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# Millennial Tourists' Environmentally Sustainable Behavior Towards a Natural Protected Area: An Integrative Framework

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Received: 17 September 2020; Accepted: 10 October 2020; Published: 15 October 2020



**Abstract:** In the last few years, natural protected areas have been facing great challenges and degradation around the world. Among this, environmental sustainability has become a priority to create harmony between tourists and nature. Tourists visiting protected areas are becoming progressively more concerned regarding the environment. Moreover, the United Nations (UN) “Sustainable Development Goals (SDGs)” have highlighted the potential role of young tourists to contribute to sustainable tourism. However, very few studies have focused on tourists' environmentally sustainable behavior towards natural protected areas. To fill the existing gap in the literature, this study aims to provide a theoretical framework that includes environmental sustainability awareness (ESA) in measuring millennial tourists' environmentally sustainable behavior (ESB). Thus, this study delivers an integrated approach based on the value-belief-norm (VBN) theory and the concept of the new ecological paradigm (NEP) towards protected areas. A self-administered questionnaire survey was conducted from one of the protected areas located in the north of Sichuan province of China, and 511 responses were obtained for statistical analysis. Results of the structural statistical analysis showed that the unified model includes a satisfactory level of predictive power for tourists' ESB, which was superior to existing theories and concepts. The findings also revealed that all proposed relationships of the variables were significant and identified the positive influence of environmental sustainability awareness in generating the ESB. This study contributes towards sustainable tourism development and the conservation of protected areas, with several practical implications for local authorities in terms of millennial participation.

**Keywords:** environmental sustainability awareness; environmentally sustainable behavior; millennial tourist; new ecological paradigm; natural protected area; value-belief-norm theory

## 1. Introduction

In a globalized and competitive world, natural protected areas are widely recognized as a foundation of sustainable biodiversity resources. These areas are protected wildlife sanctuaries and scientific reserves, under some form of legal protections, which contribute to both leisure and the environment [1]. Protected areas are defined by different kinds of values, such as environmental, economic, scientific, social, and heritage, which is beneficial for both local communities and global culture [2]. The World Database on Protected Areas (WDPA) reported 261,766 protected areas around the world, in 245 countries [3]. The main objectives of defending protected areas are becoming more

diverse and complex. The specific security needs to be tailored to achieve the successful supervision of protected areas [4]. The legal framework of protected areas consists of international, regional, national, or local regulations, ultimately based on the Ramsar Convention, the World Heritage Convention, and the Biodiversity Convention [5].

Increased tourist traffic in natural protected areas poses a considerable extensive threat to their environmental sustainability. Many territories have been devastated by the unregulated growth of nature-based tourists and the inability to regulate or manage their access [6]. Besides, some irresponsible behaviors by tourists, such as littering, spitting, making excessive noise, damaging plants, and smoking [7], also cause devastation to protected areas [8]. Weaver and Lawton [9] found, to maintain the ecological integrity of protected areas, visitors need to be encouraged to participate in environmental enhancement activities. Analyzing the impact of environmental awareness on tourists' environmentally sustainable behavior (ESB) is therefore very important. Moreover, it is also vital for tourists to acquire the knowledge of the actions which they should know towards protected areas. Those who are more closely associated with the environment and have greater responsiveness to nature, are intended to protect the environment [10].

Considerable research has been conducted to examine individuals environmental behavior, for example, consumers' environmental awareness towards green products [11]; travelers pro-environmental behavior (PEB) towards green lodging context [12]; PEB of local and nonlocal tourists [13]; tourists' responsible behavior towards destination [14,15]; picking up litter in national parks [16]. These studies applied several theoretical frameworks, such as the theory of reasoned action (TRA) [17,18], the theory of planned behavior (TPB) [19,20], the value-belief-norm (VBN) theory [21], and the norm activation model [22] have been adopted and extended to assess tourists' environmental behaviors. Among these, the VBN theory is widely used to test the relationships of individual values, which drive beliefs and norms and directly motivate individual behavior towards the environment [21,23]. Researchers found the positive significant effect of the VBN framework to predict the stakeholder's PEBs [12,24]. Besides, research in ecological overview also stressed the wide influence of public behavior [25,26]. Values are rather constant and difficult to change, so this theory is not very comprehensive itself. Prior studies provided a constructive framework to explain the psychological mechanisms leading to the acceptance of environmental behavior [9,23]. While these studies have aided in the understanding of tourist behavior in the context of green nature [24,27,28], there is still a knowledge gap on tourists' environmentally sustainable behavior (ESB) in an integrative way, mostly in younger generations. Nevertheless, the application of a comprehensive and integrated framework is crucial to understanding tourists' ESB.

Johnson, Bowker, and Cordell [29] identified the attitude–action gap among young and old populations. The findings revealed that young people were more educated about environmental problems but less inspired to follow up with behavior compared to other generations. Moreover, young tourists are very interested in trendy traveling and challenging destinations but have little knowledge of sustainable actions [30]. The research suggested that young tourists' environmental awareness can lead to stimulating affective attachment to the visited place, which might influence their behavior. In this sense, the sustainable behavior of millennial tourists can be considered as advocacy for environmental protection [29,31]. Besides, the substantial rise in the number of millennial tourists can represent an important influence on the development of a sustainable environment. Therefore, this study confines the sample to only millennial tourists and makes a distinctive contribution to the literature in accordance to answering the following questions:

RQ1. How does environmental sustainability awareness shape millennial tourists' environmental values towards natural protected areas?

RQ2. How do environmental values and the new ecological paradigm influence millennial tourists' environmentally sustainable behavior towards natural protected areas?

To better understand, the present study proposed an integrative theoretical framework, building on the value-belief-norm (VBN) theory [21], the new ecological paradigm (NEP) [25,26],

and concepts pertaining of environmental sustainability (i.e., environmental sustainability awareness and environmentally sustainable behavior) [32,33], to predict millennial tourists' environmentally sustainable behavior (ESB) towards natural protected areas. To achieve this goal, data was collected through an onsite survey and structural equation modelling (SEM) analysis was employed to examine the relationships among the proposed constructs. This work has significant theoretical and practical contributions in the context of a protected destination economy.

The paper is structured as follows. First, it reviews the extant literature by outlining the key aspects of protected areas and millennial tourists' behavior, along with the theoretical discussion based on the VBN theory and the NEP. Then, it presents the hypothetical relationships and conceptual model with the key constructs. This is followed by the details about the method's design. The study's findings are then presented and discussed. Finally, the main conclusions, the theoretical and practical implications are discussed, together with the study limitations and suggestions for future research.

## 2. Literature Review and Theoretical Framework

This section is divided in two different blocks: first, the importance of the nature-based protected area and millennial tourists' sustainable behavior is presented in Sections 2.1 and 2.2, respectively. Second, Section 2.3 focuses on the environmental sustainability awareness (ESA), followed by the value-belief-norm (VBN) theory (Section 2.4), the new ecological paradigm (NEP) in Section 2.5, and finally environmentally sustainable behavior (ESB) presented in Section 2.6.

### 2.1. Nature-Based Protected Area

Protected areas have to meet ecological and recreational requirements, beyond the mere management of wilderness and research preserves, as defined by the International Union for Conservation of Nature (IUCN): "a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" [34]. In the tourism industry, these areas are rapidly becoming important in tourist destinations. The European Charter for Sustainable Tourism in Protected Areas was then implemented in 1995 [35].

With a continuously growing global demand for nature-based recreation, a fundamental realignment of the protected relationship between nature and visitors is becoming important [36]. Weaver and Lawton [9] suggested a new visitation paradigm for visitors to encourage and enable them to serve as agents of environmental enhancement through effective motivation and mobilization. Additionally, they mentioned that it is necessary for mass participation in on-site park enhancement activities. Natural protected areas are great resources for sustainable environmental development. Tourists must know what type of actions to take before visiting the protected areas [14,37]. Therefore, it is mandatory to establish a unified initiative to tackle the challenges of managing sustainable conservation for the protected landscape.

Moreover, a positive note is offered by a prior study, which observed that most tourists from certain national parks are likely to engage in the enhancement of protected areas and that such initiatives could be advertised or made available [28]. Attracting visitors from different cultures is one of the goals for many national parks [36]. To mitigate the adverse impacts of increased tourism activity, encouraging environmentally friendly behavior among the tourists becomes imperative [10,28], more so in protected areas, where there is a strong human connection with nature. The research assessed the pro-sustainable behavior of tourists regarding voluntary purposes [14], with an integrating view.

### 2.2. Millennial Tourists' Sustainable Behavior

The millennials are known as generation Y or generation Z, which is the next generation after the baby boomers and generation X [38,39]. Based on the generational theory, age and macro-environment form a collective viewpoint shared by members of the cohort. The research focuses on the millennial generation, including those born between 1980 and 2000, who reached young adulthood at the beginning

of the 21st century [40]. Moreover, the millennials have different attitudes, values, and behaviors than other groups because of technological, socio-cultural, and economic factors [41].

Meanwhile, the tourism industry has gained an interest in young tourists who may represent its future. Their participation is increasingly thought of as an essential precondition for the improvement of sustainable nature tourism [30]. They are the most influential users of the Internet for travel planning, bookings, and sharing economy. They can be also an important influencer of environmental sustainability [42,43]. Indeed, the emerging natural protected areas fit well with their pursuit of authenticity, emotions, responsibility, and experiences-over-posessions. The memorable experience of millennial tourists and the perceived emotional importance of protected areas may therefore have a significant effect on their environmentally sustainable behavior [31,38,44]. A better understanding of millennials is paramount since they are considered to be the heavy travel consumers of the future. Thus, an understanding of their tourism behaviors is necessary.

### 2.3. Environmental Sustainability Awareness (ESA)

Environmental sustainability awareness maintains or improves the quality of life and significantly affects individual behavior to be more environmental-friendly on Earth [45]. This has led to the adoption of the concept to address environmental challenges, which played a key role in the birth of environmental movements [46]. The adoption of the authentic environmental attitude and behavior generally emerges as a result of the expression of an intention to act [7,47], due to the influence of cognitive factors [48]. Among those cognitive factors identified by Hines [7], and further updated by Bamberg and Moser [46], are the degrees of environmental awareness.

Thus, environmental sustainability aims to enhance human well-being, [49]. From the nature-based tourism perspectives, ESA has become a mandatory issue due to the distinctive characteristics, ecological values, authenticity, and natural resources, which do not require the environmental damage associated with other destination types [50,51]. Among various internal factors, environmental awareness has aroused recent attention with its positive influence on tourist environmentally responsible behavior [52,53]. Authors confirmed that actions related to environmental awareness have the utmost importance in seeking to promote sustainable behavior towards nature [51–53]. As millennials are regarded as future decision-makers in society, in this case, their awareness of the natural protected areas will therefore have a significant effect upon the sustainable development of tourism.

### 2.4. Value-Belief-Norm (VBN) Theory

The value-belief-norm (VBN) theory stems from the conjunction of two theoretical traditions. The first contributor, the value theory by Schwartz [22,54], hypothesizes that human attitudes and behaviors are the functions of enduring, trans-situational beliefs about desired end states of social interaction. The second component is the norm activation theory (NAT), which was established as a general theory of altruism [22]. Together, these theories clarify the moral normative basis of environmentalism or, more precisely, the tendency to take action with a proenvironmental goal [21,23]. Influential aspects of individual environmentalism have thus been developed as the VBN theory [21]. This theory focused on the values (e.g., altruistic value, egoistic value, traditional value, and openness to change value), which influences beliefs (e.g., the new ecological paradigm), and then influences personal norms and behavior [21,23]. It is primarily designed to analyze environmentally friendly actions and integrates many important concepts (i.e., values and ecological worldview) in environmentalism. Thus, the VBN theory posits relationships between values, beliefs, norms, and behaviors in a causal chain [21,23,55].

The VBN theory has been proposed in various studies in different ways, such as, in tourists' pro sustainable behavior [14], norms and beliefs regarding waste management [56], PEB among different groups [27], tourists' green lodging intention [12], ecological risk perception [57], responsibility for climate change [58], value orientation towards environmental significant behavior [55], the recreational experience and environmental responsiveness [59], and eco-tourism behavior among nature-based

tourists [24]. In tourism research, this theory has been also adapted and extended with the other psychological theory to examine tourists' responsible behavior towards nature [12,14,24]. This is a very complex issue to determine individuals' values, beliefs, and behaviors within a separate theory. Nowadays, nature tourists are likely to adopt a sustainable attitude, as they are aware of environmental problems and feel morally responsible about the environment. The nature-based environmental sustainable initiatives emphasize the establishment of social and economic systems to protect the environment and other local assets for future generations [14]. Nevertheless, very few have focused on the VBN theory as an integrated way in the context of millennial tourists ESB. In this way, this work seeks to develop an integrated model to enhance comprehension regarding ESB among the millennial tourists.

### 2.5. *The New Ecological Paradigm (NEP)*

The new ecological paradigm (NEP) is used as a one-dimensional measure of environmental attitudes, as it is designed to measure the overall human-environment relationship [25]. A high NEP score is associated with a high eco-centric orientation. In response to this environmental evolution from the local to the global manipulative stage, a revised version was established [26]. Thus, the endorsement of the NEP is an acceptance of a set of principles by humanity towards nature [25,26]. The revised NEP has focused on five dimensions of people's environmental attitudes; (i) beliefs about humanity; (ii) ability to upset nature; (iii) the existence of limits to human economic growth and development; (iv) humanity's right to rule over the rest of nature; (v) refusal of anthropocentrism [25,26]. Concerning a past perspective, the research found that adjustment of this NEP concept is strictly involved with individuals' environmental concerns [56,60].

Tourists' perceptions of the natural protected areas are becoming core elements in promoting environmental sustainability, which are the main objectives to be achieved [9,61]. Environmentally cautious behavior of visitors may or may not exhibit environmentally sustainable behavior which leads to the origination of the NEP. Prior research focused on environmental attitude according to the NEP, which is associated with tourism motivation [14]. A significant relationship was found between the respondents' demographics and NEP. This research indicated that those respondents who support the idea of limits to development and who are more concerned about a potential eco-crisis tend to be closer to nature, more interested in learning about nature, and more preoccupied to avoid issues associated with a lack of environmental protection [61]. Several studies have used the NEP to measure environmental attitudes, beliefs, and worldviews and environmental attitudes. However, the underlying values of the NEP in an integrated context is still rare [14,62,63]. Next, following the VBN theory, the current research hypothesizes an environmental perspective that places humans as a part of nature, as assessed by the NEP.

### 2.6. *Environmentally Sustainable Behavior (ESB)*

The concept of sustainability as an answer to the destruction of the environment as well as mitigating the effect of climate change has existed since the Stockholm Declaration in 1972 [64]. According to Local Agenda 21, sustainability comprises four major dimensions: social, economic, environmental, and governance [65]. If people embrace the logic of environmentalism [23], they are more likely to engage in environmental behaviors that contribute to environmental sustainability. However, dealing with environmental sustainability at an individual level is a complex dimension. The theory of environmentally significant behavior by Stern [23] suggests that the values of PEB lead to the development of beliefs about environmental responsibility. Individuals' consciousness and values towards the environment are also important in the environmental sustainability movement [55,66,67].

From the tourism industry's viewpoint, environmentally sustainable refers to recognizing the often conflicting economic and social demands of visitors and places. Where possible, the integrity of the environmentalism should be preserved and enhanced to generate opportunities for future generations [30,66,68,69]. The country which has a tourism and hospitality sector that both cares about

the sustainability of the environment and honors its places of natural beauty and wonder is going to lead the pack to attract international and local visitors alike to its ecological citizenships [69,70]. The successive expansion of these protected sites, such as national parks, scenic spots, forest parks, or wetland parks, reflects the massive increase in visitation, which additionally leads to economic development. However, increased tourist traffic, especially in the more accessible protected areas, poses a substantial hazard to their environmental integrity. In order to reduce the associated negative impacts of the environment, it is mandatory to intensify sustainable management and monitoring initiatives [71,72].

Various studies have been conducted to examine the relationship between values, beliefs, and environmental behavior in the terms of PEB [30,73]. Previous research has been focused on residents' attitudes towards sustainable tourism [10], environmental travel mode [66], commitment to biodiversity and environmental risk assessment [69,72,73]. However, environmentally sustainable behavior towards the nature-based protected area is still very rare. In this sense, more work is needed concerning the factors that motivate such actions, and the scope of behaviors conducted by tourists that enhance the sustainable values towards the natural environment [30,70]. Thus, this study proposes an integrative framework to assess millennial tourists' ESB in a deeper sense.

### 3. Conceptual Model and Hypotheses Formulation

This section proposed a conceptual model based on the VBN theory and the NEP to examine millennial tourists' ESB. At the end of this segment, a graphic representation of the hypothetical relationship is provided in Figure 1.

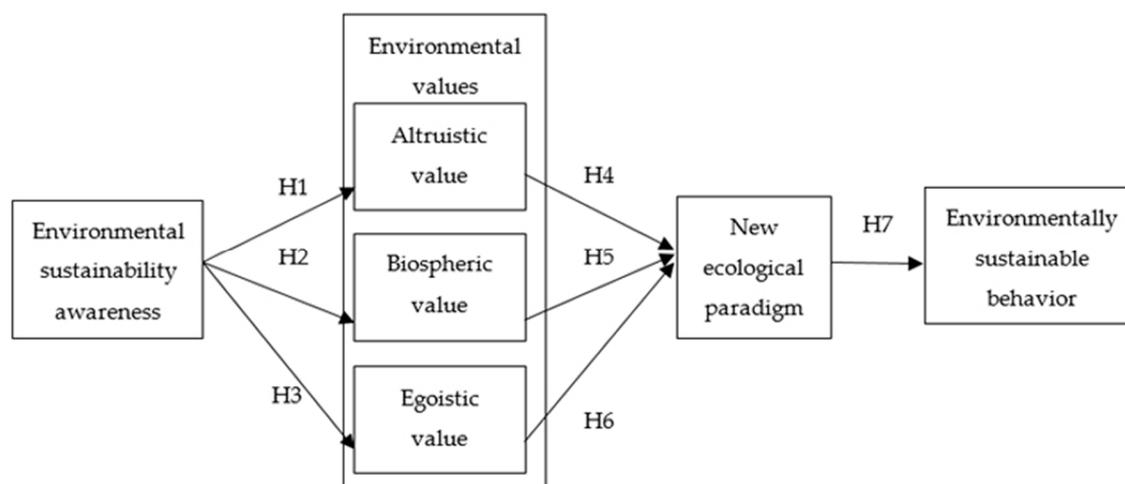


Figure 1. The conceptual model.

#### 3.1. Environmental Sustainability Awareness and Environmental Values

As the environment is threatened due to human overexploitation of nature, environmental awareness is necessary to integrate into our daily life. This dimension is viewed as a fundamental component of environmental education, which is a vital part of environmental values [74]. Following the VBN theory, environmental values perform a major role in activating the personal norms and feelings of having a moral responsibility to save the environment [21]. Moreover, values act as an administrative guide to a greater understanding of the world of an individual's life. Thus, the three-dimensional orientation of values (i.e., altruistic, biosphere, and egoistic) plays an important role and act as environmental values in steering individual behavior [21,55]. In the term of environmental values, the following hypothetical relationships have formulated:

According to the VBN theory, altruistic values, known as the values of self-transcendence, which is a key element in forming an environmental belief [21]. People with high altruistic value orientations are more prone to participate in environmental-friendly behavior. Therefore, this is a

collective value concerning other people and living species which motivates people to engage in significant environmental behavior [75–77]. According to past studies, environmental sustainable awareness has a positive impact on the importance of altruism in green intention [11]. Prior studies have also found a significant positive effect of altruistic values in behavioral intention [14,78]. When people aware of environmental problems (awareness of consequences), they will be more responsible for alleviating these issues (ascription of responsibility). Empirical evidence suggests that this is particularly suitable for actions which do not negatively impact the natural environment (or may even benefit the environment) [28,79]. Hence, the following hypothesis has proposed:

**Hypothesis 1 (H1).** *Awareness of environmental sustainability positively influences millennial tourists' altruistic value.*

Biospheric value is the core moral principle reflected in the VBN theory towards the atmosphere [21,74]. Individuals who perceive a high level of biospheric value are more likely to be concerned about the environmental crisis, such as, pollution, global warming, deforestation than those who perceive a lower level of biospheric value [55,76]. Thus, this value is linked to nature and biosphere. Similarly, if a person's ESA is based on biospheric values, the individual would take positive action based on moral principles [28,80]. When visitors decide to explore a nature destination, they believe that they have contributed to environmental protection and helped nature, which can produce significant biospheric value [24]. Thus, the effect of environmental awareness and environmental values involves beliefs, environmental attitudes, and is possibly affected by selective attention to information. Based on the above discussion, it can be hypothesized that:

**Hypothesis 2 (H2).** *Awareness of environmental sustainability positively influences millennial tourists' biospheric value.*

At the end of the causal chain of values, the egoistic value orientations contribute strongly and substantially to the ability to pay for conserving nature [21,74]. Besides, as pointed out in earlier research, egoistic importance has a positive impact on environmental behavior [74] as individuals are influenced by ESA. According to the previous findings by the egoistic value, orientations are positively and significantly related to the willingness to pay towards wildlife conservation [55,76]. The results also indicate that an individual's ESA is mainly shaped by egoistic value. In the tourism context, environmental awareness and egoistic value are significantly influencing tourists pro sustainable behavior, green hotel visit intention, and positively affect tourists' green PEB [27,78,81,82]. Based on the above discussion, the following hypothesis was proposed:

**Hypothesis 3 (H3).** *Awareness of environmental sustainability positively influences millennial tourists' egoistic value.*

### 3.2. Environmental Values and the NEP

Within the background of the VBN theory, environmental values (i.e., altruistic, biospheric, and egoistic) were known as the environmental world view and operationalized using the new ecological paradigm (NEP) [25,26]. Environmental values are cognitive representations of one's beliefs about the way things ought to be [25,60]. These theories have been used in environmental psychology and sociology literature to influence a variety of environmental behaviors and attitudes [61,83]. However, as a multifaceted term, environmental values are composed of self-awareness, which complicates the process of impact on individuals environmental behavior [9]. Individuals hold enduring beliefs and ideals that are essential to preserving the environment.

Individuals with higher levels of altruistic ideals are more careful about the ecological advantages of their actions than the consequences for themselves [9]. Meanwhile, scholars have explored

the significant effects of tourists' altruistic values on the NEP [14,62]. Hence, we proposed the following hypothesis:

**Hypothesis 4 (H4).** *Altruistic value has a positive influence on the new ecological paradigm (NEP).*

Biospheric values appear to encompass manifold inspirations for green behavior and can, therefore, be considered as an important predictor of norms and intentions [21,55]. This value was found consistently and significantly associated with an individual's environmental behavior. Past research identified that adopting environmental values leads to an ecologically minded worldview [76], young travelers PEB [30], sustainable travel mode choice [66], and that personal norms act as a direct predictor of environmental intention or behavior [14]. It is reported that people's beliefs and biospheric values have an important role in their decisions which in turn affects psychological behavior. Based on the above discussion, the following hypothesis was proposed:

**Hypothesis 5 (H5).** *Biospheric value has a positive influence on the new ecological paradigm (NEP).*

Egoistic value reflects beliefs about the self-concerning nature [21,74]. This concept leads to environmental values of the potential ecological paradigm of nature. From the tourism perspective, past empirical studies have found significant relationships between egoistic value and the NEP [14,28,30,66,76,78], willingness to pay for wildlife, urban parks, and pro sustainable behavior by tourists. Thus, the following hypothesis was articulated:

**Hypothesis 6 (H6).** *Egoistic value has a positive influence on the new ecological paradigm (NEP).*

### 3.3. The NEP and Environmentally Sustainable Behavior (ESB)

Individuals' behavioral choices towards the natural environment refer to individuals' commitment to participate in environmentally friendly initiatives. People's norms directly affect environmentally sustainable behavior [25,26]. Prior studies provided an indication for the association of personal norms and environmentally sustainable tourist behavior (e.g., saving water, not littering, switching off the lights or air-conditioning, and using public transport) [9,62,83].

Some authors refer to environmental sustainability as a key variable for the competitive advantage of tourist destinations over the long term and for improving the quality of life of the local population [14,61,63]. Furthermore, the positive perceptions about the destinations have a positive effect on young residents' involvement in promoting and supporting the destination [62]. Regarding destination areas, the literature suggests that being green has become an effective strategic approach to engage in environmentally sustainable behaviors. If individuals have the relevant knowledge and skills to implement green travel behavior and feel that it is easy to do so, they will be more likely to adopt eco-friendly behavior towards the destination. Thus, the following hypothesis was formulated:

**Hypothesis 7 (H7).** *The new ecological paradigm (NEP) has a positive influence on individuals' environmentally sustainable behavior towards the natural protected area.*

## 4. Materials and Methods

### 4.1. Research Site, Respondents, and Data Collection Procedure

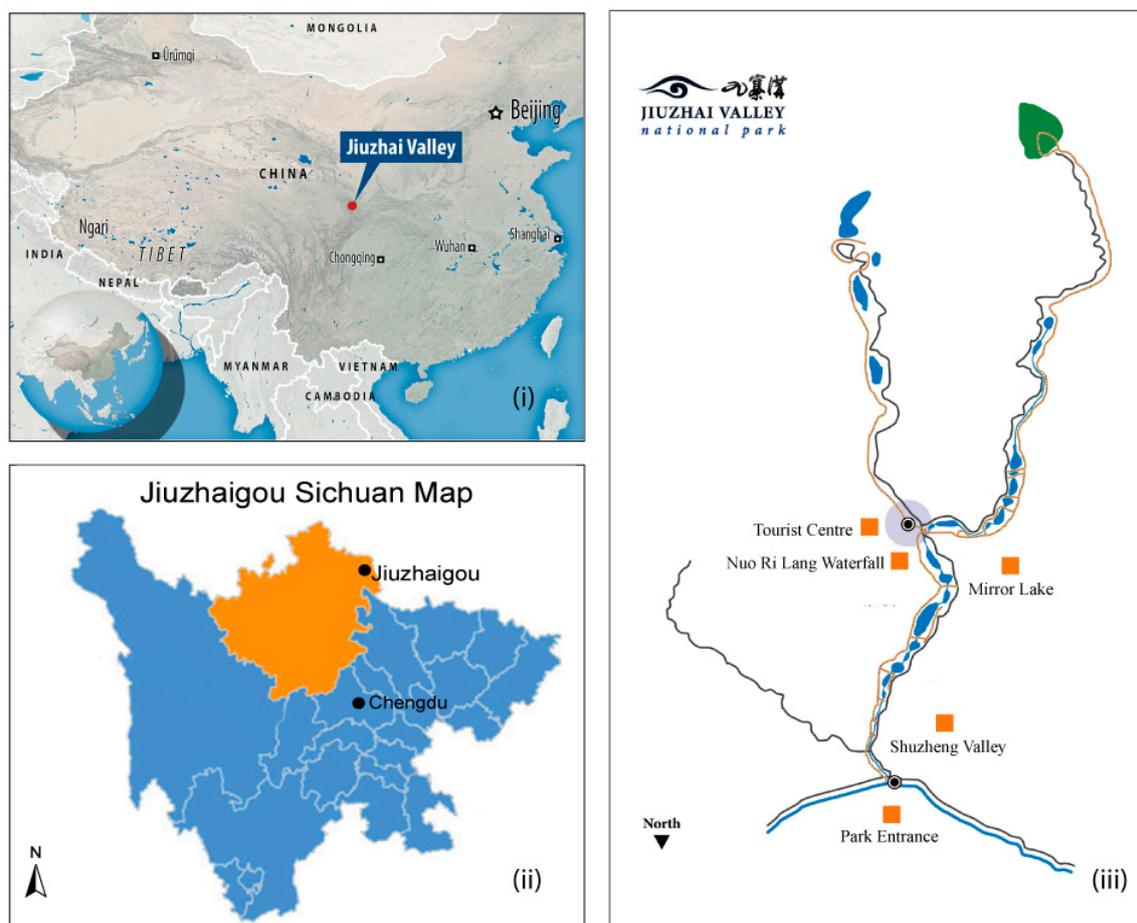
The research site in this study was the Jiuzhaigou National Park, which is located in the north of the Chengdu city, Sichuan province, China (see Figure 2). This valley covers a total area of 720 square kilometers, with buffer zones covering an additional 400–600 square kilometers [84]. This site was chosen, because it belongs to the category of protected landscapes, according to the International Union for Conservation of Nature (IUCN). Moreover, in 1992, UNESCO entered this scenic area onto the world natural heritage list and was declared a world biosphere reserve forest in 1997 [85]. To secure

the reserve area's environment, the park's administration limited entrances to around 5000 on peak days such as the October National holiday (which somewhat accounts for the stable visitation from 2017 to 2019) [84]. However, the increasing number of visitors had put pressure on the environmental management of this protected area because of some tourists' lack of environmental awareness and sustainable behaviors that are damaging its environment [86,87]. Therefore, encouraging and guiding tourists to perform environmentally sustainable behavior (ESB) is also significant from a psychological and management perspective.

For this study, Chinese millennials represented the sample group, because China is an important part of the tourism industry. According to the statistics, the Chinese tourism market is quite significant, receiving around RMB 5.7 trillion in 2019 [88]. Besides, China is one of the countries that have the largest number of outbound tourists. Furthermore, there are more than 400 million Chinese millennials, who are defined as those born between 1982 and 2002, who grew up alongside the internet, hi-tech markets, smart devices, mobile phones, and online social networks [89]. They are becoming one of the great influencers of both Chinese and International markets. In China, the millennials have a great influence on the tourism market. Compared to other age groups, Chinese millennials are young, independent thinkers, technologically well-balanced, willing to encounter innovation and to explore new knowledge [42,89].

For the main data collection, the non-probability, convenience sampling technique was used due to the unavailability of a sampling frame [90]. While there was no fixed list of millennial tourists and the target population, survey sites were chosen consciously, and the sampling process was spontaneous, which was expected to reduce the confirmation bias [91,92]. Data collection lasted one month in March to April 2019, at the Jiuzhaigou national park, Chengdu. To get a representative sample, the survey was carried out on both weekdays and weekends, distributed by researchers who understood the subject matter to visitors to the Jiuzhaigou national park. The survey took about 15 min per person to complete. Only those who showed a positive and friendly attitude to the researchers were selected for the survey, and each respondent was given information about the survey's purpose just before answering. To encourage completeness, when the respondents finished the questionnaires, they were rewarded with a small token gift (a souvenir pen, a packet of wet facial tissues). A total of 600 questionnaires were distributed at five locations (e.g., Park entrance, Mirror lake, Virgin forest, Shu Zeng falls, and Nuo Ri Lang Waterfall) in the Jiuzhaigou national park. A total of 570 questionnaires were returned, and 511 valid questionnaires were used in the data analysis. The return rate and validity rate of the survey are 95.0% and 89.64%, respectively. Regarding the sample size, it was suggested that there should be a minimum of 10 cases per parameter or items required in statistical analysis [93,94].

Non-response bias refers to whether bias exists between the responder and non-responder with regards to their demographic profile and attitudinal constructs [95]. As for this study, using the non-probability convenience sampling technique partially solved the non-response bias issue as the decision was made to choose respondents of certain characteristics as the target population. This assumption implies the respondents whose responses were collected lately, were deemed to be non-respondents [96]. An independent sample t-test was conducted to investigate this bias. Results of the t-test suggest that there is no mean difference between early respondents (responses received in the first week) and late respondents (responses received in the last week). These justify that non-response problem is not a major concern in this study.



**Figure 2.** (i) The research site (Jiuzhaigou) in the map of China; (ii) The map of Jiuzhaigou; (iii) Data collection or sample areas inside the Jiuzhaigou; source: [85,97,98].

#### 4.2. Instrument Development and Measures

To test the proposed model, the current research adopted a cross-sectional questionnaire survey methodology. The questionnaire encompassed four sections: (i) a filter question included to ensure that the respondents belong to millennial tourists (i.e., born between 1980 and 2002); (ii) respondents' demographics; (iii) information about the experience of visiting the natural protected area; (iv) the research constructs or items.

The research model consists of six constructs, including environmental sustainability awareness (ESA), altruistic value (AV), biospheric value (BV), egoistic value (EV), new ecological paradigm (NEP), and environmentally sustainable behavior (ESB). The measurement items for all constructs were derived from the existing literature to obtain good content validity and further revised to fit the research context. The four items of environmental sustainability awareness were constructed referring to Ballantyne et al. (EA towards botanic gardens) [47], Xu et al. (green furniture) [50], and Panda et al. (green products) [11]. The four items of altruistic value were constructed referring to Stern et al. (environmentalism value) [21], Groot and Steg (environmental behavior) [55], Riper and Kyle (behavioral engagement) [28]. The biospheric value (four items) was adapted from Stern et al. [21], Groot and Steg [99], and [12] who measured the biosphere, environment, and ecosystem. The egoistic value (four items) was derived from Stern et al. [21], who promotes values towards PEB. The new ecological paradigm was measured using three items (one item deleted) adapted from Dunlap et al. [25,100]. Finally, four items for environmental sustainable behavior were adapted from Stern [23], Groot and Steg [55], and Paswan et al. [67]. A total of 23 items (see Appendix A, Table A1) were measured on a 5-point Likert scale, ranging from "1 = strongly disagree" to "5 = strongly agree".

Based on the literature and pre-validated scales, the questionnaire was created in English and reviewed for content validity by two academicians who were familiar with relevant research. Furthermore, to sustain the originality of the measurements, the questionnaire was designed in the English language and then translated into Chinese. As the survey was conducted in China, the back-translation method was employed to ensure translation equivalence [101]. A pilot test was performed with 25 millennial tourists who visited the natural protected area to assure that the questions were clear and unambiguous. Following the pilot test, the questions were revised and improved.

#### 4.3. Descriptive Analysis

Among the 511 respondents, there was a higher percentage of female (62.0%) than male (38%) respondents. The respondents' ages ranged from 18 to 25 years old, consistent with the target group (millennials in China). A plurality of respondents was aged 24–29 years old (39.7%), followed by 30–35 (32.3%), and 18–23 (28.0%). A relative majority of the respondents had a Master's degree or above (49.5%), followed by an Undergraduate degree (28.2%), and below Undergraduate degree (22.3%). They indicated their monthly income to be over 6001 RMB (CNY) (38.0%), followed by 3001–6000 RMB (34.1%), and 28% below 3000 RMB. Among them, 45.0% were visiting this protected area for the first time, followed by 39.9% on their second, and 15.1% on their third visit. The majority (60.3%) came to this area from the provinces outside Sichuan and 39.7% from the Sichuan province. Finally, sources of information about this area were social media (38.4%), word of mouth (29.4%), tourism websites (14.7%), online search engines (7.6%), Radio or TV (3.9%), visitors own experience (3.5%), and newspapers or magazines (2.5%). Table 1 shows a summary of the respondents' profile.

**Table 1.** Respondents profile ( $n = 511$ ).

| Characteristics                         | Category                                      | Frequency | Percentage (%) |
|---|---|-----------|----------------|
| Gender                                  | Male  | 194       | 38.0           |
|   | Female  | 317       | 62.0           |
| Age                                     | 18–23 years old                               | 143       | 28.0           |
|   | 24–29 years old                               | 203       | 39.7           |
|   | 30–35 years old                               | 165       | 32.3           |
| Education level                         | Less than an undergraduate degree             | 114       | 22.3           |
|   | Undergraduate degree                          | 144       | 28.2           |
|   | Master's degree or above                      | 253       | 49.5           |
| Monthly income level                    | Less than 3000 RMB                            | 143       | 28.0           |
|   | 3001–6000 RMB                                 | 174       | 34.1           |
|   | Over 6001 RMB                                 | 194       | 38.0           |
| Experience of visiting this destination | One time                                      | 230       | 45.0           |
|   | Two times                                     | 204       | 39.9           |
|   | Three times or above                          | 77        | 15.1           |
| Information source                      | My own experience                             | 18        | 3.5            |
|   | Newspaper or magazine                         | 13        | 2.5            |
|   | Radio or TV                                   | 20        | 3.9            |
|   | Online search engine                          | 39        | 7.6            |
|   | Social media                                  | 196       | 38.4           |
|   | Word of mouth (family, friends, others, etc.) | 150       | 29.4           |
|   | Tourism website                               | 75        | 14.7           |
| Place of residence                      | In Sichuan province                           | 203       | 39.7           |
|   | Outside of Sichuan province                   | 308       | 60.3           |

## 5. Results

### 5.1. Data Analysis

The collected data were analyzed using the statistics packages the IBM SPSS V. 23.0 and AMOS 21.0. The two-step data analyses were done to first assess the measurement model and then test the hypotheses by fitting the structural model [94]. At first, confirmatory factor analysis (CFA) was conducted to test a measurement theory based on the overall model fit, construct reliability, and validity of the constructs. Finally, the structural equation modeling (SEM) and the model fit indices were performed [102]. To validate the survey instrument, this study analyzed the convergent and discriminant validity.

### 5.2. Reliability and Validity Testing

In the early stages of evolving the research model, a common method bias (CMB) was performed to understand the model fit indices by using a widely accepted Harman's one-factor test. Harman's single-factor technique used in the exploratory factor analysis (EFA) to specify the common method variance. In total, 55.92% common variance was found. It is lower than the suggested value of 70% by Fuller et al. [103]. Thus, this study does not suffer from the CMB issue.

A confirmatory factor analysis (CFA) was conducted to empirically test the measurement model (see Table 2). For internal consistency, the values of Cronbach's alpha ( $\alpha$ ) coefficient of each construct ranged from 0.863 to 0.906. Thus, the reliability of each construct was demonstrated to be high, since they exceeded the suggested cut-off point of 0.7 [104,105]. The composite construct reliability (CR) was also measured to evaluate the multi-item scales [106]. The values ranged from 0.768 to 0.909, which exceeded the minimum requirement of 0.60. The factor loadings ranged from 0.72 to 0.90, which is greater than the threshold value of 0.60 for established items [107,108]. Besides, all average variance extracted (AVE) values ranged between 0.525 and 0.716, exceeding the suggested cut-off point of 0.50 [94].

**Table 2.** Reliability and validity testing.

| Construct                                    | Items | Mean | SD    | S.E.  | S.F.L. | CR    | AVE   | Cronbach's Alpha ( $\alpha$ ) |
|--|-------|------|-------|-------|--------|-------|-------|-------------------------------|
| Environmental sustainability awareness (ESA) | ESA1  | 4.13 | 0.661 | 0.029 | 0.76   | 0.863 | 0.612 | 0.863                         |
|  | ESA2  | 4.12 | 0.694 | 0.031 | 0.78   |       |       |                               |
|  | ESA3  | 4.12 | 0.691 | 0.031 | 0.82   |       |       |                               |
|  | ESA4  | 4.09 | 0.719 | 0.032 | 0.77   |       |       |                               |
| Altruistic value (AV)                        | AV1   | 4.30 | 0.615 | 0.027 | 0.77   | 0.909 | 0.716 | 0.906                         |
|  | AV2   | 4.28 | 0.628 | 0.028 | 0.89   |       |       |                               |
|  | AV3   | 4.28 | 0.628 | 0.028 | 0.90   |       |       |                               |
|  | AV4   | 4.25 | 0.624 | 0.028 | 0.82   |       |       |                               |
| Biospheric value (BV)                        | BV1   | 4.19 | 0.657 | 0.029 | 0.72   | 0.890 | 0.671 | 0.896                         |
|  | BV2   | 4.22 | 0.663 | 0.029 | 0.82   |       |       |                               |
|  | BV3   | 4.20 | 0.649 | 0.029 | 0.85   |       |       |                               |
|  | BV4   | 4.21 | 0.644 | 0.028 | 0.88   |       |       |                               |
| Egoistic value (EV)                          | EV1   | 4.24 | 0.643 | 0.028 | 0.72   | 0.887 | 0.664 | 0.888                         |
|  | EV2   | 4.24 | 0.622 | 0.028 | 0.86   |       |       |                               |
|  | EV3   | 4.24 | 0.646 | 0.029 | 0.89   |       |       |                               |
|  | EV4   | 4.24 | 0.644 | 0.028 | 0.78   |       |       |                               |
| New ecological paradigm (NEP)                | NEP2  | 4.28 | 0.646 | 0.029 | 0.83   | 0.768 | 0.525 | 0.867                         |
|  | NEP3  | 4.27 | 0.641 | 0.028 | 0.85   |       |       |                               |
|  | NEP4  | 4.27 | 0.646 | 0.029 | 0.83   |       |       |                               |
| Environmentally sustainable behavior (ESB)   | ESB1  | 4.25 | 0.621 | 0.027 | 0.78   | 0.884 | 0.657 | 0.865                         |
|  | ESB2  | 4.25 | 0.623 | 0.028 | 0.86   |       |       |                               |
|  | ESB3  | 4.24 | 0.627 | 0.028 | 0.81   |       |       |                               |
|  | ESB4  | 4.29 | 0.629 | 0.028 | 0.79   |       |       |                               |

SD = standard deviation; S.E. = standard error; S.F.L. = standardized factor loading; CR = composite reliability; AVE = average variance extracted.

The Pearson product-moment correlation coefficient ( $r$ ) reveals the strength and the direction of the relationships. The Pearson product-moment correlation was performed to determine the inter-relationships between the constructs (see Table 3). There is a significantly positive correlation between the constructs. The Pearson product-moment correlation coefficient ( $r$ ) was between 0.639 and 0.771,  $n = 511$  (\*\*  $p < 0.01$ ), with a strong correlation (large effect size).

**Table 3.** Pearson correlation coefficient.

| Sl. No. | Constructs                             | ESA      | AV       | BV       | EV       | NEP      | ESB      |
|---------|--|----------|----------|----------|----------|----------|----------|
| 1.      | Environmental sustainability awareness | 1        | 0.686 ** | 0.757 ** | 0.704 ** | 0.639 ** | 0.700 ** |
| 2.      | Altruistic value                       | 0.686 ** | 1        | 0.743 ** | 0.771 ** | 0.735 ** | 0.737 ** |
| 3.      | Biospheric value                       | 0.757 ** | 0.743 ** | 1        | 0.741 ** | 0.727 ** | 0.731 ** |
| 4.      | Egoistic value                         | 0.704 ** | 0.771 ** | 0.741 ** | 1        | 0.731 ** | 0.758 ** |
| 5.      | New ecological paradigm                | 0.639 ** | 0.735 ** | 0.727 ** | 0.731 ** | 1        | 0.730 ** |
| 6.      | Environmentally sustainable behavior   | 0.700 ** | 0.737 ** | 0.731 ** | 0.758 ** | 0.730 ** | 1        |

\*\*  $p < 0.01$ .

### 5.3. Discriminant Validity

In discriminant validity (see Table 4), the AVE values of all constructs (diagonal elements) surpass the square correlations (0.639 to 0.771) between any two constructs (off-diagonal elements), which supports it [107]. Furthermore, the square root of AVE (0.72 to 0.84) for each construct exceeded the correlations between the given construct and others [93]. Hence, the discriminant validity of the instrument was supported. The results (CFA) from the measurement model indicate that the model closely fits the data (chi-square ( $X^2$ ) = 540.250; degrees of freedom (df) = 215;  $X^2/df = 2.513$ ; probability level ( $p$ ) = 0.000; RMR = 0.016; GFI = 0.914; AGFI = 0.889; NFI = 0.944; RFI = 0.934; IFI = 0.965; TLI = 0.959; CFI = 0.965; RMSEA = 0.054).

**Table 4.** Discriminant validity.

| Sl. No. | Constructs                             | ESA      | AV       | BV       | EV       | NEP      | ESB  | 95.0% Confidence Interval |             |
|---------|--|----------|----------|----------|----------|----------|------|---------------------------|-------------|
|         |  |          |          |          |          |          |      | Lower Bound               | Upper Bound |
| 1.      | Environmental sustainability awareness | 0.78     | -        | -        | -        | -        | -    | -0.049                    | 0.049       |
| 2.      | Altruistic value                       | 0.686 ** | 0.84     | -        | -        | -        | -    | 0.085                     | 0.244       |
| 3.      | Biospheric value                       | 0.757 ** | 0.743 ** | 0.81     | -        | -        | -    | 0.083                     | 0.259       |
| 4.      | Egoistic value                         | 0.704 ** | 0.771 ** | 0.741 ** | 0.81     | -        | -    | 0.044                     | 0.225       |
| 5.      | New ecological paradigm                | 0.639 ** | 0.735 ** | 0.727 ** | 0.731 ** | 0.72     | -    | 0.163                     | 0.339       |
| 6.      | Environmentally sustainable behavior   | 0.700 ** | 0.737 ** | 0.731 ** | 0.758 ** | 0.730 ** | 0.81 | 0.137                     | 0.300       |

Diagonal values are AVE and off-diagonals are inter-construct squared correlations, \*\*  $p < 0.01$ .

### 5.4. Test of Alternative Model

To better understand, the proposed model postulation of all variables was interpreted in two variants. The first variant is conceptualized as environmental sustainability awareness (ESA) indirectly predicting environmental sustainability behavior (ESB) and the strength of the relationship is moderated by altruistic value (AV), biospheric value (BV), egoistic value (EV), and a new ecological paradigm (NEP). The second alternative is to treat all six constructs in a fully mediated model. Numerous studies conducted in different settings used the NEP as a fully mediated variable. Henceforth, this study also operationalized the NEP in its mediated version. Therefore, the following alternative model was tested

to find the explanatory power of the NEP towards ESA. The indirect-impact assessment allows us to determine which model has more power to explore the ESA towards ESB. The findings of the model test show that the proposed model (see Table 5 for model 1) is more appropriate for the future tests of the variable (see Table 6 for model 2).

Table 5. Results of alternative model 1.

|         | Indirect Path        | Lower Level | Upper Level | p-Value | Standardized Estimate | Total Effect |
|---------|----------------------|-------------|-------------|---------|-----------------------|--------------|
| Model 1 | ESA → AV → NEP → ESB | 0.126       | 0.273       | 0.001   | 0.257 ***             | 0.873        |
|         | ESA → BV → NEP → ESB | 0.134       | 0.351       | 0.001   | 0.318 **              |              |
|         | ESA → EV → NEP → ESB | 0.141       | 0.334       | 0.001   | 0.298 ***             |              |

Significance of estimates: \*\*\*  $p < 0.001$ ; \*\*  $p < 0.010$ .

Table 6. Results of alternative model 2.

|         | Indirect Path        | Lower Level | Upper Level | p-Value | Standardized Estimate | Total Effect |
|---------|----------------------|-------------|-------------|---------|-----------------------|--------------|
| Model 2 | ESA → AV → NEP → ESB | 0.146       | 0.316       | 0.001   | 0.297 ***             | 0.832        |
|         | ESA → BV → NEP → ESB | 0.198       | 0.650       | 0.003   | 0.535 **              |              |
|         | ESA → EV → NEP → ESB | 0.171       | 0.411       | 0.001   | 0.364 ***             |              |
|         | ESA → NEP → ESB      | -0.563      | 0.074       | 0.190   | -0.302                |              |

Significance of estimates: \*\*\*  $p < 0.001$ ; \*\*  $p < 0.010$ .

5.5. Structural Equation Modeling and Hypothesis Testing

The proposed relationships were empirically tested based on a covariance matrix. After all the variables in the measurement model were found to reach the relevant threshold in the reliability and validity tests, the structural model study assumptions were further tested [107]. The structural model was estimated using a maximum likelihood estimation method and a correlation matrix as input data. Standardized betas ( $\beta$ ), t-values, and explanatory power ( $R^2$ ) are shown in Figure 3.  $R^2$  for all endogenous constructs was greater than 0.2, indicating substantial explanatory power [93].

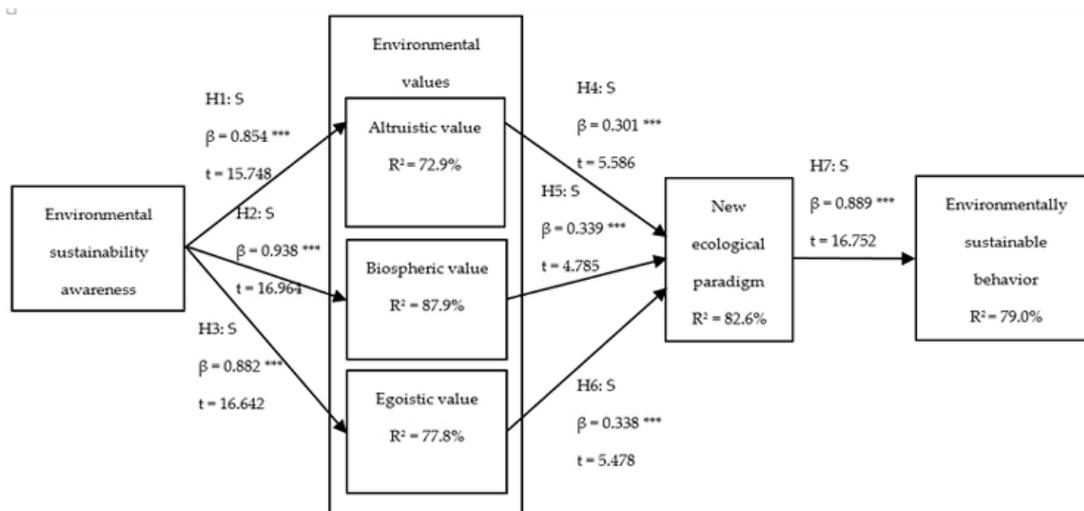


Figure 3. Estimates of structural equation modeling (SEM).  $\beta$  = path coefficient, t = standardized coefficient, \*\*\*  $p$ -value  $< 0.001$ ,  $R^2$  = squared multiple correlations, S = supported.

According to the hypothetical testing results (see Figure 3), all seven hypotheses were supported. In the analysis of Hypothesis 1, environmental sustainability awareness (ESA) had a significant

positive influence on altruistic value ( $\beta = 0.854^{***}$ ,  $p < 0.001$ ,  $t$ -value = 15.748). In the analysis of Hypotheses 2 and 3, ESA had a significant positive influence on biospheric value ( $\beta = 0.938^{***}$ ,  $p < 0.001$ ,  $t$ -value = 16.964) and egoistic value ( $\beta = 0.882^{***}$ ,  $p < 0.001$ ,  $t$ -value = 16.642), respectively. It is confirmed that ESA has a significant influence on three types of environmental values. Thus, H1, H2, and H3 were supported. Moreover, in the analysis of Hypothesis 4, altruistic value ( $\beta = 0.301^{***}$ ,  $p < 0.001$ ,  $t$ -value = 5.586), the analysis of Hypothesis 5, biospheric value ( $\beta = 0.339^{***}$ ,  $p < 0.001$ ,  $t$ -value = 4.785), and the analysis of Hypothesis 6, egoistic value ( $\beta = 0.338^{***}$ ,  $p < 0.001$ ,  $t$ -value = 5.478) had a small significant positive influence on the new ecological paradigm (NEP). Thus, H4, H5, and H6 were also supported. Finally, in the analysis of Hypothesis 7, the NEP ( $\beta = 0.889^{***}$ ,  $p < 0.001$ ,  $t$ -value = 16.752) had also a significant positive influence on environmentally sustainable behavior (ESB). Thus, H7 was also supported. These results imply that all the variables of VBN and the concept of NEP were significantly related to tourists' ESB towards a nature-based destination.

The overall model fit indicates chi-square ( $X^2$ ) = 605.252, degrees of freedom (df) = 222, and is significant at probability level ( $p$ ) = 0.000. The  $X^2/df$  ratio of less than 5 (2.726) is used as the common decision rule of an acceptable overall model fit. The normed  $X^2$  of the model is 605.252 (that is,  $X^2/df = 605.252/222 = 2.726$ ), indicating an acceptable fit. The results showed that goodness of fit statistics of the theoretical framework indicates a good fit, as it lies in the satisfactory edge. Furthermore, other indicators of goodness-of-fit are root mean square residual (RMR) = 0.019; goodness of fit index (GFI) = 0.905; which is significant, adjusted goodness of fit index (AGFI) = 0.882; normed fit index (NFI) = 0.937; relative fit index (RFI) = 0.928; incremental fit index (IFI) = 0.959; Tucker-Lewis index (TLI) = 0.953; comparative fit index (CFI) = 0.959; root mean square error of approximation (RMSEA) = 0.058 [83]. Within the overall model, the estimates of the structural coefficients provide the basis for testing the proposed hypotheses.

### 5.6. Indirect-Impact Assessment

The indirect impact evaluation allows further analyses to be carried out on the mediation effect between variables within the proposed model. The roles of the altruistic value, biospheric value, egoistic value, and the new ecological paradigm as mediators between environmental sustainability awareness and environmentally sustainable behavior were examined via the bootstrapping method (see Table 7). Millennial tourists' altruistic value and new ecological paradigm significantly mediated the impact of environmental sustainability awareness on environmental sustainability behavior (0.257<sup>\*\*\*</sup>;  $p < 0.001$ ; 95% confidence interval (CI)). Additionally, biospheric value and new ecological paradigm significantly mediated the impact of environmental sustainability awareness on environmental sustainability behavior (0.318<sup>\*\*\*</sup>;  $p < 0.001$ ; 95% confidence interval (CI)). Finally, egoistic value and new ecological paradigm significantly mediated the impact of environmental sustainability awareness on environmental sustainability behavior (0.298<sup>\*\*\*</sup>;  $p < 0.001$ ; 95% confidence interval (CI)).

**Table 7.** Results of indirect impact.

| Indirect Path  | Standardized Estimate | Lower Level CIs (95%) | Upper-Level CIs (95%) | $p$ -Value |
|--|-----------------------|-----------------------|-----------------------|------------|
| Environmental sustainability awareness → altruistic value → new ecological paradigm → environmentally sustainable behavior | 0.257 <sup>***</sup>  | 0.126                 | 0.273                 | 0.001      |
| Environmental sustainability awareness → biospheric value → new ecological paradigm → environmentally sustainable behavior | 0.318 <sup>**</sup>   | 0.134                 | 0.351                 | 0.001      |
| Environmental sustainability awareness → egoistic value → new ecological paradigm → environmentally sustainable behavior   | 0.298 <sup>***</sup>  | 0.334                 | 0.141                 | 0.001      |

\*\*\*  $p < 0.001$ ; \*\*  $p < 0.010$ .

## 6. Discussion and Implications

Knowing and predicting millennial tourists' activities have frequently been attempted in the literature on sustainable tourism. This is because millennials are important and effective stakeholders who can make valuable contributions towards any sustainable environmental development. Based on the above discussion, an understanding of millennial tourists' sustainable behavior towards the protected area is necessary. Although several studies address the travel behaviors of seniors and baby boomers, there is a lack of studies investigating millennials [30,31,89].

Regarding this point of view, the current research investigated millennial tourists' environmentally sustainable behavior (ESB) based on the VBN theory [21] and the new ecological paradigm [25,26]. In particular, the current study verified how millennial tourists' environmental sustainability awareness (ESA) influences their environmentally sustainable activities when visiting a protected area. Therefore, a quantitative face-to-face onsite survey was conducted from "Jiuzhaigou", a world natural heritage site in the north of Sichuan province of China. The respondents were a sample of Chinese millennial tourists ( $n = 511$ ). The interactions between the nature reserve and the visiting millennial tourists were also analyzed in this study. Although previous studies have integrated the VBN theory and the NEP to examine tourists' behavior [14,28,78], none of these focused on millennial tourists' ESB, in the context of a natural protected area. Thus, this study provides the following contributions:

### 6.1. Theoretical Implications

The current study makes several academic or theoretical implications. Firstly, this research investigated the effect of environmental awareness on millennial tourists' altruistic value, biospheric value, and egoistic value. The results revealed a positive significant relationship between these variables. Tourists with high levels of environmental awareness were more concerned about the environmental values of the natural protected area. Thus, Hypotheses 1, 2, and 3 are supported. This result was consistent with previous research which argued that individuals with a higher degree of environmental awareness appear to be more concerned about green products [11,50].

Secondly, with the expansion of prior research, this study proposed an integrated framework based on the value-belief-norm (VBN) theory [21] and the new ecological paradigm (NEP) [25,26] to explore tourists' ESB towards natural protected areas. The indicators (variables) for each construct were identified by relevant literature review and expert feedback. Results revealed that altruistic value, biospheric value, and egoistic value have a significant positive effect on the NEP, which is similar to previous studies [30,78], but for different purposes. Thus, Hypotheses 4, 5, and 6 are supported.

Finally, we found that the NEP has a significant positive effect on respondents' environmentally sustainable behavior (ESB) towards the natural protected area. Therefore, Hypothesis 7 is also supported. This result is relevant to several studies in the context of PEB [14,28,30,78]. Thus, this is a new contribution to sustainable tourism perspectives. All hypotheses (H1 to H7) of this study are supported, and thus the variables of VBN theory were significantly related to the respondents' ESB towards the protected area. Results also revealed that the explanatory power of biospheric value (88% i.e.,  $R^2 = 0.879$ ) is greater than the altruistic value (73% i.e.,  $R^2 = 0.729$ ) and egoistic value (78% i.e.,  $R^2 = 0.778$ ), which means that biospheric value is significantly more effective than altruistic and egoistic value towards the natural protected area. This result is similar to previous findings [14,28,30].

The findings of this study provide valuable insights into the applicability and generalization of VBN theory and NEP definition in terms of ESB. This confirms the successful integration of the VBN theory and the NEP. These theories, therefore, represent the influence of ESA, which favors the development of tourists' ESB towards the destination. These responses likely resulted from the greater pro-environmental behavior (PEB), as described by prior research [30,78]. Consistent with the original mediating structure of the VBN theory [21], this study describes the dimensions of environmental values (i.e., altruistic value and biospheric value and egoistic value) and the NEP as an environmentalism belief which has a significant impact on tourists environmentally sustainable behavior. Finally, from a theoretical point of view, the empirical findings of this study support the

VBN theory. The key advantage of the VBN theory is its comprehensiveness and sufficiency. It is also widely used for theoretical and model applications in the PEB and environmentally responsible behavior contexts [24,78]. Moreover, this theoretical construct can be applied in several environmental consumption circumstances relating to sustainable green behavior [11,50].

Nature tourists are becoming more concerned about the effects of their pattern of consumption on the environment. Thus, the integrative theoretical framework of examining millennial tourists' ESB was fit and can effectively assess the nature-based destination. This paper represents the first attempt to employ the integrated theoretical framework to assess this in the context of the natural protected area. The VBN model explained 19–35% of the variance in environmentally significant behavior, and the more difficult and time-consuming the behavior, the less variance was explained by attitudinal factors. For example, 4% of the variance in committed activism was explained by the socio-psychological factors of the VBN model [21]. Compared with this, the proposed model seems to provide a better level of predictive power towards the natural environment.

## 6.2. Practical Implications

The findings of this study will help to establish nature-based marketing approaches for destinations that will lead to the development of sustainable environmental actions towards the natural protected area. Thus, the following practical implications should be introduced:

The destination marketing organizations (DMOs) should enhance the environmental awareness program among nature-based tourists and let them recognize the significance of the natural protected areas. Different types of workshops, seminars, and conferences should be provided to raise environmental awareness among visitors, mostly for future generations. The programs' goals should be to help tourists better understand the nature of the protected area and how their actions contribute to sustainable nature-based tourism. They need to work with the telecommunications companies to locate the young visitors' origins and send customized phone messages in this context. Moreover, DMOs may provide codes of conduct and environmental messages on their nature-based tourism destinations' websites or social media pages that tourists can read before attending. Thus, destination organizations can gain a competitive advantage by exploiting this caution by offering them sustainable environmental services. However, the marketers need to understand how increasing levels of sustainability awareness impact other factors which explain the ESB of visitors.

Relevant government departments, communities, work units, tourism practitioners, should be building a sustainable nature-based protected area for future tourists. Furthermore, policymakers should be more active on (traditional and electronic) media to promote environmental responsibility, thereby kindling individuals' desire to be close to it, ultimately stimulating visitors' responsible attitudes toward national parks. Besides, personalized mobile apps and social media-based approaches can be implemented to boost interaction with environmentally sustainable behavior. From an administrative point of view, various approaches should be used, such as audio, images, animations, video, and interactive content, to disseminate the information on sustainable awareness, to ensure the messages are persuasive and convincing. It is also possible to create virtual communities with local visitors and long-stay tourists as the participants, to increase the sustainability of the protected areas. Environmental knowledge should be shared about the conservation of the environment and its benefits for the local community. They can demonstrate the environmental benefits of places because the learning experience is an important component of sustainable behavior. This will eventually affect how they use and handle the areas.

Reducing the adverse environmental effects on tourism destinations would help the growth of sustainable environmental tourism [28]. If tourists have more environmentally oriented attitudes, they may feel that the implementation of sustainable tourism is feasible, potentially leading them to increase their environmentally sustainable behaviors.

Through the empirical analysis, this study maintains that it is necessary to promote the formation of favorable environmental values (i.e., altruistic, biospheric, and egoistic). In that way, tourists will

engage in more proactive, community-based environmental programs, which will increase their values towards nature. Additionally, the personal and social norms regarding natural protected areas will be increased while they are planning to visit the destination. The current analysis offers important insights for decision-makers at various levels. For instance, the government may focus more and more on spreading awareness among people about environmental sustainability issues to guide their travel behavior to align with environmental protection concerns. Similarly, marketers should also consider this finding while designing advertisements. They may highlight those features of their products that solve environmental sustainability issues. Based on the current analyses, managers can preserve local ecosystems and biodiversity by providing a “nature classroom” that encourages tourists to realize the value of natural resources.

## 7. Conclusions

This study contributes to the existing literature based on the VBN theory and the NEP to examine millennial tourists’ environmentally sustainable behavior through the influencing dimension of environmental sustainability awareness. The result of the statistical analysis (CFA-SEM) demonstrates that all the hypothetical relationships have positively affected individuals’ sustainability behavior towards the natural protected area. Moreover, the research findings also support the inclusion of environmental sustainability awareness in the framework of environmentally sustainable behavior. Thus, the implications originating from this research can guide management interventions for other protected areas. Protected sites are often considered to represent a nation’s heritage and attract tourists from around the world, while at the same time being precious and irreplaceable assets to the whole of humanity. Therefore, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) has prioritized the promotion of the protection of natural heritage to balance biological diversity around the world [109].

## 8. Limitations and Future Research

Although this study has several meaningful theoretical and practical contributions, the present research has some limitations. Firstly, the research model tested in this study was empirically assessed in only one research location in China, the Jiuzhaigou National Park. This research takes a Chinese natural heritage-type destination as the setting of our case study, but it may not be representative for more remote or less-known destinations. Environmental behaviors in a different type of nature destination may have different degrees of influences on the relationship between tourists’ environmental sustainability awareness (ESA) and environmentally sustainable behavior (ESB), so future research could try to focus on the effect of ESA in other types of destinations (i.e., coastal destination, wetland park). Therefore, some caution is required when generalizing and applying the findings of this study to various contexts.

Secondly, this research only measured Chinese millennial tourists’ ESB on a quantitative basis with the nonprobability convenience sampling, which might not be suitable. Future studies can adopt a qualitative approach, to explore a wider area. Moreover, a comprehensive analysis, taking into account different ages and generations is necessary for future studies. Thirdly, a comparative study can be attempted, by differentiating visitors and non-visitors, or domestic and international tourists’ behaviors. Future research also can consider the impact of national culture on the proposed theoretical framework. Finally, this research adopted only one external factor (ESA) to explore individuals’ environmentally sustainable behavior, in this stage, other factors, such as environmental knowledge, environmental qualities, environmental protective facilities, environmental concerns, and environmental protection behaviors can be included in the future research.

**Author Contributions:** Conceptualization: F.S. and M.T.S.; Data curation, F.S. and M.T.S.; Formal analysis, F.S., M.T.S., A.B. and D.P.B.; Investigation, F.S., M.T.S. and B.L.; Methodology, F.S. and M.T.S.; Project administration, B.L.; Resources, A.B. and B.L.; Software, F.S.; Supervision, B.L.; Validation, F.S. and M.T.S.; Writing—original draft, F.S. and M.T.S.; Writing—review and editing, A.B., D.P.B. and B.L. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

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

## Appendix A. Constructs and Scale Items

**Table A1.** Constructs and Scale Items.

| Latent Variable                        | Observed Variable | Item Text   | References  |
|--|-------------------|---|-------------|
| Environmental sustainability awareness | ESA1              | To achieve sustainable development: I feel the awareness of environmental changes | [11,47,50]  |
|  | ESA2              | I feel pressure to save the environment   |             |
|  | ESA3              | I understand personal responsibility about the environment                        |             |
|  | ESA4              | I influence others' awareness   |             |
| Altruistic value                       | AV1               | I think about the world at peace: a world free of war and conflict                | [21,28,55]  |
|  | AV2               | I think about the equality: equal opportunity for all                             |             |
|  | AV3               | I think about social justice: correcting injustice, care for others               |             |
|  | AV4               | I am helpful: working for the welfare of others                                   |             |
| Biospheric value                       | BV1               | I am interested in preventing pollution and conserving natural resources          | [12,21,55]  |
|  | BV2               | I am interested in respecting the earth (harmony with other species)              |             |
|  | BV3               | I am interested in unity with nature: fitting into nature                         |             |
|  | BV4               | I am interested in protecting the environment: preserving nature                  |             |
| Egoistic value                         | EV1               | I agree with authority: the right to lead or command                              | [21,55]     |
|  | EV2               | I agree with social power: control over others dominance                          |             |
|  | EV3               | I agree with influential: having an impact on people and event                    |             |
|  | EV4               | I agree with wealth: material possessions, money                                  |             |
| New ecological paradigm                | NEP2              | I can feel plants and animals have as much right to exist as humans               | [25,100]    |
|  | NEP3              | I can feel the Earth is like a spaceship with very limited room and resources     |             |
|  | NEP4              | I can feel the balance of nature is very delicate and easily upset                |             |
| Environmentally sustainable behavior   | ESB1              | I respect the nature and wildlife of this protected area                          | [23,55,110] |
|  | ESB2              | I follow the tourism regulations of the administration of this protected area     |             |
|  | ESB3              | I help to maintain the local environmental quality of this protected area         |             |
|  | ESB4              | I help other tourists to learn about the importance of the natural protected area |             |

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