


Article

The Environmental Values Play a Role in the Development of Green Entrepreneurship to Achieve Sustainable Entrepreneurial Intention

Nosheena Yasir ^{1,2,3,*} , Muhammad Babar ^{3,4}, Hafiz Shakir Mehmood ^{3,5}, Ruyu Xie ¹ and Guanke Guo ¹

¹ Department of Management, Xi'an Jiaotong University City College, Xi'an 710018, China; xieruyu0513@163.com (R.X.); guoguanke.63@xjtu.edu.cn (G.G.)

² School of Economics and Management, Northwest University, Xi'an 710127, China

³ Sage Education (Pvt.) Limited, 18 KM, Ferozpur Road, Lahore 54600, Pakistan; engr.babar@sust.edu.cn (M.B.); shakir@slc.edu.pk (H.S.M.)

⁴ School of Economics and Management, Shaanxi University of Science and Technology, Xi'an 710021, China

⁵ School of Automation, Northwestern Polytechnical University, Xi'an 710072, China

* Correspondence: nosheena.yaqoob@yahoo.com

Abstract: Business culture is shifting rapidly as a result of discussions emphasizing green entrepreneurship, which emphasizes ecological sustainability. Sustainable entrepreneurship plays a crucial role in predicting economic growth in a world where enterprise is driven by climate change and environmental degradation. Despite the positive contributions of eco-friendly corporate operations, there is still limited knowledge about sustainable entrepreneurial intentions and their environmental value. Current research examines the impact of attitudes toward sustainable entrepreneurship, perceived behavioral control, and subjective norms, as well as environmental value on sustainable entrepreneurial intentions. The study uses survey responses from 418 students in Lahore and Faisalabad, Pakistan, and evaluates a revised version of the theory of planned behavior using structural equation modeling. The findings of the study suggest that environmental value has a direct and indirect impact on attitudes towards sustainable entrepreneurship, and perceived behavioral control and environmental value support sustainable entrepreneurial intentions. However, subjective norms were found to be insignificant in influencing sustainable entrepreneurial intentions. Furthermore, this study explores the connection between environmental values, attitudes towards sustainable entrepreneurship, and how perceived behavioral control is moderated by entrepreneurial experience. Entrepreneurs with prior experience might expect a stronger correlation between their environmental values and their desire to launch a sustainable venture. Policymakers and managers need to prioritize the development of ecological values and sustainable entrepreneurial intentions to support the growth of sustainable enterprises. The findings have significant implications for developing effective strategies to foster sustainable development in businesses.

Keywords: environmental values; green innovation; theory of planned behavior; entrepreneurial experience; sustainable intention



Citation: Yasir, N.; Babar, M.; Mehmood, H.S.; Xie, R.; Guo, G. The Environmental Values Play a Role in the Development of Green Entrepreneurship to Achieve Sustainable Entrepreneurial Intention. *Sustainability* **2023**, *15*, 6451. <https://doi.org/10.3390/su15086451>

Academic Editor: Wen-Hsien Tsai

Received: 10 March 2023

Revised: 30 March 2023

Accepted: 7 April 2023

Published: 10 April 2023



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1. Introduction

Recent years have seen a rise in the number of published works focusing on the steps taken by businesses to foster more ecologically sustainable business practices, especially through the creation and use of green technology [1,2]. This is because global warming and environmental degradation pose the biggest threats to humanity, and a contradiction between economic development and ecological protection has emerged, negatively impacting sustainable development [3,4]. Environmental concerns, unmet social needs, and the financial crisis have all increased their influence on the natural ecosystem and human civilization. Companies are similarly experiencing rising expenses and facing

restrictions on their access to natural resources due to environmental degradation caused by globalization and the impact of climate change [5]. If businesses are serious about worldwide expansion and achieving sustainable growth based on environmental sustainability, they will need to address these environmental challenges. Environmental values, often known as green values, are essential for a sustainable entrepreneurship model [6]. More specifically, “green” business ventures have been gaining popularity [7], and discussions around sustainable entrepreneurship have focused on the crucial role of firms in resolving environmental and social sustainability issues [6,8] as well as finding solutions for cleaner production and technical processes [9]. Consequently, entrepreneurship is increasingly seen as a potential remedy for social injustice and environmental degradation rather than the root cause of these issues [10]. This has led researchers to coin the term “sustainable entrepreneurship” [11] to investigate the interplay between traditional entrepreneurship, society, and the environment.

According to Shepherd and Patzelt [12], sustainable entrepreneurs strive to maximize “gain”, where “gain” broadly includes the economic and non-economic benefits for individuals, the economy, and society. This is done in order to “preserve nature, life support, and community in pursuit of perceived opportunities to bring into existence future products, processes, and services for gain.” Entrepreneurship that considers the needs of future generations is called “sustainable”, and it has been compared to “social” and “environmental” entrepreneurship. However, sustainable entrepreneurship is considered a distinct approach because it integrates the production of environmental, social, and economic values [13]. Sustainable entrepreneurship is defined as the act of creating a business while considering its sustainability, as described in the current research [14]. This involves organizing the company in a way that takes into account multiple economic, social, and ecological factors. While sustainable entrepreneurial intention is an essential component for the motivational change necessary to predict sustainable entrepreneurial behavior [15], it is not the only factor to consider. To what extent are environmental values associated with sustainable entrepreneurial intention? This is an important question to explore in this setting. As concerns about environmental values increase, more and more entrepreneurs are considering how to incorporate sustainable practices into their startups [16]. However, the connection between environmental values and sustainable entrepreneurial intention remains unclear.

Entrepreneurs often prioritize the financial success of their businesses, which may conflict with social and environmental considerations [17]. As the cost of repairing environmental damage increases, the motivation to establish a sustainable business may decrease since economic profitability could be jeopardized [18]. However, a school of thought suggests that sustainable entrepreneurs can create value by establishing a startup that prioritizes sustainability and incorporates environmental concerns. Environmental values represent the beliefs of entrepreneurs in expanding beyond typical economic boundaries and aligning with ecological values [19]. In this way, these values and the practice of sustainable entrepreneurship constitute two systems that reinforce each other [20]. Sustainable entrepreneurs prioritize social and environmental concerns over financial gain [6]. The potential for environmental damage and the difficulty in securing natural resources have prompted entrepreneurs to reevaluate their sustainability practices and desire to engage in sustainable entrepreneurship [21]. Sustainable entrepreneurs aim to create, modify, and integrate processes that lead to sustainable and profitable business opportunities [22]. These objectives provide a platform for new business owners to create something enduring. Therefore, the fundamental or first object of this study is to examine the connection between environmental values and the intention to build a sustainable business. In this context, an entrepreneur’s desire to implement eco-friendly procedures can be seen as an opportunity to create long-lasting initiatives in their current venture or to start a new one from scratch [7]. Studies have shown that there is substantial disagreement over what constitutes an entrepreneurial mindset [23]. The second objective of this paper is to incorporate environmental values into the theory of planned behavior in order to explain intention formation in sustainable entrepreneurship [24] as well as the role of entrepreneurial inten-

tions in sustainable entrepreneurial intentions [25], which is not explicitly considered in the literature. Based on the findings of previous research, this study identifies a significant research gap regarding the environmental challenges faced by Pakistan, including air pollution, water scarcity, deforestation, soil degradation, and climate change [8]. In light of this gap, it is imperative to increase environmental awareness and develop business models that rely on renewable energy in order to mitigate these challenges. Hence, this study aims to address this specific research gap by examining the relationship between environmental values and sustainable entrepreneurial intention; this study provides insights into how individuals' attitudes towards the environment can influence their intentions to engage in sustainable entrepreneurship. The current study focuses on how individuals can cultivate a mindset that promotes sustainable entrepreneurial intentions. Therefore, present entrepreneurial intention models contribute to the research gap by failing to offer a remedy for studying only one particular type of entrepreneur (one who is committed to sustainability). The TPB theory identifies the factors (the researcher's attitude, social norms, and perceived behavior control) that affect the researcher's intention to engage in sustainable entrepreneurship [26], and these notions have been used in fields such as the entrepreneurial intentions of investors [27].

As a result of the third objective of this study, we now understand that successful entrepreneurs require a unique set of knowledge and skills, which are influenced by their prior experiences as entrepreneurs [23]. Research indicates that entrepreneurs with prior experience are more likely to adopt sustainable practices [18], and the same applies to students with prior academic experience in entrepreneurship [16]. However, few studies have investigated the mediating effect of the TPB's antecedents on the relationship between environmental values and sustainable entrepreneurial intention [16]. Sher Ali's [6] study covers a similar topic; however, it only examines environmental and work values as antecedents, without considering entrepreneurial experience as a moderator. However, in the present study, there has been insufficient investigation into the interplay between environmental values as a precursor and entrepreneurial experience as a moderator, specifically in the context of Pakistan. This work aims to address this void. To what extent do experiences affect sustainable entrepreneurial intention? This paper finds that entrepreneurial experience has a moderate effect on the two components (attitude and perceived behavior control) of the theory of planned behavior. Yet it remains unclear how much attitudes toward sustainable entrepreneurship and perceived behavior control influence entrepreneurial intention [16]. Therefore, studies should focus on the following questions: (1) How do environmental concerns factor into the decision to start a sustainable business? (2) To what extent are perceived behavior control and attitudes toward sustainable entrepreneurship influenced by environmental values and the intention to engage in sustainable entrepreneurship? (3) How does experience affect attitudes toward sustainable entrepreneurship and perceived behavior control in this relationship? To examine entrepreneurs' environmental values in the context of Pakistan, researchers must first integrate them into the existing literature on the theory of planned behavior.

Section 2 will provide a comparison and contrast of studies on sustainability and environmental psychology with studies on entrepreneurial intention. Based on this analysis, we will speculate on how environmental values might impact the different stages of intention development in sustainable entrepreneurship. Sections 3 and 4 will detail our research methodology and findings. Section 5 will provide a discussion of the findings in the context of the literature on sustainable entrepreneurship, as well as recommendations for policymakers and educators. Section 6 will discuss the limitations of the study, potential directions for future research, and the conclusion of the article.

2. Literature Review and Hypotheses Development

We will first explore the theoretical underpinnings of the theory of planned behavior. Following this, we will analyze how ideas such as environmental values and sustainable entrepreneurial intention relate to the theory and examine how prior business experience

influences attitude and perceived behavior control variables as moderators pertinent to these ideas. The first part of this paper will provide a literature review on the idea of planned behavior, followed by a discussion of environmental values and sustainable entrepreneurial intention, from which six hypotheses will be derived.

2.1. Development of Sustainable Intention

Entrepreneurship is typically defined as the act of planning and execution. When launching a new venture, entrepreneurs do not simply react to environmental circumstances or “catalytic occurrences”, but rather follow a series of well thought out steps [28]. One of the most commonly used and consistently confirmed theories for modeling entrepreneurial intention development is the theory of planned behavior [28–30]. Therefore, the theory of planned behavior has been used in numerous studies to explain the genesis of non-conventional forms of entrepreneurship, such as social [31] and sustainable [32] enterprises. The theory of planned behavior is widely used because it provides a realistic model of entrepreneurial intentions. Due to its widespread application and validity in the literature on entrepreneurship [24,32], we will primarily focus on the pre-behavioral component of the theory of planned behavior.

The theory of planned behavior (TPB) posits that an individual’s motivation to act is based on their estimation of the likelihood of successfully completing the behavior, as well as their assessment of how desirable the action is. In particular, an individual’s attitude towards entrepreneurship, subjective norms, and sense of behavioral control plays a role in shaping their intentions. The former two elements explain the desire to engage in a specific behavior, while the latter represents judgments on the feasibility and self-efficacy of the behavior. All three factors depend on a person’s conviction that engaging in the behavior in question would provide positive outcomes [24]. Such benefits can be realized within the framework of sustainable entrepreneurship if environmental values are embraced. The interplay of these three variables (personal attitude, social norms, and perceived behavior control) is expected to have an impact on the correlation between environmental values and sustainable entrepreneurial intentions. Further consideration of these factors is provided below.

2.2. Intention Creation and Hypothesis Development in Sustainable Entrepreneurship

The creation of sustainable entrepreneurial intention draws connections between the major variables of the theory of planned behavior—views, attitudes, norms, and behavioral control—and the desire to establish a sustainable firm. Attitudes in the theory of planned behavior reflect an individual’s desire for a particular behavior. Positive attitudes toward becoming a sustainable entrepreneur have been found to have a significant influence on intentions to become a sustainable entrepreneur [32]. Individuals who have a more positive outlook toward sustainable behavior are more likely to put their beliefs into practice [33]. Similarly, individuals who had pro-environmental views are more likely to adopt sustainable business strategies [34]. Therefore, we expect that people’s intentions to launch a sustainable firm will increase if they have a favorable view of sustainable entrepreneurship. Subjective norms indicate the social environment’s influence on individual behavior. Surprisingly, subjective norms had the least impact on conventional entrepreneurial intentions [29]. However, perceived social pressure to implement sustainable technology, such as cleaner production standards, plays an important role in their implementation [35]. Furthermore, Munoz and Dimov [36] demonstrate that perceived social support can be a pathway to sustainable entrepreneurial involvement. Thus, we expect that people will be more likely to form intentions to launch a sustainable firm when they are exposed to strong subjective norms promoting sustainable entrepreneurship. Perceived behavioral control refers to a person’s belief in their own ability to carry out a task [24]. Perceived behavioral control is strongly linked to entrepreneurial intentions, according to the conventional entrepreneurship literature [28,29]. Furthermore, people who feel they have a lot of control over their actions are more likely to achieve them and have higher hopes of accomplishing

set goals in the launch of a successful company [32]. Consequently, perceived behavior control and skill have been highlighted as crucial aspects in the adoption of sustainability measures in a company context [37,38]. The social issues surrounding sustainable development are often viewed as intractable, making this a crucial point. Researchers have used the term “wicked problems” to describe these types of issues [39]. Thus, we expect that people will be more likely to form intentions to launch a sustainable firm when they feel they have a great deal of behavioral control over sustainable entrepreneurship.

Hypothesis 1a (H1a). *The intentions to launch a sustainable enterprise are influenced by a positive attitude toward sustainable entrepreneurship.*

Hypothesis 1b (H1b). *The intentions to launch a sustainable enterprise are positively influenced by societal norms that support sustainable entrepreneurship.*

Hypothesis 1c (H1c). *The intentions to start a sustainable enterprise is positively influenced by a high perceived behavioral control of becoming a sustainable entrepreneur.*

2.3. Environmental Values and Sustainable Entrepreneurial Intention

An entrepreneur’s values are significant indicators of his or her attitude, perception, and behavior with respect to sustainable entrepreneurship [40]. Environmental values in the context of sustainable entrepreneurship refer to the principles and beliefs that guide a business in its commitment to protecting and preserving the natural environment [6]. This includes the recognition of the interconnectedness between the environment, society, and the economy and the importance of balancing these three values for long-term sustainability [37]. These values are rooted in the country’s cultural and religious traditions that emphasize the responsible use of resources and respect for nature. It is for this simple reason that environmental entrepreneurship has recently risen to the fore as a major driving force in the direction of achieving sustainable development goals. Entrepreneurs’ mindsets have shifted, particularly in industrialized nations, and they have begun to consider the environmental effects of their entrepreneurial activities [41]. As a result, the emphasis has turned to environment-centered entrepreneurship, which will not only address the challenges of deteriorating the environment and climate change, but will also contribute to long-term green economic growth [42]. Therefore, environmental values are not only good for the business ecosystem as a whole, but also increase the environmental performance of new firms. There is a growing mentality among entrepreneurs to start something fresh. Sustainable entrepreneurship involves a commitment to either creating a new business from the ground up or re-establishing the company’s core intentions within the existing organization. Sustainable entrepreneurial intention is linked to an entrepreneur’s intention to create new core values, especially in the area of environmental values [26]. Because of growing concerns about the environment and the depletion of natural resources, more and more businesses and entrepreneurs are making the conscious decision to operate in sustainable entrepreneurship [16]. Furthermore, sustainable entrepreneurship should be fostered so that new solutions to waste reduction and natural resource depletion issues can be developed [43]. All types of entrepreneurs rely on nature to produce, survive, and thrive (for example, raw materials from nature and the air that workers breathe), which motivates entrepreneurs to prioritize environmental sustainability.

Hypothesis 2 (H2). *There will be a positive relationship between environmental values and sustainable entrepreneurial intention.*

2.4. Mediation Effect of Attitude and Perceived Behavior Control between Environmental Values and Sustainable Entrepreneurial Intention

The majority of environmental issues are mostly the result of human activities and behaviors. Many researchers and scientists have been drawn to environmentally responsible behavior in recent years. Basic remedies necessitate modifying people's environmental behaviors [44,45]. Hence, pro-environmental behaviors are a collection of people's conscious actions toward the environment that include a wide range of specific emotions, desires, and dispositions for environmentally optimal intentions. Environmental value has been identified as another type of work value in the existing literature on social entrepreneurship [46]. Environmental values characterize the selfless actions of individuals such as universalism, empathy, and altruism that lead them to enthusiastically protect their local ecosystem and their fellow humans [47]. On the other hand, individual preferences are defined by factors such as employment security, stability, and social cohesion rather than environmental value [46]. According to the study by Douglas and Shepherd [48], entrepreneurial activity is correlated with a willingness to take risks, which could have implications for environmental protection efforts. Given the current state of environmental degradation, sustainable entrepreneurs may feel compelled to consider environmental protection measures when launching an enterprise. These entrepreneurs prioritize environmental values when creating business value, as they anticipate benefits and advantages within the enterprise [6].

The extent to which sustainable practices are implemented can help entrepreneurs identify and generate environmental values. When environmental values are widely recognized, valued, and popularized, entrepreneurs are better able to tailor their efforts toward implementing sustainable behavior [14]. The degree to which entrepreneurs intend to pursue sustainability is also affected by the recognition of environmental value. A more positive attitude toward sustainable entrepreneurship can make sustainable efforts more practical and achievable [1]. A positive attitude forms the basis for entrepreneurial inspiration and conduct [24]. Entrepreneurs with a positive attitude are more likely to seize opportunities to create value in their environment, increasing the likelihood that their intentions will materialize into sustainable entrepreneurship [16]. Their attitude also promotes the long-term durability of the link between environmental values and sustainable entrepreneurial intentions.

Perceived behavioral control, which reflects an individual's personal perception of their ability to perform and control behavior, can serve as an additional direct predictor of behavior [49]. Perceived behavioral control is considered superior to two other antecedents, perceived self-efficacy and perceived controllability [50], and it is used to conceptualize feasibility. Similar to self-efficacy [51], perceived behavioral control reflects the extent to which an individual believes they are capable of performing a specific behavior [24].

Perceived behavioral control is the result of control beliefs, which include confidence in one's abilities and an awareness of potential enabling and constraining factors. Thus, sustainable entrepreneurial intention influences entrepreneurs' perceived behavioral control, serving as a predictor of the intention to establish sustainable entrepreneurship [14]. Environmental values encourage entrepreneurs to prioritize the development of enterprise sustainability. Perceived behavioral control enhances entrepreneurs' confidence in translating environmental values into sustainable behavior. Therefore, perceived behavioral control facilitates the realization of sustainability objectives, such as energy efficiency requirements [32].

Entrepreneurs with higher perceived behavioral control are better suited to use environmental values to bring about sustainable activities within their organizations [6]. These activities could help minimize the usage of limited materials, reduce waste, limit the use of remaining resources and energy, and kick start the development of new products to improve long-term sustainability. Environmental values may accelerate the transition to sustainable entrepreneurial behavior by increasing the perceived behavioral control of entrepreneurs.

Hypothesis 3 (H3). *The relationship between environmental values and the intention to engage in sustainable entrepreneurship is mediated by the attitude toward sustainable entrepreneurship.*

Hypothesis 4 (H4). *The relationship between environmental values and sustainable entrepreneurial intention will be mediated by the perceived behavior control.*

2.5. Moderating Effect of Entrepreneurial Experiences on Attitude and Perceived Behavior Control

Furthermore, experience is a significant source of the entrepreneurial process of learning, which is tied to one's initial degree of experience, intellectual characteristics, and entrepreneurial dispositions that can help entrepreneurs organize and manage a new firm [52]. In other words, business knowledge enables entrepreneurs to examine business opportunities with greater rigor; the number of opportunities perceived [53] and regarded as feasible, including anticipated prospects for sustainable entrepreneurship, will decrease with business and entrepreneurial experience. This is because opportunities for sustainable entrepreneurship are correlated with a diminished degree of organizational legitimacy. Despite the fact that such endeavors rank highly in terms of their moral plausibility [54], they are likely to rank poorly in terms of pragmatic legitimacy given their inherent innovativeness. Realizing chances for sustainable entrepreneurship could be more challenging than realizing potential in more traditional fields because of this lack of pragmatic legitimacy. There is a correlation between participants' prior experiences with environmental concerns and their ability to promote sustainable entrepreneurship. Ernst [55] also found that one's attitude predicted one's propensity to engage in environmentally-conscious entrepreneurship and perceived behavior control.

The environment can be a crucial accelerator for successful sustainable entrepreneurship [16], and entrepreneurs' experiences help them recognize the importance of this fundamental relationship. Entrepreneurs who are keenly attuned to the importance of creating green value may rely on their successes to guide them as they apply rational and scientific approaches to turn their good intentions into sustainable entrepreneurial behavior [56]. These factors have a rapid effect on an entrepreneur's attitude on sustainable entrepreneurship [16], with a positive and strong attitude clearly favoring the establishment of an intention to launch a new sustainable company [57]. Many different types of experiences are appropriate for entrepreneurs who want to participate in sustainability and are based on identifying, developing, and utilizing environmental values [32]. Entrepreneurs can lower the likelihood of failure by drawing on their prior experiences. The reverse side of this is that it boosts entrepreneurs' self-assurance and their ability to complete specific tasks [10]. The right amount of experience allows for greater perceived behavior control and assists entrepreneurs in times of crisis, particularly when implementing environmental protection or resource recycling strategies. Based on what has been stated, we can make the following assumptions (Figure 1):

Hypothesis 5 (H5). *The relationship between environmental values and an attitude towards sustainable entrepreneurship will be positively moderated by entrepreneurial experience.*

Hypothesis 6 (H6). *The relationship between entrepreneurs' environmental values and their perceived behavior control will be positively moderated by the entrepreneurial experience.*

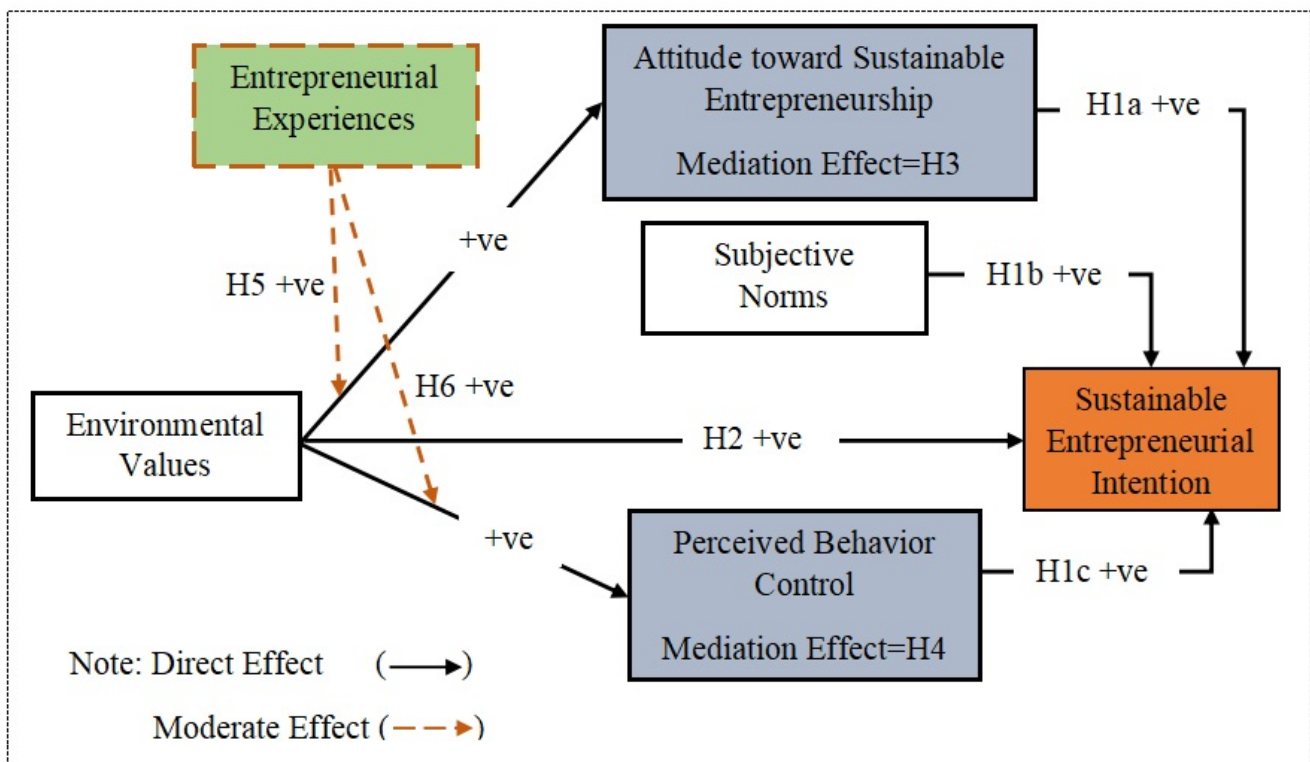


Figure 1. Research hypothesis model developed in this study.

3. Data and Method

3.1. Research Design

The purpose of this section is to introduce the methodological approach employed in this study, which aims to fill important theoretical gaps by analyzing the literature on environmental values-based entrepreneurial intention models, with a particular focus on major environmental values, sustainable intention attitudes, subjective norms, and perceived behavior control, as well as entrepreneurial experience [58]. A survey was used as the main source of information in this investigation. Due to the sensitivity of deliberate processes to initial conditions [59], we used a sample of Pakistani university students. Therefore, it is not only vital to measure sustainable entrepreneurial intention prior to actual action, but also necessary to include individuals who have no intention of starting a (sustainable) enterprise [28].

University students will have a significant impact on the structure of the country's economy in the coming years. It is important to note that university students are the future workforce and leaders of the country. As such, their education and training are critical in shaping their values, attitudes, and behaviors towards sustainable development. In terms of sustainable development goals, university students can act as catalysts for achieving these goals if they are properly trained and leveraged [60]. For example, university students can be trained in sustainable business practices, renewable energy, and social entrepreneurship, among other areas. They can also be engaged in community-based projects that promote sustainable development, such as eco-tourism or waste reduction initiatives. In this way, university students can help to create a culture of sustainability and innovation that can contribute to the achievement of sustainable development goals. Additionally, studies have shown that university degrees encourage entrepreneurship, especially when students are close to deciding on an occupation [61]. The constructs were examined through pre-testing 60 students from 4 to 6 different universities to reach a conclusion for the questionnaire for actual data collection. Before beginning the proper data collection through the pilot study, the validity and reliability of the constructs were prioritized. Data from 60 students were collected to complete the pilot study, and the

instrument was amended based on the suggestions of the pilot test respondents. We used the convenience sampling technique, which has been widely used in entrepreneurship research despite concerns about generalizability [28,62].

3.2. Measurement Scale

The study title, research objectives, demographic information about the students, and a 5-point scale are all included in the final questionnaire. The instrument items for each construct are listed in Table 1. A 5-point Likert scale was used, with 1 representing “strongly disagree” and 5 representing “strongly agree”. To measure sustainable entrepreneurial intentions and other proposed theoretical frameworks, the researcher chose authentic and reliable scales. The measured items for environmental values were adapted from Mair and Noboa [63]. Braun’s [64] research was used to assess attitudes toward sustainable entrepreneurship. Subjective norms and perceived behavioral control were assessed by modifying the work of Moriano et al. [30], McGee [65], and Ajzen [49]. Furthermore, the construct for mapping sustainable entrepreneurial intentions was adapted from Autio et al. [66] and Linan Chen’s [29] work. The experience measures (three items) all originated from an instrument created by Hockerts [67].

Table 1. Adapted measurement of the constructs.

Constructs	Items	Statement
Environmental Values (EV)	EV1	A job that allows me to help save the environment.
	EV2	A role that necessitates a concern for the natural world.
	EV3	A profession that can help make the world a better place.
	EV4	A position that will allow me to work directly with the underprivileged of our society.
	EV5	A job that is more valuable to society’s most vulnerable members.
	EV6	A job that will provide me with income and job opportunities.
Entrepreneurial Experience (EE)	EX1	I have some experience addressing socioeconomic issues.
	EX2	I have worked as a volunteer or otherwise with sustainable enterprises.
	EX3	I have extensive knowledge of sustainable social enterprises.
Attitude towards Sustainable Entrepreneurship (ASE)	ASE1	Modern industrial impacts on nature are minimal.
	ASE2	The equilibrium of nature is fragile and easily disturbed.
	ASE3	Humans have the right to alter the natural environment to meet their requirements.
	ASE4	Human interference with nature frequently has disastrous consequences.
	ASE5	If nothing changes, we will soon face a major environmental disaster.
	ASE6	The environmental crisis has been greatly exaggerated.
	ASE7	The earth’s space and resources are limited.

Table 1. Cont.

Constructs	Items	Statement
Subjective Norms (SN)	SN1	Your close family.
	SN2	Your friends.
	SN3	Your fellow students.
Perceived Behavior Control (PBC)	PBC1	Locate a product or service gap in the market that can help with sustainability.
	PBC2	Create a customer-pleasing, environmentally responsible product or service.
	PBC3	Calculate customer demand for a sustainable product or service.
	PBC4	Determine a reasonable price for a sustainable product or service.
	PBC5	Estimate the amount of funds and working capital required for my long-term business.
	PBC6	Get others to recognize and support my vision and plans for a sustainable business.
Sustainable Entrepreneurial Intention (SEI)	SEI1	In my business, we will put an emphasis on doing well (employment creation, poverty reduction, and life quality enhancement).
	SEI2	My business will prioritize environmental considerations over financial benefit if it means conserving the environment (including biodiversity, energy, and natural resource sustainability).
	SEI3	If I were to establish a business, it would promote sustainable development.
	SEI4	If I were to start my own business, I would prioritize societal benefits over financial gains.
	SEI5	In the next five years, I hope to start a business that addresses a problem related to environmental sustainability.
	SEI6	I want to build a sustainable company.

3.3. Common Method Variance

In order to mitigate the effects of common method bias and improve the reliability of interviewee responses, we reversed one of the intention scales, as advised by Podsakoff et al. [68]. In this study, we used the one-factor test proposed by Harman [69] to address the issue of CMV bias [68]. This study did not find any notable concern regarding common method variance (CMV), as the major component accounted for less than 50% of the variation (31.16%). Therefore, it appears that the common method bias is not a major issue in this research [68].

3.4. Data Analysis Method

In this study, we utilized structural equation modeling (SEM) and AMOS version 7.0 software, with guidance from Byrne [70] and SPSS statistics, to analyze the data. These tools proved useful in handling the complexities of our measurement model. The following sections cover the assessment of internal and external validity, hypothesis testing, and mediation and moderation analysis.

3.5. Normality Test

The respondents' high sustainable entrepreneurial intention was reflected in the maximum, minimum, mean, and standard deviation values of all factors. To assess the normality of the data, descriptive statistics were used, including an analysis of skewness and kurtosis. A distribution is considered normal if both skewness and kurtosis fall between ± 1.0 . Otherwise, the data are non-normal if the skewness and kurtosis exceed ± 1.0 . Based on the results, the data were found to be roughly normally distributed [71]. Both the descriptive statistics and normality test indicated that the data were normal, as all values were within the acceptable range, as shown in Table 2.

Table 2. Descriptive Statistics of Structures Exhibiting Skewness and Kurtosis.

Constructs	N	Minimum	Maximum	Mean	St. Dev.	Skewness	Kurtosis
EV	418	1.00	5.00	3.8413	0.60336	−0.329	−0.369
EE	418	1.00	5.00	3.6104	1.04695	−0.303	−1.418
ASE	418	1.00	5.00	3.9641	0.82108	−1.073	0.466
SN	418	1.00	5.00	3.6890	0.98950	−0.536	−1.179
PBC	418	1.00	5.00	3.6754	1.06700	−0.386	−1.431
SEI	418	1.00	5.00	3.8596	0.89137	−1.001	0.283

EV = Environmental value, EE = Entrepreneurial Experience, ASE = Attitude towards Sustainable Entrepreneurship, SN = Social Norms, PBC = Perceived Behavior Control, and SEI = Sustainable Entrepreneurial Intention.

3.6. Data Collection

Between September and December 2021, a quantitative research design was employed to collect data from enrolled university students in 2 metropolitan cities in Punjab province, namely Lahore and Faisalabad. These cities were purposively chosen due to their economic significance and central location, with Lahore serving as the economic center of central Punjab and Faisalabad developing into a major industrial and distribution hub with access to multiple transportation modes. The data collection process began with the random selection of 10 universities from a total of 66 in the province. A total of 10 universities were randomly selected from a pool of 66 universities in the Punjab province, resulting in a sample of 418 respondents, after 6% of the incomplete or ineligible responses were removed ($35 > \text{age} > 18$). The age of the typical study participant was 24 years, which is consistent with the age of university students in Lahore and Faisalabad. Of the 418 respondents, 251 were male (60%) and 167 were female (40%), and all were in their final semester. The participants were enrolled in various academic fields, with 38.8% studying business, 33.7% studying engineering, 15.8% studying agriculture, and 11.7% studying information technology. The survey also revealed that 59.3% of the participants had received sustainable entrepreneurship education, while 54.5% had a background in the green economy, as shown in Table 3.

Table 3. Demographics of the Study.

Measures	Items	Numbers	Percentage
Gender	Male	251	60%
	Female	167	40%
Age	Less than 25	285	68.2%
	Above 25	133	31.8%
Scientific domains	Engineering	141	33.7%
	Business	162	38.8%
	Agriculture	66	15.8%
	Information technology	49	11.7%
Sustainable Entrepreneur Education	Yes	248	59.3%
	No	170	40.7%
Context green economy	Yes	228	58.5%
	No	190	45.5%

4. Theoretical Framework and Empirical Investigation

4.1. Measurement of the Model

For this data study, we employed a technique called confirmatory factor analysis to check for reliability and validity, both internally and externally. Cronbach's alpha, factor loadings, and composite reliability were all above the threshold of 0.07, indicating high internal consistency for the measurement and meeting the suggested value as proposed in suggestions from Hair et al. [72]. The average value extracted (AVE) was utilized to examine the variables' convergent validity. In addition, the variance extracted for each construct was observed to be greater than 0.50, as evidenced by the current body of literature [73], as shown in Table 4.

Table 4. Reliability and validity of the constructs.

Construct	Item	Loading	Alpha	CR	AVE
Environmental Values [63]	EV1	0.814	0.908	0.929	0.685
	EV2	0.852			
	EV3	0.793			
	EV4	0.838			
	EV5	0.837			
	EV6	0.832			
Attitude towards Sustainable Entrepreneurship [64]	ASE1	0.807	0.937	0.950	0.762
	ASE2	0.889			
	ASE3	0.892			
	ASE4	0.872			
	ASE5	0.889			
	ASE6	0.889			
Subjective Norms [30]	SN1	0.882	0.869	0.920	0.793
	SN2	0.909			
	SN3	0.880			
Perceived Behavior Control Behavior [49,65]	PBC1	0.708	0.896	0.911	0.658
	PBC2	0.838			
	PBC3	0.831			
	PBC4	0.817			
	PBC5	0.850			
	PBC6	0.817			
Sustainable Entrepreneurial Intention [29,66]	SEI1	0.828	0.885	0.912	0.633
	SEI2	0.835			
	SEI3	0.745			
	SEI4	0.814			
	SEI5	0.792			
	SEI6	0.757			
Entrepreneurial Experience [67]	EX1	0.852	0.825	0.895	0.739
	EX2	0.871			
	EX3	0.856			

4.2. Discriminant Validity

The current study's construct was subjected to a validity check using the Fornell–Larcker criterion to determine its ability to distinguish between groups. To establish discriminant validity as per the Fornell–Larcker criterion, the average variance extracted (AVE) of the latent construct must have a higher squared correlation than the model's most highly correlated variable. The results in Table 5 indicate that all constructs met the Fornell–Larcker criterion [74], confirming that discriminant validity was achieved. Therefore, the study's various constructs demonstrated discriminant validity, and the findings established the study's discriminant validity.

Table 5. Discriminant validity of constructs.

Constructs	EV	EE	CGE	ASE	SN	PBC	SEI	EX
EV	0.827							
SEEA	0.211	1						
CGEA	0.127	0.206	1					
ATE	0.420	0.479	−0.097	0.872				
SN	0.640	0.680	−0.176	0.503	0.890			
PBC	0.378	0.455	−0.022	0.548	0.457	0.811		
SEI	0.397	0.384	−0.065	0.476	0.453	0.590	0.795	
EX	0.644	0.607	−0.131	0.417	0.644	0.413	0.358	0.859

EV = Environmental Values, a = control variables = sustainable entrepreneur education and context green economy. ASE = Attitude towards Sustainable Entrepreneurship, EX = Entrepreneurial Experience, SN: Subjective Norms, PBC: Perceived Behavior Control, and SEI: Sustainable Entrepreneurial Intentions.

As a component of the confirmatory factor analysis, we evaluated the model's fitness in addition to assessing its internal and external validity. The model's fitness was also assessed by SPSS AMOS, using a maximum likelihood estimate to establish the validity of each variable via CFA. Table 6 displays the goodness-of-fit indices, their acceptable thresholds, and the actual values obtained for the model. According to Hair et al. [75] and Zainudin [76], it is advisable to use a minimum of three distinct fitness indicators, including one from each category of model fit: absolute fit, incremental fit, and parsimonious fit. Based on the literature surveyed earlier, researchers should report on at least one fitness measure from each category. In this study, we found that at least one index from each of the three fitness categories fell within an acceptable range, indicating that the model had good fit. The details are presented in Table 6.

Table 6. Evaluation of Model Fitness.

Name of Category	Name of Index	Level of Acceptance	Result Extracted from Fit Model
Absolute Fit	Chi-Square	$p < 0.01$	$p = 000$
	Root mean square error of approximation	RMSEA < 0.08	RMSEA = 0.03
Incremental Fit	Goodness-of-fit-index	GFI > 0.90	GFI = 0.93
	Comparative-fit-index	CFI > 0.90	CFI = 0.95
	Tucker–Lewis index	TLI > 0.90	TLI = 0.94
Parsimonious Fit	Chi-Square/DF = Ration	Ration < 5.0	Ration = 3.43

4.3. Measurement of Structural Model

The results of the structural equation modeling are presented in Table 7, along with standardized regression weights and Figure 2. The findings related to the control variables were in line with our expectations. Specifically, the results indicated a positive and significant correlation between education on intentions to become a sustainable entrepreneur, with a path coefficient ($\beta = 0.163, p < 0.05$). Likewise, the second control variable, “context

green economy”, which refers to whether a startup team pursues a product or service idea that can be attributed to a green market economy, showed a positive and significant effect on the dependent variable “sustainable entrepreneurial intentions” with a path coefficient ($\beta = 0.191, p < 0.01$). Furthermore, the study’s results provide additional support for the direct relationship between environmental values and attitudes towards sustainable entrepreneurship. This is demonstrated by the positive and significant path coefficient for environmental values ($\beta = 0.270, p < 0.001$), which further strengthens the link between environmental values and attitudes towards sustainable entrepreneurship. These findings imply that an individual’s perspective on the value of the environment is a significant influence on their attitudes towards pursuing sustainable business practices. These observations are consistent with Lyons et al.’s research [47], which also found a similar connection between the value of the environment and the adoption of sustainable entrepreneurship. Likewise, the results provide support for the direct link between environmental values and perceived behavior control, with a path coefficient value of ($\beta = 0.382, p < 0.01$). These findings align with the previous research on environmental values and their positive correlation with entrepreneurial intentions, which Patzelt and Shepherd [12] identified as a significant driver of sustainability intentions. Therefore, these findings are consistent with the existing literature and further emphasize the importance of environmental values in shaping perceptions of behavior control towards sustainable entrepreneurship.

Table 7. Direct Relation of Path Analysis.

Hypothesis	Constructs	Std. Estimate	SE	Z. Values	p. Values	Status
Control variable	SEE	0.163	0.058	2.812	0.05	Supportive
Control variable	CGE	0.191	0.077	2.490	0.01	Supportive
	EN→ATE	0.270	0.052	5.192	0.001	Supportive
	EN→PBC	0.382	0.089	4.365	0.01	Supportive
H1a	ATE→SEI	0.168	0.049	3.456	0.05	Supportive
H1b	SN→SEI	−0.12	0.073	1.531	0.125	Not supportive
H1c	PBC→SEI	0.071	0.026	2.730	0.01	Supportive
H2	EV→SEI	0.077	0.019	4.16	0.01	Supportive

Note: Point estimation = Standardized Coefficient, SE = Standard Error, Z = Z value, $p = p$ value.

Thirdly, Table 7 presents the results of the path analysis, which examines the directional relationship between attitudes, norms, levels of self-perceived behavioral control, and intentions to launch a new environmentally responsible company, as proposed in Hypothesis 1. As shown in Figure 2, both attitudes ($\beta = 0.168, p < 0.05$) and perceived behavioral control ($\beta = 0.071, p < 0.01$) were positively and significantly associated with the intention to engage in sustainable entrepreneurship, thereby validating hypotheses H1a and H1c. It is noteworthy that the perceived support from the social network appears to have less importance, as indicated by the findings. The correlation between subjective norms and intentions was non-significant ($p > 0.125$), with a practical value of 0.12. Therefore, Hypothesis 1b was not supported by the evidence, which is consistent with findings for traditional forms of entrepreneurship as reported by Krueger et al. [28]. On the other hand, the results for the relationship between environmental values and the intention to engage in environmentally responsible business supported Hypothesis 2. Specifically, the correlation was positive and statistically significant ($\beta = 0.077, p < 0.01$), providing further support for the importance of environmental values in shaping sustainable entrepreneurial intentions.

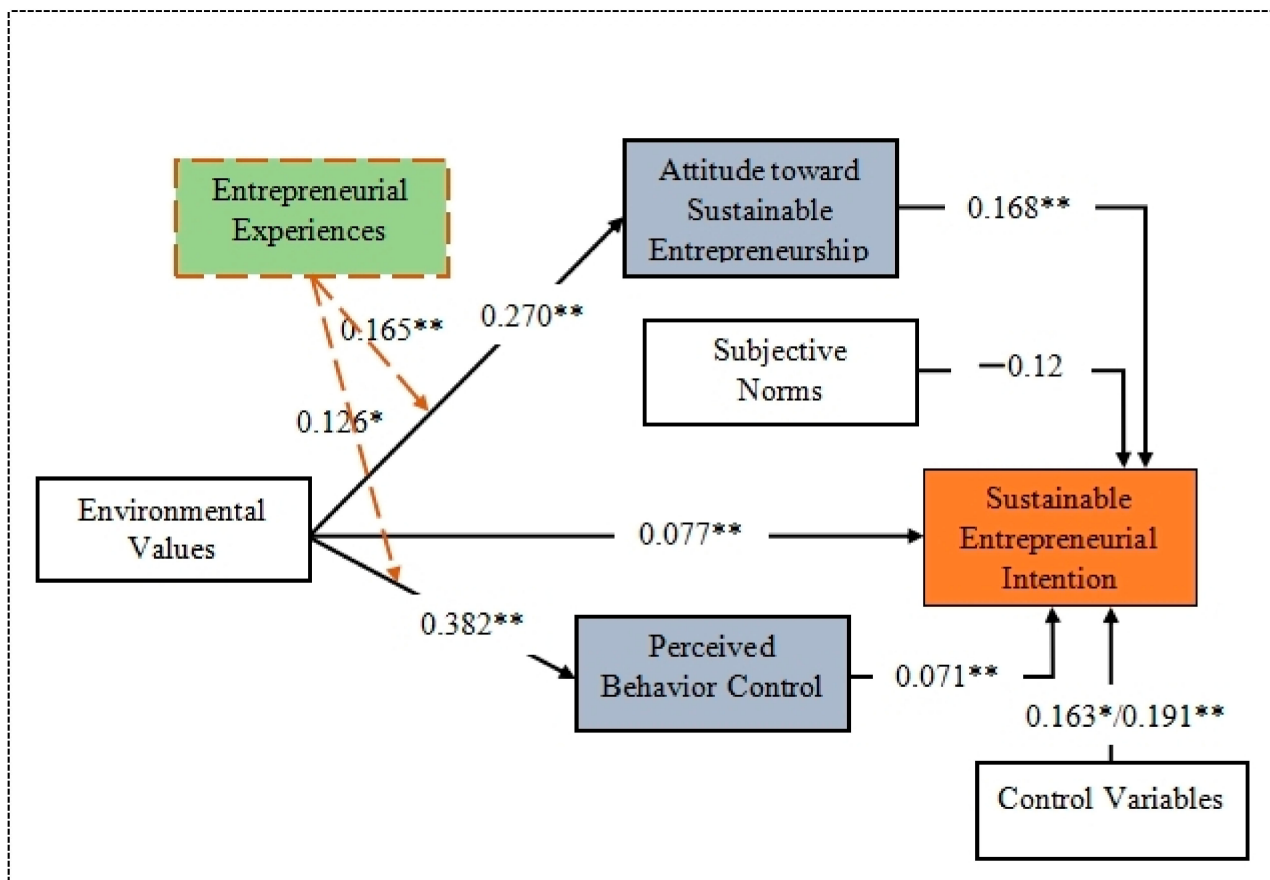


Figure 2. A Sustainable Model Incorporating Environmental Values and Sustainable Intentions to Standardize Route Coefficients. Note. * $p < 0.05$, ** $p < 0.01$.

4.4. Mediation Analysis of the Study

We utilized a bootstrapping technique with 5000 iterations to investigate the role of attitude towards sustainable entrepreneurship and perceived behavior control as an intermediary. To perform this analysis, we followed the analytical strategy recommended by Preacher and Hayes [77]. Our findings revealed a significant mediating effect of environmental value on sustainable entrepreneurial intention through ASE, supporting hypothesis H3 (EV → ASE → SEI). The 95% confidence interval, which did not include the value 0, provided further evidence of this effect. Detailed results of the mediation analysis are reported in Table 8. Table 7 revealed a significant direct relationship between environmental values and sustainable entrepreneurial intention ($\beta = 0.077$, $p < 0.01$) in our study. These results indicate that the influence of environmental value on sustainable entrepreneurial intention was partly mediated by attitude towards sustainable entrepreneurship, as evidenced by the significant mediation effect reported in Table 8. As per Hypothesis 4, we posited that the impact of environmental value on sustainable entrepreneurial intention would be mediated by perceived behavior control. Our results showed that there was indeed a significant indirect effect of environmental value on sustainable entrepreneurial intention via perceived behavior control, as supported by H4 (EV → PBC → SEI) in our study.

Our study found that the indirect effect of environmental value on sustainable entrepreneurial intention through perceived behavior control was statistically significant, as indicated by the 95% confidence interval of PBC and H4 (EV → PBC → SEI) not including 0. This validates Hypothesis 4, which suggests that perceived behavior control mediates the relationship between environmental value and sustainable entrepreneurial intention. Notably, we found that the direct effect of environmental value on perceived behavior control was significant ($\beta = 0.382$, $p < 0.01$) in Table 7, which partially explains the mediating

role of perceived behavior control. Our findings indicate that perceived behavior control played a partial mediating role in the relationship between environmental values and sustainable entrepreneurship. To assess the extent of the mediating effect, we examined the direct effects of environmental value on sustainable entrepreneurial intention when the mediator was considered. Our analysis revealed that environmental value was still able to significantly predict the dependent variable in the presence of the mediator, suggesting a partial mediating influence in one direction. However, in the opposite direction, we observed a full mediating effect [78]. Refer to Table 8 for detailed results.

Table 8. Mediating Effect.

Hypotheses	Path	Point Estimation	5000 Times 95% CI		Status
			Bias-Corrected Percentile Boot LLCI	Boot ULCI	
H3	EV→ATS→SEI	−0.06	−0.02	−0.09	Supportive
H4	EV→PBC→SEI	0.012	0.11	0.05	Supportive

4.5. To Account for Moderate Relationships, the Suggested Model Employs Hierarchical Regression Analysis

We evaluated the fitness of the proposed model using SPSS AMOS, and the results showed that the model fit the data well: $\chi^2 = 4481.422$ ($p < 0.001$), $df = 2696$, $\chi^2/df = 1.662$, $GFI = 0.931$, $TLI = 0.946$, $NFI = 0.950$, $CFI = 0.901$, and $RMSEA = 0.036$. Of the six proposed hypotheses, all but one part of Hypotheses 1 (subjective norms H2b) were found to be insignificant in the current model. Notably, we found that environmental value was the most salient determinant of attitude toward sustainable entrepreneurship and perceived behavior control. Furthermore, our analysis revealed that perceived behavior control had a greater impact than attitudes toward sustainable entrepreneurship in shaping sustainable entrepreneurial intentions. Hence, we can infer that perceived behavior control, as an intrinsic factor, plays a crucial role in sustaining sustainable entrepreneurial intentions by acting as a powerful driving force. In contrast, the external factor of attitude appears to have a less prominent role in this context.

A graphical representation of the obtained results can be seen in Figure 2. Based on the research paper on environmental values and attitudes toward sustainable entrepreneurship, the moderating effect of entrepreneurial experience on sustainable entrepreneurial intention may be due to some factors. One possible reason is that individuals with more entrepreneurial experience may have a better understanding of the market and the business environment. Experienced entrepreneurs may have a greater sense of self-efficacy, which is essential for sustainable entrepreneurial intention. Additionally, experienced entrepreneurs may have a more developed network of contacts, which can facilitate access to the resources, information, and financing necessary for sustainable entrepreneurship, as well as in the relationship between environmental value and perceived levels of behavioral control, and individuals with more entrepreneurial experience may have greater perceived control over their behavior, including their ability to act sustainably. This sense of control may arise from their previous experiences in identifying and pursuing entrepreneurial opportunities and overcoming obstacles in the business environment. Moreover, experienced entrepreneurs may also have a better understanding of the potential benefits of sustainability for their business, including improved customer loyalty, increased employee motivation, and reduced costs through resource efficiency. This understanding may further strengthen their intention to engage in sustainable entrepreneurship, hence supporting Hypotheses H5 and H6. Hierarchical regression analysis was performed, with the following computations: $B = 0.165$, $p = 0.05$ for the relationship between environmental value and sustainable entrepreneurship attitude, and $B = 0.126$, $p = 0.5$ for the relationship between environmental value and perceived levels of behavioral control. The results of the moderation analysis can be found in Table 9.

Table 9. Moderating Hierarchical Regression.

Variables	Model 1	Model 2	Sig	Status
H5. In terms of environmental values and attitude towards sustainable entrepreneurship, entrepreneurial experience has a moderate relation to environmental values				
Step–1				
EV	0.042 **			
ATE	0.385 *			
R2	0.243			
Step–2				
EV × ATE		0.165 **	0.02	Supportive
R2		0.262		
Adjusted R2		0.017		
H6. Entrepreneurial Experience is moderating between environmental values and perceived behavior control				
Step–1				
E. v	0.286 *			
PBC	0.0340 **			
R2	0.268			
Step–2				
E.V × PBC		0.126 *	0.031	Supportive
R2		0.282		
Adjusted R2		–0.015		

* = $p < 0.05$, ** = $p < 0.01$, EV = Environmental Value, ATE = Attitude towards Sustainable Entrepreneurship, PBC = Perceived Behavior Control.

5. Discussion

This section summarizes the key findings regarding the impact of the external factor ‘environmental value’ on sustainable entrepreneurial intention, along with the reasons for the observed relationships. Additionally, a unique mediation of ‘attitude toward sustainable entrepreneurship’ and ‘perceived behavioral control’ is presented, validating their predictive role in sustainable entrepreneurial intention. Furthermore, the moderating effect of ‘entrepreneurial experience’ on sustainable entrepreneurial intention is discussed.

Firstly, the current study added two control variables, sustainable entrepreneurial education and a green context economy, to account for context-related explanations of environment-based sustainable entrepreneurial intention. These included sustainable entrepreneurial education and a green context economy, which have been widely associated with starting an environment-based sustainable business. Our study found that taking a specific course on sustainable entrepreneurship has a good correlation with entrepreneurial intentions. As a result, our findings support previous research that has advocated for the inclusion of sustainable entrepreneurship curricula [56]. In addition, Lans et al. [79] demonstrated that integrating specific entrepreneurial and sustainability-related competencies is advantageous for tracking the sustainable entrepreneurial development process of students. Another factor that may influence the dependent variable of sustainable entrepreneurial intention in business activity is the presence of a green context economy. This phenomenon is referred to as “green context economy” in the current paper. It refers to finding market prospects for sustainable technology or services and developing and deploying a suitable green technology [80]. For example, Malen and Marcus [81] define “entrepreneurship in renewable energy technology” as the discovery, evaluation, and utilization of products and services incorporating leading renewable energy technologies to lessen traditional energy generation and distribution’s significant environmental consequences and consumption. Green context economy has a significant positive effect on sustainable entrepreneurial intention in the current study.

Secondly, environmental values have a direct and favorable influence on attitudes toward sustainable enterprises and perceived behavioral control [16]. Entrepreneurs that have a positive attitude toward sustainability are more likely to launch a sustainable enterprise [82]. A positive attitude helps entrepreneurs improve the balance of values connected to people–profit–planet, resulting in sustainable enterprise [82,83]. Entrepreneurs are concerned about investing time and resources into environmental values, which increases the risk associated with beginning a business without producing profit. People with a positive attitude toward environmental values believe that following these values will promote the prevalence and success of sustainable entrepreneurship [6]. The intention to reap the benefits of environmental preservation and value development [6] can be bolstered by a sustainable entrepreneur’s faith in their ability to succeed in a startup. Perceived control of one’s behavior is a major source of confidence; it may persuade startup founders to prioritize environmental values and take greater control of their operations from the start in the hopes of boosting potential for sustainable entrepreneurial growth and environmental effectiveness [84].

Thirdly, the findings of Hypothesis 1 are about the influence of attitudes, norms, and perceived behavioral control in shaping intentions to start a new sustainable enterprise. As a direct consequence of this, we contributed to the ongoing conversation regarding the numerous human and societal elements that play a role in the decision-making process involved in the process of becoming a sustainable entrepreneur. While there are occasional instances of linking environmental concerns with social responsibility in industry standards [85], it might be challenging for entrepreneurs to launch a new sustainable business at the societal level. Therefore, the present research was not supported by the subjective norms of the sample. Consequently, social drivers such as perceived network support and approval would reduce the inclination to engage in sustainable entrepreneurship [86]. Subjective norms showed less significance than attitudes and perceived behavioral control, which obtained substantial support. These data suggest that the intention to launch a sustainable business is unrelated to the perception of social network approbation [87]. While entrepreneurs have traditionally been motivated by financial gain, an increasing number of sustainable entrepreneurs are shifting their focus to greening their company’s bottom line in order to solve environmental concerns [88]. Our research will inspire company entrepreneurs to make choices based on environmental values, which could lead to chances for them to create environmentally responsible companies. This seems to run counter to what we know about what it takes to be a sustainable entrepreneur, wherein resources and other forms of support from one’s social network play a significant role [36]. Enterprises that focus on environmental sustainability are more likely to adopt novel practices, which in turn boosts environmental values and introduces new markets [89]. Firm-level concerns are usually related to social and economic value realization, whereas macro-level concerns related to environmental value realization are more prevalent at the global level. The significance of environmental values is on the rise. The environment and wasting of natural resources will gain from a new awareness of environmental values, which will promote cleaner production. This study supports the sustainable entrepreneurial intentions of entrepreneurs, as indicated by their conduct [6]. Sometimes, industry standards link environmental problems to social responsibility [3]; however, at the social level it becomes difficult for entrepreneurs to set up a new sustainable enterprise. As a result, the intention for sustainable entrepreneurship will decrease. Although economic value has attracted the attention of entrepreneurs, an increasing number of sustainable entrepreneurs are focused on greening the bottom line of their company to deal with environmental issues [11]. However, the impact of conflict on entrepreneurial decisions varies depending on multiple factors. These include industry norms, regulatory frameworks, stakeholder pressures, and competitive dynamics. Ultimately, entrepreneurs need to balance economic and environmental considerations in a manner consistent with their values, goals, and resources. They also need to consider the broader societal and environmental context in which they operate [85,88].

Fourthly, the current venture's emphasis on environmental value and its potential use for sustainable entrepreneurial intention are additionally taken into account in this study's alternative Hypothesis 2. The research question RQ1 posed in the "Introduction" section is addressed by the intriguing data shown in the highlighted findings of this study. In our study, there was a significant correlation between environmental values and the intention to start a sustainable business ($\beta = 0.019$). This finding is crucial for those in business who have a concern for the environment. This study is in line with prior studies, such as the one by Nuringsih et al. [90], which argued that green value would boost sustainable business. The findings of this study are consistent with those of previous studies. However, the findings of St-Jean and colleagues' study [91] contradict this investigation. As a consequence of this, green marketing and green manufacturing entrepreneurs could be motivated to develop and manufacture environment-friendly goods and services as a result of these practices [92], in addition to other practices based on environmental values. Because green marketing makes it easier for people to seize environment-friendly chances by boosting their own motivation to launch an eco-friendly company. Compared to social and economic values, the realization of environmental values is typically a macro-level issue that relates to global problems, whereas social and economic values are more likely to be addressed at the firm level. However, it increasingly becomes more important to attach greater weight to the effects of environmental values. A new understanding of environmental values will have a positive impact on the environment and the natural resource currently wasted, which could promote cleaner production. This finding helps to enhance entrepreneurs' intentions to become sustainable entrepreneurs, as predicted by their behavior towards sustainable entrepreneurship [6]. The impact of the conflict between their economic and environmental values on entrepreneurial decisions also affects sustainable entrepreneurial intention. Therefore, the current study has found that environmental concerns can stimulate innovation and creativity among entrepreneurs, leading to the development of new products and services that are environmentally sustainable [92]. Other studies have shown that environmental regulations can impose significant costs on small businesses, making it more difficult for them to compete with larger firms. However, by understanding the trade-offs and tensions between these three values, entrepreneurs can make more informed decisions that balance their economic and environmental goals [81].

Fifthly, regarding mediation (RQ2) and the Hypotheses 3 and 4, the impact of attitude towards sustainable entrepreneurship ($R^2 = 0.216$) was lower, while perceived behavior control ($R^2 = 0.238$) was a stronger predictor. Although this investigation employed two factors of the theory of planned behavior as mediators, the results showed that perceived behavior control had a greater impact on determination. Additionally, attitude towards sustainable entrepreneurship was found to mediate the link between environmental values and the intention to engage in environmentally responsible business, with a mediating impact of -0.06 . Sustainable entrepreneurs often worry about the financial viability of their ventures, as they need to dedicate time and resources to environmental causes. However, individuals with a positive attitude tend to believe that adhering to environmental values will increase the prevalence of sustainable entrepreneurship and ultimately lead to greater success, thereby reducing fears of business failure [6]. It is crucial to examine in-depth the role of attitude in sustainable entrepreneurship. Previous studies have shown that entrepreneurs with a positive attitude are better equipped to tackle the various obstacles that may arise during the initial stages of starting a new venture [30]. Conversely, a negative attitude may lead to a loss of confidence and reduce the intention of entrepreneurs to engage in sustainable entrepreneurship due to the fear of business failure. Additionally, a positive attitude can act as a mediator between environmental values and sustainable entrepreneurial intention [6,10]. Moreover, the more importance entrepreneurs place on environmental values, the more active their attitude towards entrepreneurship will be in general. Moreover, there is a mediation effect between environmental values and sustainable entrepreneurial intentions, explained by perceived behavior control ($R^2 = 0.012$). If entrepreneurs prioritize environmental protection, they are more likely to feel in control

of their actions. These findings are consistent with those of Ahmed et al. [84]. The study found that the magnitude of every effect was higher than zero. An entrepreneur with a high level of perceived behavior control is more confident in pursuing values aligned with their environment, without self-doubt. They have faith in themselves and search for opportunities in a competitive environment, making them more likely to become sustainable entrepreneurs [84]. This is mainly because conceptualizing feasibility relies on perceived behavioral control, which is similar to self-efficacy [51]. Both represent the degree to which an individual believes they are capable of carrying out a specific behavior [24].

Perceived behavioral control is a combination of control beliefs that involve trust in one's abilities as well as the facilitators and barriers. When entrepreneurs believe in the success of their startups, they are more motivated to protect the environment and create value [6]. Moreover, the belief that one's actions can be controlled instills entrepreneurs with the conviction that they should prioritize environmental values from the outset of their ventures to increase sustainable possibilities and environmental performance [84].

Based on the third research question (RQ3), the Hypotheses 5 and 6 were explained. It was found that entrepreneurial experience was the most effective moderator. Although the study examined the effect of entrepreneurial experience on attitudes towards sustainable entrepreneurship and perceived behavior control on the two elements of the theory of planned behavior, it was found that an optimistic attitude increased entrepreneurs' tolerance for business failure regardless of their level of experience. Successful entrepreneurs often possess an optimistic attitude that enables them to tackle potential challenges and start new sustainable enterprises. However, a pessimistic outlook can hinder the desire to pursue environmentally responsible business due to fear of failure. The study found that entrepreneurial experience plays a moderator role in linking environmental values to sustainable entrepreneurial attitudes, which is a positive finding. Despite confirming the initial assumption, the results hold significant implications for promoting sustainable entrepreneurship. One possible reason is that individuals with more entrepreneurial experience may have a better understanding of the market and the business environment, which may help them identify opportunities for sustainable entrepreneurship. Moreover, experienced entrepreneurs may have a better understanding of the risks and challenges involved in entrepreneurship, including those related to sustainability. This understanding may enable them to develop more realistic and achievable goals, as well as strategies for overcoming obstacles [53].

Perceived behavioral control is an important factor in shaping entrepreneurial intentions, as it can influence an individual's perception of their ability to successfully engage in sustainable entrepreneurship [90]. This is particularly important in the context of environmental sustainability, where entrepreneurs may face unique challenges and barriers that require a high level of perceived behavioral control to overcome [56]. Additionally, the influence of entrepreneurial experience on attitudes towards sustainable entrepreneurship and perceived behavioral control highlights the importance of education and training in promoting environmentally responsible business practices among entrepreneurs. By providing entrepreneurs with the knowledge and resources necessary to engage in sustainable entrepreneurship, we can help create a more environmentally sustainable future [24]. Perceived behavioral control and competence play a crucial role in the implementation of sustainable policies in business. Entrepreneurs with sufficient expertise and positive behavior control are better equipped to implement green approaches and create sustainability in their business practices [37]. This enables them to achieve their intention of engaging in sustainable entrepreneurial practices. Experience often motivates entrepreneurs toward general entrepreneurship and generating economic value, rather than improving their self-efficacy [18]. Sufficient experience enables entrepreneurs to recognize the importance of environmental value. Green practices make it easier for entrepreneurs to develop sustainability with high-level perceived behavior control [13]. Therefore, entrepreneurs with high-level perceived behavior control are confident that they could determine how to implement environmental values; it makes entrepreneurs' intention towards sustainable

entrepreneurial behavior more practical. Additionally, experienced entrepreneurs may have a greater understanding of the environmental impacts of business activities and the benefits of sustainability [57]. This knowledge may motivate them to incorporate sustainability into their business practices, leading to a stronger intention to engage in sustainable entrepreneurship.

5.1. Implications

The current study reveals several theoretical and practical implications. It is a modification of the previous model [91] and the development of a new model applicable to another culture, such as Pakistan. This investigation employed the theory of planned behavior integrated with environmental values. Additionally, it explored the moderating effect of entrepreneurial experience on the two mediating factors of attitude towards sustainable entrepreneurship and perceived behavior control to further investigate the concept of sustainable entrepreneurial intention. The significance of these findings lies in the empirical evidence they provide, demonstrating that environmental values have a positive impact on the intention to engage in sustainable entrepreneurship. These values motivate entrepreneurs and increase their willingness to pursue sustainable entrepreneurship. Attitude and perceived behavior control are among several intermediary factors that connect environmental values to the aspiration to create a sustainable business.

5.1.1. Theoretical Implication

Our research has theoretical implications for teaching green entrepreneurship in higher education institutions.

Firstly, the relevance of environmental values enhances entrepreneurs' willingness to become sustainable entrepreneurs. The promotion of environmental protection, green technology, and cleaner production can raise environmental values among entrepreneurs by educating them about the advantages of implementing such practices. Furthermore, established, successful entrepreneurial ventures can serve as models to encourage sustainable entrepreneurship. To support the implementation of environmental values into practice, policymakers can aid company owners by creating favorable legislation that incentivizes the use of green technology and the production of less wasteful products.

This study's second contribution to the literature on sustainable entrepreneurship is the establishment of a link between environmental values, attitudes, and intentions [82]. This study's findings also provide crucial insights into the mediating role of perceived venture attitude and perceived behavior control in shaping students' sustainable intentions. Notably, this study did not use a mediator to explain the relationship between subjective norms and sustainable intentions. These results are consistent with Hewlett et al.'s [92] findings, which indicate that millennials have a more positive disposition toward sustainable businesses and are more environmentally conscious.

Thirdly, this study highlights the need for a redefinition of environmental value in order to promote both economic and environmental value. Policymakers need to consider a new understanding of environmental value for cleaner production policies. To foster a shift towards sustainable entrepreneurship, system-level changes are needed that align with the new concept of environmental value [93]. The authors argue that a comprehensive analysis of economic and environmental value will aid policymakers in identifying and categorizing the types of green technology businesses necessary to promote more sustainable entrepreneurship. However, the introduction of breakthrough technologies that connect traditionally separate but related industries may lead to institutional conflicts and legitimacy issues, as noted by previous studies [94].

5.1.2. Practical Implications

The practical implications of this study are significant. This research highlights the importance of environmental values in promoting sustainable entrepreneurship through attitudes and perceived levels of behavioral control.

Entrepreneurs with a positive attitude are more likely to take risks and achieve economic, social, and environmental progress through ecological stability. To encourage more sustainable entrepreneurship, it is crucial to educate and raise awareness among entrepreneurs about the benefits of environmental practices and green technologies. This can help more people acquire a positive attitude and understand the value of green implementation. Additionally, entrepreneurs should prioritize environmental preservation, low consumption, high yield results, and green technologies. For less optimistic entrepreneurs, low-risk and mature technologies may be more appealing, and replicating existing innovation may be the most effective approach to green implementation. Environmental innovation strategies are recommended for entrepreneurs who are willing to take risks and have a positive attitude towards developing solutions for green efficiency value.

Secondly, we suggest that governments should establish policies and regulations that encourage sustainable entrepreneurship. The following are some examples of policies and regulations that could be established by governments to encourage sustainable entrepreneurship, based on an environmental value. Tax incentives: governments could offer tax incentives for companies that adopt environmentally sustainable practices or invest in renewable energy sources. Environmental standards: Governments could establish environmental standards that businesses must meet to operate legally. These standards could include limits on carbon emissions, waste management, and energy usage. Public procurement: governments could prioritize the procurement of goods and services from businesses that have environmentally sustainable practices. Subsidies: governments could offer subsidies or grants to businesses that are developing or implementing environmentally sustainable technologies or practices. Education and training: governments could invest in education and training programs to help entrepreneurs learn about sustainable business practices and how to implement them effectively. Access to funding: governments could provide easier access to funding for entrepreneurs who are developing environmentally sustainable products or services. Research and development: governments could invest in the research and development of sustainable technologies and practices to support sustainable entrepreneurship. These are just a few examples of policies and regulations that could be established by governments to encourage sustainable entrepreneurship. By implementing these policies, governments can provide support for entrepreneurs who prioritize environmental values and promote the development of sustainable businesses.

While policies and regulations to encourage sustainable entrepreneurship can be effective in promoting environmentally responsible business practices, it is important to consider the potential drawbacks and unintended consequences that may arise. The following are some potential issues to consider. Unintended consequences: Policies and regulations designed to encourage sustainable entrepreneurship could have unintended consequences that limit innovation or competition. For example, tax incentives for renewable energy may unintentionally limit innovation in other areas of sustainability or discourage investment in new technologies. Compliance costs: Some businesses may not be able to adopt sustainable practices due to high compliance costs. These businesses may be at a disadvantage compared to competitors who can afford to implement sustainable practices. Regulatory burden: Excessive regulation could create a burden on businesses, particularly small businesses. This could discourage entrepreneurship and limit economic growth. International competition: policies and regulations that create an uneven playing field between domestic and international businesses could lead to a loss of competitiveness for domestic businesses. Lack of access: small businesses or entrepreneurs with limited resources may not have access to the education, training, or funding needed to adopt sustainable practices. Policies that do not take these limitations into account could result in a lack of diversity in sustainable entrepreneurship. By considering these potential drawbacks and unintended consequences, policymakers can develop policies and regulations that are more effective and equitable for sustainable entrepreneurship. Additionally, universities can play a crucial role in fostering a culture of sustainable entrepreneurship by offering courses and programs that promote sustainable values and practices.

Thirdly, we recommend that entrepreneurs with a positive experience should be encouraged to continue adopting sustainable practices, as they are more likely to have a greater perceived behavior control. Business incubators should allocate more resources to support sustainable entrepreneurs and encourage them to adopt a sustainable mindset. This can include providing mentorship, networking opportunities, and access to funding. By doing so, more opportunities will be created for entrepreneurs to develop and implement sustainable practices, which can lead to a more efficient use of environmental resources and the expansion of the sustainable entrepreneurship sector.

Overall, our study has practical implications for policymakers, educators, and entrepreneurs interested in promoting sustainable entrepreneurship; while the idea of establishing policies and regulations to encourage sustainable entrepreneurship is a sound one, it is important to consider the potential drawbacks and unintended consequences of such policies. Governments should strive to design policies that are targeted, tailored, and phased in a way that supports sustainable entrepreneurship while minimizing any negative effects on businesses that may be unable to adopt sustainable practices for various reasons. By emphasizing the importance of environmental values, attitude, and perceived behavior control, our findings suggest that sustainable entrepreneurship can be promoted through a combination of educational, regulatory, and supportive measures.

6. Conclusions

Green entrepreneurship can contribute to addressing environmental issues. This study aimed to conduct an in-depth analysis to examine the direct and indirect relationships between attitudes, perceived behavioral control, and sustainable entrepreneurial intention in relation to environmental values. In this study, no association was found between environmental values and subjective norms, and subjective norms had an insignificant effect on sustainable entrepreneurial intention. This is true because entrepreneurs tend to be innovative, up to date in their expertise, and capable of providing viable alternatives to non-sustainable practices and materials. In this study, the authors examine the various environmental factors that combine to create feasible entrepreneurial intentions. The results of this study were incorporated into a structural equation model and 5000 bootstrapped iterations were conducted to investigate the mediating role of attitude toward sustainable entrepreneurship and perceived behavior control. The analytical method recommended by Preacher and Hayes [77] and the hierarchical regression method for the moderate relationship in the proposed model were used to successfully complete our studies' objectives. As a result, six of the hypotheses were confirmed; however, one aspect of Hypothesis 1b (subjective norms) was not supported in relation to sustainable entrepreneurial purpose. However, the lack of association between subjective norms and sustainable entrepreneurial intention suggests that social pressure or influence from others may not be a significant factor in driving sustainable entrepreneurial behavior. This finding indicates that entrepreneurs may be more likely to adopt sustainable practices based on their personal beliefs and values, rather than external pressures. These findings have important implications for policymakers and business owners who seek to promote sustainable entrepreneurship. Specifically, policies that encourage the development of entrepreneurship skills and expertise in sustainable practices could help to increase the number of entrepreneurs who adopt sustainable practices. In addition, programs that aim to enhance environmental values, attitudes, and perceived behavior control among entrepreneurs could also promote the adoption of sustainable practices. Overall, this study provides important insights into the factors that drive sustainable entrepreneurship and suggests that promoting green enterprise can be an effective way to address environmental challenges. As such, policymakers and business owners should prioritize the development and implementation of policies and programs that support sustainable entrepreneurship.

Future Directions

Although this study has limitations, it provides interesting avenues for future research. One limitation is the lack of connection between subjective norms and environmental values in entrepreneurship research [23]. Investigating the direct and indirect effects of these variables on sustainable entrepreneurial intention and other values would be beneficial. Additionally, comparing university students' perspectives on sustainable entrepreneurial intentions across different regions of the world and using qualitative methods could provide more comprehensive insights. Understanding which value, social, economic, or environmental, drives sustainable entrepreneurial intention and behavior would also be useful in addressing the issue at hand. Finally, larger-scale research is needed to generalize the findings beyond the two business hub cities in Pakistan. Despite the growing field of sustainable entrepreneurship, there are still gaps in the research, and more research is needed to promote environmentally conscious business practices.

Author Contributions: Conceptualization, N.Y., M.B., H.S.M. and R.X.; methodology, G.G.; software, N.Y., M.B., H.S.M., R.X. and G.G.; validation, N.Y. and R.X.; investigation, N.Y., R.X. and G.G.; resources, N.Y. and R.X.; data curation, N.Y., M.B., H.S.M., R.X. and G.G.; writing—original draft preparation, N.Y. and R.X.; writing—review and editing, N.Y. and G.G.; visualization, N.Y., R.X. and G.G. All authors have read and agreed to the published version of the manuscript.

Funding: This paper is supported by the scientific research project of Xi'an Jiaotong University City College (2022Z03).

Institutional Review Board Statement: All procedures followed in this research were conducted in compliance with the ethical standards of the responsible committee on human experimentation (Xi'an Jiaotong University City College, Xi'an 710018, China) and with the Declaration of Helsinki of 1975, as revised in 2000. This approval was obtained on 18 May 2022.

Informed Consent Statement: Written informed consent was obtained from all participants to be included in the study.

Data Availability Statement: The quantitative and qualitative data used to support the findings of this study are included within the article.

Conflicts of Interest: The authors declare no conflict of interest.

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