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Shaping Sustainable Entrepreneurial Intentions among Business Graduates in Developing Countries through Social Media Adoption: A Moderating-Mediated Mechanism in Pakistan

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Abstract: Entrepreneurship is crucial for alleviating job challenges among business graduates and for sustaining a growing local economy. However, different factors support and encourage students to be entrepreneurs. Modern technologies such as social media are becoming more popular with young people in enterprise creation. However, the connection between social media use and business among the youth of developing countries has yet to be noticed. This study examines the relationship between entrepreneurial education (EE), attitudes toward sustainable entrepreneurship (ATSE), and sustainable entrepreneurial intentions (SEIs); as well as examining the moderating effect of social media adoption on this relationship. To put the proposed concept to the test, data was collected from 314 business graduates from Pakistani universities. Structural equation modeling using AMOS (Version 26) was utilized to test the proposed hypotheses. The study findings show that student attitudes concerning sustainable entrepreneurship mediate the association between EE and sustainable entrepreneurial intention. Furthermore, the results illustrate that social media moderated the relationship between the research participants' attitudes concerning sustainable entrepreneurship and their desire to practice sustainable entrepreneurship. The study makes significant contributions to the field that scholars can use to initiate future research projects.

Keywords: entrepreneurial education; attitudes toward sustainable entrepreneurship; sustainable entrepreneurial intention; social media



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1. Introduction

Sustainable entrepreneurship, our era's greatest challenge, begins with spotting opportunities [1]. Sustainable entrepreneurship has gained in importance in recent years to become one of the most active topics, leading to a proliferation of entrepreneurial solutions to environmental, social, and financial issues [2,3]. As defined by experts, sustainable entrepreneurs mix social, economic, and ecological entrepreneurship to build sustainable entrepreneurship [1,2]. Prescriptive frameworks and models are mainly concerned with environmental economics and social entrepreneurship [4]. Potential sustainable entrepreneurs may lose when the triple bottom line is balanced between private and commercial profits and ecological and societal costs. Entrepreneurs committed to sustainability must consider current developmental requirements without putting forthcoming generations at threat [3,4].

The creation of socioeconomic, environmental, and sustainable business models has helped address societal issues [2,5]. These models are largely concerned with learning about the plans and motives of recent business school graduates, due to the speed with

which the entrepreneurial process moves. Both the economy and job creation benefit from entrepreneurship [6]. Sustainable entrepreneurship is crucial for achieving the goals of sustainable development. Public interest groups must work to raise everyone's quality of life, including the impoverished, the ill, the employed, the creative, the organized, the sustainable, and the environmentally sensitive [7,8]. These worries impact the most crucial and accurate indicator of the entrepreneurial mentality, namely, the desire to launch a viable business [9]. Despite our limited understanding of these concerns, they are essential for making business decisions that follow the sustainability principles outlined in the Sustainable Development Goals, such as starting a new business or modifying an existing one. We must learn more about their aims to make wise business decisions that uphold these standards [1,4].

Even though entrepreneurship is on the rise, thanks to EE, there is little evidence that current youth, particularly university graduates, have good entrepreneurship skills and the necessary potential to allow them to challenge a possible worsening future [5]. According to prior research, one of the steps toward achieving such entrepreneurship skills and potential is to replace the existing EE model and focus instead on EE with value and sustainability indicators [5,10].

This concept has been widely debated in Pakistan, as the country has developed policies to promote and encourage SEI in order to help combat poverty and contribute to its economic and social development [2,6]. The existing conditions of business and labor markets in emerging nations have resulted in role shifts and insecurity. Business graduates must attain the skills essential for becoming self-employed and launching new firms. Consequently, several higher education institutions worldwide have modified how they teach entrepreneurship to students [3].

Social media is widely used by university students [7,8]. Social media are Web 2.0 programs that exchange user-generated content [11]. Online, students are inundated with advertisements from individuals, businesses, and public and private organizations [12]. Students select which social media platforms to read and connect with based on their preferences [2,13]. Instagram, Facebook, and YouTube are less relevant politically and socially than Twitter; WhatsApp is a social network based on instant messaging; and YouTube is used for self-education [9,14]. Social media's commercial advantages and business applications are the main topics of entrepreneurship research. Social media helps businesses perform better [15] and increases the likelihood that new ventures will succeed by removing geographic barriers to product sales, enabling quick and affordable customer communication, and permitting the expansion of customer viewpoint data to boost sales [3,16]. Additionally, research on the advantages of social media has been done for historical tourism and women-owned businesses [11,12].

Research on the association between EE, Attitudes toward Sustainable Entrepreneurship (ATSE), and social media usage concerning persistent Sustainable Entrepreneurial Intentions (SEIs) among business graduates is very limited and seldom found in the literature. As a result, there are a number of knowledge gaps in the field. Moreover, institutional initiatives to promote entrepreneurial competencies may be favorably or badly impacted depending on how much time students spend on social media platforms. This study offers a new framework for modeling Pakistani graduates' EE and its impact on ATSE and SEIs. Additionally, it introduces the framework's SM moderating role. Even in the extensive research on graduates who pursued entrepreneurship, the moderating effect of SM on the association between independent variables and SEIs has not yet been studied.

This article is organized as follows: the first section contains the theoretical and empirical review and formulation of hypotheses. Next, the employed methodology, the sample and its characteristics, and the variables under investigation are justified. Finally, the results, debates, conclusions, and potential future research directions are presented.

2. Literature Review (Development of Research Hypotheses)

2.1. Effect of Entrepreneurial Education (EE) on Attitudes toward Sustainable Entrepreneurship (ATSE)

EE is a learning strategy that emphasizes the broadening of entrepreneurial knowledge, abilities, skills, and attitudes [9]. Indeed, EE is also represented as being to reflect on one's activities in order to facilitate learning [6,11]. Like other disciplines, EE can be learned and enriched by publishing advancement skills, strengths, personalities, and characteristics that help students' attitudes toward sustainable entrepreneurship [12,13]. Students can improve their critical thinking about ATSE by shifting their learning style from teacher-centered to learner-centered [5]. After taking entrepreneurship courses, students can understand the primary vital learning approach, which includes offering business practice, visiting a business, and interviewing a famous entrepreneur [17]. Based on the above discussion, this research proposes:

Hypothesis 1 (H1): *Entrepreneurial Education is positively related with Attitudes toward Sustainable Entrepreneurship.*

2.2. Effect of Attitudes toward Sustainable Entrepreneurship (ATSE) on Sustainable Entrepreneurial Intentions (SEIs)

An attitude is a judgment or assessment of a person's behavior. With respect to the impact of entrepreneurial education and students' entrepreneurial mindset, attitudes and self-efficacy play a mediating role [7]. The gap between expectations of personal interest in being independent and organizationally employed has been described as an attitude toward entrepreneurship from an entrepreneurial perspective [5,15]. The attitude to entrepreneurship is the extent to which a person retains a positive or negative personal assessment of becoming an entrepreneur [18]. Many studies that have explored the subject of entrepreneurship have found that entrepreneurial attitude is a noteworthy predictor of SEIs [16,18]. Additionally, other studies disentangled the components of attitudes toward sustainable entrepreneurship in order to explore its relation with SEIs [5,9]. This study, therefore proposes:

Hypothesis 2 (H2): *Attitudes toward Sustainable Entrepreneurship are positively related to Sustainable Entrepreneurial Intentions.*

2.3. Entrepreneurial Education (EE) and Sustainable Entrepreneurial Intentions (SEIs)

The term "entrepreneurship school" refers to several educational courses and programs dedicated to developing SEIs and skills [5,10]. The researcher has opened a heated debate on EE in both society and the higher education market, and has further advanced EE in colleges and universities [6,19]. EE is essential in preparing young people for the job market and is a critical component in easing the transition from school to work [6,20]. The methodologies used to evaluate EE programs' success concentrate on three areas: sustainable entrepreneurial intention, entrepreneurial behavior, and skills learned [19,21,22]. The study found that EE significantly enhanced college students' entrepreneurial abilities and potential, and significantly increased their contribution to sustainable entrepreneurship [23]. Based on this discussion, this study hypothesizes that:

Hypothesis 3 (H3): *Entrepreneurial Education is positively related with Sustainable Entrepreneurial Intentions.*

2.4. The Mediating Role of Attitudes toward Sustainable Entrepreneurship (ATSE)

The ATSE is seen as a precedent in past studies for accomplishing SEIs [24]. Most recent studies have used Ajzen's Theory of Planned Actions (TPB) as a basis for constructing theoretical frameworks, and empirical evidence supports its application [9]. Similarly, the study by [22] indicated that a person's ATSE and potential are related to individ-

ual SEIs. Cross-cultural variations were also found to assess differences in ATSE and SEIs [6,7]. Researchers found that EE strongly affects university students' attitudes toward sustainable entrepreneurship, about being entrepreneurs, and about taking risks to launch new companies [10]. The environment of the university's entrepreneurship enhances students' sustainable attitudes about SEIs [17,23]. Hence, the researcher in the present study postulates:

Hypothesis 4 (H4): *Attitudes toward sustainable entrepreneurship mediate the relationship between entrepreneurial education and sustainable entrepreneurial intentions.*

2.5. Moderating Effect of Social Media (SM)

The fourth industrial revolution, which included social media, opened the market to entrepreneurs [4,11]. Social media spread through cyberspace, forming an enterprise ecosystem and opening up a massive demand for entrepreneurs with low entry barriers [9]. Building a website and displaying products online requires basic marketing skills that promote an entrepreneurial attitude for SEIs in reaching a global market [24]. To launch a business, a minimal budget is required to improve SEIs through SM and e-payment [2,22,24]. The challenge for new business people today is not to increase market size but to meet the competitive pressures of other well-known brands worldwide [6]. As a new startup, SM is a modern tool for generating brand recognition; and demand across cyberspace encourages people to pursue sustainable entrepreneurship [10,23]. It is thus proposed that:

Hypothesis 5 (H5): *Social Media adoption moderates the relationship between attitudes toward sustainable entrepreneurship and sustainable entrepreneurial intentions.*

2.6. The Research Framework

Based on the comprehensive literature review, the suggested study's research framework is shown in Figure 1. The research framework developed EE, ATSE, SMA, and SEIs.

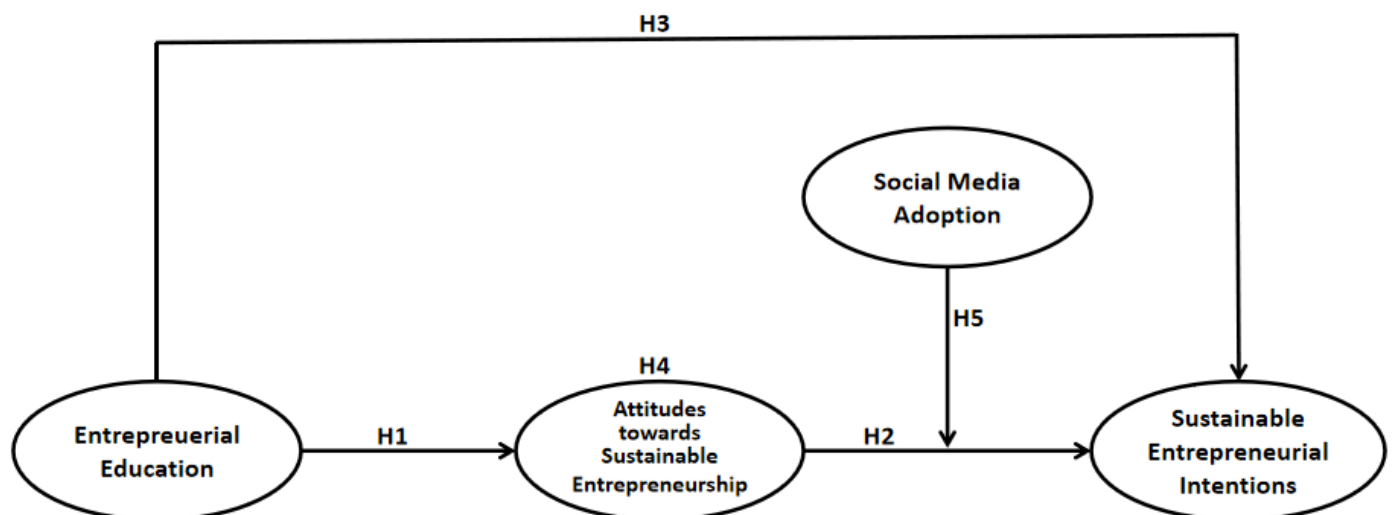


Figure 1. The Research Framework.

3. Methodology

3.1. Respondents' Background

The target respondents were polled with a pen-and-paper survey. The target participants visited their universities. The target respondents were from the Faculty of Management/Business Studies. The questionnaire was given to 700 people (all of them fully informed about the study). They were similarly guaranteed complete privacy and confidentiality of their personal information. We received 317 total responses, yielding a response rate of 45.28%. Out of 317 questionnaires, three questionnaires were removed due to incomplete data. The respondents consisted of 192 males (61.9%) and 118 females (38.1%). Most respondents were between the ages of 26 and 30 (46.8%). The remaining respondents' ages were 20–25 (27.7%), 31–35 (21.3%), and 36 (4.2%). As per the program of the study, the majority of respondents were enrolled in post-graduate programs, i.e., 179 (57.00). The average respondent (i.e., 57) was graduate level (18.15%) and in a Ph.D. program; the average number of respondents was 78 (24.85). Finally, yet importantly, most respondents maintained family businesses 193 (62.3%), while 117 (37.7%) had no family business. The details are provided in Table 1 below.

Table 1. Demographics Information.

| Background | Categories | No. of Respondents | Percentage of Respondents (%) |
|------------|---------------------|--------------------|-------------------------------|
| Gender | Male | 192 | 61.9 |
| | Female | 118 | 38.1 |
| Age | 20–25 | 87 | 27.7 |
| | 26–30 | 148 | 46.8 |
| | 31–35 | 66 | 21.3 |
| | 36 and above | 13 | 4.2 |
| Program | Post-graduate level | 179 | 57.00 |
| | Graduate level | 57 | 18.15 |
| | Ph.D. | 78 | 24.85 |
| Business | Family business | 195 | 62.10 |
| | No business | 119 | 37.89 |

3.2. Survey Development

The survey was developed in consultation with three experts directly related to the research area, two of whom were academic professors and one a practitioner with a particular field of knowledge. All measuring elements were taken from previous research. Every question was assessed using a five-point Likert scale. Four items were operationalized for EE [25]. A four-item scale operationalizing SEIs was developed based on the work of [1,26]. Additionally, four-item scale adopted from [27] measured ATSE. Finally, a four-item scale adopted from [5,28] was used to assess SM. Table 2 summarizes the items used in the questionnaire along with their factor loadings.

Table 2. Results of measurement model.

| Construct | Items/Codes | Loading |
|---|---|---------|
| Entrepreneurial Education | EE1—The course on entrepreneurship is one of my favorites. | 0.809 |
| | EE2—I decided to seek business ownership after completing a course on entrepreneurship. | 0.829 |
| | EE3—I appreciate reading biographies of successful entrepreneurs. | 0.884 |
| | EE4—I am ready to create my own business by understanding the particulars of entrepreneurship. | 0.839 |
| Attitudes toward sustainable entrepreneurship | ATSE1—Being an entrepreneur is the best way for me to express myself. | 0.839 |
| | ATSE2—My best hope for a prosperous and secure future is to forge my path in the world through entrepreneurship. | 0.875 |
| | ATSE3—Being an entrepreneur will afford me the chance to test myself. | 0.880 |
| | ATSE4—For my future success, I must become an entrepreneur. | 0.828 |
| Social media adoption | SM1—If I utilized social media as a business tool, I would be fairly positive about the benefits I would receive. | 0.814 |
| | SM2—Utilizing social media for business purposes would enable me to attain hitherto unattainable objectives. | 0.903 |
| | SM3—I will utilize social media for business purposes when appropriate. | 0.851 |
| | SM4—In the future, I intend to utilize social media effectively for my business endeavors. | 0.750 |
| Sustainable entrepreneurial intention | SEIs1—I am preparing to launch my own business. | 0.861 |
| | SEIs2—I intend to pursue the entrepreneurial route with all my might. | 0.858 |
| | SEIs3—I seek an opportunity to become an entrepreneur. | 0.825 |
| | SEIs4—After I graduate, I intend to establish my own business. | 0.828 |

3.3. Data Analysis

Data were analyzed using SPSS 25.0 and AMOS 24.0. The data analysis procedure involved two stages. (1) The suggested research model was evaluated using the measurement model; and (2) the proposed research model was evaluated using SEM. The multi-group analysis and the indirect impact in AMOS 24, finally, carried out moderation and mediation analysis (models 1 and 4, respectively). Results and discussion of the study are presented in the following sections.

4. Research Results

4.1. Common Method Bias (CMB)

The study data was tested for bias using the Harman One-Factor Test (as suggested by [6,15]). The test used one non-rotated factor per element. This single factor explained only 32.809 percent of the variance, indicating no CMB in the data. However, we used the Marker Variable Technique to investigate the CMB problem, which is in line with recent research studies [29–31]. The results established that the user data did not contain any CMB contamination.

4.2. Measurement Model

We evaluated the psychometric properties of the model by conducting a confirmatory factor analysis (CFA) in Amos (Version 26) on 16 items representing each of the 4 constructs. The measurement model had good values for the comparative fit index (CFI = 0.957), the root means square error of approximation (RMSEA) (less than 0.08), and the standardized root means square residual (less than 0.08). The literature-recommended cutoff value [6,31] was utilized to confirm that the constructed measurement model provided a good match. Additionally, factor loading scores as demonstrated in Table 3 show that all the items are perfectly loading on their respective constructs.

Table 3. Factor Loading Scores.

| Items | Factors | | | |
|-------|---------|--------|-------|--------|
| | EE | SEI | ATSE | SM |
| EE3 | 0.884 | 0.255 | 0.093 | −0.021 |
| EE4 | 0.839 | 0.310 | 0.144 | 0.029 |
| EE2 | 0.829 | 0.325 | 0.090 | −0.030 |
| EE1 | 0.809 | 0.287 | 0.005 | 0.023 |
| SEI1 | 0.254 | 0.861 | 0.142 | 0.041 |
| SEI2 | 0.357 | 0.858 | 0.166 | 0.018 |
| SEI4 | 0.360 | 0.828 | 0.172 | 0.046 |
| SEI3 | 0.370 | 0.825 | 0.171 | 0.023 |
| ATS3 | 0.047 | 0.190 | 0.880 | 0.164 |
| ATS2 | 0.092 | 0.067 | 0.875 | 0.119 |
| ATS1 | 0.083 | 0.131 | 0.839 | 0.172 |
| ATS4 | 0.095 | 0.170 | 0.828 | 0.120 |
| SM2 | −0.013 | 0.072 | 0.125 | 0.903 |
| SM3 | −0.060 | 0.002 | 0.053 | 0.851 |
| SM1 | −0.017 | 0.051 | 0.149 | 0.814 |
| SM4 | 0.098 | −0.023 | 0.195 | 0.750 |

The shading shows the loading of items on their respective constructs.

The validity of the measurement model was determined using a two-step technique suggested by [15]. Initially, convergent validities and construct reliabilities (CR) were analyzed based on criteria established in the literature [32]. With CR values ranging from 0.866 to 0.943, all structures may be deemed reliable. Convergent validity requires satisfying three additional conditions [6,33]. All factor loadings must be greater than 0.6 and statistically significant at or below the 0.001 level (factor loadings were 0.750 and 0.903). Each of the constructs had an AVE (Average Variance Extracted) value of more than 0.5, ranging from 0.627 to 0.806. These details are provided in Tables 2–4.

Table 4. Convergent and Discriminant Validity.

| | CR | AVE | MSV | ASV | SM | SEI | EE | ATSE |
|-------------|-------|-------|-------|-------|--------------|--------------|--------------|--------------|
| SM | 0.869 | 0.627 | 0.112 | 0.925 | 0.792 | | | |
| SEI | 0.943 | 0.806 | 0.487 | 0.950 | 0.108 * | 0.898 | | |
| EE | 0.918 | 0.738 | 0.487 | 0.928 | 0.032 | 0.698 *** | 0.859 | |
| ATSE | 0.911 | 0.720 | 0.142 | 0.916 | 0.334 *** | 0.377 *** | 0.254 ** | 0.849 |

Note: EE: Entrepreneurial Education, ATSE: Attitude Toward Sustainable Entrepreneurship, SEIs: Sustainable Entrepreneurial Intentions, SM: Social Media, CR: Composite reliability, AVE: Average variance explained, MSV: Maximum shared variance, ASV: Average shared variance; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Bold values show the square root of respective AVEs.

Consequently, convergent validity is established by a CR value greater than 0.70, a factor loading greater than 0.60, and an AVE value greater than 0.5. Second, we compared the MSV values to their AVE values to determine if they were discriminant; the ICC between the two constructs must be greater than the square root of the AVE [32]. Table 4 demonstrates that the AVE is more than the MSV values for all constructs and that the square root of the AVE is greater than the model's correlations between constructs. Additionally, All of the HTMTs were less than 90, indicating discriminant validity [33], as shown in Table 5.

Table 5. HTMT Analysis.

| | SM | SEI | EE | ATSE |
|-------------|-------|-------|-------|------|
| SM | | | | |
| SEI | 0.104 | | | |
| EE | 0.032 | 0.705 | | |
| ATSE | 0.363 | 0.384 | 0.250 | |

4.3. Structural Model

The proposed research model and underlying hypotheses were evaluated using structural equation modeling (SEM). The SEM model returned a good model fit (CMIN/df = 2.982, CFI = 0.969, TLI = 0.959, and RMSEA = 0.08). As illustrated in Table 6 and Figure 2, additional path analysis was used to evaluate the proposed relationships between the variables within the model. Three significant direct hypotheses confirm that EE is a strong predictor of ATSE (H1, $\beta = 0.254$; $p \leq 0.001$). H2 confirms that ATSE is associated with SEIs ($\beta = 0.214$; $p \leq 0.001$), and H3 confirms that EE is also a predictor of SEIs ($\beta = 0.644$; $p \leq 0.001$).

Table 6. Results of Hypothesis Testing.

| Hypotheses | Path | Beta | S.E. | C.R. | p-Value | Support |
|------------|-----------------------|-------|-------|--------|---------|----------|
| H1 | EE \leftarrow ATSE | 0.254 | 0.062 | 4.117 | *** | Accepted |
| H2 | ATSE \leftarrow SEI | 0.214 | 0.052 | 4.522 | *** | Accepted |
| H3 | EE \leftarrow SEI | 0.644 | 0.065 | 10.941 | *** | Accepted |

Note: $p \leq 0.001$ ***.

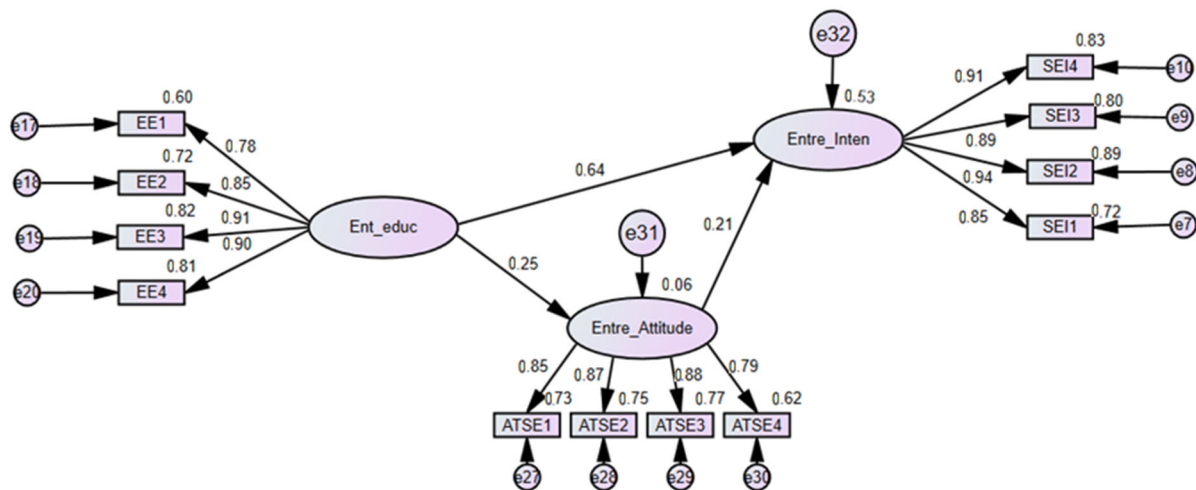


Figure 2. The Structural Model.

4.4. Moderation Analysis

In this study, we used multi-group analysis in AMOS (24) to investigate how SM affected the other components in a moderating way. Using multi-group analysis, the study’s sample was split into two categories (High and Low), and both were given the identical structural model. Next, we used pairwise comparisons of standardized beta coefficients to compare the low and high categories. Moderating will have no effect until the critical ratio for the difference is significantly over or below the threshold.

The concept of SM was measured on a 5-point Likert scales using a 4-item scale. The total mean of SM was 3.471, indicating a high level of SM among respondents to the survey. In the questionnaire survey, SM was measured using a metric scale; however, in the multi-group analysis, the median-split approach was utilized to turn the metric character of SM into a categorical scale [32]. Out of the sample of 310, 125 graduates (median less than 2.4) and 185 employees (median larger than 2.4) were put in the low and high levels of SM, respectively.

The result, as described in Table 7, shows a moderation effect of SM such that the strength of the impact of ATSE on SEIs (H5) (β Low SM = 0.384 ***; β High SM = 0.407 **) increases in the case of SM. The difference in the effect of ATSE on SEIs is significant in cases of SM (C.R. = 4.718 for S.M.), thus affirming our moderation hypothesis for SM. Our data shows that a high level of SM will strengthen the effect of ATSE on SEIs.

Table 7. Moderation Analysis.

| Relationship | Moderation of SM | | |
|--------------|------------------|-----------|---------|
| | Low | High | CR |
| ATSE → SEI | 0.384 *** | 0.407 *** | 4.718 * |

Note: $p \leq 0.001$ ***; $p \leq 0.05$ *.

4.5. Mediation Analysis

In our model, ATSE serves as a mediator. To investigate the indirect effects that indicate mediation, a bias-corrected bootstrapping analysis with a 2000 bootstrap sample and a 90% confidence interval was performed [34]. Furthermore, our mediation analysis reveals that ATSE significantly indirectly affects the association between EE and SEIs. The outcomes of the mediation analysis are illustrated in Table 8. In particular, the study reveals that EE interaction positively predicts SEIs directly ($\beta = 0.644$, $p \leq 0.001$) and indirectly ($\beta = 0.054$, $p \leq 0.001$) mediated by ATSE. Since the direct effect is still significant, the current study confirms a partial mediation between EE and SEIs. The results further confirm the acceptance of our mediation hypothesis.

Table 8. Mediation Analysis.

| Relationship | Direct Effect | | | | Indirect Effect | | | | Total Effect | | | |
|-----------------|---------------|-------|-------|-------|-----------------|-------|-------|-------|--------------|-------|-------|-------|
| | Est. | Sig. | LLCI | ULCI | Est. | Sig. | LLCI | ULCI | Est. | Sig. | LLCI | ULCI |
| EE → ATSE → SEI | 0.644 | 0.001 | 0.559 | 0.722 | 0.054 | 0.004 | 0.025 | 0.086 | 0.698 | 0.001 | 0.623 | 0.765 |

5. Discussion

This research investigated five proposed hypotheses using structural equation modeling. It is worth noting that this analysis supports all five of the proposed hypotheses. The study's first hypothesis shows that EE positively affects ATSE. This finding supports previous studies [5,6,23,32]. The primary reason for this is that students in Pakistani universities benefit greatly from the assistance they receive from their institutions in cultivating expertise in business. Many studies have indicated that EE can inspire students to develop an entrepreneurial mindset and ultimately lead them to pursue entrepreneurship as a career. In addition, EE prepares students with an entrepreneurial attitude and an academic understanding of entrepreneurship. This is a long-term investment in the students' human capital, as they will receive the knowledge, experience, and skills required to begin and run a successful business.

As part of an endeavor to develop tremendous momentum in students' entrepreneurial attitudes, the indirect impact of the ATSE on students in Pakistani colleges should be researched frequently. Following [17,20,21,33–35], the analysis for Hypothesis 2 reveals that ATSE encourages young people to use their entrepreneurial intentions to establish firms. Therefore, developing an entrepreneurial attitude through exposure to education is vital for realizing SEIs. Consequently, a series of SEIs can be constructed using ATSE.

The initiative to promote entrepreneurship through formal education seems very worthwhile, as it has been proven from this research that EE does influence the entrepreneurial attitude to venture into entrepreneurship. As per the analysis findings, H3 is supported in this research. This finding is similar to that found by [10]. It is essential to have a highly developed educational system [34]. It significantly impacts society by teaching fundamental entrepreneurial skills as early as elementary school. At the secondary and higher stages of education, this is reinforced. To encourage graduates to develop jobs based on what they have learned rather than seek employment from firms, most universities in Pakistan are refocusing the majority of their programs on entrepreneurship. Unquestionably, the next generation will strongly influence the nation's entrepreneurial culture. Indirectly, developing an entrepreneurial culture can help a nation become more self-reliant, which can aid in branding the nation as a globally competitive powerhouse [16].

Hypothesis, i.e., H4, of the study confirms that ATSE partially mediates the relationship between EE and SEIs. The outcomes are identical to previous studies [5,6,9]. Specifically, EE can have a favorable impact on SEIs through ATSE. Therefore, EE will influence students' willingness to engage in entrepreneurial activities, assuming that entrepreneurial training and programs effectively increase students' ATSE levels. This result indicates that students transact business with universities through EE supply-related education and training. As a result, students develop an SEI, which includes a willingness to take risks, a readiness to accept ambiguity, and a positive perspective on business [36]. With EE, an ATSE and a stronger SEIs can be produced [36–38].

The H5 result indicates that SM moderates the association between ATSE and SEIs. The findings align with earlier research that discovered that SM moderated the relationship between ATSE and SEIs [8,39]. The findings indicate that business schools and entrepreneurship programs require additional investment in SM and the creation of maker spaces on campus. In addition to gaining greater confidence in their technological aptitude, students benefit from enhanced entrepreneurial skills, which may lead to future careers in entrepreneurship [40–42].

6. Conclusions

There is evidence that purpose, sensitivity to diverse standards, and consideration of future outcomes are present in all forms of a commercial venture, despite the enormous changes in entrepreneurship and the most significant shift from traditional to modern firms. To achieve this objective, the study emphasized the mediating and moderating impacts of ATSE and SM in sustainable entrepreneurial intention, with necessary practical and political implications. The findings provide enlightening information and prospective ways to encourage sustainable entrepreneurship among favored entrepreneurs. These findings suggest that the SEIs will advance more rapidly as an individual's career goals and understanding of their long-term impacts are respected. Therefore, fostering abilities and capabilities is an efficient and dependable method for promoting sustainable businesses and producing sustainable entrepreneurs.

6.1. Theoretical and Practical Implications

The present study supplements the entrepreneurship literature. It enhances the understanding amongst business graduates of the importance of EE, ATSE, and SM for SEIs. Public and private companies applying the proposed methodology based on the findings of this study can thereby reduce the degree of failure in this area for graduates. This study also allows prospective scholars in related fields to explore fields of concern that may need more exploration and analysis. The study will, furthermore, support recent graduates, provide them with new guidance for doing business, and explain the value of advanced preparation in promoting entrepreneurship. EE is linked to workplace learning and expectations, providing students with practical training and enabling them to position themselves in this new era's competitive job market.

This study can moreover help business students by emphasizing the need to acquire real-world workplace experience so they can quickly land their first business. Meanwhile, it will assist business schools in creating efficient programs and lessons for promoting these requirements, ensuring that graduates possess both academic and practical expertise.

Both government and private institutes should launch and disseminate numerous business schemes and cooperate with universities. This will persuade business graduates to launch their own companies rather than seek a job at the end of their studies. In addition, decision-makers should understand how the SEIs of business students could be maximized by announcing and launching financial support schemes and assisting students using such technologies.

6.2. Limitations and Future Research Directions

Like any other research, the present study has several shortcomings. However, such limitations do not restrict the generalizability of its results. The first limit is related to the sample size, which is relatively small. All participants were studying in Pakistan's ten business schools. Therefore, the authors recommend that future research choose a greater sample size from various disciplines.

This research also includes students who have received EE. This will assist research including people without EE, actual entrepreneurs, and comparing diverse categories of people.

SEI's use as a dependent variable presents a further constraint. Although the relationship between behavioral intentions and conduct has been established in the past and is supported by empirical study [43], additional factors may prevent choices from becoming actions. Future research could include longitudinal data that observes which students become entrepreneurs and follows them over time. This information might also be used to compare their levels of success to validate and improve our findings.

In addition, while our data were acquired from students enrolled in entrepreneurship courses at a university that offered them access to digital technology, the specifics of the program's content, design, and delivery were not taken into account in our study. This information may be useful for identifying specific changes in scope and the tools used to boost ATSE and SEIs. Lastly, our instruments were based solely on perceptual measurements, so our study can only capture students' perceived learning of social media adoption. Future research should explore whether there is a correlation between higher levels of actual knowledge in utilizing digital technology and SEIs and whether ATSE likewise mediates this correlation.

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