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Examining the Relationships Between Psychological Capital, Academic Performance, and Career Adaptability Among Medical Students in Saudi Arabia

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Abstract

This study explored the relationships between psychological capital, academic performance, and entrepreneurial intentions among medical students in the Kingdom of Saudi Arabia using SmartPLS analysis. The research methodology employed in this study responses from 423 participants, including 254 males and 169 female medical students. The research established satisfactory to high levels of reliability for the constructs examined. Correlation analysis revealed significant positive associations among self-efficacy, hope, resilience, optimism, academic performance, and entrepreneurial intention. Self-efficacy emerged as a central factor, demonstrating strong correlations with hope, resilience, optimism, entrepreneurial intention, and academic performance. Direct effects analysis indicated that academic performance positively influences entrepreneurial intentions. Moreover, hope, optimism, resilience, and self-efficacy exhibited significant positive direct effects on both academic performance and entrepreneurial intentions. Mediation analysis highlighted the partial mediating role of academic performance in the relationship between psychological capital and entrepreneurial intentions. Total effects analysis confirmed the consistent influence of psychological capital on entrepreneurial intentions, with academic performance acting as a mediator. This study underscores the importance of psychological capital in shaping academic and entrepreneurial outcomes among medical students, providing insights for educators and policymakers aiming to support the development of future business leaders.

Keywords: Psychological Capital, Academic Performance, Entrepreneurship.

Introduction

Positive psychological states that include self-efficacy, optimism, resilience, and hope are all components of psychological capital that are present during the stages of growth and development (Zeng et al., 2024). The numerous components of psychological capital include features of resilience, hope, optimism, and self-efficacy. A person's psychological capital also influences their entrepreneurialism. The results of the meta-analysis demonstrated the strong correlation between entrepreneurship and PsyCap, including self-efficacy, the drive for accomplishment, and entrepreneurial orientation (Zhao et al., 2020). Increased job possibilities and faster innovation are two benefits of entrepreneurship for a country's economy. In addition, entrepreneurship may address issues like social and environmental concerns by establishing new businesses and utilizing cutting-edge products and technologies (Zhao & Wang, 2022). It's noteworthy to note that psychological capital elaborates on "who you are" and "who you are becoming," while social capital describes "who you know." Human capital deals with "what you know." (Hanafiah et al., 2017). The relatively new idea of psychological capital, or PsyCap, which

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focuses on a person's positive personal resources and is connected to academic achievement, has been proposed as a concept that is favorably associated with students' academic performance (Slåtten et al., 2021). This study aimed to identify the influences of psychological capital (Psychcap) on students' academic performance. The mediating effects of Entrepreneurial intentions were also examined. Figure 1 shows the conceptual model of Psychcap on students' academic performance mediating the effect of entrepreneurial intentions.

Theoretical Background and Hypothesis

Enhancing psychological capital (Psychcap) has been shown in several studies to be crucial to the success of entrepreneurship. Psychological capital was first identified in research during the period of 1997. Afterward, some researchers started looking into how social, human, and economic factors play a role in entrepreneurship. They had a special interest in learning how people's positive mental attributes affect their behavior and the prosperity of their enterprises. Eventually, the idea of "positive psychological capital" emerged from this line of research (Wang et al., 2022). Optimism, hope, resilience, and self-efficacy make up the PsyCap, which has attracted the attention of academics within educational environments. Hope is a positive motivational state based on an interactively acquired feeling of accomplishment. Self-efficacy is a robust predictor of students' academic progress and motivation across different cultures. Higher academic achievement was predicted by optimism. Being resilient means having the ability to recover from difficult situations (Liu & Huang, 2022).

The concept of psychological capital—hope, self-efficacy, optimism, and resilience was established by (Luthans et al., 2007). Based on the good organizational behavior criteria (state-like, valid measurement, and performance impact), they selected these four psychological resources. First used in an industrial-organizational setting, this novel idea has been linked to a variety of successful job outcomes (Liu & Huang, 2022). The university students are future workers in the labor market and must be developed if they hope to swiftly adjust to the academic requirements of current society and PsyCap in organizational contexts has to be expanded to academic settings (Li et al., 2023). As Mahfud et al. (2020) study suggests that psychological capital plays a partially mediating role between entrepreneurial attitude orientation and entrepreneurial intention and that entrepreneurial mindset orientation influences students' intentions to start a new business both directly and indirectly. The impact of entrepreneurial mindset orientation on entrepreneurial intention demonstrates the direct effect, whereas the impact of the same orientation on students' psychological capital demonstrates the indirect effect (Mahfud et al., 2020).

Psychological capital and entrepreneurial intention

Psychological capital (PsyCap) and entrepreneurial intention (EI) have been demonstrated to positively correlate in several studies. For instance, prior research has shown a relationship between EI and every facet of PsyCap, such as resilience and self-efficacy. Higher PsyCap scores which include resilience, hope, optimism, and self-efficacy have been linked in some research to stronger inclinations to pursue entrepreneurship. Studies have showed that the association between PsyCap and EI is mediated by entrepreneurial self-efficacy (Mahama et al., 2023).

In the study of (Margaça et al., 2023), the results showed that fear of failure and defensive regulatory attention, as well as continuous regulatory emphasis and fear of failure, mitigate the impact of the pandemic phase on entrepreneurial intention. Moreover, the results suggest that a wider range of characteristics may impact entrepreneurial intentions. It has been demonstrated

that PsyCap, a reliable measure with validated scales, is a superior predictor than each of its subdomains alone. It is also probably connected to a number of interesting aspects of business, including success (Welter & Scrimshire, 2021). The findings of the study by (Chevalier et al., 2022) show how PsyCap influences favorable entrepreneurial outcomes more broadly, and other studies have shown how PsyCap helps with positive emotions and academic performance.

H1: Self-efficacy, a psychological capital component, significantly positively relates to entrepreneurial intention.

H2: The psychological capital component of hope significantly positively correlates with the entrepreneurial intention.

H3: Resilience, a psychological capital component, significantly positively relates to entrepreneurial intention.

H4: There is a considerable positive correlation between optimism, a psychological capital component, and entrepreneurial intention.

Psychological capital and academic performance

The results of (Onivehu, 2020) study show a significant positive correlation between the academic accomplishment of social work students and psychological capital, which comprises resilience, hope, optimism, and self-efficacy. Another study looked at factors related to academic achievement of university students, found that PsyCap, positive emotions and study engagement, form a complex or, to put it another way, multifaceted pattern that supports academic achievement (Slåtten et al., 2021). The study conducted by (Chaudhary and Narad, 2022) found a favorable association between secondary school students' academic success and their levels of "self-efficacy," "resilience," "optimism," and total psychological capital. According to the study of (Onivehu, 2020), the independent variables (resilience, hope, optimism, and self-efficacy) collectively account for 36.0% of the variation in the academic performance of social work students, or R-square.360. This is highly significant, as well shown by the F-value (68.35).

H5: Academic Performance and self-efficacy, a psychological capital component, are significantly positively correlated.

H6: Hope, a psychological capital component, significantly positively correlated with academic performance.

H7: Resilience, a psychological capital component, significantly positively correlated with academic performance.

H8: Optimism, a psychological capital component, significantly positively correlated with academic performance.

Academic performance and entrepreneurial intention

According to research on the possible effects of entrepreneurship on academic performance, students' perceived behavioral control, family business background, and subjective norm significantly predict their interest in entrepreneurship (Osakede et al., 2017). The study's findings indicate that entrepreneurial intention has a major beneficial influence on college students, based on questionnaire data from Chinese students (Deng and Li, 2017). The need for performance, risk-taking propensity, and internal locus of control were found to have a positive and statistically significant relationship with the effects of entrepreneurship intention in another study by (Ndofirepi, 2020). This study aimed to understand if these psychological traits act as a mediator in how entrepreneurship education impacts one's intentions to become an entrepreneur..

H9: Academic performance has a significant positive relationship with entrepreneurial intention

Mediating role of Academic performance

The results of a study by (Villanueva-Flores et al., 2023) that examined the relationship between psychological capital and the intention to pursue entrepreneurship as a career path, as well as the mediating effects of perceived behavioral control and subjective norms, demonstrate the mediating roles that these factors play in this relationship. (Jalil et al., 2023) demonstrated how social capital and psychological capital combine to shape the goals of female entrepreneurs. Additionally, entrepreneurial attitudes are important in mediating these relationships. Specifically, entrepreneurial attitudes mediate the effects of social capital and psychological capital on the intentions of women entrepreneurs. Although optimism, hope, and resilience didn't have direct effects, the results showed that self-efficacy played a significant role as a mediator in the impact process. This conclusion was drawn from survey data collected from fifteen Chinese higher education institutions. It also verified the relationship between the four elements of psychological capital—hope, self-efficacy, resilience, and optimism—and entrepreneurial activity (Juhdi, 2015).

H10: The association between psychological capital and entrepreneurial intention is mediated by academic performance.

Methodology

The research methodology employed in this study involved the collection and analysis of responses from 423 including 254 males and 169 female medical students located in the Kingdom of Saudi Arabia. Psychological capital, comprising self-efficacy, hope, resilience, and optimism, served as independent variables, while academic performance acted as the mediating variable, and entrepreneurial intention as the dependent variable. The measurement of 22 items psychological capital consisting self-efficacy (6 items), hope (6 items), resilience (5 items), and optimism (5 items) utilized an established questionnaire developed by (Luthans et al., 2007). Academic performance was measured through three items, including students' final summative assessment score, formative assessment score, and rural immersion program's score. Entrepreneurial intention was assessed using six items adopted from (Liñán and Chen, 2009). All scales in the study were measured using a five-point Likert scale where strongly agree 5 and strongly disagree 1. Data analysis was conducted using SmartPLS version 4(Ringle et al., 2024), a robust statistical tool for structural equation modeling.

Results

The study employed SmartPLS for data analysis, aiming to understand the interrelationship among psychological capital, academic performance, and entrepreneurial intention among medical students. The convergent validity was established by calculating Cronbach's alpha, average variance extracted (AVE), and composite reliability of the constructs. The results of Cronbach's alpha revealed values of 0.75 for self-Efficacy, 0.76 for hope, 0.81 for resilience, 0.86 for optimism, 0.70 academic performance, and 0.74 for entrepreneurial intention (Table 1). These findings indicate that the measurement scales utilized in the study demonstrate satisfactory to high levels of reliability (Nunnally, 1978).

Table 1 Average Variance Extracted (AVE), Composite Reliability & Discriminant Validity

Variables	Cron	AVE	Composite	Discriminant Validity – MSV / Factor Correlations
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				Self-efficacy	Hope	Resilience	Optimism	Academic Performance	Entrepreneurial Intention
Self-efficacy	0.75	0.60	0.88	0.774					
Hope	0.76	0.61	0.87	0.368	0.78				
Resilience	0.81	0.65	0.90	0.342	0.336	0.806			
Optimism	0.86	0.63	0.89	0.456	0.477	0.527	0.793		
Academic Performance	0.70	0.61	0.82	0.380	0.360	0.456	0.522	0.781	
Entrepreneurial Intention	0.74	0.60	0.84	0.257	0.331	0.305	0.297	0.321	0.774

The correlation analysis results reveal significant relationships among the variables of self-efficacy, hope, resilience, optimism, entrepreneurial intention, and academic performance. Firstly, self-efficacy demonstrates strong positive correlations with hope ($r = .607, p < .01$), resilience ($r = .585, p < .01$), optimism ($r = .676, p < .01$), entrepreneurial intention ($r = .617, p < .01$), and academic performance ($r = .507, p < .01$). Similarly, hope displays significant positive correlations with resilience ($r = .580, p < .01$), optimism ($r = .691, p < .01$), entrepreneurial intention ($r = .600, p < .01$), and academic performance ($r = .576, p < .01$). Resilience also exhibits strong positive correlations with optimism ($r = .726, p < .01$), entrepreneurial intention ($r = .676, p < .01$), and academic performance ($r = .553, p < .01$). Furthermore, optimism correlates significantly with entrepreneurial intention ($r = .723, p < .01$) and academic performance ($r = .545, p < .01$). Additionally, entrepreneurial intention is positively correlated with academic performance ($r = .567, p < .01$). Overall, these findings suggest a complex interplay among psychological factors such as self-efficacy, hope, resilience, and optimism, influencing both entrepreneurial intentions and academic performance. These results underscore the importance of fostering positive psychological traits in medical students to enhance their academic and entrepreneurial pursuits. The result is presented in the Table 2.

Table: 2 Results of Pearson correlation analysis

Variables	Self-efficacy	Hope	Resilience	Optimism	Entrepreneurial Intention	Academic Performance
Self-efficacy	-	.607**	.585**	.676**	.617**	.507**

Hope		-	.580**	.691**	.600**	.576**
Resilience			-	.726**	.676**	.553**
Optimism				-	.723**	.545**
Entrepreneurial Intention					-	.567**
Academic Performance						-

The results of the mediation analysis examining the relationships between hope, optimism, resilience, self-efficacy, academic performance, and entrepreneurial intentions among medical students are presented below.

Direct Effects:

Academic performance demonstrated a significant positive direct effect on entrepreneurial intentions ($\beta = 0.135$, $p = 0.001$), indicating that higher academic performance levels are associated with greater entrepreneurial intentions among medical students.

Hope exhibited a significant positive direct effect on both academic performance ($\beta = 0.208$, $p = 0.001$) and entrepreneurial intentions ($\beta = 0.155$, $p = 0.002$), suggesting that higher levels of hope are related to improved academic performance and stronger entrepreneurial intentions among medical students.

Higher levels of optimism are linked to better academic performance and significantly higher levels of entrepreneurial intentions. Moreover, optimism demonstrated a significant positive direct effect on academic performance ($\beta = 0.168$, $p = 0.014$) and a significantly stronger direct effect on entrepreneurial intentions ($\beta = 0.395$, $p < 0.001$).

Similarly, resilience demonstrated significant positive direct effects on both academic performance ($\beta = 0.231$, $p < 0.001$) and entrepreneurial intentions ($\beta = 0.165$, $p = 0.001$), suggesting that greater resilience levels are linked with enhanced academic performance and stronger entrepreneurial intentions.

Higher levels of self-efficacy are linked to better academic performance and slightly increased entrepreneurial intentions among medical students. Self-efficacy displayed a significant positive direct effect on academic performance ($\beta = 0.185$, $p = 0.002$) and a marginally significant direct effect on entrepreneurial intentions ($\beta = 0.101$, $p = 0.047$).

Total Indirect Effects:

The total indirect effects of hope, optimism, resilience, and self-efficacy on entrepreneurial intentions through academic performance were also examined. These analyses revealed significant indirect effects for hope ($\beta = 0.028$, $p = 0.017$), optimism ($\beta = 0.023$, $p = 0.015$), resilience ($\beta = 0.031$, $p = 0.016$), and self-efficacy ($\beta = 0.025$, $p = 0.025$). These findings suggest that academic performance partially mediates the relationships between these psychological constructs and entrepreneurial intentions among medical students.

Total Effects:

Finally, the total effects, representing the combined direct and indirect effects, were assessed. The total effects of hope ($\beta = 0.183$, $p < 0.001$), optimism ($\beta = 0.418$, $p < 0.001$), resilience ($\beta =$

0.196, $p < 0.001$), and self-efficacy ($\beta = 0.126$, $p = 0.013$) on entrepreneurial intentions were consistent with their respective direct effects. These results underscore the importance of academic performance as a mediator in explaining the relationships between these psychological constructs and entrepreneurial intentions among medical students.

The R-square results provide valuable insights into the variance explained by the model for both academic performance and entrepreneurial intention among medical students. For academic performance, the model accounts for approximately 47.4% of the variance, indicating that a significant portion of the variability in academic achievement is explained by the psychological capital components examined in the study. Similarly, for entrepreneurial intention, the model explains approximately 68.3% of the variance, suggesting a substantial influence of psychological capital on the students' inclination towards entrepreneurship.

In summary, the findings suggest that hope, optimism, resilience, and self-efficacy play significant roles in influencing academic performance and entrepreneurial intentions among medical students, with academic performance serving as a partial mediator in these relationships.

Table 3: Direct Relationship for Hypothesis testing

Hypothesis	Relationship	Std. Beta	Std. Error	t-value [^]	Decision	p-value
H 1	Self-efficacy -> Entrepreneurial Intention	0.101	0.051	1.987	Supported	0.047*
H 2	Hope -> Entrepreneurial Intention	0.155	0.050	3.091	Supported	0.002*
H 3	Resilience -> Entrepreneurial Intention	0.165	0.049	3.334	Supported	0.001*
H 4	Optimism -> Entrepreneurial Intention	0.395	0.052	7.610	Supported	0.000**
H 5	Self-Efficacy -> Academic Performance	0.185	0.059	3.123	Supported	0.002*
H 6	Hope -> Academic Performance	0.208	0.061	3.402	Supported	0.001*

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H 7	Resilience -> Academic Performance	0.231	0.065	3.580	Supported	0.000**
H 8	Optimism -> Academic Performance	0.168	0.069	2.449	Supported	0.014*
H 9	Academic Performance -> Entre_Intention	0.135	0.041	3.317	Supported	0.001*

** $p < 0.01$, * $p < 0.05$ *R2 (Academic Performance 0.474; Entrepreneurial Intention 0.683)*

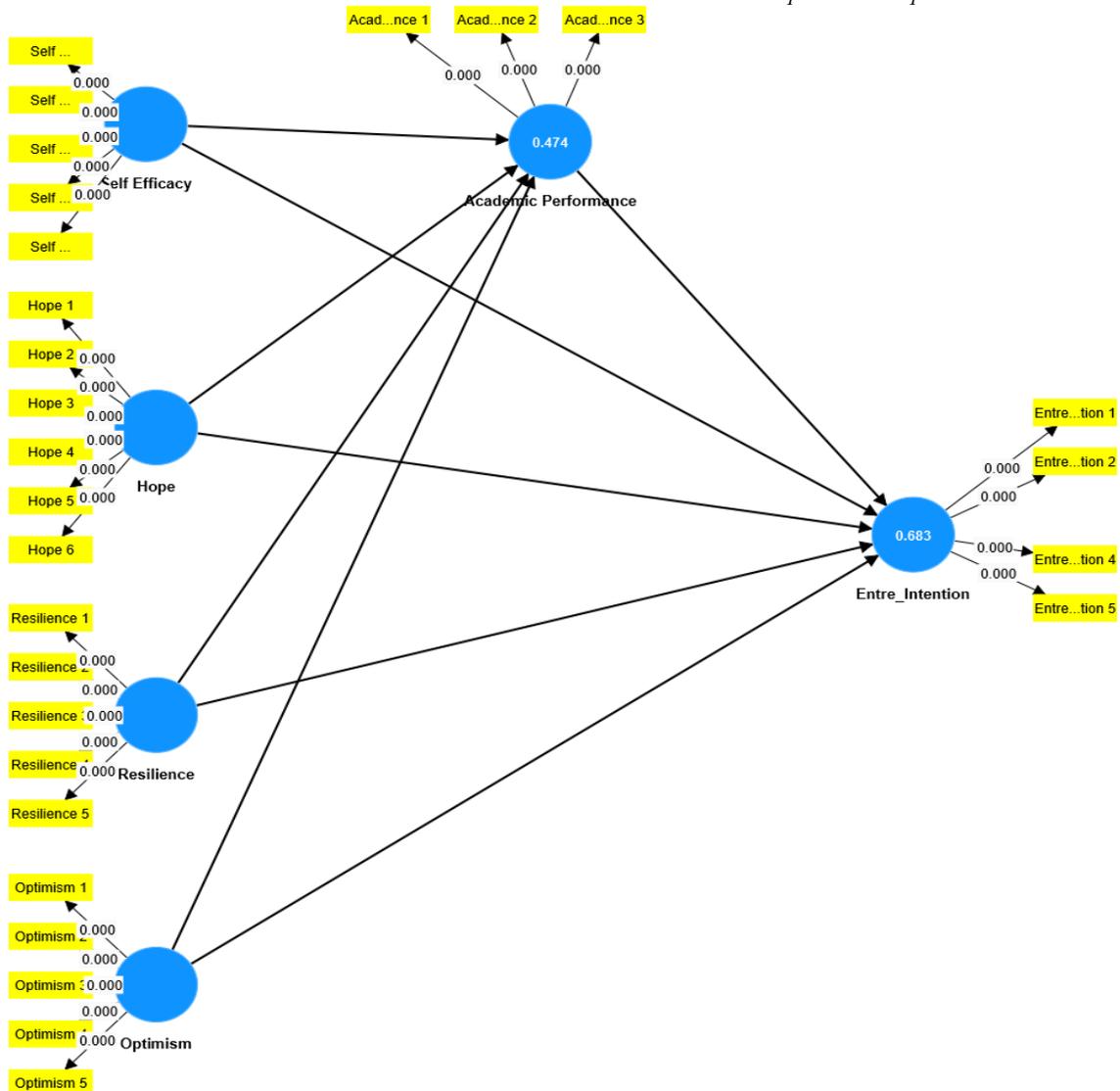


Figure : 1 Path diagram showing the relationship of psychological capital, academic performance and entrepreneurial intention.

Discussion

In light of the analysis results, it is evident that psychological factors such as hope, optimism, resilience, and self-efficacy play crucial roles in influencing both academic performance and entrepreneurial intentions among medical students. These findings corroborate the previous research emphasizing the significance of psychological capital in entrepreneurial endeavors (Tian, 2022). The observed direct effects highlight the importance of these positive psychological attributes in driving academic achievement and fostering entrepreneurial aspirations (Baluku et al., 2020). Additionally, the identification of academic performance as a partial mediator underscores the interconnectedness of psychological attributes and academic outcomes in shaping entrepreneurial intentions (Panda and Arumugam, 2023). This highlights the need for a holistic approach to business management education, one that acknowledges the interrelationship

between psychological factors and academic success. By fostering an environment that promotes the development of psychological capital alongside academic excellence, educational institutions can effectively nurture a new generation of resilient and innovative entrepreneurs (Tsai et al., 2020).

PsyCap has a favorable impact on students' learning. For instance, it can raise motivation, decrease academic burnout, enhance engagement, enhance academic achievement, and improve students' adaption to learning (Li et al., 2023). Academic performance appears to have a direct impact on students' PsyCap and an indirect effect on students' perceived group PsyCap, according to research by (Vanno et al., 2014), which evaluated empirical evidence on the relationships between academic performance, perceived group PsyCap, and individual PsyCap of Thai undergraduate students. In (Slåtten et al., 2021) study from 2021 focusing on factors influencing university students' academic performance, it was found that the supportive study climate affects academic performance through three key components: mindset, psychological capital (PsyCap), positive emotions, and study engagement. The research also uncovers a complex relationship among PsyCap, positive emotions, study engagement, and academic performance, suggesting a multifaceted pattern that enhances academic success. Additionally, another study by (Zhao et al., 2020) explores the link between psychological capital and entrepreneurial intention. It demonstrates how psychological capital mediates the effects of financial, human, and social capital to influence the entrepreneurial intention of Chinese college students.

Implications

The results of this study provide important insights for both theory and practice in the field of entrepreneurship education for medical students. The identification of hope, optimism, resilience, and self-efficacy as influential predictors of both academic performance and entrepreneurial intentions underscores the importance of fostering positive psychological attributes in entrepreneurial development programs. These results suggest that interventions aimed at cultivating these traits among medical students could effectively enhance their academic performance and stimulate their entrepreneurial aspirations. Thus, modules fostering hope, optimism, resilience, and self-efficacy should be included in entrepreneurship education curricula to provide students the mentality and abilities necessary for successful entrepreneurship. By incorporating the established PsyCap Intervention (PCI) training model developed by Luthans and colleagues (Luthans et al., 2006), institutions can provide students with structured interventions aimed at enhancing these critical psychological attributes. Integrating such programs into entrepreneurship education curricula cannot only improve academic performance but also cultivate a robust foundation for entrepreneurial success. The mediation findings emphasize the importance of a holistic approach to business management education, recognizing how psychological traits and academic success affect students' desire to start their businesses. By fostering an environment that promotes both personal growth and academic excellence, educational institutions can nurture a new generation of resilient and innovative entrepreneurs poised to make meaningful contributions to society and the economy.

Conclusions

The study showed that psychological capital has a remarkable impact on the academic performance and entrepreneurial aspirations of medical students. Through meticulous SmartPLS analysis, research established the reliability of measurement scales and revealed robust correlations among self-efficacy, hope, resilience, optimism, academic performance, and

entrepreneurial intention. The findings emphasized the central role of psychological capital, particularly self-efficacy, in shaping both academic achievement and entrepreneurial aspirations. Moreover, analysis highlighted the mediating role of academic performance, suggesting that enhancing academic outcomes may fuel entrepreneurial ambitions among medical students. These insights hold critical implications for educators, policymakers, and practitioners. By recognizing the importance of psychological capital, educational institutions can tailor interventions to foster positive psychological traits and support the development of future business leaders. Policymakers can also design initiatives to create an environment conducive to nurturing both academic excellence and entrepreneurial skills. Moving forward, longitudinal studies and intervention-based research can offer deeper insights into causal relationships and the efficacy of interventions. Such efforts are essential for advancing business education and cultivating a workforce equipped with the entrepreneurial mindset necessary for success in today's dynamic business landscape.

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