, 2023). In addition, alertness moderates the connection between entrepreneurial education and intention through converting the acquired knowledge into practical acknowledgment of opportunities (Naz et al., 2020).

Nonetheless, this connection can be moderated by contextual limitations, including inexperience or exposure to entrepreneurial networks (Gill et al., 2021). An example is undergraduate students who might have a good level of theoretical knowledge but they lack the ability to utilize opportunities effectively in

the real world (Khan, 2022). This implies that EA is necessary, but it can be worked more efficiently when applied in combinations with other drivers- especially passion and educational reinforcement.

Entrepreneurial Passion

Entrepreneurial passion (EP) is a positive feeling of strong emotions towards entrepreneurial activities that are central to an individual (Cardon et al., 2009). It portrays passion, commitment, and self-motivation in business establishment and expansion (Biraglia and Kadile, 2017). The entrepreneurial spirit of passion keeps entrepreneurs going during moments of uncertainty, risk, and setbacks, and serves as a source of psychological energy (Cardon, Gregoire, Stevens, and Patel, 2013).

The studies have continued to indicate that EP is a predictor of entrepreneurial intention, as well as persistence. Passionate people are more creative, stronger, and more effective in venture-related activities (Porkodi et al., 2023; Marques et al., 2024). Moreover, EP also engages with education and alertness in the sense that people who have a personal stake in it tend to turn learning into an opportunity-seeking (Nguyen and Nguyen, 2024). Academic studies have shown that experiential learning, mentorship, and role modeling in nurturing passion in a student greatly contribute to entrepreneurial commitment (Onwe et al., 2024).

Nevertheless, too much passion without proper planning can also result in overconfidence and take a risk of making a wrong judgment (Hongtao et al., 2024). Thus, it is important that sustainable entrepreneurial success depends on balanced development, which is education, alertness, and passion.

Incorporating Education, Alertness and Passion.

Though many studies have been done on EE, EA and EP alone, there are limited studies which have been done on the issue of the combined effect of these on entrepreneurial intention. Recent results show that the connection between education and cognitive alertness and passion is synergistic, and when combined, these two factors help to activate the entrepreneurial motivation (Murad et al., 2021; Naz et al., 2020). That is, education gives the base, alertness gives the brain-function and passion gives the emotional force of acting as an entrepreneur.

This three-dimensional linkage reiterates the significance of a holistic approach in programs of entrepreneurship development. Good curricula should not just be based on theory and must be able to stimulate intellectual flexibility, awareness of opportunities, and intrinsic drive. In the Pakistani context of higher education, where the structures and cultural factors might inhibit the manifestation of entrepreneurship, the combination of these elements might have a tremendous positive impact on the entrepreneurial intentions of students.

Theoretical Framework

The theory of planned behavior (TPB) (Ajzen, 1991), which hypothesizes that the major predictor of behavior is intention, forms the basis of this study. The constructs proposed by TPB such as attitude, subjective norms, and perceived behavioral control are extrapolated here to include psychological variables that influence motivation and thinking. Entrepreneurial education lies as the antecedent that increases the perceived behavioral control due to the acquisition of skills. Entrepreneurial alertness affects the cognitive assessment and opportunity recognition, whereas the affective motivation is affected by entrepreneurial passion. Taken together, these elements forecast the entrepreneurial intentions, which comprise the conceptual model that was tested in the current research.

Hypotheses

1. Entrepreneurial education, entrepreneurial alertness, and entrepreneurial passion possess strong positive relationship with the entrepreneurial intentions.
2. Entrepreneurial education has a positive effect on entrepreneurial intentions.
3. Entrepreneurial alertness has a positive effect on entrepreneurial intentions.
4. Entrepreneurial passion has a good impact in entrepreneurial intentions.

5. Education, alertness, and passion are the combined factors that are good predictors of entrepreneurial intentions.

This model combines educational, cognitive and emotional aspects and can give a multidimensional perspective of the entrepreneurial motivation among university students in Khyber Pakhtunkhaw.

Methodology

Research Design and Philosophy

The present research has used cross-sectional research design which is a quantitative study in an attempt to highlight the relationship between entrepreneurial education, entrepreneurial alertness, and entrepreneurial passion and entrepreneurial intentions among the university students in Khyber Pakhtunkhwa (KP) in Pakistan. In accordance with the positivist philosophy, objective measurement, empirical testing, and deductive reasoning were the basis of the investigation. The quantitative approach was selected in order to be able to statistically validate relationships and extrapolate across a high student population, which was in line with the explanatory aim of the study (Bloomfield and Fisher, 2019).

The survey was conducted using a structured self-administered questionnaire that was sent to the students attending business administration and commerce department. The reason why the cross-sectional design was deemed appropriate was the resource limitations and the nature of the relationship that the study was focusing on determining at a single point in time (Flick, 2022).

Population and Sampling

The population sample was of last-year undergraduate and graduate business or commerce students in universities in the KP in the public sector. The group was chosen owing to the fact that it is a dynamic group exposed to entrepreneurship education that is making critical career decisions.

Simple random sampling method was applied with the probability based approach to guarantee representativeness and reduce selection bias. The sample frame was 17 universities that provide management and commerce courses in the province. According to the formula given by Yamane (1967), a population of 1550 students was estimated to give a minimum sample size of 318. The total number of valid responses was 295 out of the 350 mailed questionnaires, which translates to a response rate of 84.3, which is above acceptable limits of social science research (Chu, 2024).

Instrumentation

The research utilized a questionnaire that had five sections. The measurement of all items was in a five-point Likert scale of 1 = strongly disagree or 5 = strongly agree. The instrument featured validated and established scales that were common in past studies conducted on entrepreneurship:

F 10 adapted items (Phan et al., 2002) Entrepreneurial Education (EE): 10 items.

- Entrepreneurial Alertness (EA): 10 items by Kaish and Gilad (1991).
- Entrepreneurial Passion (EP): 10 questions of Cardon, Gregoire, Stevens, and Patel (2013).
- Entrepreneurial Intentions (EI): 10 items borrowed by Liangan and Chen (2006) EI.

The questionnaire was pretested on clarity, structure and be understood and then it was finally distributed. The responses of three academic professionals and a pilot group of 30 students resulted in some minor changes in wording and order.

Data Collection Procedure

The information was gathered in a period of April- July 2024 using direct administration of questionnaires in classrooms where the department heads and course instructors gave their consent. They informed the respondents regarding the scholarly purpose of the research and guaranteed them anonymity and confidentiality. The level of participation was voluntary and no incentives were given.

A total of 350 questionnaires gave out were returned and 295 considered complete and fit to be analyzed. The rest 35 were not included because of incomplete or contradictory responses.

Data Analysis Techniques

The data were coded and analyzed in SPSS 26. Demographic characteristics and distributions of variables were summarized with the help of descriptive statistics (means, standard deviations, frequencies). Cronbachs alpha was used to test reliability, and it had a value between 0.699 and 0.868, demonstrating that there was high internal consistency between constructs (Park, 2021).

The correlation and regression analyses were used in order to analyze the relationships and predictive relationship between independent variables (EE, EA, EP), and the dependent variable (EI). The level of significance was established at p <. 05. The regression system was used to test the five hypotheses which included individual and combined effects of the predictors. The Durbin-Watson value (1.818) was used to ensure that there was no autocorrelation in the model, and it was acceptable that the model was robust.

Ethical Considerations

The research process was conducted in a way that ethical standards were observed. The participants were made aware of their right to withdraw at any point, and their answers would be confidential. The research was done with the ethical permission of the Department of Business Administration, Gomal University, and in compliance with the research integrity guidelines set by Higher Education Commission (HEC) Pakistan.

The information was utilized only academically, none of them was identified. The researcher was also very transparent and accountable as she documented all her processes with regard to sampling, data collection and analysis.

The methodological reliability and external validity of the results were achieved with the help of the selected quantitative research design, tested tools, and thorough analytical processes. The next section will contain the empirical findings, statistical procedures, and discussion of the relationships between entrepreneurial education, alertness, passion and entrepreneurial intentions of students.

Results and Findings

This part provides the empirical findings achieved using the descriptive, correlational, and regression analysis in investigating the correlations between entrepreneurial education (EE), entrepreneurial alertness (EA), entrepreneurial passion (EP), and entrepreneurial intentions (EI) among the university students in the Pakistani province of Khyber Pakhtunkhwa (KP). All tests were performed with the SPSS version 26 and used a significant level of p =.05.

Demographic Characteristics of the respondents.

A sample of 295 final-year students in business and commerce programs in 17 KP universities in the public sector was sampled. Their demographic features are summarized in Table 1.

Table 1

Demographic Characteristics of Respondents (N = 295)

Variable	Category	Frequency	Percentage (%)
Gender	Male	213	72.2
	Female	82	27.8
Age	20–25 years	184	62.4
	Above 25 years	111	37.6
Marital Status	Unmarried	225	76.3
	Married	70	23.7
Monthly Income	Below PKR 50,000	172	58.3
	Above PKR 50,000	123	41.7
Residence	Local	134	45.4
	Non-local	161	54.6
Family Type	Single	199	67.5
	Joint	96	32.5
Education Level	BBA	185	62.7
	MBA	110	37.3

The sample population included majorities of males (72.2), unmarried (76.3), and younger (2025) respondents. The sample of the undergraduate students and their postgraduate counterparts contribute to the increased generalizability of the study to the KP higher-education setting.

Reliability and Descriptive Statistics

The study constructs were summarized using descriptive statistics to provide central tendencies and dispersion (Table 2). All the scales were rated using 5-point Likert scale.

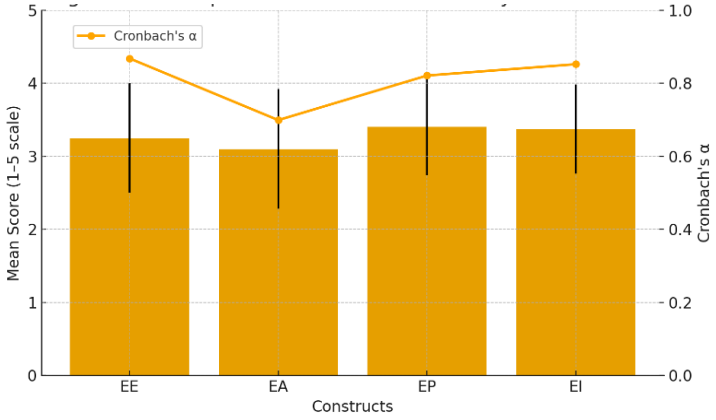
Table 2

Descriptive Statistics and Reliability of Constructs

Construct	N	Mean	SD	Cronbach's α
Entrepreneurial Education (EE)	295	3.25	0.75	0.868
Entrepreneurial Alertness (EA)	295	3.10	0.82	0.699
Entrepreneurial Passion (EP)	295	3.40	0.66	0.821
Entrepreneurial Intentions (EI)	295	3.37	0.61	0.852

Figure 1

Descriptive Statistics and Reliability of Constructs



All reliability coefficients exceeded **0.69**, confirming satisfactory internal consistency (Park, 2021). Mean values above 3.0 indicate generally favorable perceptions toward entrepreneurship among respondents.

Correlation Analysis

Pearson's correlation coefficients were computed to examine bivariate associations between variables (Table 3).

Table 3

Correlation Matrix

Variable	1	2	3	4
1. EE	1			
2. EA	.275**	1		
3. EP	.486**	.222**	1	
4. EI	.645**	.274**	.538**	1

Note. P < .01 (two-tailed).

There were all positive relationships, and more importantly, all of the predictor variables (EE, EA, EP) showed significant positive relationship with the entrepreneurial intentions, which implies the positive relationship between the level of entrepreneurial motivation and the level of exposure to higher education, cognitive alertness and passion.

Regression Analyses

Effect of Entrepreneurial Education on Entrepreneurial Intentions (H2)

A simple linear regression was used to investigate the predictive ability of EE on EI.

- $\beta = 0.53$, $t = 14.46$, $p < .001$
- $R^2 = 0.416$, $F = 194.25$, $p < .001$

Entrepreneurial education accounted the 41.6% of the variance in the entrepreneurial intentions which is significant and positive. This helps to believe that organized entrepreneurship studies significantly increase the likelihood of students engaging in self-employment.

The Impact of Entrepreneurial Alertness on Entrepreneurial Intentions (H3)

The regression analysis showed that entrepreneurial alertness also had a significant prediction of entrepreneurial intentions:

- $\beta = 0.21$, $t = 4.87$, $p < .001$
- $R^2 = 0.075$, $F = 23.73$, $p < .001$

In spite of the fact that the effect size was low (7.5 %), EA did play a significant role as it allowed students to recognize and assess business opportunities that could arise due to their academic exposure.

The relationship between the entrepreneurial passion and the entrepreneurial intentions is also tested by Effect of Entrepreneurial Passion on Entrepreneurial Intentions (H 4).
Entrepreneurial passion was found to have a strong and positive influence:

- $\beta = 0.50$, $t = 10.94$, $p < .001$
- $R^2 = 0.290$, $F = 119.61$, $p < .001$

The students who were ardent showed a greater tendency towards entrepreneurship and this shows that emotional involvement is also an important motivational factor that accompanies school knowledge.

This is the interaction of entrepreneurial education with alertness and passion (H 5).
To determine the predictive power of the three independent variables combined predicting entrepreneurial intentions, a multiple-regression model was estimated.

Table 4

Multiple Regression Results (Model Summary and Coefficients)

Predictor	β (Standardized)	*t*	*p*
Constant	–	6.24	.000
Entrepreneurial Education	0.398	9.92	.000
Entrepreneurial Alertness	0.058	1.75	.081
Entrepreneurial Passion	0.267	5.92	.000
Model Fit: $R = 0.699$; $R^2 = 0.488$; Adj $R^2 = 0.483$; $F(3, 291) = 92.47$; $p < .001$; Durbin–Watson = 1.818.			

The group predictors accounted 48.8 percent of the entrepreneurial intentions variance ($p < .001$). Entrepreneurial education and passion were consistent with high contribution as well as alertness contributed with low but positive contribution ($p = .081$). The acceptable Durbin Watson value shows that there is no autocorrelation of residual values, which confirms the reliability of the models.

Interpretation of Findings

Relationship Strengths

Entrepreneurial education was the most prominent of the predictors, which validates the fact that the exposure to systematic learning also leads to a significant boost in entrepreneurial disposition. The second-strongest determinant was entrepreneurial passion, which highlights the importance of emotional involvement in the process of nourishing entrepreneurial drive. Although less statistically significant, entrepreneurial alertness also helped in refining opportunity recognition and strengthening behavioral preparation.

Model Implications

The results are consistent with the past foreign research (Botsaris and Vamvaka, 2016; Hoang et al., 2021) claiming that education develops the basic competencies, and passion is a key to motivation. The mere fact that the entire model can be explained by almost half of the total is indicative of the fact that incorporating both cognitive (EA) and affective (EP) factors into educational programs can have a significant impact on an entrepreneurial outcome.

The fairly small variance explained by EA (7.5 0) alone implies that the effect of alertness could be indirect, which might be a direction of future research.

The Observations of Gender and Educational Level

Early cross-tabulations revealed that there was a slight difference between male students and female students in their entrepreneurial intention and passion, which is consistent with the previous gender-difference results in entrepreneurial motivation (Urban, 2020). The levels of alertness and intention were also higher among MBA students as compared to the BBA students, which could be due to increased exposure to high level entrepreneurial courses and case-based learning.

Summary of Hypotheses Testing

Hypothesis	Statement	Result
H_1	EE, EA, and EP are jointly related to EI	Supported
H_2	EE positively influences EI	Supported ($p < .001$)
H_3	EA positively influences EI	Supported ($p < .05$)
H_4	EP positively influences EI	Supported ($p < .001$)
H_5	Combined EE + EA + EP predict EI	Supported ($p < .001$)

All proposed hypotheses were supported, confirming strong statistical evidence for the model's assumptions.

It has also been confirmed that all the hypotheses were supported, which proves the strong statistical support of the assumptions of the model. Generally, the statistical analyses established that there are significant positive correlations between entrepreneurship education, alertness, passion and entrepreneurial intentions. The most significant factor turned out to be education, then passion, and alertness was the moderate and significant factor. The combined model predicted close to fifty percent of the variance in intentions, which highlights the collective effect of cognitive and emotional variables in the determination of entrepreneurial motivation amid university students.

Discussion

This paper discussed the relationship between entrepreneurial education (EE), entrepreneurial alertness (EA) and entrepreneurial passion (EP) and entrepreneurial intentions (EI) of university students in Khyber Pakhtunkhwa, Pakistan. Based on the Theory of Planned Behavior (Ajzen, 1991), the findings are empirical proof that the three variables play a major role in determining the willingness of students to pursue entrepreneurial ventures. The results contribute to the theoretical discussion by finding that the educational exposure and affective-cognitive processes both predict entrepreneurial motivation in a developing-economy setting.

Entrepreneurial Education as a basis of Entrepreneurial Intentions

The comparison of the results showed that entrepreneurial education is the strongest predictor of entrepreneurial intentions (= 0.53, p <.001). This contributes to an abundance of literature that considers education as a driving force behind the entrepreneurial development of mind (Fayolle and Gailly, 2015; Martin et al., 2013). The entrepreneurship courses push the students to recognize opportunities, cope with uncertainty and internalize the worth of being self-employed. The findings are also reminiscent of the argument presented by Rahim et al. (2015) that, institutional initiatives in Pakistan to institute

entrepreneurship curricula have influenced the perception of entrepreneurship as a career opportunity among students in a positive manner.

Nevertheless, the fact that risk-averse attitudes remain among graduates (Global Entrepreneurship Monitor, 2016) points to the possibility that the formal instruction might not be enough. Successful programs should combine experiential learning, mentorship, and start-up incubation to transform the theoretical knowledge into a practical ability (Buana et al., 2017). In this way, the education of entrepreneurs can be viewed as a base that needs to be reinforced with the help of cognitive and emotional elements, such as alertness and passion, in order to generate significant behavioral intentions.

The contribution of Entrepreneurial Alertness: Cognitive recognition and Opportunity Awareness

Entrepreneurial alertness showed a positive but less significant impact on the entrepreneurial intentions (= 0.21, p <.05). This observation is consonant with the past research that has focused on alertness as a cognitive resource enabling individuals to observe and consider business opportunities (Tang et al., 2012; Khan and Khan, 2023). Others who were more concerned with environmental changes, gaps in the market, and innovations had higher chances of expressing entrepreneurial intentions.

This low power of this relationship however suggests that alertness might be a mediating and not a direct predictor. Students may not have enough practical experience or exposure to the market and may not be able to take the identified opportunities. In line with the conclusions made by Gill et al. (2021), academic alertness tends to stay at the perceptual phase, and to be moved to actionable opportunity searching it needs to be reinforced through an experience. Thus, case-based projects and real-world simulations should be combined with theoretical modules in the universities to improve the opportunity recognition skills.

Although it has a less powerful direct effect, alertness enhances entrepreneurial learning by filling the cognitive to behavioral preparedness gap. It is an adjunct of education because it transforms learning into sensory acuity- making students capable of linking the theoretical learning to realities in the environment.

Passion to be an Entrepreneur as an Emotional and Motivational Force

The second-strongest predictor of entrepreneurial intentions was entrepreneurial passion (0.50, p <.001). This result supports the opinion that the emotional involvement and self-identity play a central role in entrepreneurial commitment (Cardon et al., 2013; Marques et al., 2024). The ardor increases the endurance, tolerance of risks, and imagination, which are the critical attributes of entrepreneurship.

Findings are also somehow in line with the previous evidence by Biraglia and Kadile (2017), who concluded that the relationship between entrepreneurial intention and perceived feasibility is mediated by passion. Emotionally attached students tend to overcome the fear of failure and develop a business. Furthermore, passion is a source of psychological energy, which means it converts knowledge (the EE) and perception (the EA) into the long-term motivation and pursuit of goals (Porkodi et al., 2023).

However, when passion is not kept in check, it may result in overconfidence or over-optimism (Hongtao et al., 2024). Therefore, teachers should develop balanced passion - i.e. direct emotional motivation into strategic cognition by using reflective practices, mentoring, and feedback systems. Entrepreneurial passion when well managed gives the fire required to keep the venture creation and growth.

The Confluence of Education, Alertness and Passion

The integrated regression model (R 2 = 0.488) corroborated that the combination of entrepreneurial education, alertness and passion can explain close to a half of the variance in entrepreneurial intentions. This shows the synergetic interplay of cognitive, affective, and the experiential aspects of entrepreneurship. Knowledge base is provided by education, cognitive processing is sharpened by alertness and action orientation is mobilized by passion. These dimensions combined create a loop within each other that makes entrepreneurial motivation stronger (Naz et al., 2020; Murad et al., 2021).

This triadic model is particularly important in developing countries such as Pakistan whose systems of entrepreneurship are still developing. Students are usually deterred by lack of access to funding, mentorship and business incubation. Thus, a structural barrier can be offset by an integrative framework that involves the combination of these psychological and educational constructs that reinforce internal motivation and opportunity recognition.

The same finding also concurs with the Conservation of Resources Theory (Hobfoll, 1989) which argues that one will invest and safeguard valuable resources like skills, knowledge and emotional energy in order to accomplish the goals, which include the resources. In this respect, education, alertness and passion are all the cognitive and emotional resources that increase the perceived behavioral control and resistant to entrepreneurial action among students.

Contextual Understandings and Cultural Reflections.

The contextual innuendo of Pakistan has some significant implications. Entrepreneurial behaviour is often suppressed by cultural norms that value job security, family demands and low financial standards (Khan, 2022). The findings of the study demonstrate that under these conditions, properly organized educational exposure and encouragement can arouse the interest of entrepreneurship. Male participants demonstrated a little better level of enthusiasm and intentions to be entrepreneurs compared to female respondents, and it reflects the regional trends where social roles prescribed by gender affect the desire to become an entrepreneur (Urban, 2020).

Also, the students of MBA were more alert and purposeful than BBA students, which is probably because of taking more advanced courses, internships, and project-based learning. This indicates that entrepreneurial learning process is enhanced by academic maturity and depth of the curriculum. As such, universities are supposed to create leveled interventions that would progressively develop cognitive complexity and emotion involvement, between the undergraduate and postgraduate studies.

Implications in Theory and Practice

Theoretical Implications

The study is an extension of the Theory of Planned Behavior with emotional (EP) and cognitive (EA) dimensions as key antecedent factors to the development of intentions. The integration points out that the intention to become an entrepreneur is not only a rational determination of the perceived control but also a combination of knowledge, perception, and passion. The results can be added to the more detailed explanation of the innervation of inner motivation mechanisms of entrepreneurship by the learning environment.

Practical Implications

1. Curriculum Improvement: Universities ought to incorporate practicative and reflective elements such as business simulations, internships, and live projects in the entrepreneurship curriculum to become alert and passionate to practice.
2. Mentorship Programs: Industry mentorships and alumni mentorships may be the link between theory and practice in the entrepreneurship setting, and both alertness and confidence may be supported.
3. Entrepreneurial Ecosystems: University based incubators, seed funding, and startup competitions would be encouraged to transform intention into behavior through policy frameworks.
4. Gender-Sensitive Training: Programs that promote the participation of female learners by networking, success stories, and special funds can help eliminate gender differences in business participation.

Comparisons with the Past Studies

The findings are consistent with world results by Hoang et al. (2021) and Ozaralli and Rivenburgh (2016), which shows that the intention is driven by entrepreneurial education and emotional engagement across the board. Nonetheless, the context of this study, a developing economy, introduces new information:

although education and passion yield strong results when it comes to predicting intentions, alertness yields moderate results, as it can be seen as a consequence of contextual constraints, including the lack of exposure to entrepreneurial ecosystems.

These results are in addition to previous research in Western and Asian settings (Elnadi and Gheith, 2023; Li et al., 2022), which confirms that the psychological processes are not different, but the extent of their impact is dependent on culture. The findings are an incentive to develop comparative research that may focus on the interaction of institutional quality and social norms with these psychological variables across regions.

Summary

Overall, this paper supports the view that entrepreneurial education provides cognitive preparation of entrepreneurial intentions, entrepreneurial alertness enhances opportunity awareness and entrepreneurial passion provides the emotional drive to take action. The combination of these constructs provides a complete picture of the transition of the students between awareness and intention. Through fostering the intellectual and emotional aspects of entrepreneurship, a university in Pakistan and other like scenarios can make a great contribution in ensuring that the future generation of entrepreneurs is enhanced.

Conclusion and Practical Implications

This paper has examined the influence of entrepreneurship education, attention and passion on entrepreneurial intentions of university students in Khyber Pakhtunkhwa, Pakistan. The findings are based on the Theory of Planned Behavior, which proves that the combination of these three variables can explain almost half of the entrepreneurial intention variance (R 2 = 0.488), showing the potential synergistic effect of them on the entrepreneurial motivation.

Entrepreneurial education proved to be the most significant predictor among the predictors, which confirms that well-organized entrepreneurship education curricula have a significant positive impact on the knowledge of students, their level of confidence, and their perceived control over their behavior. The second most powerful driver was entrepreneurial passion, which emphasized the significance of emotional commitment and enthusiasm towards the process of becoming an entrepreneur. The statistical weaker entrepreneurial alertness had a complementary role of helping to identify opportunities and scanning the environment. Combined, these results show that to develop entrepreneurial potential in young graduates it is necessary to work on cognitive ability as well as emotional interest.

Practically, universities are supposed to restructure entrepreneurship programs that incorporate experiential learning, mentorship, and project-based programs that connect classroom theory with practical application. Both alertness and passion can be developed by incubation centers, business simulations, and exposure to the successful entrepreneur among students. Academia and industry partnerships should be enhanced by policymakers to establish an enabling entrepreneurial environment that transforms intention to action.

Limitations to the study are that it is limited to public-sector universities in KP and is cross-sectional, thus making it difficult to infer causation. Further studies ought to utilise longitudinal research and larger samples of private institutions and rural environments. A closer look at mediating roles, e.g. self-efficacy or social capital, could also help better understand the way in which the educational and psychological variables are translated into entrepreneurial action.

Conclusively, the research concludes that education, alertness, and passion are the pillars of perception, refining and motivation respectively. They are synergistic, which makes them the building block of entrepreneurial development amongst university students. These areas can be empowered with specific educational and policy initiatives that can profoundly increase the ability of Pakistan in terms of innovation, job creation and economic growth of long-term sustainability.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Araujo, A. R., Santos, C. M., & Silva, J. L. (2023). Entrepreneurship education and entrepreneurial mindset among university students. *Education + Training*, *65*(3), 351–369.

Bazkiaei, H. A. (2020). *Attitude towards entrepreneurship on the relationship between psychological and educational factors with entrepreneurial intention among university students* (Doctoral dissertation, Universiti Teknologi Malaysia).

Biraglia, A., & Kadile, V. V. (2017). The role of entrepreneurial passion and creativity in developing entrepreneurial intentions: Insights from American students. *Journal of Small Business Management*, *55*(1), 160–178.

Bloomfield, J., & Fisher, M. (2019). Quantitative research design. *Journal of the Australasian Rehabilitation Nurses' Association*, *22*(2), 27-30. https://doi.org/10.33235/jarna.22.2.27-30

Cardon, M. S., Gregoire, D. A., Stevens, C. E., & Patel, P. C. (2013). Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of Business Venturing*, *28*(3), 373-396. https://doi.org/10.1016/j.jbusvent.2012.03.003

Chavoushi, Z. H., Zali, M. R., Valliere, D., Faghih, N., Hejazi, R., & Dehkordi, A. M. (2021). Entrepreneurial alertness: a systematic literature review. *Journal of Small Business & Entrepreneurship*, *33*(2), 123–152. https://doi.org/10.1080/08276331.2020.1764736

Elnadi, M., & Gheith, M. H. (2023). The role of individual characteristics in shaping digital entrepreneurial intention among university students: Evidence from Saudi Arabia. *Thinking Skills and Creativity*, *47*(101236), 101236. https://doi.org/10.1016/j.tsc.2023.101236

Fayolle, A., & Gailly, B. (2015). The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *Journal of Small Business Management*, *53*(1), 75–93. https://doi.org/10.1111/jsbm.12065

Franke, N., & Lüthje, C. (2004). Entrepreneurial intentions of business students—A benchmarking study. *International journal of innovation and technology management*, *1*(03), 269-288.

Gill, A., Hussain, A., & Khan, R. (2021). Entrepreneurial alertness and opportunity recognition among Pakistani students. *Pakistan Journal of Commerce and Social Sciences*, *15*(2), 450–468.

Hassan, A., Saleem, I., Anwar, I., & Hussain, S. A. (2020). Entrepreneurial intention of Indian university students: the role of opportunity recognition and entrepreneurship education. *Education + Training*, *62*(7/8), 843–861. https://doi.org/10.1108/et-02-2020-0033

Hoang, G., Luu, T. T., Le, T. T. T., Tran, N., & Tran, A. K. T. (2023). Examining the effects of entrepreneurship education on entrepreneurial intentions of Vietnamese business students: The roles of entrepreneurial alertness and resilience. *Journal of Education for Business*, *98*(8), 462–470. https://doi.org/10.1080/08832323.2023.2232921

Ibrahim, N. S., & Kohar, U. H. A. (2025). Bridging the intention–action gap through entrepreneurial optimism: A conceptual exploration. *International Journal of Research and Innovation in Social Science*, *9*(10), 3272–3279. https://doi.org/10.47772/ijriss.2025.910000267

Iqbal, J., Siddique, D. M., Oad, M. K., Khan, Z. U., Sanawar, M., & Haider, H. I. (2025). Presenteeism, burnout, and productivity loss among employees: A Smart PLS-based structural model. *CADEMIA International Journal for Social Sciences, 4(4)*, 2019-2026. https://doi.org/10.63056/acad.004.04.1046

Khan, N. (2022). Cultural determinants of entrepreneurial behavior in Pakistan: A critical review. *Asian Journal of Management Sciences*, *10*(1), 33–47.

Li, C., Murad, M., Khan, M. A. S., & Ashraf, S. F. (2022). Entrepreneurial alertness and opportunity recognition: A cognitive approach. *Frontiers in Psychology*, *13*.

Martin, B. C., McNally, J. J., & Kay, M. J. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes. *Journal of Business Venturing*, *28*(2), 211-224. https://doi.org/10.1016/j.jbusvent.2012.03.002

Mei, H., Lee, C.-H., & Xiang, Y. (2020). Entrepreneurship education and students' entrepreneurial intention in higher education. *Education Sciences*, *10*(9), 257. https://doi.org/10.3390/educsci10090257

Rauf, S., & Jamshed, S. (2024). Entrepreneurship Education Challenges in Pakistan and Role of Higher Educational Institutions (A Case Study of CPEC). *International Research Journal of Arts, Humanities and Social Sciences*, *2*(01), 176-190.

Rodrigues, A. O., Marques, C. S., & Santos, G. (2024). Artisan entrepreneurship: a systematic literature review of this emerging field of research and new trends. *International Journal of Entrepreneurship and Small Business*, *52*(2), 256-282.

Sanawar, M., Iqbal, J., & Siddique, M. (2025). Importance of Work-Life Balance its Relation with Employee's Burnout and Mediation of Demographics: A Survey-Based Study of Hospitals of District Bhakkar, Punjab, Pakistan. *Pakistan Social Sciences Review*, *9*(4), 298-310.

Sataloff, R. T., & Vontela, S. (2021). Response rates in survey research. *Journal of Voice: Official Journal of the Voice Foundation*, *35*(5), 683–684. https://doi.org/10.1016/j.jvoice.2020.12.043

Tang, J., Kacmar, K. M. M., & Busenitz, L. (2012). Entrepreneurial alertness in the pursuit of new opportunities. *Journal of business venturing*, *27*(1), 77-94.

Urban, B. (2020). Gender differences in entrepreneurial intention: Testing social and cognitive factors. *South African Journal of Economic and Management Sciences, 23*(1), 1–11.

Vamvaka, V., Stoforos, C., Palaskas, T., & Botsaris, C. (2020). Attitude toward entrepreneurship, perceived behavioral control, and entrepreneurial intention: Dimensionality, structural relationships, and gender differences. *Journal of Innovation and Entrepreneurship*, *9*(1). https://doi.org/10.1186/s13731-020-0112-0

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.

Yang, J. (2013). The theory of planned behavior and prediction of entrepreneurial intention among Chinese undergraduates. *Social Behavior and Personality*, *41*(3), 367–376. https://doi.org/10.2224/sbp.2013.41.3.367

Yousaf, A., Hussain, M., & Naseem, S. (2021). Entrepreneurial alertness and intention: Mediating role of self-efficacy. *Journal of Entrepreneurship Education, 24*(5), 1–14.