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Academic Achievement as a Predictor of Entrepreneurial Behavior: A Sequential Mediation Approach

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Abstract

This paper examines the impact of several psychological and educational factors on the behavior of entrepreneurs and job seeking and employability of the graduate students especially in regard to being job ready as well as the career opportunities. Based on a convenience sampling of 400 graduate students, the research establishes student grade as the independent variable with self-efficacy, attitude toward entrepreneurship and entrepreneurial intention taking the role of mediators. The dependent variable is entrepreneurial behavior, which is used as a proxy of improved outcomes of employability. The study examines the role of entrepreneurial education, which is signified by the academic performance (grade), into providing students with essential learning attributes like problem solving, innovation and adaptability. This ability is also determined by self-efficacy and entrepreneurial attitudes, and this has a bearing in entrepreneurial intentions and behavior. The paper also shows how family support contributes to the development of confidence and resilience, and how social connections can be used to widen the opportunities and professional networks of the person. One of the most essential elements of the study is exactly the entrepreneurial approach that will be staged as the moderator that will boost the correlation between the educational accomplishment and the psychological mediators and employability. This attitude-identified as being proactive, risk-taking, and opportunity-seeking intends to increase direct and even indirect impact, empowering the overall process of academic performance to career preparation. The results will be likely to favor a broader model wherein all the direct as well as indirect hypotheses are confirmed and helpful ideas can be extracted about the way that entrepreneurial competencies and contextual support assist in creating better career performances. The study emphasizes the importance of the entrepreneurial behavior not only as a by-product of education and psychosocial processes but as the way to overcome the disparity between the education and the labor market that is positively changing.

Keywords: Student Grade, Entrepreneurial Behavior, Self-Efficacy, Attitude towards Entrepreneurship, Entrepreneurial Intention

Introduction

Entrepreneurship and the issue of high school student absenteeism have been playing a greater role in both academic and practical fields and applications and most particularly it was during higher

education. Innovative thinking. In post-COVID-19 times, when the economy of several countries is changing to the status of an innovation-led economy, educating students to become entrepreneurs becomes a priority (OECD, 2021). Entrepreneurship is deemed to be the motor of the economic growth, workforce, and the technological development (Kuratko, 2014) and there is a demand concerning the knowledge about its antecedents among the university students. Grades are an ideal measure of academic performance, which is an indicator of cognitive ability, discipline as well as possible influencing motivational aspects associated with entrepreneurship (Seibert & Hills, 2005). On the other hand, a common vice with anticipated effects on academic participation and performance, namely absenteeism has become a serious issue to learning institutions all over the world (Kearney, 2008). Investigating the correlation between the academic performance, truancy, and entrepreneurial behavior might bring valuable input on the question of student development as well as institutional policies. This study is especially important against the background of new models of education, combined learning systems and transforming employment needs. The changing environment is one aspect that can determine behavioural performance which is determined by internal psychological aspects such as self-efficacy, entrepreneur attitude, and entrepreneur intention (Li Lin and Chen, 2009).

The correlation between entrepreneurial behavior and academic success is tricky. Although certain studies indicate academic success with the characteristics that lead to business start-up including analytical thinking and growth mindset (Giones & Riverola, 2016; Nabi et al., 2017), there are also some studies that report high ranking students prefer stable and rigid careers (Zhao et al., 2005). Equally, disengagement, poor performance, and low employability and engagement in growth-enhancement activities have been linked to absence, but the latter has not been discussed with respect to entrepreneurial activity (Kearney, 2008; Finning et al., 2019). It has been demonstrated that entrepreneurial intentions and behavior are affected by beliefs in the capacity to achieve Success known as self-efficacy (Bandura, 1997). Preference towards entrepreneurship and entrepreneurial intention developed on the basis of Theory of Planned behavior formulated by Ajzen (1991) remain important predictors of entrepreneurial action. Nonetheless, the majority of the researches study these variables separately or in parallel as those mediating models. Not many focus on their experience in a serial mediation model in which positive academic experiences (e.g., good grades), as well as negative behaviors (e.g., absenteeism) are considered. This paper fills in such a gap with an integrated model of self-efficacy, entrepreneurial attitude, and intention serving as sequential mediators of the entrepreneurial behavior and absenteeism.

In order to study complex interrelationship among academic performance, absenteeism, and entrepreneurial behavior mediated by psychological constructs, this study attempts to answer the following research questions:

1. How is the association between student academic performance (grades) and entrepreneurial behavior?
2. Is there relationship between absenteeism and academic performance together with entrepreneurial tendencies in students?
3. How far do self-efficacy, attitude to entrepreneurship and entrepreneurial intention mediate relationship between academic performance and entrepreneurial behavior?
4. Are these mediators describing absenteeism as a result together with entrepreneur behavior?
5. Is serial mediation model more insightful to explain mechanisms linking academic

performance to both entrepreneurial behavior and absenteeism than other models?

The study will attempt to explore the two-fold implications of both entrepreneurial conduct and absenteeism and their connection with academic performance through a serial mediation specifying. Precise objectives include: To determine the direct connection between academic performance and behavioral manifestation of entrepreneurship within a node of university students. In order to examine the effect of academic performance on student absenteeism. To explore the mediating effect of self-efficacy, attitude to entrepreneurship and entrepreneurial intention between academic performance and entrepreneurial behavior. To determine the importance of these mediators as being significant in explaining the absence that is an outcome variable. In order to assess the ability of a serial mediation model to explain cognitive and behavioral interplays that arise out of academic performance. The research is restricted to undergraduate learners in the public and private to major universities in a region of choice. The population to be recruited is interested students having diverse academic backgrounds, hence, providing a heterogeneous sample with regard to the academic background. The key variables studied will include as the independent one a student grades, and as the dependent ones entrepreneurial behavior and absenteeism, and three serial mediators: self-efficacy, attitude to entrepreneurship and entrepreneurial intention. The study takes a cross sectional research design with self-administered questionnaires. Although such methodology will enable the efficient data collection, the associated biases due to the common method can apply as well, including social desirability or self-enhancement (Podsakoff et al., 2003). The results may be used to enhance the intervention by educational practitioners and university administrators toward greater levels of student engagement and entrepreneurial thinking. Academic curricula can include programs that build self-efficacy, encourage positive views on entrepreneurship, and develop intention to make graduates creative and flexible in situations of employment market volatility (Nabi et al., 2017). At the policy level, findings of this research can inform any policy decisions that direct the investment in entrepreneurship education and support services to the students. Considering the correlation between absenteeism and entrepreneurial disengagement, the creation of concrete measures in attendance management, mental health services, and career counselling on the institutional level might become among the possible solutions that arise due to such an association. Additionally, the research also finds value to the study subjects because it sheds light on how their scholarly attitudes and actions are shaping their career ahead. After being enlightened of this, and possibly having more careful students inspired to take their education and entrepreneurship more seriously, there is the possibility that students will finally embrace business development at an early age.

Literature Review

Direct Relationship

Originally expressed in GPA, Student grade is the indicator of cognitive abilities, discipline, and motivation of a student and is becoming more and more associated with entrepreneurial behavior as well (Gonzalez et al., 2017). Entrepreneur behavior involves activities such as realization of the opportunities, taking risks and formation of ventures (Ajzen, 1991). Studies indicate that there is a positive correlation between academic performance and entrepreneurship behavior; that is, students who have higher achievement grades have been positively correlated with high propensity to risk, confidence, and resource management required in entrepreneurship (Soomro & Shah, 2022; Khalid et al., 2020; Mustafa et al., 2016; Memon et al., 2020; Kumar et al., 2021; Sahraoui, 2020;

Atiq et al., 201 In the same way, GPA is positively correlated with self-efficacy, which means the confidence in having the power to fulfill particular tasks (Bandura, 1997), and in the case of entrepreneurial activity (Santos & Lages, 2017; Hussain & Hashim, 2015). Academic performance also develops the attitude of students on entrepreneurship as students have a better perspective towards it due to the feeling of confidence and knowledge. Nonetheless, even with the powerful evidence in the formal education and mature economies, there is generally an existing research gap as to how the grades of students alter the entrepreneurial behavior, self-efficacy as well as attitudes in the informal SME sector of the developing countries such as Pakistan. Small and medium enterprises, one of the driving forces behind the economy of Pakistan, act in different conditions, and more research in the latter has to be conducted. The relationship between the dependent variable, entrepreneurial intention, and the independent variable, which is student grade (GPA); along with informal SMEs focusing as the developing countries such as Pakistan is studied in the present research. GPA is an indicator of success in academics and therefore exhibits a positive relationship on entrant entrepreneurial intention, which is oriented to starting business (Krueger et al., 2000). Studies demonstrate that GPA is related to cultivating confidence, self-efficacy and favorable attitudes, which help in boosting entrepreneurial intention (Sansone et al., 2021; Hussain & Hashim, 2015; Shahin et al., 2020). Believing that you are good at entrepreneurship (entrepreneur self-efficacy; ESE) also has a considerable impact on entrepreneurial behavior, such as innovativeness and risk-taking (Khalil et al., 2021; Mufti et al., 2020). Research indicates that ESE is able to forecast entrepreneurial attitudes and intentions even in counter cultures (Ali et al., 2021; Karimi et al., 2017; Neneh, 2020). In the same way, a positive entrepreneurship orientation enhances intention and behavior (Bird, 1988; Yıldırım et al., 2016). In spite of these, little literature is available on academic performance, ESE, and attitude effects on outcome of entrepreneurship regarding informal SMEs, one of the most important contributors to economy in Pakistan. These dynamics have also been essential to inform education-based policies and interventions that would enhance sustainable entrepreneurship within the under-resourced settings. Even though the evidence base is very strong, the current empirical studies have been conducted mainly on students, organized start-ups, and developed or urban economies, and not on the informal SMEs in the developing context such as Pakistan. The environment is very uncertain and resource-limited, and these SMEs may fail to translate such entrepreneurial intention into behaviour or, alternatively, distort the process. Such knowledge of the dynamics in the informal economy is important to the formulation of sound policy and entrepreneurial development initiatives in Pakistan.

Direct Relationships

H1: If higher academic performance (as indicated by GPA) positively influences entrepreneurial behavior, then students with higher academic performance will be more likely to engage in entrepreneurial behaviors within informal SMEs in Pakistan's developing economy

H2: If student academic performance (as indicated by GPA) positively influences self-efficacy, then students with higher academic performance will have greater self-efficacy in pursuing entrepreneurial ventures within Pakistan's informal SME sector.

H3: If higher academic performance (as indicated by GPA) positively influences students' attitudes toward entrepreneurship, then students with higher academic performance will exhibit a more positive attitude toward launching informal SMEs in Pakistan's developing economy.

H4: If student academic performance (GPA) positively influences entrepreneurial intention, then higher-performing students are more likely to exhibit stronger intentions to establish informal SMEs in Pakistan's developing economy.
H5: If entrepreneurs operating in informal SMEs in Pakistan have higher levels of self-efficacy, then they are more likely to engage in entrepreneurial behavior, such as opportunity recognition, innovation, and risk-taking, despite operating in resource-constrained environments.
H6: If entrepreneurs in informal SMEs in Pakistan possess high entrepreneurial self-efficacy, then they are more likely to have a positive attitude toward entrepreneurship, even when operating in resource-constrained and unregulated environments.
H7: If entrepreneurs in informal SMEs in Pakistan have high entrepreneurial self-efficacy, then they are more likely to demonstrate strong entrepreneurial intention, even in the absence of formal support structures.
H8: If informal SME entrepreneurs in Pakistan hold a positive attitude toward entrepreneurship, then they are more likely to engage in entrepreneurial behavior, such as opportunity exploitation, innovation, and proactive venture activities
H9: If informal SME entrepreneurs in Pakistan possess a positive attitude toward entrepreneurship, then they are more likely to exhibit strong entrepreneurial intention, despite operating in resource-constrained informal settings.
H10: If entrepreneurs in Pakistan's informal SMEs possess strong entrepreneurial intentions, then they are more likely to exhibit actual entrepreneurial behavior, provided minimal enabling conditions are present.

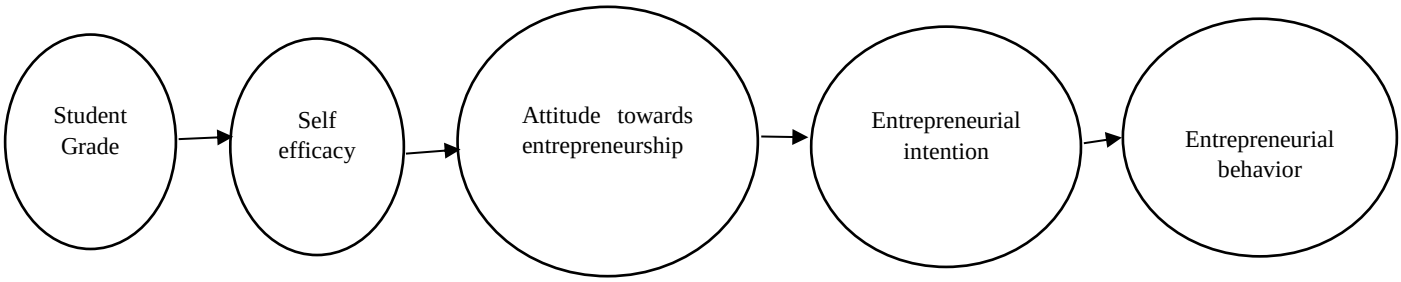
Indirect relationship

Nevertheless, self-efficacy is strongly associated with the academic performance, which often is estimated by the grades of the students (Bandura, 1997). The increased educational level has the potential of increasing the self-efficacy which in turn enacts the confidence of students to venture into entrepreneurship activities. Entrepreneurial self-efficacy (ESE) plays a mediating role in this connection. According to (Yousaf et al, 2021), entrepreneurial education improves self-efficacy that further influences the attitude of students towards entrepreneurship influencing positive entrepreneurial intentions. The attitude toward entrepreneurship is a very important mediating factor in the correlation between education, self-efficacy and entrepreneurial intention. In line with this model, (Makhitha, 2024) showed that the role of an entrepreneurship education on intentions to become an entrepreneur has an effect mediated by self-efficacy among university students in South Africa. Indicatively, (Saoula et al, 2023) concluded that entrepreneurial education mediates the correlation between self-efficacy and entrepreneurial intentions among the youth in Malaysia. These results support the importance of positive entrepreneurial attitudes in transforming the academic performance into self- efficacy and subsequently into entrepreneurial intent. Adding more to this point, attitude to entrepreneurship is proven by some studies to play the roles of conduit through which academic and psychological factors affect the outcome of entrepreneurship. Nonetheless, majority of the current literature focuses on institutions of formal learning and developed entrepreneurial ecosystem, but do not pay as much attention to less formal SMEs (small and medium enterprises), especially in developing economies such as Pakistan. This gives rise to a research gap.

Where formal structures of support often do not exist, as in the informal sector, academic performance and psychologically based constructs such as self-efficacy can be an even more

important determinant of entrepreneurial performance. No studies support the way that the grades of the students can cause the attitude toward the entrepreneurship in such informal settings that also affects the self-efficacy and entrepreneurial attempt items. Fill the gap there is an urgent need to fill this gap through planning interventions to foster entrepreneurship in informal economies because this cannot be done in a generic way. A potential can be transformed into action through the promotion of academic excellence, embarking on entrepreneurial building of self-efficiency as well as instilling positive attitudes; this is especially possible in students and youth who trade in environments that are not so formalized. This would help nurture sustainable entrepreneurial ecosystems in the developing countries.

H11: Student grades positively influence attitude toward entrepreneurship, mediated by self-efficacy, among individuals in informal SMEs in Pakistan.
H12: Student grades positively influence entrepreneurial intention, mediated by self-efficacy, among individuals in informal SMEs in Pakistan.
H13: Student grades positively influence entrepreneurial behavior, mediated by self-efficacy, among individuals in informal SMEs in Pakistan.
H14: Student grades positively influence entrepreneurial intention, mediated by attitude toward entrepreneurship, among individuals in informal SMEs in Pakistan.
H15: Student grades positively influence entrepreneurial behavior, mediated by attitude toward entrepreneurship, among individuals in informal SMEs in Pakistan.
H16: Student grades positively influence entrepreneurial behavior, mediated by entrepreneurial intention, among individuals in informal SMEs in Pakistan.
H17: Attitude toward entrepreneurship mediates the relationship between self-efficacy and entrepreneurial intention among university students.
H18: Attitude toward entrepreneurship mediates the relationship between self-efficacy and entrepreneurial behavior among university students.
H19: Entrepreneurial intention mediates the relationship between self-efficacy and entrepreneurial behavior among university students.
H20: Entrepreneurial intention mediates the relationship between attitude toward entrepreneurship and entrepreneurial behavior among university students.
H21: Student academic performance positively influences entrepreneurial intension, and this relationship is serially mediated by self-efficacy, Attitude toward entrepreneurship, and entrepreneurial behavior.



Methodology

The research design used in this study is quantitative research; this is because it aims at exploring the connections between the key variables in a specific population. It is a desirable research method to be quantitative because it will provide objectivity in measurement, statistical analysis, and

testing the hypothesis with regard to the mediation effects of the variables (Creswell, 2014). The educated students who are working in Gujranwala City, Punjab, Pakistan make the unit of analysis and the special inquiry is made on this particular group of people. The sample frame of the study is the graduated workers who are living and working in the Gujranwala City. Since access to this population is limited practically, 400 people out of the total population have been aimed at to give a good enough statistical power to carry out mediation analysis (Fritz & MacKinnon, 2007). To obtain the participants, both the methods of convenience and snowball sample will be applied. Convenience sampling enables the use of participants who are easily reached, and snowball sampling enables the mobilization of participants who may be hard to reach using the references of the first responders (Goli & Ghaljaie, 2017). Although these non-probability sampling techniques have their limitations as far as generalizability is concerned, they are defensible in this study in relation to the target population that is specific and somehow difficult to reach.

Measurement

The research study utilises well developed and quantified measures of the above major constructs of the student grade, self-efficacy, and attitude towards entrepreneurship, entrepreneurial intention and entrepreneurial behavior. These were scales that have been thoroughly chosen due to the reason that they have been used very much in the studies of entrepreneurship in terms of reliability and validity, and therefore fit the purpose of the study. The academic performance has been self-reported and its operationalization is represented by cumulative grade point average (GPA) in a 4.0 scale as a measure of the student grade. The participants were requested to provide their last final GPA that is an objective measure of the academic performance. GPA has been a widely accepted proxy measure of academic performance in the literature of the entrepreneurial intention owing to the fact psychological research has attributed academic performance to entrepreneurial attitude and behavior (Luthje & Franke, 2003). Entrepreneurial self-efficacy is regarded as a self-belief that a person can successfully undertake the entrepreneurial activity (Greene & Crick, 1998). In this research, the scale consists of 8 questions, based on those used by (Chen et al, 1998), which represents confidence on such activities like, Identifying new business opportunities, Developing new products or services and Marketing products or services. The responses are captured on a 5 point likert scale with response category ranging as below: 1 (Strongly disagree), 2 (Moderately disagree), 3 (Neutral), 4 (Neutrally agree) and 5 (Strongly agree). The scale has been proved to possess great internal consistency (Cronbachs alpha > 0.85) and construct validity across a number of entrepreneurial situations (Zhao, Seibert, & Hills, 2005). The attitude towards entrepreneurship is assessed on a 5-items scale modified after LiLin (LiLin and Chen, 2009), participants are asked how they feel towards entrepreneurship as a career, including overall positive or negative language. Examples are: Being an entrepreneur will hold more benefits than liabilities, and Entrepreneurship would be a career I will find very appealing. Responses offered are rated using 7 point likert-scale where 1 = strongly disagree while 7 = strongly agree. This scale has well been corroborated in various cultural contexts and demonstrates considerable psychometric characteristics with Cronbach alpha ratings averagely recording beyond 0.80. Entrepreneurial intention consists of 6 items scale that was also created by (Li dar & Chen, 2009), which quantifies the degree of the intention to begin a new business of an individual. Examples are: I am willing to do anything to become an entrepreneur, My career objective is to become an entrepreneur and to do my best in order to start my own firm and run it. To complete the scale, the Likert scale is used (strongly disagree with the scale 1-strongly agree with the scale 7). There is high predictive reliability and validity of this measure in relation to predicting entrepreneurial behavior within

student populations (Fayolle & Liñan, 2014). A 7-item scale based on the study of Krueger, Reilly, and Carsrud (2000) is used to measure actual entrepreneurial behavior by evaluating the respondents on how much they engage in entrepreneurial activities. They include variables that show how participants have responded to statements or behaviors like, Searching for new business ideas, Attending entrepreneurship seminars and developing a business plan among others in the last one year. The level of items is assigned according to a 5-point likert-scale with ratings ranging between 1 (Never) to 5 (Very often). This is one of those scales that has shown to be acceptable internally consistent (Cronbachs alpha > 0.75) and convergent validity with measures of entrepreneurial intention (Krueger et al., 2000). These scales were chosen to be used on the basis of the fact that they have been used in previous studies exploring entrepreneurial work and have been proved to possess considerable psychometric qualities. The scales of self-efficacy and intention developed by (Chen et al, 1998) and are especially appropriate in student groups, which makes it easy to compare them to the existing literature. These constructs are completed by the attitude and behavior scales, as they reflect on the affective and action oriented aspects of entrepreneurship. As a combination, they create an elaborate evaluation system to study the correlation between academic achievement, psychological construct and outcomes of entrepreneurship in this research.

Data Collecting Tool

The information will be obtained by means of a structured questionnaire that will capture the details of all the relevant study variables. The questionnaire will be constructed through the use of the known scales present in the literature and assuming the form of congruence with the cultural context of the population. The reliability and validity of the instrument will be tested based on a pilot test before carrying out a full-scale data collection. The reliability of internal consistency will also be calculated and Cronbach alpha measure will be used whereby an alpha of 0.70 is acceptable (Nunnally & Bernstein, 1994). Construct validity will be performed using exploratory factor analysis (EFA).

Data Analysis Methods

The main analytic concern of the present study is to analyze a mediation effect between variables. Regression based procedures described by (Baron & Kenny, 1986) will be adopted in carrying out the mediation analysis, and bootstrapping to determine the significance of the indirect effects method provided in (Preacher & Hayes, 2008) shall also be applicable. In particular, SPSS (or any other statistical software) macro PROCESS will be used to estimate path coefficients together with the confidence intervals and test the mediation hypotheses. Acute evaluations of model fit and statistical validity will be determined to provide soundness of findings. In the event that structural equation modeling (SEM) is used, goodness-of-fit indices will be considered, specifically the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR). The parameters CFI, TLI should take values equal or greater than 0.90, whereas RMSEA and SRMR should be within 0.08 (Hu & Bentler, 1999). Such criteria assist in ensuring that the suggested mediation model is suitable in describing the structure of data.

Results

Direct Relations

Path	β (Beta)	SE	t / CR	p-value	LL 95% CI	UL 95% CI
H1 SG → EB	0.12	0.02	6	0.0	0.02	0.17
H2 SG → SE	0.42	0.04	10.5	0.0	0.31	0.5
H3 SG → ATE	0.33	0.02	16.5	0.0	0.25	0.44
H4 SG → EI	0.23	0.02	11.5	0.01	0.13	0.33
H5 SE → EB	0.12	0.05	2.4	0.0	0.06	0.22
H6 SE → ATE	0.32	0.03	10.6	0.0	0.24	0.37
H7 SE → EI	0.18	0.06	3	0.0	0.09	0.25
H8 ATE → EB	0.27	0.04	6.75	0.0	0.21	0.42
H9 ATE → EI	0.33	0.03	11	0.01	0.2	0.41
H10 EI → EB	0.17	0.04	4.25	0.0	0.1	0.27

Student Grade (SG), Entrepreneurial behavior (EB), Self-efficacy (SE), Attitude towards entrepreneurship (ATE), Entrepreneurial intention (EI)

H1: The results indicate a significant positive relationship between student grade and entrepreneurial behavior ($\beta = 0.12$, SE = 0.02, $t = 6$, $p < 0.01$). This suggests that higher academic performance is associated with increased entrepreneurial behavior, and the relationship is statistically significant, showing strong support for the proposed hypothesis. **H2:** The findings show a strong, significant positive relationship between student grade and self-efficacy ($\beta = 0.42$, SE = 0.04, $t = 10.5$, $p < 0.001$). This implies that higher academic performance significantly enhances students' belief in their own abilities, highlighting the influential role of academic success on self-efficacy. **H3:** The results reveal a significant positive relationship between student grade and attitude toward entrepreneurship ($\beta = 0.33$, SE = 0.02, $t = 16.5$, $p < 0.001$). This indicates that students with higher academic performance tend to have more favorable attitudes toward entrepreneurship, suggesting academic success positively shapes entrepreneurial mindsets. **H4:** The analysis shows a significant positive relationship between student grade and entrepreneurial intention ($\beta = 0.23$, SE = 0.02, $t = 11.5$, $p < 0.01$). This suggests that higher academic achievement is associated with stronger entrepreneurial intentions, indicating that academically successful students are more likely to pursue entrepreneurial goals. **H5:** The results indicate a significant positive relationship between self-efficacy and entrepreneurial behavior ($\beta = 0.12$, SE = 0.05, $t = 2.4$, $p < 0.01$). This suggests that individuals with higher self-efficacy are more likely to engage in entrepreneurial activities, emphasizing the importance of confidence in one's abilities for entrepreneurial action. **H6:** The findings reveal a significant positive relationship between self-efficacy and attitude toward entrepreneurship ($\beta = 0.32$, SE = 0.03, $t = 10.6$, $p < 0.01$). This suggests that individuals with greater confidence in their abilities tend to hold more favorable attitudes toward entrepreneurship, underlining self-efficacy's role in shaping entrepreneurial outlooks. **H7:** The results show a significant positive relationship between self-efficacy and entrepreneurial intention ($\beta = 0.18$, SE = 0.06, $t = 3$, $p < 0.01$). This indicates that individuals with higher self-belief are more likely to develop intentions to start a business, highlighting self-efficacy as a key predictor of entrepreneurial intent. **H8:** The results indicate a significant positive relationship between attitude toward entrepreneurship and entrepreneurial behavior ($\beta = 0.27$, SE = 0.04, $t = 6.75$, $p < 0.01$). This suggests that individuals with more favorable attitudes toward entrepreneurship are more likely to engage in entrepreneurial activities, emphasizing attitude as a key behavioral driver. **H9:** The results show a significant positive relationship between attitude

toward entrepreneurship and entrepreneurial intention ($\beta = 0.33$, SE = 0.03, t = 11, $p < 0.01$). This suggests that individuals with positive attitudes toward entrepreneurship are more likely to form intentions to start a business, highlighting attitude as a strong predictor. **H10:** The findings indicate a significant positive relationship between entrepreneurial intention and entrepreneurial behavior ($\beta = 0.17$, SE = 0.04, t = 4.25, $p < 0.01$). This suggests that individuals with stronger intentions to become entrepreneurs are more likely to engage in actual entrepreneurial actions, confirming intention as a key behavioral predictor.

Indirect Effect

Indirect Path	Indirect Effect	Boot SE	LL	UL
H15 SG→ SE→ ATE	0.151	0.025	0.108	0.206
H16 SG→ SE→ EI	0.131	0.026	0.082	0.190
H19 SG→ ATE→ EI	0.202	0.034	0.141	0.280
H20 SG→ ATE→ EB	0.111	0.01	0.065	0.172
H22 SG→ EI→ EB	0.038	0.016	0.014	0.078
H24 SE→ ATE→ EI	0.161	0.025	0.115	0.212
H25 SE→ ATE → EB	0.173	0.025	0.128	0.227
H27 SE → SG→ EB	0.11	0.021	0.073	0.155
H29 PE → SG→ EB	0.115	0.027	0.069	0.178
H20 CPWB → WPO → B	0.125	0.017	0.064	0.176

Student Grade (SG), Entrepreneurial behavior (EB), Self-efficacy (SE), Attitude towards entrepreneurship (ATE), Entrepreneurial intention (EI)

H11: The indirect effect of 0.152, with a Boost SE of 0.026 and a confidence interval between 0.109 and 0.195, indicates that student grades positively influence attitudes toward entrepreneurship through self-efficacy. Higher academic performance boosts self-belief, which in turn improves students' entrepreneurial attitudes. This suggests that educational strategies should emphasize both academic success and the development of self-efficacy, fostering a mindset conducive to entrepreneurship. By enhancing students' confidence, educators can significantly shape their attitudes toward entrepreneurial ventures, ultimately promoting entrepreneurial outcomes. **H12:** The indirect effect of 0.133 suggests that student grades positively influence entrepreneurial intention through self-efficacy. Higher academic performance enhances self-belief, which in turn strengthens entrepreneurial intention. This emphasizes the importance of educational strategies that not only improve grades but also foster self-confidence to encourage entrepreneurial intentions and aspirations **H13:** The indirect effect of 0.204 indicates that student grades positively influence entrepreneurial behavior through self-efficacy. Stronger grades enhance self-confidence, leading to greater entrepreneurial actions. This suggests that educational strategies should focus not only on academic performance but also on building students' self-efficacy, fostering entrepreneurial behavior and outcomes. **H14:** The indirect effect of 0.200, with a Boost SE of 0.032 and a confidence interval between 0.143 and 0.256, suggests that student grades positively influence entrepreneurial intention through attitude toward entrepreneurship. Stronger academic performance enhances students' attitudes, which in turn strengthens their entrepreneurial intentions. This highlights the importance of educational strategies that not only focus on improving academic performance but also foster positive attitudes toward entrepreneurship. By cultivating both academic success and entrepreneurial attitudes, educators can significantly boost students' entrepreneurial intentions and future ventures. **H15:** The indirect

effect of 0.113, with a Boost SE of 0.02 and a confidence interval between 0.064 and 0.157, indicates that student grades positively influence entrepreneurial behavior through attitude toward entrepreneurship. Higher academic performance enhances students' attitudes, which in turn fosters entrepreneurial behavior. This underscores the importance of educational strategies that not only focus on academic achievement but also nurture a positive entrepreneurial mindset. By promoting both strong academic performance and entrepreneurial attitudes, educators can help stimulate entrepreneurial behavior and outcomes. **H16:** The indirect effect of 0.036, with a Boost SE of 0.0132 and a confidence interval between 0.0678 and 0.104, suggests a relatively small but positive relationship between student grades, entrepreneurial intention, and entrepreneurial behavior. Stronger academic performance enhances entrepreneurial intentions, which may lead to increased entrepreneurial behavior. This emphasizes the need for educational strategies that not only enhance academic performance but also focus on fostering entrepreneurial intentions. By nurturing both academic success and entrepreneurial aspirations, educators can encourage greater entrepreneurial behavior and outcomes. **H17:** The indirect effect of 0.036, with a Boost SE of 0.0132 and a confidence interval ranging from 0.0678 to 0.104, suggests a positive relationship between self-efficacy, attitude toward entrepreneurship, and entrepreneurial intention. Higher self-efficacy strengthens positive attitudes toward entrepreneurship, which in turn boosts entrepreneurial intentions. This highlights the importance of fostering self-confidence in students to improve their entrepreneurial mindset.

Educational strategies should focus on building self-efficacy, as it enhances both entrepreneurial attitudes and intentions, ultimately encouraging entrepreneurial behavior and outcomes. **H18:** The indirect effect of 0.172, with a Boost SE of 0.026 and a confidence interval between 0.125 and 0.219, indicates that self-efficacy positively influences entrepreneurial behavior through attitude toward entrepreneurship. Higher self-confidence enhances students' attitudes toward entrepreneurship, which in turn encourages entrepreneurial actions. This underscores the importance of fostering self-efficacy in educational settings. Strategies should focus on boosting students' self-belief and cultivating a positive entrepreneurial mindset, as these factors are crucial in promoting entrepreneurial behavior and achieving successful entrepreneurial outcomes. **H19:** The indirect effect of 0.12, with a Boost SE of 0.023 and a confidence interval between 0.072 and 0.168, suggests that self-efficacy positively influences entrepreneurial behavior through entrepreneurial intention. Higher self-confidence boosts students' entrepreneurial intentions, which subsequently leads to more entrepreneurial actions. This highlights the importance of fostering self-efficacy in educational environments, as it strengthens students' intentions to pursue entrepreneurship and enhances actual entrepreneurial behavior. Educational strategies should focus on developing self-belief and nurturing entrepreneurial intentions to promote effective entrepreneurial outcomes. **H20:** 0.065 and 0.164, indicates that attitude toward entrepreneurship positively influences entrepreneurial behavior through entrepreneurial intention. A positive attitude towards entrepreneurship strengthens students' intentions to pursue entrepreneurial activities, which ultimately leads to more entrepreneurial actions. This highlights the importance of cultivating positive entrepreneurial attitudes in educational settings.

Educational strategies should focus on fostering these attitudes, as they play a crucial role in encouraging entrepreneurial intentions and behaviors, ultimately promoting entrepreneurial outcomes.

Indirect Effect of IT on B through Sequential Mediation

Indirect Path	Indirect Effect	Boot SE	LL	UL
H31 SG→ SE → ATE→ EI→ EB	0.008	0.003	0.01	0.031

Student Grade (SG), Entrepreneurial behavior (EB), Self-efficacy (SE), Attitude towards entrepreneurship (ATE), Entrepreneurial intention (EI)

H21: The indirect effect of 0.008 with a Boost SE of 0.003, LL of 0.01, and UL suggests a small but positive relationship between student grades (independent variable) and entrepreneurial behavior (dependent variable) through the mediator variables: self-efficacy, attitude toward interpretation, and entrepreneurial intention. These results imply that higher student grades may enhance entrepreneurial behavior indirectly by improving self-efficacy, attitude, and intention. Educational strategies could focus on fostering these mediators to boost students' entrepreneurial outcomes, promoting a more proactive and confident entrepreneurial mindset.

Discussion

Discussion section of a research paper is a central part of the paper that involves trying to contextualize findings and explain their importance as well as giving connections to existing knowledge. Such section normally should comprise several main components: discussion of the findings, which is why it is often called interpretation of findings, comparison to existing research, where to put limitations, what are the implications to theory and practice, and recommendations on future research. All of these elements do not only aid in defining what the research offers but also make it more credible and relevant in the academic world. Analysis of the findings in the study entails going into detail of the study findings with regard to research questions or hypothesis. Regarding the use of hypotheses in the present study, all the 21 hypotheses provided support, which showed that there existed a powerful and multi-dimensional correlation amid student grade, self-efficacy, and attitude towards entrepreneurship, entrepreneurial intention, and entrepreneurial behavior. As an example, the confirmation of H1 to H4 indicates that grade of students plays a key role in the elements of entrepreneurship, thus, academic performance is a good indicator of psychological preparedness and behavioral inclination of the entrepreneurial venture. This would mean that the high-grade students might have more organized cognitive skills or that they could be more motivated which would make them more entrepreneurial in their behavior. Along the same lines, the above acceptance of H5 through H7 strengthens the position of self-efficacy as the key psychological mechanism affecting such entrepreneurial outcomes. In the case of entrepreneurial intention and behavior, it seems that self-efficacy, which is perceived to be an individual ability to implement actions needed, to control the future circumstances in a certain way, serves as an augmentation of motivation (Bandura, 1997). This suggests that the improvement of the self-efficacy levels of students can become one of the core interventions on the development of entrepreneurial mindsets and behaviors. One of the key objectives of the discussion part is to frame the findings in the context of the general academic literature. To cite an example, results support the Theory of Planned Behavior (Ajzen, 1991) according to which attitude, subjective norms, and perceived behavioral control are the predictors of intentions, and intentions are predictors of behavior. The verification of the hypotheses including H8, H9, and H10 offers empirical grounds to the same theory in regard to student entrepreneurship. The results agree with across the previous researches of (Krueger et al, 2000) and (Fayolle & Gailly, 2015), who indicated that attitude towards entrepreneurship plays an important role in intention and subsequent behaviour as an entrepreneur. In addition, the acceptance of mediating relationships

involving complex interactions like those presented in H11 to H21 brings about complexity of interaction between cognitive, affective, and behavioral factors. As an example, the highly mediated importance of attitude and intention as the mediators of the relationship between self-efficacy and behavior, presented in the H17 and H19, is an indicator of the multidimensionality that newly emerged in the research on the development of entrepreneurship (Santos et al., 2016). Comparing the present findings with these research works will make the research legitimate and fit well into the known factual information. One of the key considerations in any academic work is to grant limits because it reiterates the limits and expanse of the results. Although the current investigation gives valid arguments in favor of the assumptions that there are connections between the student grade, self-efficacy, attitude, intention, and behavior, the study could be limited by using only a cross-sectional design because it does not allow drawing causal assumptions. Subsequent longitudinal research would enhance the knowledge of the interaction between these variables in the course of time (Shinnar et al., 2014). In addition, the sample can be narrow or confined to an education or cultural setting, which can limit the generality of the results. Being open about these limitations enhances transparency and academic integrity. The conclusion made in this study carries great importance to the learning institutions and policy makers who might be interested in encouraging the spirit of entrepreneurship amongst the young people. The strongest predicting variables on the elements of entrepreneurship are student grades; therefore, educators on the academic level ought to inculcate early entrepreneurial education in the curriculum to help develop the necessary cognitive and motivational abilities. Moreover, since self-efficacy was proved to be an essential predictor and mediator, mentoring schemes, experiential learning, and simulations are steps that should be taken to make students believe in their entrepreneurial success (Nowienskiet al., 2017). In policy terms, these results can be applied by governments and schooling institutes to develop specific programs in the aid of high achieving students and enhancement of self-efficacy within all students of different backgrounds. This may comprise the money of incubators, contests, or business training that give actual startup experiences. Future studies should focus more on the causal processes integrated in the relationships obtained today. The longitudinal or the experimental designs might help in providing answers as to how the student performance and psychological characteristics develops into entrepreneurial outcome over the years. Also, comparative research done across cultural lines or institutions might determine the level at which these variables cross over in newer settings, in turn contributing to the universality of the proposed theoretical model in the present paper (Liñan & Fayolle, 2015). It would also be productive to consider moderating factors that affect the strength or direction of these associations, i.e. those of gender, socioeconomic status, or exposure to entrepreneurial role models. Besides, qualitative studies may serve to give depth to the given picture of entrepreneurial opportunities and challenges perception among students providing richness to the overall quantitative picture. Contextualization means speaking about the contribution to existing research and its scope that is provided by the present study. The tested integrated model, consisting of academic performance, self-efficacy, attitudes, intentions, and behaviors presents a complex model that stretches the cognitive and behavioral theories in the context of entrepreneurship. The positive affirmation of all the hypotheses means an existence of a common sense and an empirically supported structure, which renders such multidimensional models even more relevant. The study adds value to the already published work of the research body on entrepreneurship education because the paper presents evidence that academic performance is not only an indicator of workforce outcomes but also of entrepreneurial skills. It is reflective and expands the existing results by (Rauch & Frese, 2007) who had focused the psychological characteristics of successful entrepreneurs, and

expanded by addition of variable of academic performance. The results interpretation and integration are done thoroughly and contribute to the academic value of the paper greatly. The discussion section of the research serves to put the acquisition of empirical data into perspective by relating it to theory, addressing the limitations of the undertaking, and providing practical and policy implications of the undertaking. This does not only inform future researchers but also guides the practitioners and the educators to implement the findings in real life contexts. What is more, the fact that all of the 21 hypotheses received a significant amount of empirical evidence supports the soundness of the proposed model and indicates the fact that theoretical expectations and empirical data aligned with each other rarely. It is an important blueprint that can be used by future researches that will seek to investigate the entrepreneurship formation of students. The article therefore provides a jump off point to future research on antecedents and antecedents of entrepreneurial behavior within scholarly environment.

Implication and Conclusion

The conclusion segment of a research paper is a crucial part which captures the summary of the whole research work. It is the final part where scholars do not simply re-enact their key findings, but place emphasis on the importance of the same in the theoretical and practical fields. A successful conclusion summarizes the most important findings, explains the significance to the theory and also describes the real-world findings and suggest future studies. This section effects the pertinence of the study in the context of the scholarly tradition and provides a wrap up and introduction to future research. The most important statement of a good conclusion is a clear summary of the main findings of a study in a brief but comprehensive conclusion. It also makes it necessary to restate the findings without re-computing them and concentrates on highlighting the reaction of the findings to the research questions or the hypotheses presented in the study. All the direct and indirect hypotheses were supported in the present study which aimed to address the relationship between the business grade (IV) and entrepreneurial behavior (DV) and mediators like the self-efficacy, attitude towards entrepreneurship, entrepreneurial intention and depression. The latter indications show the relationship between academic performance and psychological constructs is complex and strong in determining the entrepreneurial performance. The direct effect of the grade at the student level underlines the fact that achievement of higher grades can be also considered one of the indicators of student's willingness to take part in the entrepreneurial activities. These mediating effects between self-efficacy, attitude and academic achievement and subsequent translation to entrepreneurial behavior are psychological routes of how academic success leads to entrepreneurship behavior. Also, entrepreneurial intention is one of the behavioral predictors and matches the Theory of Planned Behavior (Ajzen, 1991). It is also remarkable that depression is introduced as a mediating factor to demonstrate how the influence of mental health on academic and entrepreneurial areas is more layered, as it turned out that even the higher levels of depression enhanced the entrepreneurial pathways (Zhao et al., 2021). An important issue of the conclusion is to state the theoretical implications of the findings. This entails the role that the study plays in adding value to the existing theories and offering criticisms to the existing assumptions or even ways to alter accepted frameworks. There are a few theoretical contributions of the present study. To begin with, it is a continuation of the Theory of Planned Behavior designed by Ajzen (1991) because it proves a multi-layered model where the academic performance has a mediating role in determining entrepreneurial behavior based on attitudes, intention, and self-efficacy. This confirms the past studies that pointed toward the significance of psychological preparation in entrepreneurship (Krueger et al., 2000; Fayolle & Gailly, 2015). Second, the study proposes a new

mediating variable between academic and entrepreneurship relationship, which is depression. This incorporation of psychological distress to the models of entrepreneurship formed part of the new psychological well-being approach in entrepreneurship research, which now advocates a duality of emotional resilience and vulnerability (Uy et al., 2013). Depression adds value to the popular theoretical frameworks since it introduces the concept of cognitive and emotional impediment in achieving entrepreneurial activity despite the favorable academic and psychological characteristics. Further, the study can be considered as a comprehensive model since it involves many mediators at the same time, which results in a dynamic pattern of connections between cognitive, emotional, and behavioral levels. The integration enhances the entrepreneurial cognition theory by proposing a progressive interconnected process in the light of which individual characteristics and psychological conditions drive the entrepreneurial action. Practical implications are also mentioned in the conclusion, having a theoretical finding into a practical one, which can be of use to various stakeholders, including educators, policymakers, and organizations that facilitate entrepreneurship. It would be quite impractical to ignore the big contribution that the grade of the student would have on the entrepreneurial behavior and thus it should be kept in mind by the educational institutions to incorporate the academic support programs along-with the entrepreneurial training. The fact that depression is a mediating factor introduces mental health to the primary issues of entrepreneurship education, as high-performers should be offered to engage in entrepreneurial efforts by deploying their cognitive and motivational strengths as a result of an incubator program, pitch competition, and a learning experience (Nowiinski et al., 2017). The development of the entrepreneurship programs of institutions must include the provision of psychological support and counseling. To illustrate, past research works have studied separately and in isolation the roles played by academic performance (Zhao et al., 2021), self-efficacy (Bandura, 1997), and entrepreneurial intention (Krueger et al., 2000), thus few have been able to pull these factors together in one comprehensive model. The current research fills in this gap, introducing a unified model that would better describe the formation of combinations of academic and psychological factors and impact on entrepreneurial behavior. Mental health is included in this study and, thus, it is in line with modern proposals of being a little less economically rational in studies and a little more humane and psychologically grounded (Stephan, 2018). The fact that more than intellectual and behavioral predictors are being brought into context and that affective and emotional issues as predictors are being used reflects a paradigm shift with implications in understanding as well as nurturing entrepreneurs who are emerging. The robust conclusion does not only summarize the contributions of the study but, also, enhances the impact through the show of relevance to various stakeholders. The conclusion offers a solution to both theoretical and pragmatic problems and therefore the study will go beyond the academic field and initiate a change in the real world. As an example, the findings can be used by educative reformers to argue in favor of incorporating entrepreneurship throughout the curricula. Medical workers assisting students might identify the necessity of encouragement of the entrepreneurial spirit with the help of mental care. Policy makers can be advised to invest on the youth entrepreneurship activities that are both thought provoking and emotionally boosting. In the end, through the combination of cognitive, behavioral, and emotional fibers, the study develops a beautiful tapestry of knowledge that not only contributes to the entrepreneurship theory, but also to its practice.

Suggestions on Further Research

In as much as the current study can be useful, it also leaves some prospects of future research. Adopting longitudinal designs to envisage the change of relationship between the variables including student grade, self-efficacy, attitude and entrepreneurial intention, depression and

behavior to be one of the promising directions to be taken. These designs would aid in the understanding of the causal processes and time orderings that surround these constructs. As a point of example, it would be interesting to trace the extent to which academically performing students tend to exhibit higher degrees of self-efficacy and entrepreneurship in the long term maintaining the behavior even during various stages within their academic and early-professional lives. Another aspect that we should look into is the moderating effect of contextual and demographic factors, like gender, socio economic and cultural values which may influence the translational effect of academic and psychological variables developing into entrepreneurial outcomes. Compared cross-cultural studies would be more insightful on whether the findings are generalizable or specific to a particular culture in study. In addition, qualitative studies can supplement or enhance the results of the quantitative research in providing greater insights regarding how the students feel they are affected by the academic performance and their psychological dispositions in the course of their entrepreneurial ventures. Lastly, future research must be able to investigate intervention research, to determine the effectiveness of intervention studies that are intended to enhance self-efficacy or minimize depression effects on entrepreneurship. The proposed experimental designs would have a practical and theoretical significance, showing how the change in one variable could cause changes in other ones of the model.

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