International Tourists' Willingness to Pay for A Wildlife Conservation Program: A Case Study of Northern Yellow-cheeked Gibbons in Bach Ma National Park, Vietnam

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Abstract Extending protected areas has enabled global species and habitat protection, especially for endangered species. In addition, understanding social preferences for species protection is essential to contribute to the biodiversity conservation efforts of protected areas. The main purpose of the study was to investigate the preferences of international tourists towards the protection of the northern yellow-cheeked gibbon (Nomascus annamensis) through a proposed wildlife conservation program in Bach Ma National Park, Central Vietnam. Data for the study was collected from a face-to-face survey of 361 randomly selected foreign tourists visiting Bach Ma National Park. By using the dichotomous choice contingent valuation approach, we estimate international tourists' willingness to pay (WTP) for the proposed conservation program of gibbons and identify elements that influence their WTP for the conservation program. We found that international tourists strongly support conserving gibbon populations in the Bach Ma. The findings from the logistic regression model in the study reveal that the respondents' bid level, education, knowledge, biodiversity conservation, climate change, and revisit variables were all significantly predictive of WTP. The estimated mean WTP amount for one-time funding of the species conservation program was US$7.83 per international tourist. The obtained results of this study suggest that policy-makers and managers of national parks should consider the significance of international visitors' support for gibbon conservation efforts when designing and developing their social strategies, programs, and policies for protecting nature and preserving biodiversity, particularly with regard to tourism segmentation in protected areas.

Keywords Willingness to Pay, International Tourists, Northern Yellow-cheeked Gibbon, Contingent Valuation Approach, Bach Ma National Park

1. Introduction

Protected areas (PAs) are being set up more and more to protect biodiversity and keep the planet's life-support systems in good shape. In 2018, there were 238,563 protected areas covering 15% of the earth's land surface, a 200% growth over the preceding 15 years [1,2]. However, humans face incalculable losses in biodiversity, especially when present rates of species extinction are higher than the natural baseline [3]. Population growth and human activities are increasing the burden on natural resources, particularly in developing countries [4,5]. Numerous protected areas are plagued by inadequate funding, which negatively impacts their capability to protect species and habitats and the societal benefits that undisturbed nature offers [6]. It also warns that the governments of developing countries have cut PA funding by more than half and that international help to protect the environment has decreased [7].

In developing and managing protected areas, national parks (NPs) are designed to safeguard biodiversity and large-scale biological processes, as well as to offer spiritual, educational, and recreational possibilities [8]. Specifically, NPs can promote the growth of nature-based tourism due to their potential social and economic advantages [9-11]. It is crucial not only to bolster the finances of protected areas, but also to influence the perspectives of tourists toward the natural environment [10,12,13]. In the economic sphere, about eight billion people visit terrestrial protected areas each year, which adds up to nearly US$250 billion in consumer surplus [14]. Annually, more than two billion people visit European NPs, resulting in a consumer surplus of approximately EUR14.5 billion [11]. In Vietnam, 9% of the overall funding of NPs is received on average from tourism [9]. Combining diverse financing sources is therefore essential for the long-term financial viability of PAs [13].

In addition, there is growing evidence that social influences, as well as changes in the social behavior and attitude, should be taken into account in nature protection [15-17]. In particular, figuring out how much people are willing to contribute to helping with nature protection is a very important part of environmental management. This is because public opinion can affect conservation efforts [18]. The monetary value of species and habitats corresponds to the approach of total economic value of use and nonuse values of biodiversity and ecosystems [19,20] and it enables natural resources to be considered in the development of socioeconomics and to assist policy and management decisions to seek conservation efforts and effective management of protected areas [21-23]. In this way, the economic value of endangered species can inform policymakers about why species must be protected and the supposed benefits of species conservation [23]. This also seems to be a feasible approach for comprehending public preferences for environmental preservation, such as the relationship between people's WTP and their socioeconomic, demographic, attitude, and behavioural characteristics [24,25].

Despite the growing number of protected areas, Vietnam confronts multiple challenges to its nature protection efforts, such as illegal hunting and resource exploitation in national parks [9]. The situation of PAs' biodiversity continues to deteriorate, e.g., with Tram Chim NP observing a substantial drop in endangered species [26]. Specifically, the status of gibbon species in Vietnam, including *Nomascus annamensis* in Bach Ma NP, could be recognised as a possible demonstration of biodiversity trends in the country as a whole; yet, gibbon numbers are dropping mostly as a result of hunting and habitat degradation [27]. This circumstance may indicate a fall in the animal populations in Vietnam. In this case, boosting conservation programs may help to avoid ecological deterioration and biodiversity loss in protected areas.

Furthermore, the majority of funding for Vietnamese NPs comes from the unstable government budget [9,28]. Strong reliance on the state budget also leads to inadequate funding for PAs and poor management capability for NPs [9]. Effectively promoting protected areas for biodiversity preservation and managing natural environmental protection require securing the support of stakeholders and a variety of innovative financing structures [13,29]. Expanding funding sources for PAs, especially in an effort to capture some of the WTP of NP beneficiaries, can raise revenues and support sustainable finance for nature conservation [10,14].

Concerning NP management in Vietnam, there is still not a lot of information about the non-use values of biodiversity, especially from WTP-based public choice studies. Most previous studies on WTP for nature protection [26,30-33] have focused on how locals, people who live in cities, and domestic tourists contribute to biodiversity conservation in national parks, whereas the contributions of foreign tourists who visit NPs have not been taken into account. In NP tourism development, it is essential to consider fund generation and visitor preferences for biodiversity and species status when promoting biodiversity conservation efforts [34,35]. The public's preferences for protecting biodiversity and its economic value should be also taken into account when natural resource managers and policymakers decide what to do to protect the environment [26,33].

By using the contingent valuation method, the aim of the research is to find out how international tourists prefer to contribute to the conservation of gibbon species in Bach Ma National Park—Vietnam. This study looks into how much money foreign tourists who visit protected areas are willing to give to help save gibbons based on a proposed conservation program in the national park. International tourists' knowledge and attitudes regarding the conservation of gibbon species and their economic value, as well as the factors influencing respondents' WTP, were explored in the research.

2. Materials and Methods

2.1. Study Area

The proposed study area is Bach Ma NP (Figure 1). It is in the middle of Vietnam, about 40 km from Hue City and 65 km from Da Nang City. The Bach Ma includes a 37,487-hectare core zone and a 58,676-hectare buffer zone. The number of tourists visiting the national park has dramatically increased, from 8,926 tourists (1,368 foreign tourists) in 2005 to 37,000 tourists (21,767 foreign tourists) in 2019 [36,37].

Bach Ma NP was set up in 1991 to protect the core of the final forest corridor extending from the South China Sea coast to the Annamite mountains. There are 2,373 plant species and 2,115 animal species within the park, making it one of the most significant areas for conserving biodiversity in Vietnam [38]. As a priority conservation area, the park consists of thirty-nine mammalian species, including gibbons, which are listed in the 2007 Vietnam Red Data Book. However, a variety of threats to biodiversity conservation are increasing, such as illicit hunting and harvesting [39]. Additionally, most of the funding for the management of Bach Ma comes from the Vietnamese state budget and there is a paucity of financial resources for conservation efforts. For example, only 2% of the total funding of Bach Ma NP was allocated to conservation and biodiversity monitoring [40]. Thus, depending on the state budget and not having enough money can make protected areas hard to reach conservation goals and make NP management less effective [9,39].
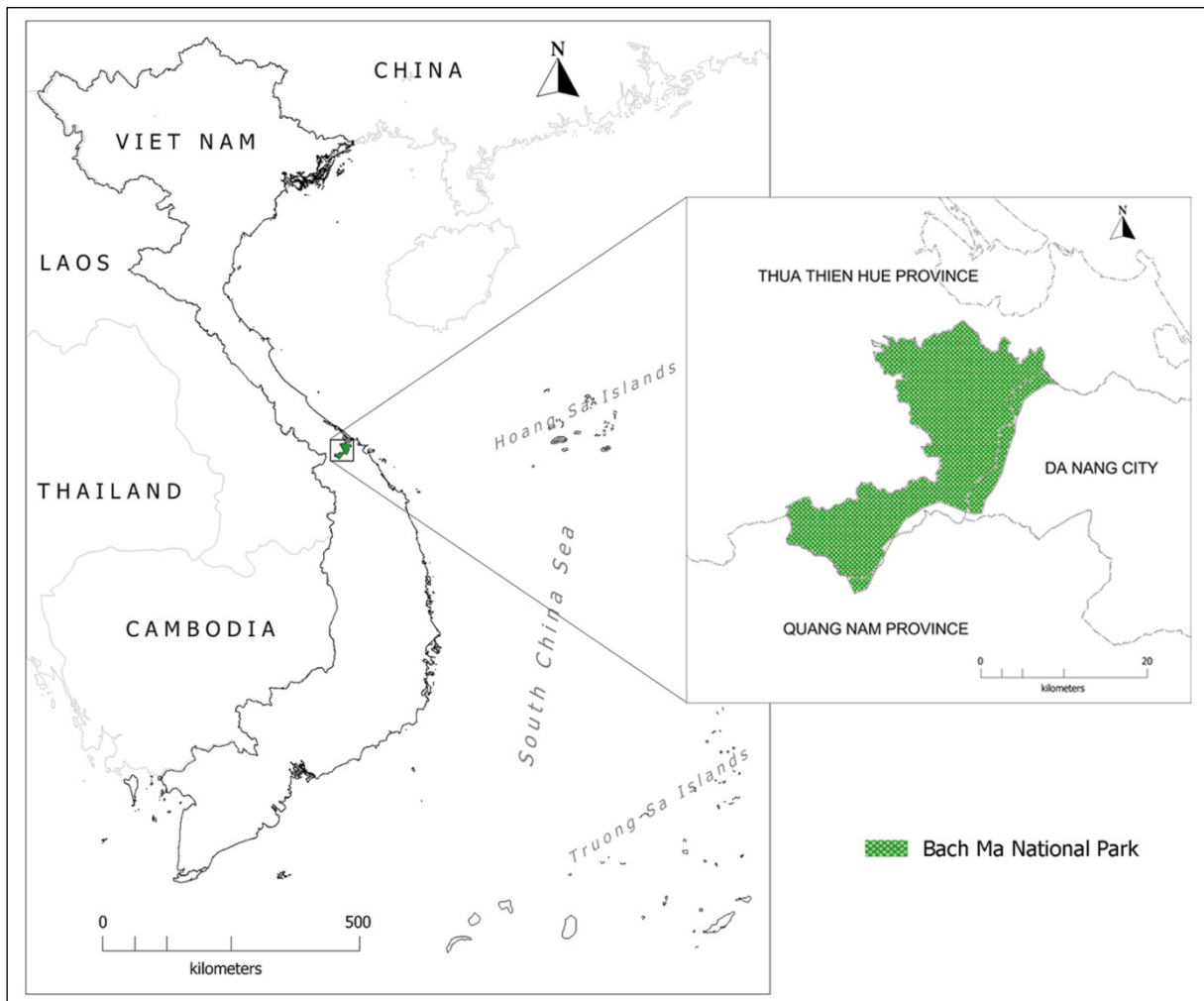

Figure 1.   The study area-Bach Ma National Park

In the conservation of six gibbon species in Vietnam, Bach Ma NP is the habitat for *Nomascus annamensis* [27]. The distribution of *N. annamensis* is only found in the Indochina peninsula (i.e., northern Cambodia, Central Vietnam, and southern Lao PDR). The species is classified as Endangered according to the IUCN Red List [41]. Of the 171 individuals of *N. annamensis* in eight PAs in the country, 34 individuals were estimated in 13 groups in the Bach Ma [42]. With a large gibbon population, the Bach Ma has become a high priority area for the conservation of *N. annamensis*. However, unlawful hunting and habitat degradation pose the greatest danger to this species [27,42]. Hence, a dedicated budget for a wildlife conservation program toward *N. annamensis* in Bach Ma NP was proposed to enhance the number of individuals of *N. annamensis* or at least to prevent the annual population decline, and the fund would be used for various gibbon conservation efforts (see [30]).

2.2. The Contingent Valuation Approach with WTP

The contingent valuation (CV) approach is a well-known stated valuation technique, and this method has been frequently used to determine values of uses and non-uses of environmental components [24,43,44]. By using a survey-based technique, a respondent declares his or her WTP for preventing a decrease in utility, such as environmental services, under hypothetical conditions in a particular area [44]. It has also been determined that the contingent valuation method (CVM) is an appropriate technique for valuing biological resources [45,46]. Additionally, calculate the entire monetary value of wildlife conservation by summing WTP depending on the total number of customers. Therefore, the paper utilised the CVM to determine the willingness of international tourists to pay for a proposed wildlife conservation program of *N. annamensis* in the Bach Ma.

Moreover, the application of CVM has been used to measure WTP for projects to protect biodiversity in Vietnam [26,30-33]. However, in the application process of the CVM, a number of disadvantages may arise in contingent valuation studies, including information effect, hypothetical bias, question order bias, scope effect, elicitation effect and strategic bias issues [47]. However, these issues could be avoided by using a good survey design, giving clear hypothetical situations, using the right elicitation forms and payment methods, and keeping sample sizes large enough [45,47,48].

In designed CVM questionnaires, a dichotomous contingent valuation question is the most popular technique to investigations of contingent valuation, as other question types are susceptible to incentive compatibility issues [44]. Using a model of random utility [49,50], the question is examined that may be stated as the utility function for a respondent *j*:

$$u_{ij} = u_i(y_j, z_j, \varepsilon_{ij}) \qquad (1)$$

where $i = 0$ represents the status quo, and $i = 1$ represents the state in which the species conservation program is implemented. Utility is reflected by a function of the respondent's income y, a vector of the respondent's characteristics z and the unobservable component ε_{ij}. Individuals are willing to pay (i.e. respond to "yes" response) to the proposal of payment t_j if the utility toward the conservation program after the payment outweighs the status quo's utility, or if the following conditions are met:

$$u_{1j} = u_1(y_j - t_j, z_j, \varepsilon_{1j}) > u_0(y_j, z_j, \varepsilon_{0j}) \qquad (2)$$

Due to the unobservable variable, the probability of a "yes" or "no" response can only be estimated:

$$\Pr(yes_j) = \Pr(u_1(y_j - t_j, z_j, \varepsilon_{1j}) > u_0(y_j, z_j, \varepsilon_{0j})) \qquad (3)$$

Assuming a linear utility function:

$$v_{1j}(y_j) = \sum_{k=1}^{m} \alpha_{1k} z_{jk} + \beta_1(y_j) \qquad (4)$$

The statement of probability becomes:

$$\Pr(yes_j) = \Pr(\sum_{k=1}^{m} \alpha_k z_{jk} - \beta t_j + \varepsilon_j > 0) \qquad (5)$$

In the present study, we questioned respondents, in response to the WTP question, if they'd or wouldn't be willing to pay a specified bid payment amount. Thereby, the parametric model was used to estimate the value of WTP for species conservation by using a logistic regression analysis with the dependent variables being "yes" or "no" to paying for the stated t_j bid level. The regression analysis was performed on the list of independent variables to influence how each variable affected the WTP of each responder. The variables are described in detail in Table 1 and the model was examined for potential multicollinearity between independent variables. The equation for regression can be represented as:

$$\text{Pr (yes)} = \alpha + \beta_1 \text{ Bid} + \beta_2 \text{ Age} + \beta_3 \text{ Marital\_status} +$$
$$\beta_4 \text{ Education} + \beta_5 \text{ Income} + \beta_6 \text{ Knowledge} +$$
$$\beta_7 \text{ Biodiversity\_conservation} +$$
$$\beta_8 \text{ Climate\_change} + \beta_9 \text{ Revisit} \qquad (6)$$

where α represents a constant and β_j represents the coefficients of the explanatory variables. In accordance with the methodology of Haab and McConnell [50], the formula for calculating the mean WTP is as follows:

$$Mean\ WTP = E(WTP|\alpha, \beta, z_j) = \frac{\alpha z_j}{\beta} \qquad (7)$$

In the analysis model "(6),", we expected that increased bid levels would have a detrimental effect on WTP. It is assumed that people who are older, married, have more education, make more money, know about gibbons, think biodiversity conservation is important, think climate change is important, and plan to visit the park again are more likely to say "yes" to the WTP.

Table 1. A summary of the logistic regression variables

Variables	Description	Value	Expected sign
Pr (yes)	Probability of the respondent's willingness to fund the conservation of gibbon species	1 = Yes WTP, 0 = No WTP	
Bid	The amount of the bid proposed to the responder (US$)	5, 10, 15, 20, 25, 50	-
Age	The age in years of the responder	Numeric variables	+
Marital status	Status of the respondent's marriage	1 = Married, 0 = Otherwise	+
Education	The respondent's educational background: If the respondent has a graduate degree or higher	1 = Some college education and more, 0 = Otherwise	+
Income	Monthly average income of the respondent	Numeric variables	+
Knowledge	If the respondent is knowledgeable of gibbons or has heard of them	1 = Yes, 0 = Otherwise	+
Biodiversity conservation	If awareness of biodiversity conservation by the respondent is important	1 = Yes, 0 = Otherwise	+
Climate change	If awareness of climate change issues by the respondent is important	1 = Yes, 0 = Otherwise	+
Revisit	If the respondents would like to revisit the Bach Ma National Park	1 = Yes, 0 = Otherwise	+

2.3. Survey Design and Samples

The designed questionnaire in the study was meticulously crafted to clarify the condition of hypothetical market that seeks accurate WTP values. The questionnaire was constructed using a variety of methods, including interviews with key informants, focus group discussions, interviews with employees and managers of the Bach Ma NP, and pretest-questionnaire surveys. These methods would allow us to gather data for developing the gibbon species conservation program in Bach Ma NP, as well as identify the present threats to the species, their funding mechanism, and payment schedule.

Based on secondary data collected from various sources (e.g., articles, reports, and government publications) and literature reviews, discussions with Bach Ma NP managers and employees as well as interviews with key informants were conducted to collect the necessary information for the development of a proposed gibbon conservation program in the Bach Ma. In this study, some stakeholders, including rangers, employees and managers of the Bach Ma, and park visitors and tour guides, participated in focus group discussions to determine the present challenges to gibbon species and national park management, the potential for contributing plans for gibbon conservation, and the payment mechanism and schedule. Various aspects of the questionnaire survey were thus investigated and developed as a result. A pilot test was also conducted with 36 international tourists to ensure that all designed questions were responsive and all information was accessible to responders. The aforementioned barriers in the CVM application process could therefore be circumvented by our survey design.

In addition to the questionnaire design process, the WTP question's single-bounded dichotomous choice was employed in order to not only decrease impediments but also facilitate data collection and estimation [43,47]. Following a series of preliminary testing and discussions, the following six bid levels were established: 5, 10, 15, 20, 25, and 50 US$. It was required that a one-time contribution be made through a trust fund, and the money from that fund would only be used to help save northern yellow-cheeked gibbons.

The questionnaire was composed of four distinct components, as follows:

The first segment offered broad information about biological variety and natural resources, as well as conservation and management challenges pertaining to Bach Ma NP. The purpose of this section is to encourage respondents to consider environmental issues and explore their level of concern for environmental and nature protection.

The second component consisted of general questions regarding respondents' awareness and knowledge of gibbon species as well as their attitudes and perceptions towards biodiversity conservation and nature protection, nature-based tourism, and environmental challenges. A 5-point Likert scale was employed to assess the respondents' awareness and concern levels, e.g., ranging from 1 (low) to 5 (high). In particular, this section aimed to collect information on how respondents feel about the worth of gibbons' existence, how they feel about helping to

save gibbons, and how they feel about their own role in protecting gibbons.

The third component consisted of concerns regarding a specific fund for the gibbon wildlife protection program in Bach Ma NP, the program's operation, and the payment collection mechanism. In this part, the scenario began with an introduction to gibbons and the risks they faced in the Bach Ma. Thereby, a detailed proposed plan for the conservation program of *N. annamensis* was given, whose activities included: planning the conservation and management of gibbons; protecting and monitoring the population and their habitat; conducting education and training activities to raise the awareness of people to conserve gibbons; enhancing the practical and managerial skills of group staff towards gibbon conservation; developing captive breeding programs for gibbons; and establishing the Vietnam Gibbon Conservation Association. Next, the respondents would be asked to contribute a fee to a "Trust Fund" which would be formed and administered by the Management Board of the Bach Ma in order to assist the gibbon conservation program in the park. Respondents were asked, by submitting cash bid amount as mentioned previously, whether or not they would vote for the conservation program. In other words, the WTP question was: "Would you be willing to make a one-time payment of <Bid Level> for the gibbon conservation program in the Bach Ma National Park?" In addition, participants were required to select a reason from the recommended list in order to justify their willingness to pay for the program.

Finally, the fourth part was meant to get people's individual information about their socioeconomic and demographic characteristics (e.g., gender, age, and education).

In order to get the main primary data for the analysis, face-to-face interviews were done through questionnaire surveys with random international tourists who visited Bach Ma NP from July to November 2016. The fieldwork did not include respondents less than 18 years of age. By applying the Yamane/Slovin's formula [51], the required sample size *n* for the survey was estimated:

$$n = \frac{N}{1 + Ne^2} \qquad (8)$$

where *e* presents the planned margin of error and *N* represents population size. The Bach Ma received a record number of 2,867 international tourists in 2015. For the fieldwork survey, a total sample size of 351 international tourists was planned to account for a 5% error margin by using "(8),". After discarding no-response and incomplete questionnaires, 361 out of a total of 380 international tourists were approved. Checked and imported into STATA 14.0 for analysis were the questionnaire-derived data.

3. Results

3.1. Respondent Socioeconomic Characteristics

In the obtained results, 52% and 48% of the 361 valid questionnaire responses were completed by men and women, respectively. Overall, the sample of international tourists was skewed toward respondents who were younger and better educated (Table 2). The respondents' average age was 33, and 53% of them were married. Sixty-two percent of respondents were college grads or above. 37% of the population had a monthly income of between US$2,001 and US$3,000.

3.2. Participants' awareness of Bach Ma National Park and gibbons

The obtained results showed that most respondents had a level of awareness and concern with Bach Ma NP of 3 (neutral) on average (Table 3). Of the 361 international tourists, 92% considered their awareness of the significance of biodiversity protection to be relatively high, whereas 61% were concerned with environmental issues. With an average score of 4.33, international tourists seemed to value tourism and recreation the most.

In the present survey, 70% of respondents indicated that they were experienced with gibbons. The participants also said that zoos (41%) and the Internet/websites (22%) were their top sources of information about gibbons (Figure 2). The majority of respondents (96%) said that gibbons should be protected. In addition, responders' potential responses to criminal actions against gibbons were diverse. About 1% of the 361 respondents stated they would do nothing if they saw someone illegally trading, hunting, or keeping gibbons. Others would prohibit them (6%), or take further measures (4%), such as calling the police.

Table 2.   Socio-economic characteristics of international tourists

| Items	Characteristics	Number of observations	Percentage (%)
Sex	Female	172	47.65
	Male	189	52.35
Age	18-28	163	45.15
	29-38	100	27.70
	39-48	53	14.68
	49-58	34	9.42
	59 and older	11	3.05
Marital status	Married	191	52.91
	Others	170	47.09
Education	High school	138	38.23
	College/technical degree	39	10.80
	Bachelor's degree	88	24.38
	Postgraduate	96	26.59
Income (US$ per month)	Up to 1000	57	15.79
	1001 – 2000	126	34.90
	2001 – 3000	134	37.12
	Over 3000	44	12.19
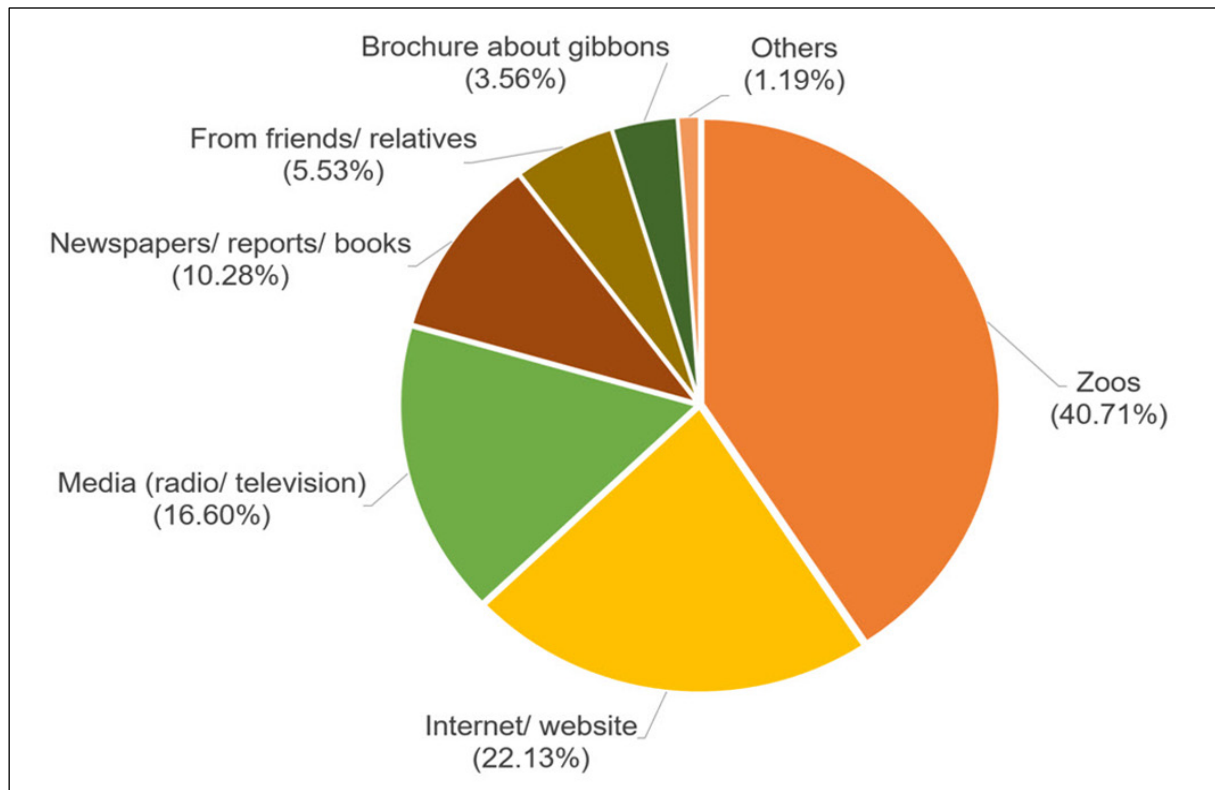
Figure 2.   Respondents' information sources to find out about gibbons

Table 3. International tourists' awareness and concerns about the Bach Ma were measured by using a 5-point Likert scale ranging from 1 (low) to 5 (high)

	Number of observations	Mean ± SD
Awareness of the significance of the protected area in terms of nature protection	323	3.663 ± 1.185
Awareness of the significance of conserving biodiversity	333	4.021 ± 0.848
Nature-based tourism and recreation	327	4.333 ± 0.792
The linkages between local communities and the protected area in nature protection	271	3.683 ± 1.103
Livelihoods' local communities living around the protected area	266	3.635 ± 1.063
Sustainable management practices (e.g. community-based forest management)	242	3.818 ± 1.058
Environmental issues in general	220	3.318 ± 1.245

3.3. WTP for Conserving Gibbon Species

Regarding WTP questions, respondents provided justification for their WTP toward the program of gibbon species conservation (Figure 3). Only 37% of participants were unwilling to pay the specified bid in the polls, while the remaining 63% were willing to do so. The majority of respondents (60%) of 132 participants who were unwilling to pay for the program felt that the protected area and the Vietnamese government were responsible for its maintenance (Figure 3a). In contrast, more than half (55%) of the 229 participants who were ready to pay for the program expressed concern about the decline of biodiversity (Figure 3b). Figure 4 shows that as the bid amount went up, the likelihood of a positive answer to the willingness to pay question went down.

Based on the findings of the computation (Table 4), the logistic regression model correctly identified 77% of cases ($\chi^2_9 = 132.24$, p<0.001). The marginal effect in the model revealed the degree of endogenous variables' influence on the likelihood of funding for species conservation. Six variables, including bid levels, education, knowledge, biodiversity conservation, climate change, and revisit, were found to predict considerably the WTP of respondents. The predicted average WTP per respondent was US$7.83. A parametric calculation shows that foreign tourists gave about US$22,449 to the gibbon conservation effort in 2015.
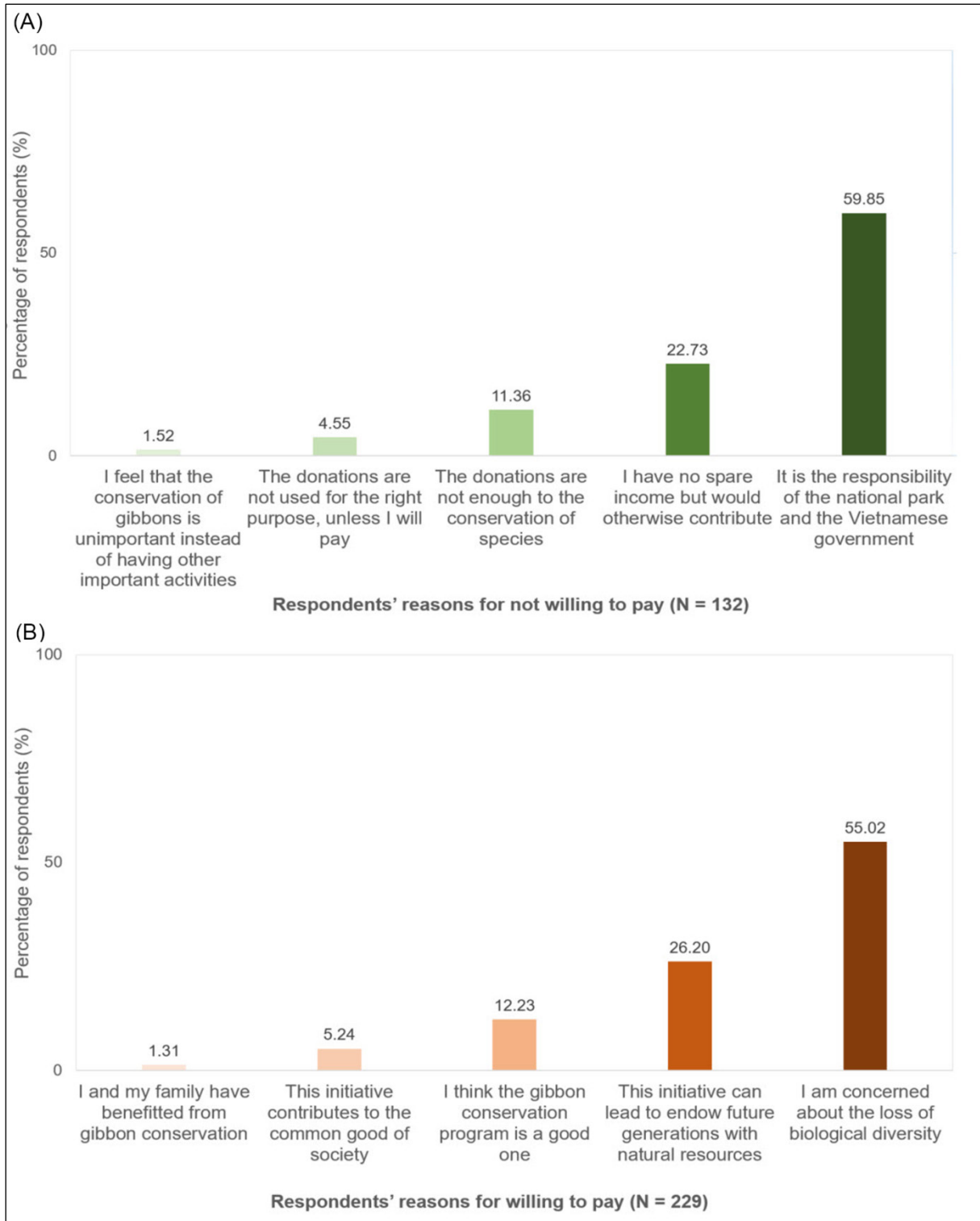
Figure 3. Respondents' reasons for not being willing to pay (***a***) and other reasons for being willing to pay (***b***)

Table 4. Factors influencing the decision of overseas tourists to contribute to the protection of gibbons in Bach Ma National Park

Explanatory variables	Coefficients	Marginal effect
Constant	−0.1781	–
Bids	−0.0551***	−0.0200***
Age	0.0034	0.0012
Marital status	0.1643	0.0599
Education	0.4417***	0.1630***
Income	0.00003	0.00001
Knowledge	0.6514***	0.2447***
Biodiversity conservation	0.3057*	0.1122*
Climate change	0.9702***	0.2998***
Revisit	0.3304**	0.1217**

Log-likelihood = -170.91, Likelihood-ratio χ^2_9 = 132.24, p<0.001, Pseudo R^2 = 0.2790, Correctly classified = 77.01%, Number of observations = 361

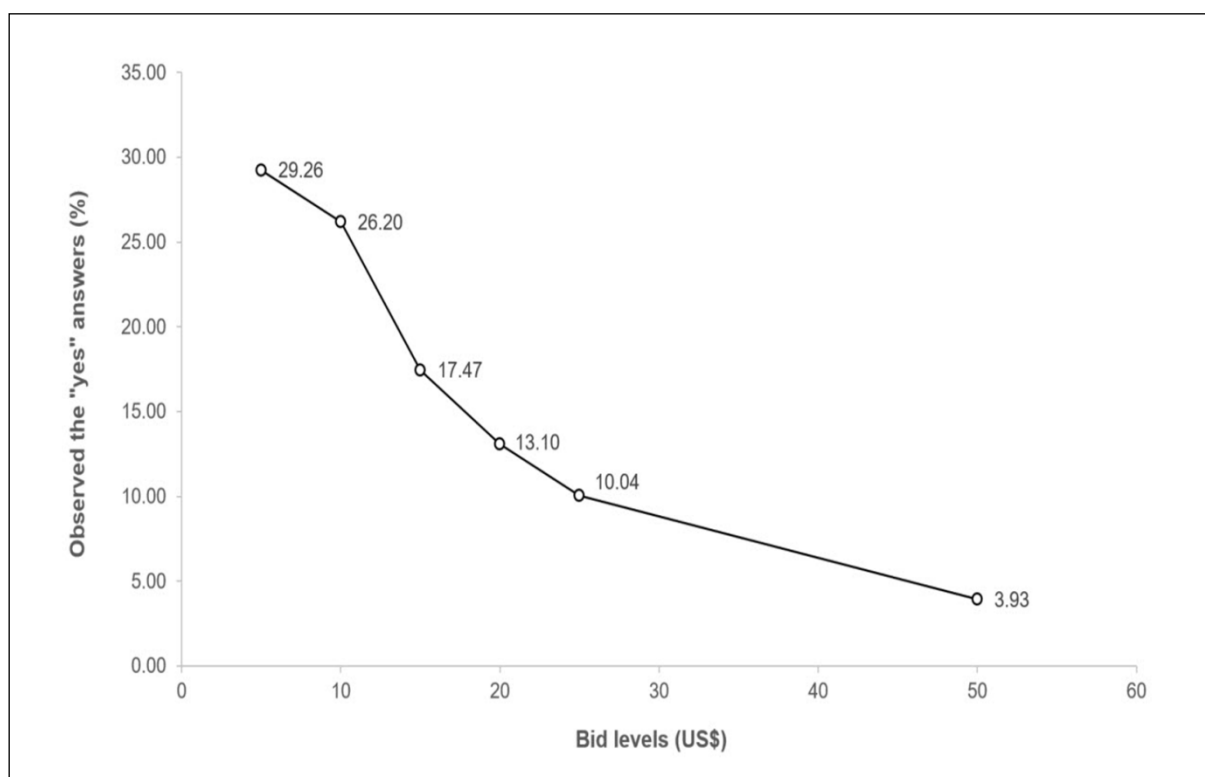Notes: ***, **, * indicate statistical significance p=0.01, 0.05 and 0.1 respectively

Figure 4. Distribution of the percentage of *yes* answers of international tourists' willingness to pay

4. Discussion

The results of an inquiry into the preferences of international tourists for gibbon species conservation programs and their WTP result in a more complete understanding of tourists' attitudes and views regarding nature protection and PA management in developing countries. In addition, the data provides further evidence of the economic contribution of wildlife as endangered species. In particular, the statistical analysis results highlight numerous aspects that influence tourists' WTP for gibbon species conservation programs.

The majority of selected international tourists in the study ranked their awareness of the Bach Ma as relatively high (Table 3). Although the primary objectives of Vietnamese NPs are biodiversity conservation and nature

protection [9], environmental education for tourists was deemed to be an essential mission of PAs [30]. In addition, biodiversity conservation should emphasise the significance of public education programs that promote the interdependence of human communities and the natural environment [18]. Enhancing public education programs and knowledge of protected areas through public media could be viewed as an attraction element for protected area-based tourism destinations [36]. The vast majority of international tourists (91%) were concerned about ecotourism and outdoor recreation. Therefore, expanding tourism and recreation in protected areas could bring attention to the direct and indirect benefits of nature-based tourism development, such as funding conservation and changing people's attitudes about protecting nature [10,12,30].

In the present study, the CV approach was employed to investigate the motivations behind individuals' decisions to pay for the conservation program of gibbon species and to measure the WTP of international tourists for the program. According to the findings, 63% of international tourists visiting the Bach Ma were willing to pay for the program. This choice emphasises the Bach Ma NP's non-use values, or rather its existing values. The participants cited several reasons for their willingness to pay for the program, with loss of biological diversity being the most prevalent. According to Dirzo and Raven [52], Pereira et al. [53], biodiversity loss has been identified as one of the world's most pressing environmental problems. People who are worried about the loss of biodiversity may support more efforts to protect nature. For example, local residents and domestic tourists who are worried about the declining status of species in protected areas may support more efforts for biodiversity conservation [26,30,32]. In contrast, the majority of those who responded negatively to the WTP said that nature protection should be the responsibility of the Vietnamese government and protected area managers, which is consistent with earlier findings [31,33]. However, Vietnamese NPs could make better management decisions and long-term commitments to protecting the environment and managing natural resources if they had money from sources other than the state budget [30].

The present study also used several elements to explain the decisions of international tourists toward the protection of gibbon species in the Bach Ma. All of the independent variables used in the analysis model to explain the willingness to pay show the expected sign. The bid amount was found to be statistically significant and negative, which shows that people pay attention to price changes. A higher offer bid level may reduce the likelihood of a "yes" response [30,32,54].

The collected results demonstrate that sociodemographic factors such as education considerably influenced the WTP of the respondents. The education variable was statistically significant and positive,

suggesting that international tourists with greater levels of education would positively result in higher WTP, which is consistent with previous research [33,34,54,55]. Other variables in the model (i.e., age, marital status, and income) were found to have no significant effect on WTP, despite the fact that their coefficients have positive values. Surendran and Sekar [55] note that older individuals may be more interested in nature conservation because they believe they will be able to enjoy its future advantages. Consistent with the findings of Hoa and Ly [31] the positive indicator of marital status revealed that married individuals may be more inclined to support nature conservation. The respondents' income level indicates their capacity to pay, and those with a greater income would be willing to pay more for nature protection [34,55]. Jacobsen and Hanley [56] indicate that WTP for habitat and biodiversity conservation is strongly linked to income level.

The results show that international tourists who are knowledgeable about gibbon species are more willing to pay for the program, and this is in line with the findings of An et al. [30]. The public's decision to support the program is influenced by their awareness of the presence of gibbons, which might be displayed in numerous ways (Figure 2). Awareness and understanding of a species favourably affect financial support for biodiversity protection [30,35,57]. According to a number of researchers [58,59], the status of threatened animals or the physical characteristics of a species were important factors in predicting willingness to pay. Specifically, in many instances, travellers who observe a greater variety of wildlife species or who have observed them before could inspire a greater commitment to natural resource conservation in PAs [35,55]. Our results are consistent with those of An et al. [30], who found that individuals with a stronger understanding of the significance of biodiversity conservation are more inclined to fund conservation efforts. A greater awareness of the many dangers to species would increase the likelihood that individuals would be ready to pay for conservation strategies [60]. Increasing public education and understanding of biodiversity and the environment could generate enormous support for safeguarding natural resources [57].

In addition, individuals with a deeper comprehension of the severity of climate change issues are more than likely to be willing to make greater contributions to the preservation of biodiversity. In nature-based tourist destinations, tourists are interested in contributing to climate change planning and adaptation strategies [61]. In particular, climate change has negative effects on species, habitats, and nature-based tourism [53,62]. Thereby, people need to know more about what causes climate change in order for them to support conservation programs that try to stop or adapt to it [63].

According to our research, people who desired a repeat

visit to the park have a greater WTP than those who did not. Repeated visits to the national park could increase understanding of protected areas and concerns for nature protection. The results corroborate the findings of An et al. [30], who confirmed that those who had visited protected areas were more willing to support the conservation of gibbon species. On the other hand, people's WTP for protecting biodiversity may not be affected by how many times they have been to a protected area because previous tourists only paid a small amount to keep the area safe [55].

The derived mean WTP estimate of international visitors for one-time support of the program in this study (US$7.83/tourist) is greater than the mean WTP of Vietnamese tourists found by An et al. [30], which was US$3.81 per person. Geographical differences may account for this disparity. In this context, comparative research on international and domestic visitors visiting the Bach Ma is required for the WTP, including socioeconomic backgrounds, motivation and trip characteristics, as well as environmental awareness and concern. In light of this, people from various nations with diverse socioeconomic qualities and perspectives may have diverse perceptions of WTP [54]. Additionally, a number of studies evaluating the influence of visit characteristics (e.g., tourists' satisfaction with facilities and services, number of species observed, and length of stay at a protected area) on WTP have been conducted [34,54,55].

Although the study was meticulously designed, there are a few drawbacks, most notably the potential for sample bias in CVM application. The data was taken from July to September, during the peak months, when the highest number of international tourists visited Bach Ma NP. In addition to inadequate sampling, the survey mostly targeted English-speaking respondents. In contrast, a diversity of sample size combinations, a focus on different tourist seasons, and the incorporation of surveys in non-English languages could reduce sampling bias and improve the generalizability of the results of future research. In addition, as stated previously, relevant explanatory variables (such as international tourists' trip characteristics, membership in environmental organisations, and ethnic groups) may have been omitted from the analysis. Future research that looks at these concerns about protecting nature in the Bach Ma or elsewhere can help us learn more about the factors that affect the WTP.

5. Conclusions

Our research showed that most international tourists visiting to Bach Ma NP are willing to pay to help the NP's efforts to protect gibbon species. Consideration must be given to the notion that policymakers and protected area authorities could gain additional funds for environmental preservation by employing model wildlife species and organising biodiversity conservation projects [30,32,33].

Our findings provide further information for an economic evaluation of how to safeguard gibbon species in Bach Ma NP in order to preserve biodiversity. Specifically, public valuation of biodiversity could assist policymakers and protected area managers in determining the economic benefits and costs of conservation measures and management of natural resources [32,64]. This is especially important when allocating funds for biodiversity conservation projects in protected areas in developing countries.

The collected results indicate that increasing the number of visitors visiting protected areas, with a particular emphasis on international tourists, would not only increase the projected WTP value but also raise funding for conservation and create support for wildlife conservation activities. Policymakers and managers of protected areas should continue to promote the development of nature-based tourist segmentation, particularly for the purpose of raising funds for PAs and establishing sustainable financing streams for NPs [9].

Moreover, a number of socioeconomic and psychosocial characteristics of the respondents (i.e., education, knowledge, biodiversity conservation, climate change, and other variables) were identified as major determinants of the WTP, which may offer incentives for biodiversity conservation. Those with a higher degree of education are more likely to WTP, are more conscious of the importance of biodiversity conservation and climate change challenges, and have a greater understanding of species to conserve biodiversity. Tourists who visit protected areas should be made aware of the species (e.g., knowledge of species geographical distribution), significance, and meaning of nature protection through exhibitions and mass media. The consequences of climate change on biodiversity should be emphasised in the awareness campaign. Future valuation studies should address the relationship between biodiversity conservation initiatives, climate change adaption methods, and WTP. Our findings suggest that NP managers should invest in tourism resources (i.e., NP qualities and features) to not only attract a growing number of tourists but also increase their happiness and intention to return by actively maintaining and continuously enhancing services and amenities. Our results can also add to the growing body of research on how CVM can be used to protect natural resources, especially in the development of tourist flows in PAs in developing countries like Vietnam.

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