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Assessment of Recreational Value in a Protected Forest Area Considering the New Environmental Paradigm (Case Study: Helen Forest, Southwestern Iran)

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Abstract: This study investigates the recreational value of the Helen protected forest area, incorporating the new environmental paradigm into economic valuation. Visitors' willingness to pay and its association with scores reflecting the new environmental paradigm were assessed through contingent valuation and a dual-dimensional questionnaire. Two models are employed: a base model with socio-economic variables and a model integrating new environmental paradigm. Results indicate that 83.04% of visitors are willing to pay for recreational use. The proposed amount, visit frequency, new environmental paradigm, age, gender, education, and income were found to significantly influence the acceptance of willingness to pay. Results indicated a strong positive correlation exists between new environmental paradigm and willingness to pay, highlighting the influence of environmental perspective. Average willingness to pay per household per visit is IRR 190,390.4 (USD 0.53), translating to an annual recreational value of IRR 22,629,264,215 (USD 64,088) for the entire Helen forest. The average new environmental paradigm scores for visitors stand at 57.36, with the statement "plants and animals have similar rights to humans" receiving the highest score of 28.4. These findings emphasize the importance of considering environmental perspectives in managing recreational sites. Integrating a new environmental paradigm into valuation methods can inform sustainable management strategies that balance economic development with environmental conservation and social well-being.

Keywords: recreational value; new environmental paradigm; contingent valuation methods; willingness to pay

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1. Introduction

People benefit from various services that forests provide, such as timber, which has a market price, and recreation, which does not have a market price [1]. Measuring these services in monetary terms can help society understand how nature contributes to human well-being and inform policy decisions for ecosystem conservation [2,3]. Economic valuations are an important first step for management practices that seek to optimize the use of resources while maximizing societal well-being [4–6]. By estimating the values of environmental goods that are usually ignored in policy decisions, the valuation process itself encourages a more complete assessment of the full value of forests, not just the market prices that are easily observable. Among the valuation methods that try to measure the different values of forest ecosystem services, most of the attention is given to marketable goods like timber that have market prices and economic impacts [5]. While traditional

market value assessments primarily focus on timber extraction, non-market valuation approaches can effectively illuminate the broader socio-economic contributions of forest ecosystems [6]. In recent years, the increasing use of forest wood products has reduced the other benefits that natural forests provide, such as biodiversity, culture, and other public goods [7,8]. Besides timber, forests also provide other public environmental goods that improve human well-being, such as recreation and biodiversity conservation. However, these services are public goods that do not have a market price or data to show how much people value them [9]. We can still estimate the economic value of these services by asking people how much they are willing to pay for them in a hypothetical situation [10]. In this method, we can capture the monetary values that people assign to these non-market forest benefits and communicate the broader social values of natural resources beyond the mere commercial assessment of timber [6]. In the absence of readily available market prices for public environmental goods, artificial valuation scenarios are employed to construct hypothetical markets for quantifying the exchange values of these ecosystem services [11].

These non-market valuation techniques provide a mechanism to assign proxy monetary values to the diverse goods and services provided by nature, regardless of their actual pricing [12]. Among these methodologies, the contingent valuation method (CVM) has gained widespread recognition in the academic literature as a preferred approach for illuminating the economic values of forest ecosystem services [13]. Pioneered by Davis [14] to estimate recreational use values for woodlands. CVM utilizes survey instruments to construct hypothetical scenarios that elicit individuals' willingness to pay (WTP), thereby uncovering previously hidden preferences for public environmental goods [15]. CVM serves as a valuable tool for eliciting WTP monetary estimates from community members for the conservation of forest resources, quantitatively approximating the implicit economic values of these public environmental goods [16]. At its core, CVM establishes a bridge between the ecological attributes that are most crucial for conservation and individuals' financially quantified preferences, or WTP, for preserving those attributes [17]. The elicited WTP values provide crucial insights into individuals' preferences, including the underlying factors influencing their choices, regarding hypothetical changes in the provision levels of environmental goods and services. This information is essential for policymaking that aims to align with the socially optimal level of natural resource management. Moreover, understanding public values serves as a critical foundation for shaping subsequent attitudes and behaviors that have implications for conservation outcomes [18,19]. A key variable that significantly impacts the outcomes of contingent valuation scenarios and influences WTP estimates is participants' pre-existing environmental attitudes. This highlights the significance of integrating environmental attitudes within the realm of CV studies. The literature emphasizes the relevance of motivations and belief systems as they contribute to nonuse values [20,21]. More specifically, a deeper examination of the underlying motivations and belief structures driving non-use existence values is essential for contextualizing contingent valuation analyses in environmental economics research [22]. While economic models often treat quantified WTP levels as direct reflections of revealed preferences, the psychological literature suggests that these hypothetical payments represent expressed behavioral intentions that are partially shaped by attitudinal factors [23,24].

In 1993, a panel of distinguished economists convened by the National Oceanic and Atmospheric Administration (NOAA) acknowledged the crucial role of accounting for "attitudes toward the environment" in interpreting responses within economic valuation scenarios [25]. Numerous studies have since corroborated this relationship [26]. Environmental attitudes, as defined by Bartczak [27] and McIntyre and Milfont [28], encompass latent psychological tendencies that manifest as individuals' evaluative orientations toward the natural world, ranging from favorable to unfavorable stances. These attitudes directly influence pro-environmental behaviors and behavioral intentions [29]. Environmental attitude stands as a significant predictor of pro-environmental behavioral intention, thereby influencing actual pro-environmental behavior [30]. A substantial body of theory supports the notion that internal attitudes guide external behaviors, including economic

decisions involving environmental goods [31,32]. For instance, WTP levels expressed in surveys may reflect underlying attitudes about the value of nature and beliefs about the consequences of environmental changes [18,32]. Reflecting the link between attitudes and behaviors, research increasingly identifies the influence of environmental perspectives on WTP, surpassing pure economic calculations [27]. Improving the precision of defining and collecting attitude measures can substantially enhance the descriptive and predictive power of economic models in estimating WTP empirically, especially in contexts that seek to understand the behavioral intention behind WTP [33].

The New Environmental Paradigm (NEP) scale is widely recognized as a pivotal quantitative instrument within the environmental literature, extensively utilized to measure attitudes and worldviews concerning the environment. The NEP scale, originally consisting of 12 items, was a fundamental tool for measuring attitudes toward the environment [34]. It underwent expansion to encompass 15 items and was rebranded as the "new ecological paradigm" scale, evaluating the endorsement of ecocentric systemic beliefs [35]. Empirical analyses typically approach the study of environmentally impactful human behaviors through a framework that contrasts the Dominant Social Paradigm (DSP) with the alternative NEP perspective. Marked by anthropocentric assumptions that prioritize economic productivity over ecological stability, DSP treats natural resources as limitless inputs for human exploitation, whereas NEP recognizes the intricate interdependencies within interconnected ecosystems with limited carrying capacities. Moreover, all elements within ecosystems, encompassing humans and other living entities, are interconnected. Consequently, the destruction of one component within an ecosystem could lead to a decline in its entirety. As humans acquire more profound insights into ecosystems, their attitudes toward the environment can undergo significant transformations [29,36]. The evolution from a DSP to an NEP, beginning in the late 20th century, signifies a shift away from the perception of human superiority towards acknowledging the inherent value of nature. This transition moves beyond accepting environmental degradation for economic gain to emphasizing the significance of preserving ecosystem health [37]. Despite numerous studies evaluating the worth of environmental goods and services, only a limited subset incorporates environmental attitudes as an explanatory factor for WTP. This is often gauged using the NEP scale. These studies are: Kotchen and Reiling [38], Cooper et al. [39], Spash [40], Meyerhoff [41], Ojea and Loureiro [42], Aldrich et al. [43], Hoyos et al. [44], Choi and Fielding [45], Bartczak [27], Meldrum [46], Halkos and Matsiori [47], Taye et al. [48], Kim et al. [49] and Yu et al. [50]. Within these studies, environmental attitude has been a focal point in assessing diverse environmental goods and services. Typically, the findings across these studies indicate a positive correlation, showcasing that higher positive environmental attitudes often align with increased WTP. For instance, Kotchen and Reiling [38], as well as Yu et al. [50], utilized the "new ecological paradigm" scale to establish a positive correlation between strong environmental attitudes and higher WTP for endangered species and national forest parks, respectively. Building upon this, Bartczak [27] discovered that both new ecological paradigm scores and altruism significantly influenced WTP for forest management changes in Poland. Taye et al. [48] further investigated, revealing that even within the NEP framework, ecocentric individuals exhibited a greater preference for preserving naturalness and valued forest services more than their anthropocentric counterparts.

Based on the provided references, it is evident that there is a complex relationship between environmental attitude and WTP. Several studies have highlighted the impact of various factors on this relationship. For instance, Kang et al. [51], found that customers' attitudes towards a company and their WTP for green initiatives may turn negative if they perceive the company's motivation as profit-driven rather than focused on public service. Furthermore, Nowacki et al. [52], revealed a weak relationship between the positive attitude towards eco-friendly destinations and the WTP more for trips to them among well-educated, young Indian consumers. Similarly, Doran et al. [53], reported that neither self-efficacy nor attitudes showed a stronger association with stated WTP for environmental protection than collective efficacy. These findings suggest that the relationship between

environmental attitude and WTP is influenced by various psychological and contextual factors. Lu et al. [54] found that individuals' materialistic values have negative relationships with their ecotourism attitude, interest, intention, and WTP a premium for ecotourism products and services. This indicates that personal values and beliefs can significantly impact the WTP for environmentally friendly products or services.

This research makes an important contribution by integrating environmental psychology perspectives, measured via the "new ecological paradigm" scale, into the economic valuation of nature-based recreation through a case study of Iran's Helen protected forest area. Too often, economic appraisals of ecosystem services overlook ideologies, values, and attitudes as drivers of WTP. However, the strong, positive link found herein between NEP scores and WTP estimates signals the need to account for visitor environmental worldviews when managing recreational sites, balancing economic sustainability with ecological conservation goals. These revealed preferences and ethical priorities can inform policymakers regarding entrance fees, recreational capacity limits, habitat maintenance investments, and educational programming. Furthermore, the methodological approach combining environmental scales with economic valuation surveys lays the groundwork for similar research across environmental attitude and context, allowing for a more comprehensive understanding of how environmental perspectives and economic valuations vary within distinct social and contextual settings.

According to the mentioned literature, it is necessary to address the issues of valuing natural resources by considering the environmental attitude to moving towards sustainable development. Therefore, considering the importance of the issue and its impact on environmental economics, it is necessary to study the importance and attractiveness of understanding the relationship between environmental values and NEP. This issue is also very important in relation to the environmental behavior of tourists of a region in the form of their WTP, because the behavior of tourists of a region has a strong effect on the environmental society of that region. This study enriches the literature by bridging the economic and psychological aspects of cultural ecosystem services within developing nations, an area that has received limited attention in prior research. This study offers novel and valuable insights into the values and preferences of people toward nature in a Middle Eastern context, which can inform and improve the decision making process for the conservation and management of forest resources. The aim of this study is to investigate the recreational value of the Helen protected forest area, integrating the new environmental paradigm into economic valuation. To achieve these objectives, this study estimates the recreational value of Helen forest using two models: the first model uses socio-economic variables as the base model, and the second model incorporates the NEP scale along with the socio-economic variables.

2. Materials and Methods

2.1. The Study Area

The Helen protected forest area, situated in the southwest of Iran, encompasses portions of the Ardal, Lordegan, and Kiyar cities within the Chaharmahal and Bakhtiari province. The area extends over approximately 40,231 hectares, of which 30,000 hectares are classified as forestland and 10,000 hectares as pastureland (Figure 1). The dominant tree species within the forest are oak (*Quercus brantii*), coexisting with other plant species such as almonds (*Amygdalus* spp.), *Pistacia mutica*, and *Astragalus* spp. [55]. The climate of the area varies from humid to very humid, as categorized by the De Martonne climate classification system, based on the region's climatic characteristics. The average annual precipitation is 550 mm, and the average annual temperature is 14.2 °C [55]. The topography of the area is mountainous, with altitudes ranging from 1168 to 3225 m [56]. The area is biodiversity-rich, as it harbors diverse habitats of mountain, forest, pasture, and riverside ecosystems. This area sustains a diverse array of flora and fauna species, some of which are endemic and play a pivotal role in maintaining the region's biological integrity [57].

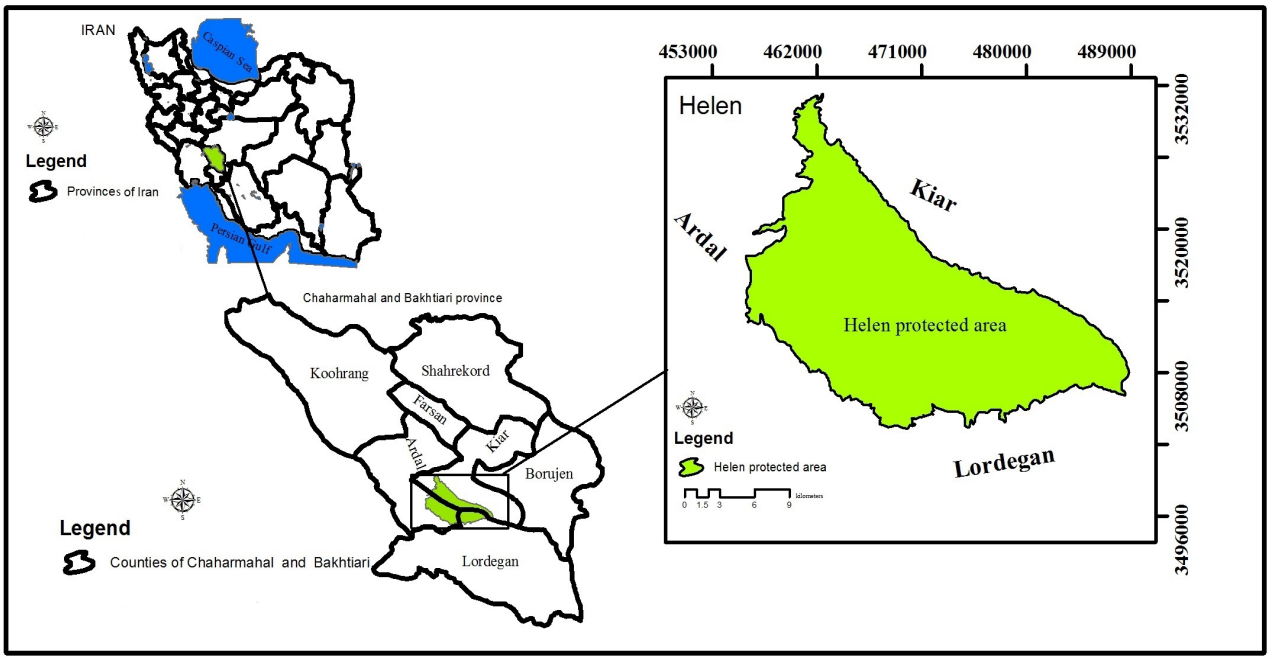

Figure 1. Geographical location of Helen protected forest area.

2.2. Methodology

The CVM is firmly rooted in welfare economics, aligning with neoclassical economic value principles and the pursuit of maximizing individual utility. Economists, researchers, and policymakers favor this survey technique due to its comprehensive and adaptable methodology, offering a robust foundation for estimating benefits in environmental enhancements and other public goods, thus aiding in the design of effective and credible policies [58]. As previously outlined, the CVM relies on direct inquiries to individuals regarding their WTP for a specific commodity. A critical aspect of applying CVM involves selecting suitable survey and elicitation methods to ensure the accuracy of data collected. Presently, one of the pivotal methods for WTP determination is the stated preference-based contingent valuation experiment, incorporating field experiments and survey data collection to capture participant preferences [59]. CVM aims to gauge WTP within hypothetical market scenarios, often employing interviews as a favored method among various data collection approaches [60].

It is noteworthy that the research is conducted in a mountainous area characterized by challenging terrain and difficult traffic conditions. These factors presented logistical constraints in accessing potential participants, ultimately influencing the achievable sample size. However, given the specific research question and target population, we utilized Cochran's formula to determine an optimal sample size with the desired confidence and precision. Therefore, this study involved estimation through face-to-face interviews utilizing a random sampling method, which included the completion of 230 double-bounded dichotomous choice questionnaires in contingent valuation (DBDC-CV). This method necessitates selecting a subsequent bid beyond the initial offer, contingent upon the respondent's affirmative or negative reaction to the preliminary bid [61]. The DBDC-CV model mirrors the consumer decision making process in real markets through its dichotomous-choice approach, resembling the 'yes' or 'no' scenario [62]. This methodology effectively mitigates biases stemming from unfamiliarity with goods [63]. The DBDC-CV model comprises two questions: the initial inquiry regarding the respondent's WTP a specified amount for a product, and the subsequent query about their WTP a higher (or lower) amount than the initial bid. The respondent's WTP falls between the two bid prices if either response is positive, between the second bid and their maximum WTP if both responses are positive, and below the second bid if both responses are negative. Finally, according to Cochran

formula, 230 questionnaires were completed by tourists visiting the Helen forest in 2022 through random sampling. In this study, domestic visitors were divided into two groups: native visitors (from Chaharmahal and Bakhtiari province) and non-native visitors (from other provinces of Iran). Interviews were conducted with both groups. The ratio of native visitors was 172 people, equivalent to 74.78%, and the ratio of non-native visitors was 58 people, equivalent to 25.22%. The questionnaire comprised three sections: The initial section gathered respondents' personal information and socio-economic status, encompassing age, gender, household size, occupation, education, forest visit frequency, affiliation with environment agencies or related organizations, household income, and more. The second section specifically delved into environmental attitudes, employing NEP for assessment.

The NEP scale is a globally recognized survey tool crafted to gauge environmental concerns across populations using a comprehensive set of fifteen statements [64]. These statements within the NEP address attitudes toward the environment [65] and are categorized into five dimensions: acceptance of growth limits, anti-anthropocentrism, recognition of natural balance fragility, rejection of exceptionalism, and acknowledgment of a potential ecocrisis [66]. This section prompts respondents with statements reflecting either an anthropocentric or ecocentric worldview, asking them to rate their agreement from "fully disagree" to "fully agree". To quantify ecological-mindedness, we converted these responses into a score on a five-point scale for each respondent. This section required respondents to indicate their environmental attitudes, assessed using the NEP scale. The information derived from the responses to the NEP questions formed the basis of our study, examining how environmental attitudes can explain WTP. The analysis was conducted using 230 comprehensive responses to the NEP questions. Additionally, in the third section, data concerning individuals' WTP for recreational values of Helen's forest was gathered for further examination.

According to "Gold, Coin, and Currency Information Network" statistics, the average exchange rate of the US dollar in 2022 was IRR 353,095 [67]. To assess the WTP for recreational and tourist services at the Helen forest area, three proposed entrance fees were considered: IRR 100,000 (approximately USD 0.28), IRR 50,000 (approximately USD 0.14), and IRR 200,000 (approximately USD 0.56). As recommended by Siew et al. [68], pre-testing serves three main purposes: (1) evaluating the soundness of the questionnaire; (2) determining the relevance of variables; and (3) establishing appropriate initial bid values for the double-bounded dichotomous choice method. This section presented three interconnected questions featuring bids of IRR 100,000 (USD 0.28), IRR 50,000 (USD 0.14), and IRR 200,000 (USD 0.56). The initial question proposed a midpoint price of IRR 100,000, asking respondents whether they were willing to pay this amount as an entrance fee to access and enjoy the tourism, recreational, and related services provided by the Helen forest.

If the answer was "yes", then IRR 200,000 (USD 0.56) was offered. Conversely, if the answer was "no" an offer of IRR 50,000 (USD 0.14) was proposed. Respondents were also given the option to specify an amount lower than IRR 50,000 (USD 0.14) or higher than IRR 200,000 (USD 0.56) in the form of a question. They were asked: what is the minimum and maximum amount you would be willing to pay to access the recreational and tourism services of Helen forest? The determination of the recreational value hinges on the dependent variable, which is the probability of accepting the proposed entrance price. This probability is derived from maximizing respondent utility when answering the questions [69].

$$U = (Y, S) \tag{1}$$

Each visitor is willing to allocate a portion of his/her income corresponding to the suggested amount for using environmental resources. The utility derived from utilizing these environmental resources surpasses the utility experienced when these resources are not utilized. This concept is articulated through the following relationship [70]:

$$U(1, Y - A; S) + \varepsilon_1 \geq U(0, Y; S) + \varepsilon_0 \tag{2}$$

U represents the indirect utility derived by an individual, A stands for the person's income, Y signifies the proposed amount, and S encompasses other socio-economic factors influenced by personal preferences. ε_0 and ε_1 are random variables with a mean of zero and are equally distributed independently. The utility difference ΔU can be described as follows [71].

$$\Delta U = U(1, Y - A; S) - U(0, Y; S) + (\varepsilon_1 - \varepsilon_0) \quad (3)$$

Indeed, in this scenario, each respondent will elicit either a zero or a one as a response. This leads to the formulation of an econometric model where the dependent variable assumes a binary form. To handle such models, logit or probit models are commonly employed to analyze and predict outcomes based on binary dependent variables. The study employed the logit model due to its simplicity and dependable calculations [72]. The probability (P_i) that a person will accept the offer (A) is described as the following equation based on the logit model:

$$P_i = F_\eta(\Delta U) = \frac{1}{1 + \exp(-\Delta U)} = \frac{1}{1 + \exp\{-(\alpha - \beta A + \gamma Y + \theta S)\}} \quad (4)$$

$F_\eta(\Delta U)$, represents a cumulative distribution function with a standard logistic difference and incorporates several socio-economic variables including income, proposed amount, age, gender, and education. β, γ, and θ represent coefficients, with expectations that $\gamma > 0$, $\beta \leq 0$, $\theta > 0$.

2.3. Calculating the Average WTP

There are three methods to estimate the WTP [73]:

1. Estimating the average WTP involves calculating the expected WTP by numerically integrating between zero and infinity (mean method).
2. Estimating the total WTP involves calculating the expected WTP by numerically integrating between positive infinity and negative infinity (overall mean method).
3. Estimating the partial WTP involves calculating the expected WTP by numerically integrating between zero and the maximum proposal (truncated mean method) (Equations (5)–(7)).

$$E(WTP) = \int_0^{+\infty} F_\eta(\Delta U) dA \quad (5)$$

$$E(WTP) = \int_{-\infty}^{+\infty} F_\eta(\Delta U) dA \quad (6)$$

$$E(WTP) = \int_{minA}^{maxA} F_\eta(\Delta U) dA \quad (7)$$

Among these methods, the third one stands out for its stability, consistency with theory, and statistical efficiency. It is calculated according to the following relationship (Equations (8) and (9)) [74]. The logistic or logit model, a statistical tool in both statistics and econometrics, specifically addresses binary dependent variables. This model derives its coefficients through the process of maximum likelihood estimation [75]. After the logit model is estimated, the expected WTP is calculated using a numerical integral between zero and the maximum accepted proposed bid by visitors to Helen's forest, as described [76].

$$E(WTP) = \int_0^{max} F_\eta(\Delta U) dA = \int_0^{max} \frac{1}{1 + \exp -(\alpha^* + \beta A)} \quad (8)$$

$$\alpha^* = (\alpha + \gamma Y + \theta S) \quad (9)$$

E(WTP) is expected amount of WTP and α * is adjusted y intercept. This is added to the original y intercept term by socio-economic values. The model is as follows:

$$Y = \alpha + \beta_i x_i \qquad i = 1, 2, 3, \ldots..n \tag{10}$$

In this model, Y is the dependent variable that represents the WTP for the recreational use of Helen forest. Y takes the value of one if the individual is willing to pay the proposed amount and zero if not. x_i are the explanatory variables, β_i are the coefficients of the explanatory variables and n is the number of explanatory variables. The study used two modeling approaches to estimate the recreational value of the protected area. The first model included the explanatory variables of the proposed bid, NGO membership, number of visits, environmental statement, age, gender, education, household size, monthly income of the individual, residence, and travel duration. The second model added the NEP variable to the explanatory variables of the first model. The study compared the effects of using environmental attitudes in estimating the recreational value of an area with the base case. SHAZAM 10 and Excel 2016 software were used to estimate the economic models (logit model) and perform statistical analysis.

Finally, considering the amount of WTP for each visitor and knowing the statistics of the total number of visitors per year, it is possible to estimate the total recreational value of Helen protected forest area. In the logit model, the initial estimated coefficients only show the signs of the effect of the explanatory variables on the probability of accepting the dependent variable and do not have a quantitative interpretation, but only the elasticities and marginal effect are interpreted. The marginal effect measures the extent of change in the probability of accepting the proposed rate due to a one unit change in each descriptive variable. It is computed using the following formula [77]:

$$ME = \frac{\partial x_i}{\partial x_{ki}} = F(x'_i \beta_k) = \frac{\exp(x'_i \beta)}{[1 + \exp(x'_i \beta)]^2} \beta_k \tag{11}$$

ME: marginal effect;
β_k: coefficient estimated for the Kth descriptive variable;
x_i: representative of descriptive variables.

The elasticity, a metric gauging the sensitivity of a dependent variable to alterations in an independent variable [78], signifies the percentage fluctuations in the observed probability of WTP among different age groups due to a 1% change in each descriptive variable. It is computed through the following formula [77]:

$$EK_i = \frac{\partial p_i}{\partial x_{ki}} \tag{12}$$

k_i: represents the specific independent variable;
p_i: stands for the probability of occurrence (either 0 or 1);
x: denotes the descriptive variables.

3. Results

3.1. Analysis of Socio-Economic Attributes

The socio-economic attributes of the 230 survey participants are summarized in Table 1. The sample was predominantly male (*n* = 177, 77%), with a mean age of 37.9 years. Most respondents (56.95%) belonged to the 30–40-year age range, whereas the group aged 50 years and above comprised the smallest percentage (5.65%). The average level of education was 16 years of schooling, and the average monthly income was IRR 62.7 million (USD 177.5). The average household size was 3.5 members, and the average frequency of visiting the surveyed location was 2.6 times per year.

Table 1. Socio-economic characteristics in the study area.

Variables	Mean	Minimum	Maximum	Standard Deviation	Coefficient of Variation
Respondent's age (year)	37.9	24	70	7.41	0.19
Education (year)	16	9	22	2.7	0.16
Income (million IRR) (USD)	62.7 (USD 177.5)	50 (USD 141.6)	200 (USD 566.4)	30.2	0.48
Household size	3.5	2	8	1.2	0.34
Number of visits	2.6	1	5	1.8	0.7

3.2. Ethical Perspectives and WTP

The current study analyzed individuals' behavior regarding the use and benefit of tourism and recreational services in the study area. Participants (n = 230) assessed two environment-related perspectives: a deontological viewpoint upholding environmental protection as an ethical duty for which payment should occur regardless of personal benefit, and a teleological perspective deeming environmental protection payments should depend on accrued human benefits. Most respondents (n = 159; 69.1%) aligned with the deontological perspective, believing the importance of environmental preservation to be sufficiently high to deserve unconditional investment. The remaining sample (n = 71; 30.9%) endorsed the teleological view, positing payments should follow from received environmental benefits. Correlational analyses revealed WTP for regional tourism services diverged by ethical orientation: specifically, intention-to-pay rates were higher among deontological (87% willing) than teleological (73% willing) respondents. On average, deontological respondents approved payments of approximately IRR 125,000 (USD 0.35) for the area's recreational services, exceeding the mean sum sanctioned by teleological respondents (Table 2).

Table 2. Investigating the environmental statement characteristics in the study area.

Parameter	Frequency	Percentage	Number of WTP	Number of Unwillingness to Pay	The Percentage of WTP	The Percentage of Unwillingness to Pay	Average WTP (USD)
Consequentialist	71	30.9	52	19	73	27	0.3
Ethics	159	69.1	139	20	87	13	0.35
Total	230	100					

3.3. WTP for Helen Forest Access

The economic value questionnaire measured visitors' WTP for access to the Helen forest area, encompassing its tourism offerings and recreational services. The results showed that 83.04% of the 230 respondents (n = 191) were willing to pay some amount, while 16.96% (n = 39) were unwilling to pay (Table 3).

Table 3. Investigating the WTP of visitors in the study area.

WTP	Frequency	Percentage
Yes	191	83.04
No	39	16.96
Total	230	100

3.4. Pricing Options and WTP

The three proposed bids in this study's questionnaire were determined through pre-testing using the double-bounded dichotomous approach. Specifically, visitors were first asked about their WTP to access the recreational services at Helen forest. The average stated WTP was calculated as IRR 100,000 (USD 0.28). This average value was then halved

to derive the median proposed price of IRR 50,000 (USD 0.14) and doubled to obtain the higher bound of IRR 200,000 (USD 0.56). The first question asked whether respondents would be willing to pay IRR 100,000 (USD 0.28) per visit for themselves and their family to use and benefit from the tourism, recreational, and tourist services at the Helen forest area. In case of a negative response, a follow-up question presented the lower price of IRR 50,000 (USD 0.14). For a positive response, the subsequent question offered the higher price of IRR 200,000 (USD 0.56). Out of the 230 respondents, 31 respondents (13.48%) rejected the initial bid of IRR 100,000 (USD 0.28). A majority of 160 respondents (69.57%) accepted the initial bid. The remaining 39 respondents (17.0%) provided no clear response. Those who accepted the initial bid were then asked about their WTP IRR 200,000 (USD 0.56). Within this group, 54 respondents accepted the offer, while 106 rejected the bid of IRR 200,000 (USD 0.56). Finally, respondents who had declined the initial bid of IRR 100,000 (USD 0.28) were offered the reduced option of IRR 50,000 (USD 0.14). Among this group, 23 respondents (10%) accepted the lower bid, while 47 (20.4%) continued to decline this reduced offer (Table 4).

Table 4. Acceptance status of the bid amount in the study area.

Acceptance Status		First Bid IRR 100,000 (USD 0.28)	Second Bid IRR 50,000 (USD 0.14)	Third Bid IRR 200,000 (USD 0.56)
Acceptance of proposed amount	Number	160	31	54
	Percentage	69.57	13.47	23.5
Rejection of proposed amount	Number	70	39	106
	Percentage	30.43	16.96	46.09
Total	Number	230	70	160
	Percentage	100	30.43	69.57

3.5. Principal Component Analysis

Principal component analysis (PCA) as a multivariate symmetric approach represents the relationship between data sets. In some studies, PCA was performed to confirm the aspects of the NEP scale and the relationship between them. The results of Kaizer–Meyer–Olkin's Measure of Sampling Adequacy (KMO = 0.889) and Bartlett's test of sphericity (p-value = 0.000) indicated that the data were suitable for PCA.

The findings revealed that all questionnaire items loaded onto five distinct factors, each with an eigenvalue greater than 1. Collectively, these five factors accounted for 79.034% of the variance in the relevant variable (Table 5). This confirms the existence of five components within the NEP scale in the context of our research, as indicated by the number of components with eigenvalues exceeding 1. The results indicate that factor 1 (ecocentric) explains 46% of the total variance, the highest among the factors considered. As a result, the logit model is re-estimated, this time incorporating the first factor alongside other socio-economic variables (see Table 5).

Table 5. Total variance explained by components.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.974	46.495	46.495	6.974	46.495	46.495	2.464	16.426	16.426
2	1.387	9.244	55.739	1.387	9.244	55.739	2.353	15.689	32.116
3	1.312	8.750	64.489	1.312	8.750	64.489	2.353	15.689	47.805
4	1.152	7.680	72.169	1.152	7.680	72.169	2.350	15.669	63.473
5	1.030	6.865	79.034	1.030	6.865	79.034	2.334	15.560	79.034
6	0.459	3.061	82.094						
7	0.417	2.778	84.872						
8	0.368	2.452	87.324						
9	0.341	2.273	89.597						
10	0.329	2.194	91.791						
11	0.315	2.100	93.891						
12	0.266	1.772	95.663						
13	0.244	1.628	97.291						
14	0.229	1.529	98.820						
15	0.177	1.180	100.000						

Figure 2 shows that five factors with a characteristic value greater than 1 have been extracted. Generally, the first component accounts for the most variance.

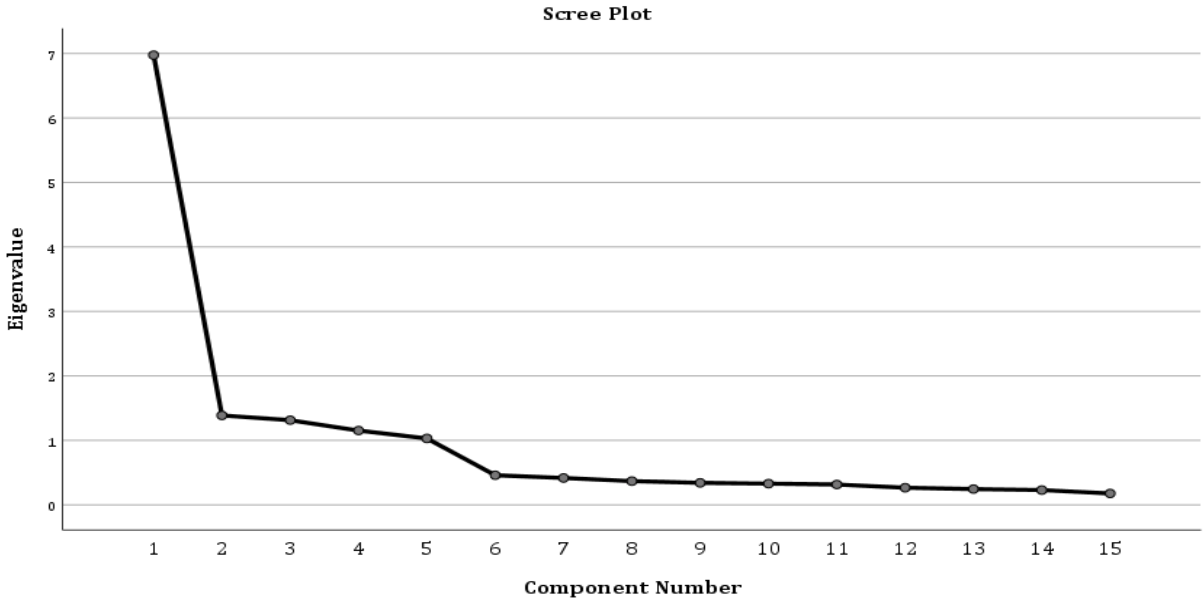

Figure 2. Eigenvalues of basic components.

Table 6 presents the grouping of the NEP scale's items into the five extracted components, categorized based on their loadings. Consequently, it shows the association of each question with its respective factor, affirming that all questions accurately measure the factor they were intended to assess. Referring to the questionnaire, the questions are denoted from N1 to N15. Notably, questions 4, 5, and 6 pertain to the nature-oriented dimension and exhibit higher explanatory power in terms of variance.

Table 6. Rotated component matrix.

Questions	Components *				
	1	2	3	4	5
N5	0.848				
N4	0.817				
N6	0.815				
N1		0.829			
N3		0.806			
N2		0.774			
N15			0.850		
N14			0.792		
N13			0.775		
N10				0.821	
N12				0.816	
N11				0.793	
N8					0.820
N9					0.811
N7					0.790

* Component 1: ecocentric. Component 2: growth limits. Component 3: possibility of an ecocrisis. Component 4: rejection of exceptionalism. Component 5: natural balance fragility.

3.6. New Environmental Paradigm and Tourist Perspectives

This study employed a 15-item Likert scale questionnaire to investigate visitors' perspectives on the NEP within the Helen forest area. The questionnaire encompassed a range of scores from 15 to 75. The questionnaire's validity and reliability were established through

expert review and Cronbach's alpha, respectively. With a value of 0.78, Cronbach's alpha indicates that the designed questions demonstrate strong internal consistency and serve as a reliable instrument for measuring environmental attitudes. The statement "plants and animals have as much right as humans to exist" received the highest mean score of 4.28, indicating a strong agreement among the respondents. In contrast, the lowest mean score of 1.79 was associated with the statement "the balance of nature is strong enough to cope with the impacts of modern industrial development", suggesting a lower level of agreement. The overall mean index score of 57.36 further emphasizes the overall positive perception of the NEP among the visitors' respondents (Table 7).

Table 7. Frequency distribution of the attitude of the NEP of the respondents of Helen forest area.

Questions	Strongly Agree	Agree	Unsure	Disagree	Somewhat Disagree	Mean
1. We are approaching the limit of the number of people the earth can support	38.3	34.3	15.2	6.52	5.65	3.93
2. The earth has plenty of natural resources if we just learn how to develop them	30.4	28.7	6.96	27	6.96	3.49
3. The earth is like a spaceship with very limited room and resources	27.8	40.9	9.57	14.8	6.96	3.68
4. Humans have the right to modify the natural environment to suit their needs	3.9	14	1.3	37	44	1.97
5. Plants and animals have as much right as humans to exist	57.4	28.3	3.91	5.65	4.78	4.28
6. Humans were meant to rule over the rest of nature	4.78	12.6	4.35	37.8	40.4	2.03
7. The balance of nature is strong enough to cope with the impacts of modern industrial development	1.74	7.83	9.13	30.9	50.4	1.79
8. When humans interfere with nature, it often produces disastrous consequences	44.3	33.5	15.7	5.22	1.3	4.14
9. The balance of nature is very delicate and easily upset	50.9	29.1	9.57	7.39	3.04	4.17
10. Human intelligence will ensure that we do not make the earth unlivable	22.2	33	6.52	21.3	17	3.22
11. Despite our special abilities, humans are still subject to the laws of nature	43	34	7	13	3	4.02
12. Humans will eventually learn enough about how nature works to be able to control it	34.4	23	6.52	15.7	20.4	3.35
13. Humans are severely abusing the environment	43.5	37	11.3	6.52	1.74	4.14
14. If things continue going as they presently are, we will soon experience a major ecological disaster	43	27	14.3	8.7	6.96	3.9
15. The so-called 'ecological crisis' facing humankind has been greatly exaggerated	5.6	8.7	12.6	27.4	45.7	2.01

3.7. Logit Model Analysis

This study used the maximum likelihood method to estimate the coefficients, statistical significance levels, and impact of the explanatory variables of the logit model on the dependent variable. Tables 8 and 9 show the results for the first model as the base model and the second model with the environmental attitude variable. It is worth noting that in the second model, based on the significance of the dimensions of the new environmental paradigm and the outcomes of the PCA test, the logit model was estimated with the ecocentric coefficient, which accounts for the most variance (46%), alongside other socio-economic variables. In both models, the proposed bid and the number of visits had a negative and significant effect on the WTP of individuals for the recreational use of Helen forest. The first model revealed that the most important positive and significant factors influencing the WTP of individuals for the recreational use of Helen forest were individual income, age, gender, education, environmental statement, travel duration and residence. The second model also found that individual income, age, gender, education, environmental statement, residence, and the NEP had a positive and significant influence on the WTP. The likelihood ratio test statistic measured the overall significance and goodness of fit of the logit model. It was 116.689 in the first model and 139.951 in the second model. The significance of this statistic in both models indicated that the estimated model was generally significant. In the first model, the goodness-of-fit criteria—Estrella, Maddala,

Cragg–Uhler, and McFadden coefficients—were 0.30955, 0.27750, 0.37005, and 0.23453, respectively. Meanwhile, the second model exhibited values of 0.32265, 0.28794, 0.38397, and 0.24504 for the same criteria.

Table 8. Results of the first logit regression model in the study area.

Variables	Coefficient	t-Ratio	Elasticity at Means	Aggregate Elasticity	Marginal Effect
Bid amount	−0.00021861	−7.5633 ***	−1.4205	−1.0134	−0.000054581
Membership in NGO	−0.13951	−0.42894	−0.022477	−0.016471	−0.034833
Number of visits	−0.58648	−4.7388 ***	−0.70473	−0.52191	−0.14643
Environmental statement	0.52415	1.8106 *	0.18649	0.13322	0.13087
Age	0.04938	2.2548 **	0.88249	0.63691	0.012329
Gender	0.72410	2.2485 **	0.26929	0.19816	0.18079
Education	0.14670	2.1503 **	1.1321	0.81397	0.036628
Household size	0.014046	0.13102	0.022498	0.016172	0.0035069
Income	0.00000014536	2.2918 **	0.38144	0.26002	0.000000036293
Residence	0.87902	1.8333 *	0.31511	0.23234	0.21947
Travel time	0.27054	1.8992 *	0.28949	0.20118	0.067547
Constant coefficient	−2.6898	−1.6640	−1.2965	−0.94030	-

Total observations: 359. Observations at one: 183. Observations at zero: 176. Estrella R-square: 0.30955. Maddala R-square: 0.27750. Cragg–Uhler R-square: 0.37005. McFadden R-squared: 0.23453. Likelihood ratio test: 116/689. Percentage of right predictions: 0.74652. ***, ** and * are statistically significant at the significance levels of 99, 95 and 90%.

Table 9. Results of the second logit regression model considering NEP in the study area.

Variables	Coefficient	t-Ratio	Elasticity at Means	Aggregate Elasticity	Marginal Effect
Bid amount	−0.00022679	−7.6772 ***	−1.4760	−1.0304	−0.000056630
Membership in NGO	−0.033678	0.10149	−0.0054345	−0.0039265	−0.0084096
Number of visits	−0.60045	−4.7970 ***	−0.72262	−0.52526	−0.14993
Environmental statement	0.50184	1.7124 *	0.17882	0.12610	0.12531
Age	0.050810	2.2959 **	0.90943	0.64414	0.012687
Gender	0.74149	2.2959 **	0.27618	0.19921	0.18515
Education	0.15831	2.2886 **	1.2236	0.86465	0.039530
Household size	0.020326	0.18784	0.032607	0.023029	0.0050755
Income	0.00000014708	2.3097 **	0.38654	0.25958	0.000000036726
Residence	0.77620	1.6063	0.27867	0.20208	0.19382
Travel time	0.24426	1.7174 *	0.26177	0.17856	0.060991
Ecocentric	0.12226	2.2726 **	0.72071	0.51341	0.030528
Constant coefficient	−4.2071	−2.3746	−2.0309	−1.4460	-

Total observations: 359. Observations at one: 183. Observations at zero: 176. Estrella R-square: 0.32265. Maddala R-square: 0.28794. Cragg–Uhler R-square: 0.38397. McFadden R-squared: 0.24504. Likelihood ratio test: 121.916. Percentage of right predictions: 0.75766. ***, ** and * are statistically significant at the significance levels of 99, 95 and 90%.

These figures in both models were considered satisfactory given the number of observations within the dependent variable. The accuracy of predictions in the first model reached 74%, while in the second model, it was 75%. These values denote a high predictive capability of the regression, surpassing the acceptable threshold for the logit model, which typically stands at 70%.

Table 9 shows that variables such as expressing environmental viewpoints and embracing ecocentric perspectives positively influence WTP. These results imply that individuals' environmental attitudes, in conjunction with socio-economic attributes, significantly influence their propensity to pay for environmental initiatives.

3.8. Calculating the WTP and the Total Annual Recreational Value of the Helen Forest

The expected value of WTP using Equation (8) was calculated by calculating the average WTP method by numerical integration in the range of zero to the maximum offer. The average WTP of each household per visit for the recreational use of the study area was IRR 138,237 (USD 0.4) in the first model and IRR 190,390.4 (USD 0.53) in the second model. The study used relation (8) to calculate the average WTP:

$$\text{Model 1}: \ \mathrm{E}\,(\mathrm{WTP}) = \int_0^{max} F_n\,(\Delta \mathrm{U})dA = \int_0^{200000} \frac{1}{1+\exp\{-(0.8078539+0.00021861)\}} \ = \ \text{IRR } 138,237 \text{ Rials } (\text{USD } 0.4)$$

$$\text{Model 2}: \ \mathrm{E}\,(\mathrm{WTP}) = \int_0^{max} F_n\,(\Delta \mathrm{U})dA = \int_0^{200000} \frac{1}{1+\exp\{-(2.9885799+0.00022679)\}} \ = \ \text{IRR } 190,390.4 \text{ Rials } (\text{USD } 0.53)$$

In addition, the average WTP of each family per year for the recreational use of the study area was calculated based on the average number of visits to Helen forest (2.60). The total recreational value of the whole area was estimated by multiplying the average WTP of each family per year by the number of families visiting Helen forest per year (45,714 families). The total recreational value of Helen forest was IRR 16,430,459,992 (USD 46,533) in the first model and IRR 22,629,264,215 (USD 64,088) in the second model. The study used the following formulas to calculate the average WTP per year for each family and the total annual recreational value:

Average WTP per year for each family = E (WTP) × Average number of visits to Helen's forest

=138,237 × 2.60 = 359,416.2 IRR (1.02 USD) Model 1

=190,390.4 × 2.60 = 495,015 IRR (USD 1.4) Model 2

Annual recreational value of Helen's forest = average WTP per year per family × number of families visiting per year

=359,416.2 × 45714.3 = 16,430,459,992 Rials (46,533 USD) Model 1

=495,015 × 45714.3 = 22,629,264,215 Rials (64,088 USD) Model 2

4. Discussion

Nature-based tourism, which involves visiting natural areas for recreation, education, or cultural purposes, is one of the main economic arguments for conserving natural resources. Indeed, it has emerged as one of the most rapidly expanding economic sectors globally [79,80]. Recreational benefits derived from forests constitute a substantial portion of the total economic value of forests, playing an increasingly vital role in the management of multifunctional forests within protected areas [81]. The monetary value of socially desirable goods, such as recreational activities in preserved natural areas, has been ignored [5,82]. Therefore, one of the most widely used services of natural resources is its recreational value. This denotes that individuals are willing to spend an amount to benefit from this function of nature [83]. The Helen protected forest area in Iran plays an undeniable role in the services and functions of the forest. However, it remains vulnerable to both natural and human-induced threats [84]. The escalating pressures on these protected regions emphasize the necessity for economic justification to support their conservation and continued protection [85].

Since according to environmental laws, reasonable use of the resources of this forest area is allowed and there are many villages on the margins and inside the area, there are no pristine conditions, especially for areas with lower altitudes and greater access. As a result, the effects of human activities in the area are quite evident. Indeed, this situation presents an opportunity. Leveraging people's environmental attitudes toward safeguarding the Helen protected forest area can facilitate economic valuation efforts. Their intrinsic value for conservation can be harnessed to establish the economic worth of preserving this vital ecosystem. Therefore, the use of environmental attitudes in economic valuation models, especially in terms of contingent valuation studies that aim to motivate WTP behavior, is very important [86].

In this study, two baseline models were estimated: one without considering environmental attitudes, and the second model incorporating environmental attitudes using the CVM to demonstrate their impact on economic valuation issues. The application of CVM in the field of valuation of forest ecosystem services is mainly from two aspects. On the one hand, it is a financially motivated tool for forest management programs. In fact, it is payment for forest ecosystem services [87,88]. On the contrary, the utilization of CVM extends to non-monetary incentive programs aimed at evaluating community preferences and WTP for forest conservation activities [89,90]. Therefore, the purpose of this study, which is a combination of attitude–behavior literature techniques and economic valuation, is to estimate the recreational value of the Helen protected forest area using NEP as a theoretical basis for determining people's WTP under the CVM.

The study conducted in the Helen protected forest area revealed that 83.04% of individuals expressed a WTP for accessing and enjoying the tourist and recreational services provided by this forest. Hence, based on the estimated percentage, it is evident that despite being a developing country, Iran showcases a willingness among its people to invest financially in utilizing the tourism potential of its forests. This implies a crucial transformation of environmental considerations into monetary valuation, underscoring the substantial importance people place on natural resources and ecosystems. The favorable effects of tourism in protected areas extend beyond mere economic gains. Tourists' appreciation for nature within these areas encompasses various dimensions beyond economic benefits, encompassing recreational and aesthetic values as well [91].

Therefore, the high percentage of people's WTP for the recreational value of the Helen forest is promising in terms of management, and given the threats to the area, it is necessary and essential to preserve and restore this forest. Socio-economic and demographic factors of visitors as well as recreational activities and objectives significantly influence recreational demand and preferences [92,93]. Therefore, the examination of factors influencing people's WTP, as determined by logit model estimation in the study area, highlighted the paramount explanatory variable affecting recreational value in CVM in both models. The estimated coefficient of the proposed amount variable emerged as the most significant and influential, signifying visitors' WTP for the area's recreational value in both models. The estimated coefficient of the offer factor, a pivotal determinant in estimating the potential WTP for recreational value, exhibits statistical significance at the 1% level, denoted by its expected negative sign. This signifies that within the assumed market scenario, an increase in the offered price corresponds to a reduced likelihood of respondents indicating a "yes" for WTP.

In [94], the estimation of the effect of the proposed amount on WTP to protect the Simlipal forest in India yielded a negative and significant impact. In [95], the price of the proposed amount was identified as the most influential variable affecting on WTP. In our study, a 1% rise in respondents' reaction to the proposed price results in a decrease of 1.034% in the probability of accepting the proposed amount in the first model and a decrease of 1.0304% in the second model. Considering the marginal effect of this variable, a one unit increase in the proposed price leads to a decrease in the probability of accepting the proposed amount by 0.000054581 in the first model and by 0.000056630 in the second model. Consequently, it can be inferred that an increase in the admission fee at Helen forest corresponds to a decrease in visitors' WTP for recreational use.

Knowing the number of visits of individuals to tourist areas is important in estimating the number of person-days or hours of visits in planning and allocation of recreational facilities available in the park [96]. This variable was statistically significant at the 1% level with the expected minus sign in both models within our study. This indicates that with an increasing number of visits to the study area, people's WTP decreases. This could be attributed to a decline in utility and a rise in the cost-effectiveness of the proposed admission fees, particularly impacting families who frequent the study area multiple times within a year. Therefore, the elasticity and marginal effect of the number of visits variable indicate a decrease in the probability of accepting the proposed amount by 0.52191% and

0.14643 units in the first model and by 0.52526% and 0.14993 units in the second model. This decrease corresponds to a 1% increase in the number of visitors and an increment of one unit (each visit) to the Helen forest area. Studies by [97,98] similarly reported a notable impact of the number of visits on WTP.

In order to identify the reasons for visitors' tendencies towards the recreational value of Helen forest, we probed two environmental perspectives; ethical and consequential statements. The expected sign of the environmental statement variable in both models is positive and statistically significant at the 10% level of influence on the WTP of the visitors. This indicates that the visitors in the study area, holding an ethical perspective, view the preservation of the environment to maintain the recreational value of Helen forest as a moral obligation. They are willing to financially support its recreational value, even if it does not directly benefit them. As a result, the positive sign indicates that ethically oriented visitors are more willing to pay than consequential visitors. The emergence of different ethical perspectives on environmental protection highlights fundamental ideological differences that may profoundly shape attitudes and conservation engagement. The ethical viewpoint expresses an eccentric paradigm-placing nature as the primary focus of ethical considerations, while the viewpoint of consequential individuals gives priority only to human benefits. Based on the results obtained, the elasticity of this variable showed that with a 1% increase in this variable, the probability of accepting the proposed amount will increase by 0.13322% in the first model and 0.12610% in the second model among visitors holding this viewpoint. Also, the marginal effect of this variable showed that by increasing one unit of the proposed price, the probability of WTP will increase by 0.13087 units in the first model and 0.12531 units in the second model for individuals with this viewpoint. A study on Bamu National Park in Iran [99] confirmed the correlation between individuals endorsing an ethical viewpoint and WTP, reporting results analogous to those observed in the present study.

Among the significant variables influencing people's WTP for the recreational value of Helen forest, age, gender, and education emerged as notably influential factors in both models, displaying a positive and significant impact. The elasticity of the age, gender, and education variables in the first model demonstrates respective increases of 0.63691%, 0.19816%, and 0.81397% in the probability of accepting the proposed amount with a 1% change in these variables. In the second model, these variables exhibit increases of 0.64414%, 0.19921%, and 0.86465% in the probability of acceptance with the same 1% change. Moreover, an increase of one unit in the aforementioned variables results in an increase in WTP by 0.012329, 0.18079, and 0.036628 units in the first model. In the second model, these increases amount to 0.012687, 0.18515, and 0.039530 units, respectively, indicating the marginal effect of age, gender, and education variables on WTP. It can therefore be concluded that in the present study, people's WTP for recreational benefits from Helen's forest increases with age. According to field observations, the main reason for this was the direct relationship between the income of visiting individuals and the age of individuals, so that individuals who had higher incomes with increasing age assigned higher WTPs. Also, the education variable showed that a higher level of education influences the probability of "yes" for the WTP of visitors. Therefore, it can be concluded that the importance and recreational benefits of the Helen forest area are high for the educated segment of society, and education is one of the ways to appreciate the recreational value of the area and preserve and restore the living and pristine nature of this forest. Numerous studies, including [100,101], reported comparable findings to the present study concerning the variables mentioned earlier.

Examining the coefficient of income variable showed that this variable has a positive and significant effect at the 5% level in both models on individuals' WTP. In general, people's income has a great influence on accepting and paying an amount for the recreational value. In this regard, the elasticity of the income variable showed that a 1% increase in people's income increases the probability of accepting the proposed amount by 0.26002% in the first model and 0.25958% in the second model. Considering the marginal effect, a

one unit increase in people's income corresponds to an increase of 0.000000036293 units in the probability of accepting the amount for the recreational value of Helen forest in the first model and 0.000000036726 units in the second model. Therefore, given the positive relationship between people's income and the probability of accepting the proposed amounts to preserve this area, poverty alleviation policies, improved income distribution and job creation policies that lead to increased income for people in society will increase people's WTP to preserve the environment, and will help sustainable tourism development. Overall, the transition from low-income to high-income groups correlates with an increase in the WTP for the recreational value of Helen Forest, as supported by [102], affirming a direct relationship between income and the probability variables governing WTP in their study.

The residence location variable helps us to determine whether the residence of visitors has any effect on their WTP for the recreational value of Helen forest or not. Therefore, the elasticity of the residence variable showed that the probability of accepting the proposed amount increased by 0.23234% in the first model with a 1% increase in this variable. On the other hand, the final effect of this variable showed that with an increase of one- unit (being native), the probability of accepting the proposed amount increased by 0.21947 units in the first model. This means that native tourists are more willing to pay for the recreational benefit than non-native people.

In this study, the duration of the trip was identified as one of the influential variables on WTP, as the distance to the forest is the most important factor in decision making for recreational trips [103,104].

Accordingly, the elasticity of this variable demonstrates that a marginal increase of 1% in the price offered to visitors results in a proportional elevation of 0.20118% in the likelihood of accepting the proposed amount in the first model, and 0.17856% in the second model. This relationship persists even with a 10% increment in this variable, underscoring its significance in influencing visitors' acceptance behavior.

Furthermore, the marginal effect of this variable elucidates that a one unit increment (representing distance from residence to Helen forest) corresponds to a 0.067547 unit increase in the probability of accepting the proposed amount in the first model, and 0.060991 in the second model. This suggests that individuals residing farther from Helen forest attribute greater economic value to it.

This study incorporated the social attitude variable, represented by the NEP, into the model alongside individual socio-economic variables [45,105], aiming to investigate its impact on the recreational value of Helen forest. People's environmental attitude is a key factor influencing their WTP for the recreational use and enjoyment. As proposed in [106], the NEP stands as a significant predictor for economic WTP in environmental protection. This study incorporates latent psychological factors into forest valuation studies and enhances our understanding of how the visitors value ecosystem services. Previous studies have also demonstrated the positive impact of environmental attitudes on the value of environmental goods and services. For instance, [38,66,107] found a positive and significant effect of the NEP on people's WTP in their research. As highlighted in [47], positive environmental attitudes correlate with increased WTP for environmental protection, a trend corroborated by findings in this study.

Examining the elasticity of the ecocentric component in the second model showed that with an increase of 5% in this variable, the probability of accepting the proposed amount increases by 0.5134. On the other hand, the final effect showed that an increase of one unit in the environmental attitude variable increases the probability of accepting the proposed amount by 0.030528 units. Indeed, the results revealed an ecological interdependent relationship between humans and nature among tourists visiting the study area. This relationship signifies a departure from anthropocentric views, advocating instead for restrained growth, maintaining natural balance, and rejecting a solely human-centered perspective [108]. Given the threatening regional developments, visitors believed altering notions of human superiority to recognize nature's intrinsic value is a vital, influential measure for protecting Helen forest or similar areas. Moreover, analysis of the NEP

scale responses further supported this view, emphasizing humanity's interconnection with the environment. Specifically, the highest agreement was for the notion that plants, animals, and humans have equal rights to life [109], indicating recognition of the inherent worth of all ecosystem elements. This aligns with conclusions by [27,38] that willingness to ascribe equal life rights was prevalent. Demonstrating this ecocentric perspective's effect, models incorporating environmental attitudes produced higher WTP estimates, from IRR 359,416.2 to IRR 495,015 annually per household, favorable figures considering Iran's inflation. Consequently, annual recreational values rose from IRR 16,430,459,992 to IRR 22,629,264,215 (USD 46,533 to 64,088) between models, highlighting the substantial influence of environmental paradigms on economic valuations and visitor perspectives. This influence fosters positive attitudes toward environmentally friendly behaviors [110].

5. Conclusions

This study concludes that visitors who exhibit more positive and robust environmental attitudes tend to assign higher value to environmental aspects. Notably, this study marks the pioneering effort in Iran, introducing the concept of recreational valuation from the perspective of the "new ecological paradigm" to the public. Furthermore, this study encourages greater focus on environmental concerns with an ecological approach to safeguard protected areas like Helen forest. It also anticipates heightened attention from officials towards Helen forest to bolster its recreational standing, urging necessary actions for its enhancement and development, given its substantial potential. Our study focused on the Helen region, characterized by a cold, mountainous climate hindering winter fieldwork. Consequently, questionnaire distribution primarily occurred during spring, summer, and autumn. Acknowledging this seasonal bias, we recommend that future research incorporates surveys across all seasons to enhance findings' accuracy and capture diverse recreational perspectives. The study area's rugged mountainous terrain and challenging traffic conditions posed significant logistical challenges, hindering access to potential participants and impacting the achievable sample size. While the sample size may be smaller than desired, the data gathered still provide valuable insights into the research objectives. We took diligent steps to ensure the quality and reliability of the gathered data, considering the limitations imposed by the geographical and environmental constraints of the study area.

In addition, the temporal scope of this study may present limitations in capturing dynamic changes over an extended period. Longitudinal studies or research with a more extended observation period could provide a more comprehensive understanding of the phenomena under investigation. Therefore, investment in education, advertising, and the introduction of ecosystem values pertaining to this area should also be considered. Moreover, from a managerial standpoint, this study yields promising outcomes. Firstly, it indicates that visitors to Helen forest exhibit awareness regarding the significance of natural resources and the environment. Secondly, it shows that society has a considerable WTP to support recreational use. These findings provide policymakers and officials with insights into the importance of endorsing environmental quality and safeguarding natural resources, thereby preventing their undervaluation due to insufficient government support. This prompts considerations for future research opportunities and recommendations. This study lays the foundation for enhanced economic valuation research in the region. To further enrich our understanding, we suggest exploring alternative valuation approaches, such as the travel cost method. Comparing results obtained through different methods can provide a more comprehensive and nuanced perspective on the economic value of the Helen forest region. Significantly, this study demonstrates people's ability to translate numerous environmental aspects into monetary terms, signifying their valuation of these resources. Consequently, it urges the policy makers to recognize the significance of publicly owned resources and undertake essential measures to protect, enhance, and develop them.

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Institutional Review Board Statement: Ethical review and approval were waived for this study as data collection was conducted anonymously through the survey. Anonymity was maintained throughout the data collection process, ensuring participants' identities remained undisclosed.

Informed Consent Statement: Informed consent was gathered from participants apprised of the study's nature, risks, benefits, confidentiality protections, and right to withdraw. To minimize risk while supporting conservation, this study utilized anonymous questionnaires regarding WTP and new environmental paradigm. Data was securely stored, and only aggregate findings will be reported.

Data Availability Statement: The data are available on request from the corresponding author.

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References

1. Enriquez-de-Salamanca, A. Valuation of ecosystem services: A source of financing Mediterranean loss-making forests. *Small-Scale For.* **2023**, *22*, 167–192. [CrossRef]
2. De Groot, R.; Brander, L.; Van Der Ploeg, S.; Costanza, R.; Bernard, F.; Braat, L.; Christie, M.; Crossman, N.; Ghermandi, A.; Hein, L. Global estimates of the value of ecosystems and their services in monetary units. *Ecosyst. Serv.* **2012**, *1*, 50–61. [CrossRef]
3. Perez-Verdin, G.; Sanjurjo-Rivera, E.; Galicia, L.; Hernandez-Diaz, J.C.; Hernandez-Trejo, V.; Marquez-Linares, M.A. Economic valuation of ecosystem services in Mexico: Current status and trends. *Ecosyst. Serv.* **2016**, *21*, 6–19. [CrossRef]
4. Campbell, E.T. Revealed social preference for ecosystem services using the eco-price. *Ecosyst. Serv.* **2018**, *30*, 267–275. [CrossRef]
5. Cook, D.; Davíðsdóttir, B.; Kristófersson, D.M. Energy projects in Iceland–Advancing the case for the use of economic valuation techniques to evaluate environmental impacts. *Energy Policy* **2016**, *94*, 104–113. [CrossRef]
6. Haab, T.C.; Interis, M.G.; Petrolia, D.R.; Whitehead, J.C. From hopeless tocurious? Thoughts on hausman's "Dubious to hopeless" critique of contingent valuation. *Appl. Econ. Perspect. Policy* **2013**, *35*, 593–612. [CrossRef]
7. Bamwesigye, D.; Hlaváčková, P. The Non-Wood Forest Value of Bwindi Impenetrable Forest, Uganda. In *Public Recreation and Landscape Protection–With Nature Hand in Hand*; Mendel University in Brno: Brno, Czech Republic, 2017; pp. 1–5.
8. Bamwesigye, D.; Hlavackova, P. Forest wood production in Tropical Africa. *J. Landsc. Manag* **2018**, *9*, 39–45.
9. Upton, V.; Dhubháin, Á.N.; Bullock, C. The valuation of non-market forest benefits in Ireland: A review. *Ir. For.* **2019**, *69*, 109–125.
10. Hou, Y.; Li, B.; Müller, F.; Fu, Q.; Chen, W. A conservation decision-making framework based on ecosystem service hotspot and interaction analyses on multiple scales. *Sci. Total Environ.* **2018**, *643*, 277–291. [CrossRef]
11. Tambor, M.; Pavlova, M.; Rechel, B.; Golinowska, S.; Sowada, C.; Groot, W. Willingness to pay for publicly financed health care services in Central and Eastern Europe: Evidence from six countries based on a contingent valuation method. *Soc. Sci. Med.* **2014**, *116*, 193–201. [CrossRef]
12. Zhang, L.; Yu, X.; Jiang, M.; Xue, Z.; Lu, X.; Zou, Y. A consistent ecosystem services valuation method based on total economic value and equivalent value factors: A case study in the Sanjiang Plain, Northeast China. *Ecol. Complex.* **2017**, *29*, 40–48. [CrossRef]
13. Riccioli, F.; Fratini, R.; Fagarazzi, C.; Cozzi, M.; Viccaro, M.; Romano, S.; Rocchini, D.; Espinosa Diaz, S.; Tattoni, C. Mapping the recreational value of coppices' management systems in Tuscany. *Sustainability* **2020**, *12*, 8039. [CrossRef]
14. Davis, R.K. Recreation planning as an economic problem. *Nat. Resour. J.* **1963**, *3*, 239.
15. Kharchenko, N.; Morkovina, S.; Kapitonov, D.; Lisova, O. Forest ecosystem services in the system of sustainable forest use of sparsely forested regions of Russia. *J. Eng. Appl. Sci.* **2018**, *13*, 3567–3572.
16. Tauristina, A.; Diswandi, D.; Mahmudi, H. Economic valuation of forest resources from drinking water customers' point of view: A contingent valuation method application. *J. Econ. Financ. Manag. Stud.* **2022**, *5*, 1668–1672.
17. Needham, K.; Hanley, N. Valuing a managed realignment scheme: What are the drivers of public willingness to pay? *Ocean Coast. Manag.* **2019**, *170*, 29–39. [CrossRef]
18. Fulton, D.C.; Manfredo, M.J.; Lipscomb, J. Wildlife value orientations: A conceptual and measurement approach. *Hum. Dimens. Wildl.* **1996**, *1*, 24–47. [CrossRef]
19. Brown, G.; Reed, P. Validation of a forest values typology for use in national forest planning. *For. Sci.* **2000**, *46*, 240–247.

20. McConnell, K.E. Existence and bequest value. In *Managing Air Quality and Scenic Resources at National Parks and Wilderness Areas*; Routledge: London, UK, 2019; pp. 254–264.
21. Bergstrom, J.; Reiling, S. Does Existence Value Exist? In *Multiple Objective Decision-Making for Land, Water, and Environmental Management*; Lewis Publishers: Boca Raton, FL, USA, 1998; pp. 481–491.
22. Loomis, J. The role of economics in managing natural resources for society. In *Society and Natural Resources: A Summary of Knowledge*; Modern Litho: Jefferson, MO, USA, 2004; pp. 295–304.
23. Harris, C.C.; Driver, B.L.; McLaughlin, W.J. Improving the contingent valuation method: A psychological perspective. *J. Environ. Econ. Manag.* **1989**, *17*, 213–229. [CrossRef]
24. Ajzen, I.; Driver, B. Contingent value measurement: On the nature and meaning of willingness to pay. *J. Consum. Psychol.* **1992**, *1*, 297–316. [CrossRef]
25. Arrow, K.; Solow, R.; Portney, P.R.; Leamer, E.E.; Radner, R.; Schuman, H. Report of the NOAA panel on contingent valuation. *Fed. Regist.* **1993**, *58*, 4601–4614.
26. Johnston, R.J.; Boyle, K.J.; Adamowicz, W.; Bennett, J.; Brouwer, R.; Cameron, T.A.; Hanemann, W.M.; Hanley, N.; Ryan, M.; Scarpa, R. Contemporary guidance for stated preference studies. *J. Assoc. Environ. Resour. Econ.* **2017**, *4*, 319–405. [CrossRef]
27. Bartczak, A. The role of social and environmental attitudes in non-market valuation: An application to the Białowieża Forest. *For. Policy Econ.* **2015**, *50*, 357–365. [CrossRef]
28. McIntyre, A.; Milfont, T.L. Who cares? Measuring environmental attitudes. In *Research Methods for Environmental Psychology*; John Wiley & Sons, Ltd.: Hoboken, NJ, USA, 2016; pp. 93–114.
29. Sulphey, M.; AlKahtani, N.S.; Senan, N.A.M.; Adow, A.H.E. New environmental paradigm, Environmental attitude, and proenvironmental behaviour as antecedents of environmental sustainability. *Int. J. Energy Econ. Policy* **2023**, *13*, 418. [CrossRef]
30. Qian, C.; Yu, K.; Gao, J. Understanding environmental attitude and willingness to pay with an objective measure of attitude strength. *Environ. Behav.* **2021**, *53*, 119–150. [CrossRef]
31. Bateman, I.; Großbritannien, D.O.T. *Economic Valuation with Stated Preference Techniques: A Manual*; Edward Elgar Cheltenham: Cheltenham, UK, 2002; Volume 50.
32. Stern, P.C. New environmental theories: Toward a coherent theory of environmentally significant behavior. *J. Soc. Issues* **2000**, *56*, 407–424. [CrossRef]
33. Spash, C.L.; Urama, K.; Burton, R.; Kenyon, W.; Shannon, P.; Hill, G. Motives behind willingness to pay for improving biodiversity in a water ecosystem: Economics, ethics and social psychology. *Ecol. Econ.* **2009**, *68*, 955–964. [CrossRef]
34. Dunlap, R.E. The new environmental paradigm scale: From marginality to worldwide use. *J. Environ. Educ.* **2008**, *40*, 3–18. [CrossRef]
35. Dunlap, R.E.; Van Liere, K.D. The "new environmental paradigm". *J. Environ. Educ.* **1978**, *9*, 10–19. [CrossRef]
36. Putrawan, I.M. Measuring new environmental paradigm based on students knowledge about ecosystem and locus of control. *EURASIA J. Math. Sci. Technol. Educ.* **2015**, *11*, 325–333. [CrossRef]
37. Kemper, J.A.; Ballantine, P.W.; Hall, C.M. Sustainability worldviews of marketing academics: A segmentation analysis and implications for professional development. *J. Clean. Prod.* **2020**, *271*, 122568. [CrossRef]
38. Kotchen, M.J.; Reiling, S.D. Environmental attitudes, motivations, and contingent valuation of nonuse values: A case study involving endangered species. *Ecol. Econ.* **2000**, *32*, 93–107. [CrossRef]
39. Cooper, P.; Poe, G.L.; Bateman, I.J. The structure of motivation for contingent values: A case study of lake water quality improvement. *Ecol. Econ.* **2004**, *50*, 69–82. [CrossRef]
40. Spash, C.L. Non-economic motivation for contingent values: Rights and attitudinal beliefs in the willingness to pay for environmental improvements. *Land Econ.* **2006**, *82*, 602–622. [CrossRef]
41. Meyerhoff, J. Stated willingness to pay as hypothetical behaviour: Can attitudes tell us more? *J. Environ. Plan. Manag.* **2006**, *49*, 209–226. [CrossRef]
42. Ojea, E.; Loureiro, M.L. Altruistic, egoistic and biospheric values in willingness to pay (WTP) for wildlife. *Ecol. Econ.* **2007**, *63*, 807–814. [CrossRef]
43. Aldrich, G.A.; Grimsrud, K.M.; Thacher, J.A.; Kotchen, M.J. Relating environmental attitudes and contingent values: How robust are methods for identifying preference heterogeneity? *Environ. Resour. Econ.* **2007**, *37*, 757–775. [CrossRef]
44. Hoyos, D. The state of the art of environmental valuation with discrete choice experiments. *Ecol. Econ.* **2010**, *69*, 1595–1603. [CrossRef]
45. Choi, A.S.; Fielding, K.S. Environmental attitudes as WTP predictors: A case study involving endangered species. *Ecol. Econ.* **2013**, *89*, 24–32. [CrossRef]
46. Meldrum, J.R. Comparing different attitude statements in latent class models of stated preferences for managing an invasive forest pathogen. *Ecol. Econ.* **2015**, *120*, 13–22. [CrossRef]
47. Halkos, G.; Matsiori, S. Environmental attitude, motivations and values for marine biodiversity protection. *J. Behav. Exp. Econ.* **2017**, *69*, 61–70. [CrossRef]
48. Taye, F.A.; Vedel, S.E.; Jacobsen, J.B. Accounting for environmental attitude to explain variations in willingness to pay for forest ecosystem services using the new environmental paradigm. *J. Environ. Econ. Policy* **2018**, *7*, 420–440. [CrossRef]
49. Kim, D.; Avenzora, R.; Lee, J.-H. Exploring the outdoor recreational behavior and new environmental paradigm among urban forest visitors in Korea, Taiwan and Indonesia. *Forests* **2021**, *12*, 1651. [CrossRef]
50. Yu, Y.; Wang, E.; Wang, Z. Valuing nonuse value of a National Forest Park with consideration of the local residents' environmental attitudes. *Forests* **2023**, *14*, 1487. [CrossRef]

51. Kang, K.H.; Stein, L.; Heo, C.Y.; Lee, S. Consumers' willingness to pay for green initiatives of the hotel industry. *Int. J. Hosp. Manag.* **2012**, *31*, 564–572. [CrossRef]
52. Nowacki, M.; Chawla, Y.; Kowalczyk-Anioł, J. What drives the eco-friendly tourist destination choice? The Indian perspective. *Energies* **2021**, *14*, 6237. [CrossRef]
53. Doran, R.; Hanss, D.; Larsen, S. Intentions to make sustainable tourism choices: Do value orientations, time perspective, and efficacy beliefs explain individual differences? *Scand. J. Hosp. Tour.* **2017**, *17*, 223–238. [CrossRef]
54. Lu, A.C.C.; Gursoy, D.; Del Chiappa, G. The influence of materialism on ecotourism attitudes and behaviors. *J. Travel Res.* **2016**, *55*, 176–189. [CrossRef]
55. Jafari, A.; Arman, Z. Monitoring of vegetation cover change in Helen forested protected area and its causes based on bi-temporal analysis of NDVI. *J. Nat. Environ.* **2015**, *67*, 391–402.
56. Raeisian, R. *Final Report National Plan of Data Collection and Analysis to Provide Identification of Watersheds in Chaharmahal and Bakhtiari*; Livestock and Natural Resources Research Center of Chaharmahal and Bakhtiari Province: Shahrekord, Iran, 2000. (In Persian)
57. Naderi, E.; Jafari, A.; Mafi-Gholami, D. Zoning Helen Forest protected area in Chaharmahal and Bakhtiari province for conservation-ecotourism goals. *J. Tour. Dev.* **2023**, *12*, 43–58.
58. Bance, P.; Chassy, A. Citizen advisory committees in the contingent valuation method process. *Politics Policy* **2020**, *48*, 766–797. [CrossRef]
59. Shee, A.; Azzarri, C.; Haile, B. Farmers' willingness to pay for improved agricultural technologies: Evidence from a field experiment in Tanzania. *Sustainability* **2019**, *12*, 216. [CrossRef]
60. Mitchell, R.; Carson, R.; Ruud, P. Cincinnati visibility valuation study: Pilot study findings. In *Report to the Electric Power Research Institute*; EPRI: Washington, DC, USA, 1989.
61. Marta-Pedroso, C.; Freitas, H.; Domingos, T. Testing for the survey mode effect on contingent valuation data quality: A case study of web based versus in-person interviews. *Ecol. Econ.* **2007**, *62*, 388–398. [CrossRef]
62. Zhou, Y.; Chen, H.; Xu, S.; Wu, L. How cognitive bias and information disclosure affect the willingness of urban residents to pay for green power? *J. Clean. Prod.* **2018**, *189*, 552–562. [CrossRef]
63. Xie, B.-C.; Zhao, W.; Yin, Z.-L.; Xie, P. How much will the residents pay for clean energy? Empirical study using the double bound dichotomous choice method for Tianjin, China. *J. Clean. Prod.* **2019**, *241*, 118208. [CrossRef]
64. Vidal, D.G.; Dias, R.C.; Seixas, P.C.; Dinis, M.A.P.; Fernandes, C.O.; Barros, N.; Maia, R.L. Measuring Environmental Concern of Urban Green Spaces' Users (UGSU) Through the Application of the New Ecological Paradigm Scale (NEPS): Evidence from a Southern European City. In *Sustainable Policies and Practices in Energy, Environment and Health Research: Addressing Cross-Cutting Issues*; Springer: Berlin/Heidelberg, Germany, 2021; pp. 21–37.
65. Naseri, H.; Waygood, E.O.D.; Wang, B.; Patterson, Z.; Daziano, R.A. A novel feature selection technique to better predict climate change stage of change. *Sustainability* **2021**, *14*, 40. [CrossRef]
66. Liu, W.-Y.; Lin, Y.-Z.; Hsieh, C.-M. Assessing the ecological value of an urban forest park: A case study of Sinhua forest park in Taiwan. *Forests* **2021**, *12*, 806. [CrossRef]
67. Gold, Coin, and Currency Information Network. Available online: https://www.tgju.org/currency (accessed on 25 January 2024).
68. Siew, M.K.; Yacob, M.R.; Radam, A.; Adamu, A.; Alias, E.F. Estimating willingness to pay for wetland conservation: A contingent valuation study of Paya Indah Wetland, Selangor Malaysia. *Procedia Environ. Sci.* **2015**, *30*, 268–272. [CrossRef]
69. Asafu-Adjaye, J.; Tapsuwan, S. A contingent valuation study of scuba diving benefits: Case study in Mu Ko Similan Marine National Park, Thailand. *Tour. Manag.* **2008**, *29*, 1122–1130. [CrossRef]
70. Hanemann, W.M. Valuing the environment through contingent valuation. *J. Econ. Perspect.* **1994**, *8*, 19–43. [CrossRef]
71. Lee, C.-K.; Han, S.-Y. Estimating the use and preservation values of national parks' tourism resources using a contingent valuation method. *Tour. Manag.* **2002**, *23*, 531–540. [CrossRef]
72. Judge, G.G.; Griffiths, W.E.; Hill, R.C.; Lütkepohl, H.; Lee, T.-C. *The Theory and Practice of Econometrics*; John Wiley & Sons: Hoboken, NJ, USA, 1991; Volume 49.
73. Bateman, I. Placing money values on the unpriced benefits of forestry. *Q. J. For.* **1991**, *85*, 152–165.
74. White, P.; Lovett, J. Public preferences and willingness-to-pay for nature conservation in the North York Moors National Park, UK. *J. Environ. Manag.* **1999**, *55*, 1–13. [CrossRef]
75. Kennedy, C. *Conservation Thresholds for Land Use Planners*; Environmental Law Institute: Washington, DC, USA, 2003.
76. Khodaverdi Zadeh, M.; Najafi Allamdarloo, H.; Raheli, H. The estimated value of the contingent valuation method recreational village Orumieh dam. *Agric. Econ. Res.* **2010**, *2*, 49–62.
77. Judge, G.G. *Introduction to the Theory and Practice of Econometrics*; John Wiley & Sons: Hoboken, NJ, USA, 1988.
78. Fatahi, A. *Foundations of Economic Valuation of Natural Resources*, 1st ed.; Ardakan University Press: Ardakan, Iran, 2013.
79. Balmford, A.; Green, J.M.; Anderson, M.; Beresford, J.; Huang, C.; Naidoo, R.; Walpole, M.; Manica, A. Walk on the wild side: Estimating the global magnitude of visits to protected areas. *PLoS Biol.* **2015**, *13*, e1002074. [CrossRef] [PubMed]
80. Buckley, R.; Brough, P.; Hague, L.; Chauvenet, A.; Fleming, C.; Roche, E.; Sofija, E.; Harris, N. Economic value of protected areas via visitor mental health. *Nat. Commun.* **2019**, *10*, 5005. [CrossRef] [PubMed]
81. Myung, E. An exploratory study of attendee willingness to pay for environmentally friendly meetings. *Int. J. Hosp. Tour. Adm.* **2017**, *18*, 272–287. [CrossRef]

82. Cook, D.; Davíðsdóttir, B.; Kristófersson, D.M. An ecosystem services perspective for classifying and valuing the environmental impacts of geothermal power projects. *Energy Sustain. Dev.* **2017**, *40*, 126–138. [CrossRef]
83. Doli, A.; Bamwesigye, D.; Hlaváčková, P.; Fialová, J.; Kupec, P.; Asamoah, O. Forest park visitors opinions and willingness to pay for sustainable development of the Germia forest and recreational park. *Sustainability* **2021**, *13*, 3160. [CrossRef]
84. Shirmardi, H.A.; Mozaffarian, V.; Gholami, P.; Heidari, G.; Safaei, M. Introduction of the flora, life form and chorology of Helen protected area in Chaharmahal and Bakhtiari province. *Iran. J. Plant Biol.* **2014**, *6*, 75–96.
85. do Val Simardi Beraldo Souza, T.; Thapa, B.; Rodrigues, C.G.D.O.; Imori, D. Economic impacts of tourism in protected areas of Brazil. *J. Sustain. Tour.* **2019**, *27*, 735–749. [CrossRef]
86. Luzar, E.J.; Cosse, K.J. Willingness to pay or intention to pay: The attitude-behavior relationship in contingent valuation. *J. Socio-Econ.* **1998**, *27*, 427–444. [CrossRef]
87. Khanal, Y.; Devkota, B.P. Farmers' responsibilization in payment for environmental services: Lessons from community forestry in Nepal. *For. Policy Econ.* **2020**, *118*, 102237. [CrossRef]
88. Naime, J.; Mora, F.; Sánchez-Martínez, M.; Arreola, F.; Balvanera, P. Economic valuation of ecosystem services from secondary tropical forests: Trade-offs and implications for policy making. *For. Ecol. Manag.* **2020**, *473*, 118294. [CrossRef]
89. Tilahun, M.; Vranken, L.; Muys, B.; Deckers, J.; Gebregziabher, K.; Gebrehiwot, K.; Bauer, H.; Mathijs, E. Rural households' demand for frankincense forest conservation in Tigray, Ethiopia: A contingent valuation analysis. *Land Degrad. Dev.* **2015**, *26*, 642–653. [CrossRef]
90. Iranah, P.; Lal, P.; Wolde, B.T.; Burli, P. Valuing visitor access to forested areas and exploring willingness to pay for forest conservation and restoration finance: The case of small island developing state of Mauritius. *J. Environ. Manag.* **2018**, *223*, 868–877. [CrossRef]
91. Harmon, D. Intangible values of protected areas: What are they? Why do they matter? *George Wright Forum* **2004**, *21*, 9–22.
92. Abildtrup, J.; Olsen, S.B.; Stenger, A. Combining RP and SP data while accounting for large choice sets and travel mode–an application to forest recreation. *J. Environ. Econ. Policy* **2015**, *4*, 177–201. [CrossRef]
93. Giergiczny, M.; Czajkowski, M.; Żylicz, T.; Angelstam, P. Choice experiment assessment of public preferences for forest structural attributes. *Ecol. Econ.* **2015**, *119*, 8–23. [CrossRef]
94. Saha, D.; Agarwalla, S. Willingness to Pay for Forest Conservation: An Empirical Investigation in Simlipal Forest. 2023. Available online: https://www.researchsquare.com/article/rs-2656400/v1 (accessed on 12 March 2024).
95. Subanti, S.; Zukhronah, E.; Handajani, S.; Irawan, B.B.; Hakim, A. Measuring economic value for tourism destination using contingent valuation method: The Sangiran sites, Central Java Province, Indonesia. *J. Phys. Conf. Ser.* **2018**, *983*, 012066. [CrossRef]
96. Beal, D.J. A travel cost analysis of the value of Carnarvon Gorge National Park for recreational use. *Rev. Mark. Agric. Econ.* **1995**, *63*, 292–303. [CrossRef]
97. Yeganeh, H.; Pourbagher, S.; Akbari, M. Investigating the factors affecting the willingness to pay ecotourism in the desert area rural of Qaleh-Bala Biarjomand-Semnan province. *Iran. J. Range Desert Res.* **2022**, *29*, 86–98.
98. Chang-San, B. A study of the economic valuation of the Saryeoni forest path utilizing the contingent valuation method. *Glob. Bus. Financ. Rev. GBFR* **2019**, *24*, 51–64.
99. Amirnejad, H.; Ataie Solout, K.; Zarandian, A. Comparison of contingent valuation and travel cost methods to estimate outdoor recreation value of recreation, tourism and aestheticfunction of Bamou National Park. *J. Environ. Sci. Technol.* **2020**, *22*, 73–85.
100. Tan, Ç. An assessment of pre-service teachers' attitudes toward books on environment and, relationship between attitudes and environmental behaviours; environmental thinking. *Procedia-Soc. Behav. Sci.* **2014**, *116*, 4357–4361. [CrossRef]
101. Deng, J.; Andrada, R., II; Pierskalla, C. Visitors' and residents' perceptions of urban forests for leisure in Washington DC. *Urban For. Urban Green.* **2017**, *28*, 1–11. [CrossRef]
102. Song, X.; Lv, X.; Li, C. Willingness and motivation of residents to pay for conservation of urban green spaces in Jinan, China. *Acta Ecol. Sin.* **2015**, *35*, 89–94. [CrossRef]
103. Hörnsten, L.; Fredman, P. On the distance to recreational forests in Sweden. *Landsc. Urban Plan.* **2000**, *51*, 1–10. [CrossRef]
104. Smink, C.K. Forests and Recreation–New Functions of Afforestation as Seen in Denmark. In *New Perspectives on People and Forests*; Springer: Berlin/Heidelberg, Germany, 2011; pp. 87–95.
105. Milon, J.W.; Scrogin, D. Latent preferences and valuation of wetland ecosystem restoration. *Ecol. Econ.* **2006**, *56*, 162–175. [CrossRef]
106. Hedlund, T. The impact of values, environmental concern, and willingness to accept economic sacrifices to protect the environment on tourists' intentions to buy ecologically sustainable tourism alternatives. *Tour. Hosp. Res.* **2011**, *11*, 278–288. [CrossRef]
107. Hwang, Y.T.; Moon, J.; Lee, W.S.; Kim, S.A.; Kim, J. Evaluation of firefly as a tourist attraction and resource using contingent valuation method based on a new environmental paradigm. *J. Qual. Assur. Hosp. Tour.* **2020**, *21*, 320–336.
108. Dervişoglu, S. Learning Pre-Conditions for Protecting the Biodiversity. Ph.D. Thesis, Hacettepe University, Ankara, Türkiye, 2007, unpublished.
109. Stevenson, R.B. Schooling and environmental education: Contradictions in purpose and practice. *Environ. Educ. Res.* **2007**, *13*, 139–153. [CrossRef]
110. Torabi, Z.-A.; Rezvani, M.R.; Palouj, M. Comparing the effect of lecture and jigsaw teaching strategies on attitude and environmentally responsible behavior: A mixed-methods approach. *J. Qual. Assur. Hosp. Tour.* **2022**, *23*, 1064–1087. [CrossRef]