

EXPLORING THE IMPACT OF ACADEMIA ENVIRONMENT ON STUDENTS' INNOVATIVE TENDENCY

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Abstract

The study purpose was to explore the impact of academia Environments (AE) on Students' Innovative Tendency (SIT) and intervening role of entrepreneurial Self-Efficacy (ESE), focused public sector universities in Pakistan. A quantitative cross-sectional design with a stratified random sampling method was used. The study applied structured questionnaire and analyzed data with descriptive and regression examinations. Findings showed positive relationship among the research variables, demonstrated that a supportive academia setting enhances SIT. Recommendations for academia management and policymakers include enhancing entrepreneurship centers, promoting gender balance, encouraging interdisciplinary collaboration, and continuously evaluating programs effectiveness. Future research should explore other elements of innovative environment and more mediators in theoretical perspectives to understand the academia settings towards students' innovative tendency, attitude and behavior.

Keywords: Innovative Tendency of Students, Environment of Academia, Entrepreneurial Self-efficacy of the Students

Introduction

Entrepreneurship holds a valuable position in academia. The desires of the students are generated by providing facilities such as laboratories and libraries (Fayolle &

Gailly, 2015). They enhance entrepreneurial intention through registering students, exposing them to potential job opportunities, engaging in internships or becoming members of "incubators" (Kuratko, 2005). The elementary characteristics of creative and risk-accepting are, therefore, developed within that particular setting (Liñán & Fayolle, 2015). Moreover, role models and social network additionally arouse the intentions of entrepreneurs (Fini et al., 2017). However, such effectiveness is undermined when bureaucratic barriers, a lack of finance, and limited interdisciplinary collaboration occur (Guerrero et al., 2019). According to Bandura's social cognitive theory, entrepreneurial self-efficacy is important in bridging perceived university support with actual involvement in entrepreneurship (Bandura, 1977). Entrepreneurship centers, as well as interdisciplinary curriculum, enhance the self-efficacy of students and increase the intention to pursue entrepreneurship among students (Guerrero et al., 2016; Chen et al., 1998; Krueger et al., 2000; Liñán & Chen, 2009).

Higher educational institutions in Pakistan have severe challenges concerning developing entrepreneurial capabilities among students. Students develop conceptual understanding through entrepreneurship courses but often do not get practical exposure to most crucial aspects, including business planning and financial management areas, as evidenced by Fayolle & Gailly, 2015; Shahjehan & Afsar, 2019. Further to this, a general lack of support mechanisms, such as incubators and financing opportunities, further hinders the realization of entrepreneurial ideas into workable business ventures. Guerrero et al., 2019; Urban & Kujinga, 2017 Cultural issues in Pakistan also more often than not encourage students to pursue traditional job careers rather than entrepreneurial ventures. Liñán & Fayolle, 2015; Amofah & Saladríguez, 2022. Furthermore, entrepreneurship education is typically confined to certain departments, lacking adequate interdisciplinary collaboration (Fini et al., 2017; Moscardini, Strachan & Vlasova, 2022), and there is insufficient cooperation among universities, industries, and government bodies, which hinders access to mentorship and industry knowledge (Guerrero et al., 2019; Dehghanpour Farashah, Ju & Zhou, 2020). It is essential to tackle these challenges and establish a supportive policy framework to cultivate a healthy entrepreneurial ecosystem within Pakistani universities (Zhuang & Sun, 2023; Urban & Kujinga, 2017).

Although the financial constraints and a lack of entrepreneurial supportive atmosphere which public sector universities face in Pakistan were recognized, among others by Mubarakshoeva (2015) and Ali (2020), significant understanding is still lacking as to how these factors affect the development of students' entrepreneurial skills. While the literature highlights a need for increasing research engagement by Mahesar 2020 and making the academic environment friendlier by Shahjehan & Afsar 2019, financial difficulties and institutional shortcomings have not been focused on as direct drivers of entrepreneurial outcomes. There is a dire need for more focused research that addresses these lacunas and explains the implications associated. Addressing these conceptual and learning gaps for innovation calls for a supporting academic environment as well as urgent actions to promote innovativeness among students, as emphasized by Moscardini, Strachan, and Vlasova (2022). Indeed, it is through this environment that such an entrepreneurial orientation can be promoted, as expressed by Amofah and Saladrignes (2022), taking into account the fact that the trend of entrepreneurship seems rather limited in many different social and cultural contexts.

It is expected that future research in diverse academic environments, especially in public sector universities in Khyber Pakhtunkhwa, will be inspired by the findings of this study regarding how academic environment influences students' innovative tendencies. From a practical implications perspective, this study contributes much toward policymakers, academic administrators, and researchers. The research elucidates the impact of academic settings on entrepreneurial behavior by applying such frameworks as the Social Cognitive Theory, the Theory of Planned Behaviour, and Resource-Based Theory. This supports the notion that supportive environments, which enhance one's self-efficacy in developing strong entrepreneurial intentions, should be fostered. Among policymakers and university leaders, the findings suggest actionable ways through which effective educational programs and supportive systems are developed. This will also provide a good foundation for future research studies in entrepreneurship education among researchers.

Research Question 1: What is the impact of academia environment on the innovative tendency of students?

Research Question 2: What is the intervening role of entrepreneurial self-efficacy in the relationship between innovative tendency of students and environment of academia?

Research Objective 1: To examine the innovative tendency of students by influence of the academia environment.

Research Objective 2: To explore the mediating role of entrepreneurial self-efficacy between the innovative tendency of students and environment of academia

The paper was organized into the following sections: a review of theoretical and empirical backgrounds, the methodology, research modeling; data analysis, results, findings, originality of research, and contribution to the theories, implications and conclusion.

Literature Review and Hypothesis Development Academia Environment (AE)

Such development could be done through various elements of the academic environment, including policies, mission statements, organizational structures, and educational approaches. According to Lukman & Glavič (2007), the structure of an entrepreneurial ecosystem can play a significant role in enhancing students' academic performances and furthering their future career prospects. It also promotes their overall wellbeing (Khattak & Ahmad, 2018). Kaya & Edem (2021) endorse this argument. Universities enhance students' innovative capabilities by providing a wide array of educational and research opportunities, promoting innovation, and facilitating business development (Boliver, 2015; Byrom et al., 2023). Key initiatives, including perceived educational support, incubators, and innovative business models, are vital for transforming ideas into practical applications and effectively managing financial resources (Said et al., 2015; Trivedi, 2016). This environment nurtures entrepreneurial characteristics such as self-efficacy, opportunity recognition, and risk-taking, which are essential for cultivating entrepreneurial ambitions and achieving success (Caliendo & Kritikos, 2011; Liu et al., 2022).

H1: *There is significant influence of academia environment on innovative tendency of students.*

Entrepreneurial Self-Efficacy (ESE)

ESE is a psychological factor that significantly affects entrepreneurial intentions, actions, and performances. In view of Bandura's social cognitive theory, self-efficacy refers to belief in the ability to perform the behaviors necessary for achieving particular goals (Bandura, 1977). In the entrepreneur setting, ESE embodies belief in one's capability to find opportunities, use resources efficiently, and handle difficulties properly (Boyd & Vozikis, 1994). In particular, it has been found to be associated with better business intentions, greater persistence, and performance (Liñán & Chen, 2009; Ishrat et al., 2022). On the contrary, ESE development is favorably impacted by participation in entrepreneurship education, enterprise experience, and mentoring (Kautonen et al., 2015), while role models of successful entrepreneurs and supportive networks enhance the latter construct (Bergmann et al., 2016). The impact of ESE on entrepreneurial behavior, such as innovation and firm growth, has been well-documented (Obschonka et al., 2020). More recent studies have also explored the antecedents of ESE, including prior experiences, education, and social capital (Peterman & Kennedy, 2003; Obschonka et al., 2018), and its cross-cultural differences (Liñán et al., 2011). Longitudinal studies have been conducted to monitor its effects on the sustainability and growth of ventures (Hmieleski & Carr, 2007).

H2: *Entrepreneurial Self-efficacy of students significantly affect innovative tendency of students*

Students' Innovative Tendency (SIT)

Innovative tendency refers to students' likelihood of engaging in entrepreneurial activities, including starting and managing businesses. It includes their intentions, behaviors, attitudes, and skills related to entrepreneurship (Sánchez, 2022; Martin et al., 2021). Studies show that entrepreneurship education significantly shapes students' intentions and attitudes, with practical experiences boosting self-efficacy (Lee et al., 2023). It is influenced by personality traits that include creativity and risk-taking, social networks, and support systems (Costa et al., 2022; Osei et al., 2023). Besides, the advancement of technology offers new opportunities for entrepreneurial development in students (Xu et al., 2024). In short, education, personality development, support system, and technology are all parts of the holistic approach to entrepreneurial tendency.

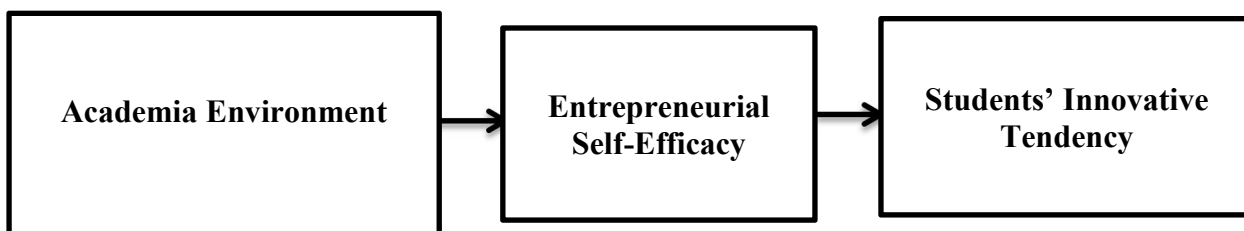
H3: *Entrepreneurial Self-efficacy plays mediating role significantly between environment of the academia and innovative tendency of the students.*

Social Learning Theory (SLT) (Bandura, 1977). It emphasized that individuals learn through observation, modeling, and reinforcement, that exposure to entrepreneurial role models and experiences within the university environment shapes students' belief and behavior.

Theory of Planned Behavior (TPB) (Ajzen, 1991). It discussed attitudes, subjective norms, and observed behavioral control that influences behavioral intentions and actions. In the context of entrepreneurship, TPB suggests that entrepreneurial self-efficacy (perceived behavioral control) mediates the relationship between the academia environment (attitudes and subjective norms) and students' entrepreneurial intentions and behaviors.

Institutional Theory (IT) (Meyer & Rowan, 1977). The study emphasized how institutional contexts, norms, and structures influence behaviors and decisions. In universities, support and cultural norms shape students' entrepreneurial perceptions and actions. A framework based on Social Learning Theory, Theory of Planned Behavior (TPB), and Institutional Theory (IT) was developed to understand how the academia environment affects entrepreneurial tendency through entrepreneurial self-efficacy.

Figure 1. Conceptual Framework



Conceptual frameworks Developed based on Social Learning Theory (SLT) (Bandura1977), the Theory of Planned Behavior (TPB)(Ajzen, 1991) and Institutional Theory(IT) (Meyer & Rowan, 1977)

Research Methodology

Research Design, Population, Sampling, Sample size and Data Analysis Techniques

Quantitative data collection was carried out using a survey method in a diversified student cohort enrolled in public sector universities at Khyber Pakhtunkhwa. This design allows investigation into the perceptions, experiences, and motivations concerning entrepreneurship among students, providing rich insights into how different factors interrelate to shape innovation potential. Only public sector universities in Khyber Pakhtunkhwa were the focus due to their high output of graduates around the world and support from government initiatives. A sample size of five universities which were selected for their highly competent faculties, robust infrastructure coupled with diverse population of students that became helpful in data collection process Liñán & Chen, 2009. A probability stratified sampling technique was employed to identify participants from the fields of Management Sciences, Information Technology, Economics, and Biotechnology, reflecting their prevalence and interest in entrepreneurship (Thompson, 2012). The study specifically targeted final-year undergraduate students, as they are at a critical stage for career decision-making (Altaf et al, 2021). Each university contributed an equal share of the total sample, that is 400; 20 respondents from each department-10 males and 10 females to create gender balance.

The questionnaire, developed from a comprehensive literature review, included several key sections: demographic information (age, gender, major in academics), perception of academic environment-infrastructure, academic programs, and faculty support, engagement in entrepreneurship education-courses and practical experiences, use of supportive resources-innovators, incubators, and funding opportunities, and indicators of innovation propensity-business intentions and aspirations, achievements, and entrepreneurial activities. In fact, the researcher personally visited the universities to seek consent from the heads and also to assess the voluntary participation of respondents before questionnaires were distributed. Response rates were monitored regularly to enhance participation and ensure the quality of data. Data were collected using a structured questionnaire with a five-point Likert scale, as suggested by Babbie and Ajzen, 1990.

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Following Linan and Chen, 2009, entrepreneurship studies analyze the academic setting with respect to the development and education of entrepreneurship, using the conceptual frameworks of Saeed et al., 2015 and Fayolle & Liñán, 2014. The key dimensions in this study are AE, ESE, and SIT-all these dimensions have established scales and prior literature backing them.

Data were collected from participants and analyzed using the Likert scale, which was processed by SPSS, a statistical software package used to simplify cumbersome analyses of quantitative data in social science research. Cronbach's alpha was first conducted to test the internal consistency of the scale items. Inferential statistical tests used to test hypotheses and investigate relationships among variables include t-tests, ANOVA, and regression analysis. The researcher ensured ethical consideration in that all participants gave their consent, and their responses have confidentiality and anonymity. Permission was obtained from the relevant institution to observe ethical standards when conducting research.

Data Analysis And Results

Table 1. Universities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	KUST Kohat	80	20.0	20.0	20.0
	University of Bannu	80	20.0	20.0	40.0
	University of Peshawar	80	20.0	20.0	60.0
	Abdul Wali khan University of Mardan	80	20.0	20.0	80.0
	GOMAL University D.I khan	80	20.0	20.0	100.0
	Total	400	100.0	100.0	

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Table 2. Departments

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Computer science	100	25.0	25.0	25.0
	Management sciences	100	25.0	25.0	50.0
	Economics	100	25.0	25.0	75.0
	Biotechnology	100	25.0	25.0	100.0
	Total	400	100.0	100.0	

Table 3. Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	150	38	38	38
	Male	248	62	62	100
	Total	400	100.0	100.0	100

Table 4. Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	1	.3	.3	3.5
	19	4	1.0	1.0	4.5
	20	26	6.5	6.5	11.0
	21	138	34.5	34.5	45.5
	22	162	40.5	40.5	86.0
	23	53	13.3	13.3	99.3
	24	3	.8	.8	100.0
	Total	400	100.0	100.0	

The sample comprises 400 participants evenly distributed across five universities, each representing 20% of the total. It is balanced among departments, with Computer Science, Management Sciences, Economics, and Biotechnology each

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making up 25%, though there is a gender imbalance with 62% male and 38% female participants. Most participants are aged 21 (34.5%) and 22 (40.5%), together representing 75% of the sample, while younger and older age groups are less represented.

Cronbach's Alpha	N of Items
.935	9

Cronbach's Alpha	N of Items
.896	4

Cronbach's Alpha	N of Items
.923	5

The reliability analysis of the study's variables showed excellent internal consistency, with Cronbach's Alpha values of .935 for Academia's Environment (AE), .896 for Entrepreneurial Self-Efficacy (ESE), and .923 for Students' Innovative Tendency (SIT). These high values indicate strong reliability and consistent measurement across all constructs.

	N	Minimum	Maximum	Mean	Std. Deviation
AE	400	1	4	3	.97
ESE	400	1	5	3	.87
SIT	400	1	5	3	.98
Valid N (listwise)	400				

Table 9. *Correlation Analysis*

		AE	ESE	SIT
AE	Pearson Correlation	1	.	.
	Sig. (2-tailed)			.
	N	400		
ESE	Pearson Correlation	.819**	1	.
	Sig. (2-tailed)	.000		.
	N	400	400	
SIT	Pearson Correlation	.810**	.840**	1
	Sig. (2-tailed)	.000	.000	
	N	400	400	400

The variables AE, ESE and SIT each have mean scores of 3.00 with moderate standard deviations, reflecting diverse participant perceptions. Correlation analysis reveals that EE is strongly correlated with ESE (.819), indicating that a favorable university environment enhances self-efficacy. Additionally, SIT is strongly correlated with both AE (.810) and ESE (.840), underscoring that a supportive environment and high self-efficacy are crucial for increasing entrepreneurial tendency.

Impact of independent Variable

Table 10. *Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.810	.657	.656	2.89520

a. Dependent Variable: SIT

b. Predictors: (Constant), AE

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Table 11. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	6386.648	1	6386.648	761.931	.000 ^b
	Residual	3336.112	398	8.382		
	Total	9722.760	399			
a. Dependent Variable: SIT						
b. Predictors: (Constant), AE						

Table 12. *Coefficients*

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	5.182	.490		10.585	.000
	AE	.456	.017	.810	27.603	.000
a. Dependent Variable: SIT						
b. Predictors: (Constant), AE						

The regression analysis indicates a strong correlation between AE and SIT, with an R^2 .657, showing that AE explains 65 percent of the variance in SIT. The adjusted R^2 of .656 confirms the model's fitness, supported by an F-value of 761.931 and a p-value of .000, demonstrating its significant predictive power. The unstandardized coefficient of .456 and a standardized Beta .810 and t value, 27.60 reveal that increases in AE lead to notable increases in SIT, with both coefficient being statistically significant

Effect of Self-efficacy on students' innovative tendency

Table 13. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.840	.706	.705	2.68123
Dependent Variable: SIT				
b. Predictors: (Constant), ESE				

Table 14. ANOVA						
Model	Sum of Squares	Df	Mean Square	F	Sig.	
	Regression	6861.536	1	6861.536	954.449	.000 ^b
	Residual	2861.224	398	7.189		
	Total	9722.760	399			
a. Dependent Variable: SIT						
b. Predictors: (Constant), ESE						

Table 15. Coefficients						
Model	Unstandardized Coefficients	Standardized Coefficients		T	Sig.	
		B	Std. Error			Beta
1	(Constant)	.364	.589		.617	.537
	ESE	1.179	.038	.840	30.894	.000
Dependent Variable: SIT						
Predictors: (Constant), ESE						

The regression analysis highlights a strong and statistically significant effect of Entrepreneurial Self-Efficacy (ESE) on SIT, with an R^2 .706, indicating that ESE accounts for 70% of the variation in SIT. The model's precision is supported by an adjusted R^2 of .705 and a significant F-value of 954.449 with a p-value of .000. The unstandardized coefficient of 1.179 and a standardized Beta of .840 and t value, 30.89 confirm that increases in ESE lead to substantial increases in SIT, underscoring ESE's strong positive impact on students' innovative tendency

Role of Self-efficacy (Mediating)

Table 16. Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.867 ^a	.751	.750	2.46873

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a. Dependent Variable: SIT
b. Predictors: (Constant), ESE, AE

Table 17. ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	7303.185	2	3651.593	599.147	.000 ^b
	Residual	2419.575	397	6.095		
	Total	9722.760	399			
a. Dependent Variable: SIT						
b. Predictors: (Constant), ESE, AE						

Table 18. Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	.870	.546		1.594	.112
	AE	.209	.025	.372	8.513	.000
	ESE	.752	.061	.536	12.263	.000
Dependent Variable: SIT						
Predictors: (Constant), ESE, AE						

The regression analysis demonstrated that Academia’s Environment (AE) and Entrepreneurial Self-Efficacy (ESE) together account for 75% of the variance in (SIT), with a correlation coefficient of .867 and an adjusted R² of .750. ANOVA affirmed the model's significance, showing an F-value of 599.147 and a p-value of .000. AE positively impacts SIT with a standardized Beta of .372, while ESE has a stronger effect with a Beta of .536, and their t value, 8.51 and 12.26. ESE mediates the relationship between AE and SIT, indicating that a supportive university environment enhances ESE, which significantly increases SIT. The constant was not significant, emphasizing ESE's critical role in mediating the influence of AE on SIT.

Findings, Originality of research, Contribution to theories, Future research, Implications and Conclusion

Findings

The high scores of Cronbach's Alpha for the measurement scales, such as Academia's Environment (AE), Entrepreneurial Self-Efficacy (ESE), and Students' Innovative Tendency (SIT), prove their reliability, therefore confirming the results of Zhao, Seibert, and Hills (2005) concerning the self-efficacy assessment. These variables, represented by the average score of 3.00 with the standard deviations for each, reflect a moderate level of agreement within the participants, hence confirming the trends that Chen, Greene, and Crick point out in 1998. This means that despite the variability in perceptivity and entrepreneurial tendencies, the results fall within the ranges documented in similar works. The strong positive correlations observed among AE, ESE, and SIT demonstrate the interconnectedness among these constructs. Bandura's Social Cognitive Theory, 1997, also supports this positive relation between Academia's Environment and Entrepreneurial Self-Efficacy since "a supportive environment encourages and greater self-efficacy". The strong correlation between ESE and SIT corresponds with the findings of Zhao et al. (2005), in which a higher degree of self-efficacy has been strongly related to a greater degree of entrepreneurial intention.

The regression analysis therefore revealed that AE and ESE significantly predict SIT. This result aligns with the model suggested by Miao, Qian, and Ma (2017), emphasizing that an enabling academic environment can help enhance students' self-efficacy and entrepreneurial outcome. This proposition, given the mediating function of self-efficacy, is corroborated by research by Stewart et al. (1999) that located self-efficacy as a mechanism through which environmental factors influence entrepreneurial intention. The study focuses on entrepreneurial self-efficacy as a significant mediator between university environments and social identity theory. This further increases ESE's importance in determining how academic settings shape entrepreneurial attitudes.

Thus, the high values of Cronbach's Alpha for AE, ESE, and SIT support the reliability of the respective scales. Evidence that is consonant with previous studies on self-efficacy measures has been presented by Zhao et al. (2005). The mean scores,

which stood at 3.00 for these variables, further coupled with their standard deviations, did show a moderate extent of consensus among participants. Such patterns have also been observed in related studies by Chen, Greene, and Crick (1998). This would suggest that there is some dispersion in the perceptions and entrepreneurial tendency yet, for the most part, these fall within the ranges reported in similar studies. Strong positive associations that exist between AE, ESE, and SIT reflect inter relationality of said variables. The positive relationship between Academia's Environment and Entrepreneurial Self-Efficacy is underpinned by Bandura's Social Cognitive Theory 1997, which purports that self-efficacy is reinforced by an enabling environment. These strong correlations between ESE and SIT corroborate findings from studies such as those by Zhao et al. 2005, which indicate that the higher the self-efficacy, the stronger the entrepreneurial intention.

The regression analysis also finds that AE and Entrepreneurial Self-Efficacy (ESE) are significant predictors of SIT. This supports the model of Miao, Qian, and Ma, 2017, which emphasizes that a supportive academia's environment is influential in enhancing self-efficacy and entrepreneurial outcomes. In addition, results support the mediating role of ESE, which is similar to Stewart, Watson, Carland, and Carland's, 1999, study, identifying self-efficacy as tool through which environmental factors influence entrepreneurial intention. In this respect, the study underlines ESE as a mediator of university environments and SIT, emphasizing its value in shaping how university settings influence entrepreneurial attitudes. This finding thus aligns with the study of Linan and Chen, 2009, which stated that self-efficacy was acting as an agency between external factors and entrepreneurial intentions. The mediating role of ESE also strengthens theoretical proposals of Shapero and Sokol, 1982, that perceived behavioral control, which is a concept close to self-efficacy, acted as a driver toward entrepreneurial behavior.

Originality of the Research

This research addresses a significant gap by investigating the innovative inclinations to entrepreneurship among university students in Pakistan highlights a conceptual gap in understanding their entrepreneurial attitudes within the country's cultural and educational context. Emphasizing innovative tendency rather than sole intentions and behaviors, this study gives an added value contribution, adding new insights to the

former theoretical perspectives and deepening the understanding of entrepreneurship issues within this specific context. The novelty of this research is underlined by its creative integration of AE, ESE, and SIT into a combined framework. While previous studies have focused on these variables individually, this research investigates not only the direct effect of a supportive university environment but also the indirect one, mediated by self-efficacy. This can be much more subtle in understanding the way the academic environment shapes students' entrepreneurial attitudes, rather than more split investigations in the area. Its novelty is further manifested in its balanced and diversified sample from five universities and four disciplines, hence assuring an insight so far as the impact of university environment and self-efficacy on entrepreneurial propensity is comprehensive. Wide representation reinforces a specific knowledge of Entrepreneurial intentions within a broad area of educational contexts. One of the peculiarities of this research is that it investigates the role of ESE in the mediating function between AE and SIT—a relationship that was less discussed before and which opens new perspectives on how university contexts impact entrepreneurship intentions. This is further evidenced in its originality in the empirical validation of SCT, TPB, and RBT, so as to validate that a supportive university environment may result in enhanced self-efficacy or tendencies toward entrepreneurship, providing theoretical understanding and guidance on policies toward the formulation of mechanisms for giving support to student entrepreneurship.

Contribution to Theories

Contribution of the Research to the Social Cognitive Theory: The present research contributes to the SCT by establishing the relationship between ESE and entrepreneurial intention. It has also re-confirmed the Centre-stage interaction between cognition and environmental factors that SCT advocates and has identified ESE as an important mediator. The high correlation and regression result point toward ESE acting as a crucial link to connect the environment with entrepreneurial behavior.

Contribution to TPB: The research furthers TPB by adding university environment as one of the major determinants of entrepreneurial intention. It proves that a facilitating university environment contributes positively toward raised perceived self-efficacy of students, which aligns with TPB's concept of perceived behavior control. This integration enriches the TPB framework by showing how interaction of the external

factor (environment of academia) and the internal factor of self-efficacy configures entrepreneurial intentions. This study contributes to Resource-Based Theory by showing that academia plays a very vital role in RBT internal resources, hence influencing the outcomes of students' entrepreneurship. Indeed, the university setting that positively enhances ESE heightens entrepreneurial tendency among students. This stresses the fact that universities, through their intellectual and social capital, are in the core of forming the entrepreneurial capabilities of students; this again points to the broader applications of RBT in educational settings.

Limitations, Future Research and Implications

The limitations of the study comprise a gender imbalance, a cross-sectional design that restricts causal inference, dependence on self-reported data, a focus on a limited number of universities, specifically public sector institutions in Khyber Pakhtunkhwa, and a necessity for greater institutional and geographic diversity. Future investigations should aim to rectify these shortcomings and examine additional mediators such as entrepreneurial education initiatives and social networks to gain a more thorough understanding of how the academic environment influences entrepreneurial intentions. It is essential to establish dedicated entrepreneurship centers that provide resources, mentorship, and networking opportunities to assist aspiring entrepreneurs. Furthermore, integrating practical experiences, such as internships and startup incubators, into entrepreneurship education will bridge the gap between theoretical knowledge and real-world application. Strategies should be implemented to enhance female participation in entrepreneurship, which may involve targeted outreach, mentorship programs, and support networks tailored for female students. Encouraging interdisciplinary collaboration among various departments and faculties will contribute to a more comprehensive approach to entrepreneurship education and support. Continuous evaluation and adaptation of entrepreneurship programs based on feedback and outcomes are crucial to meet the changing needs of students and the entrepreneurial ecosystem. University management and policymakers play a vital role in creating a more conducive environment for nurturing entrepreneurial talent and strengthening the academic entrepreneurial ecosystem.

Conclusion

This study provides valuable insights into how Academia Environment (AE) and Entrepreneurial Self-Efficacy (ESE) influence Students' Innovative Tendency (SIT), contributing significantly to Social Cognitive Theory (SCT), the Theory of Planned Behavior (TPB), and Resource-Based Theory (RBT). It highlights the importance of a supportive university environment in boosting both self-efficacy and entrepreneurial tendency. The research's focus on ESE's mediating role offers new understanding of how university environments affect entrepreneurial outcomes. Future research should address these limitations and explore additional variables to enhance our understanding of entrepreneurial behaviors and improve academic interventions.

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