

Article

Preserving the Culture of Jeju Haenyeo (Women Divers) as a Sustainable Tourism Resource

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Received: 21 November 2020; Accepted: 15 December 2020; Published: 17 December 2020



Abstract: The culture of Jeju Haenyeo, the women free divers of Jeju Island, is inscribed on United Nations Educational, Scientific and Cultural Organization (UNESCO)'s Intangible Cultural Heritage list; however, it is proving difficult to maintain this status because, in the absence of conservation measures, the number of Haenyeo is decreasing. Therefore, the purpose of this study was to use contingent valuation to determine the economic value of preserving Jeju Haenyeo culture, which derives from visitor entrance fees, with the aim of justifying the preservation of this and other such intangible cultural resources. Despite its methodological advantage of allowing estimation of the value of non-market goods, the contingent valuation method (CVM) has been criticized because the hypothetical nature of the conditions can cause overestimation. To overcome that limitation, the respondents in this study reported their willingness to pay (WTP), and their responses were repeatedly confirmed to ensure their sincerity. The CVM estimate of the preservation value of Jeju Haenyeo culture was 17,308 South Korean Won. The results of this study serve as referential data on the value of cultural heritages and the need to preserve and utilize these resources.

Keywords: culture of the Jeju Haenyeo; UNESCO Intangible Cultural Heritage of Humanity; willingness to pay; preservation value; contingent valuation method

1. Introduction

Artifacts of cultural heritage can be preserved and restored to serve as foundations for sustainable tourism and related industries [1–4]. In particular, intangible cultural heritage stands out as a form of cultural authenticity, so it serves as a resource that generates socio-economic benefits within the cultural tourism sector [5–7]. The United Nations Educational, Scientific and Cultural Organization (UNESCO) designation of intangible cultural heritage is given to cultural resources with high historical, ethnic, and artistic value; it aims to promote international cooperation and support for their protection [8–10]. In November 2016, Korea's Culture of the Jeju Haenyeo (Women Divers) was added to the UNESCO Intangible Cultural Heritage of Humanity list at the 11th Convention on the Protection of Intangible Cultural Heritage, held in Ethiopia.

The Haenyeo are female divers who are characterized by their free, or “breath-hold”, diving, in which they dive to collect seafood without any special equipment. The designation recognizes the women as having courage, persistent vitality, and a strong pioneering spirit as they seek to make a living in the barren Jeju Island environment [11], and recognizes their lifestyle as having strong regional characteristics. However, the environment of Jeju is changing rapidly, and the Culture of Jeju Haenyeo

is in danger of disappearing. Accordingly, the 2012 World Conservation Congress adopted an agenda that calls for redefining the unique value of culture to come up with ways to preserve the endangered Haenyeo community; furthermore, the Korean government is also promoting various measures to popularize the culture. Despite these efforts, most previous studies on the crisis of the Jeju Haenyeo have focused on current difficulties and alternatives, and none have studied the culture's practical value as an intangible cultural heritage entity. Thus, for sustainability purposes, this changing culture and its conventions should be protected and fostered in a comprehensive and systematic manner. Because a region's culture can help determine its survival and future development, it is necessary to identify ways to protect and transfer cultures and their value through accurate recognition of cultural identity [12]. Intangible cultural assets on the verge of disappearing are being forgotten because they cannot keep up with the pace of a rapidly changing society. Thus, framing a culture's meaning with the value estimation method provides a basis for the development of alternative means of expanding and preserving awareness of that culture. In this context, the culture of Jeju Haenyeo needs to be re-recognized as a unique intangible cultural heritage that is distinct from tangible resources.

Unlike market goods, culture is intangible, which makes it difficult to estimate its economic value [13]. Therefore, for the purpose of this study, the contingent valuation method (CVM), a methodology for estimating the value of non-market goods, was utilized to estimate the economic value of the Haenyeo cultural heritage. In CVM, a researcher first sets up a hypothetical payment situation and then asks participants about their payment intentions (willingness to pay—WTP) to estimate the value of the cultural resource [14,15]. Despite the methodological advantages of contingent valuation, however, some critics say that the hypothetical situations presented could ultimately result in exaggerating the value of non-market goods. Therefore, to compensate for the shortcomings of CVM, we applied a two-step approach that verified respondents' initial responses twice to minimize exaggeration bias. This study is significant in that these findings can raise awareness of the need to preserve the culture of Jeju Haenyeo and provide reference data for efforts to improve the preservation of all types of traditions. Moreover, with the rapid progression of the smart paradigm shift, concerns about cultural extinction could continue to grow. In this regard, this study can be used as a basic reference for the sustainable conservation of tourism resources in the era of the Fourth Industrial Revolution.

2. Literature Review

2.1. Contingent Valuation

CVM is a representative method of estimating the economic value of non-market goods [16]. Because of its methodological advantages, researchers have used contingent valuation in various academic fields; for instance, it is actively used in tourism studies, owing to the large number of public goods among tourism resources [17–19]. The main logic of CVM is that researchers generate a hypothetical payment environment for a given non-market good and ask respondents about their WTP. The questions can be open or closed. Dichotomous contingent valuation (DC-CVM), a close-ended methodology, requires “yes” or “no” responses for the amounts given [20,21]. However, if the hypothetical payment environment is not realistic, bias could distort respondents' WTP; investigators cite this potential as the most significant limitation of CVM [22–24]. To overcome this inherent bias, some researchers have increased the reliability of the method using a two-step approach in which they reaffirm respondents' initial answers through approaches such as automatic sharing of personal information [18,25]. Given the convincing arguments for the success of these efforts, which can ultimately lead to more conservative WTP estimates, we applied the same process to increase the dependability of respondents' WTP for preserving the culture of Jeju Haenyeo.

2.2. The Culture of Jeju Haenyeo as an Intangible Cultural Heritage

Intangible cultural heritages are spiritual or material cultural resources with a value that persists across generations [9,26]. Because they are an important means of understanding and predicting

modern behaviors through the cultures of the past, preserving these resources is necessary and modern cultures will benefit from analyzing and understanding their value [27]. In particular, heritages that represent the cultural diversity of mankind are key tourist attractions that help to counter the accelerating globalization-influenced uniformity, commercialization, and subordination of world cultures today [28,29]. Cultural heritage tourism is unique in that it represents the past in terms of time and space, and combines it with the sincerity of experience in content. Among cultural heritages, world heritage sites, which are determined by UNESCO, are highly valuable for their ability to represent their countries [1,30,31]. In fact, intangible cultural heritage is used in a variety of ways in the tourism sector. Cultural heritage-based destinations linked to intangible cultural heritage have the benefits of cultural resources [32]. An intangible cultural heritage experience can enhance visitors' understanding of local and cultural areas [33–36]. In addition, enhancing the value of intangible cultural assets, which are traditionally closely linked to local social and cultural values, can help foster sustainable tourism destinations [12].

The culture of Jeju Haenyeo (Women Divers), the subject of this study, is one of Korea's leading intangible cultural heritages. In 2007, UNESCO selected the Jeju Special Self-Governing Province as a cultural symbol of Jeju Island in recognition of its international excellence and representation, and listed it 19th in Korea on its Intangible Cultural Heritage of Humanity list. Jeju is an island located in the southern part of Korea; because it is separate from the mainland, it has a unique natural environment with a variety of regional characteristics. The Haenyeo are female divers who professionally collect seafood without a separate breathing apparatus; unhesitatingly jumping into the rough sea with just small buoys, they are vivid symbols of the spirit of Jeju's residents. The culture, as designated by UNESCO, consists of various tangible and intangible facets of the Haenyeo's lives, such as ceremonies and labor songs that pray for the ladies' well-being and strengthen community solidarity and the passing down of their roles within the village community. In addition, there is value in the sharing and cooperation of Jeju Haenyeo culture, in the women's comparatively high status in Korea's male-centered Confucian society, in the ecology of environmentally friendly fisheries, and in the dedication and participation of the community, all of which provide guidance for the formation of a sustainable development model for human society. However, as cultures are influenced by globalization, traditional ways of life around the world are slowly disappearing [37]; against this general background, the number of female divers on Jeju Island, specifically, is decreasing due to aging. Given this context and its importance as a Korean cultural resource, there is a need to re-establish the preservation value of the Jeju Haenyeo as a resource that is gradually disappearing. Despite the importance of the Haenyeo culture, there is little extant research on preserving it. When the culture of Jeju Haenyeo was selected as a UNESCO World Heritage Site, researchers began to think about how to protect the culture on a sustainable level, and research was conducted to explore methods of preserving the culture as a tourism resource [38,39].

3. Methods

3.1. Model Specifications

In this study, we used DC-CVM to estimate the value of preserving the culture of Jeju Haenyeo as a cultural and tourism resource. In DC-CVM, the dichotomous choice between “yes” and “no” is based on maximization utility theory; respondents compare the utility of preserving a resource by making the given payment with that of not paying and choose the option that provides the greater value [40]. Converting respondents' answers into probability models allows researchers to estimate their WTP [18]. For this study, the respondents chose whether there was greater utility in paying a monthly fee to preserve the culture of Jeju Haenyeo, or in not paying. This can be expressed in Equation (1), as follows [21]:

$$v(1, Y - A; s) + \varepsilon_1 \geq v(0, Y; s) + \varepsilon_0 \quad (1)$$

where v is the indirect utility, which is assumed here to equal the utility; Y is the individual's income; A is the amount of the donation to preserve the Haenyeo culture; s is other socioeconomic characteristics (gender, age, income, etc.); and ε_1 and ε_0 are identically, independently distributed random variables with zero means. If the condition does not hold, respondents will decline to donate. The probability of preserving the culture by making monthly payments can be expressed with the following (Equation (2)):

$$P_1 = P_r\{WTP\} = P_r\{v(1, Y - A; s) + \varepsilon_1 \geq v(0, Y; s) + \varepsilon_0\} \quad (2)$$

The difference (Δv) between the probability of paying monthly to preserve the Haenyeo culture, and that of not making the monthly payments, can be measured in the size of the utility individuals obtain from paying or not paying [18], as determined with the following (Equation (3)):

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

3.2. Logit Model and Estimation of Willingness to Pay (WTP)

In this study, the dichotomous choice for respondents under DC-CVM was whether or not they would pay various amounts on a monthly basis to preserve the Haenyeo culture; therefore, the data needed to be categorical. Logit models are widely used to estimate probability models for categorical data [18,41], and maximum likelihood is used to estimate parameters. Equation (4) gives the model for the probability that a respondent would agree to make the monthly payments [21]:

$$P_1 = F_\eta(\Delta v) = \frac{1}{1 + \exp^{-\Delta v}} = \frac{1}{1 + \exp^{-(\alpha + \beta^* \text{bid} + \gamma Z)}} \quad (4)$$

where P_1 is the probability function, F_n is the cumulative density function, and β , γ , and Z are the parameters to be estimated for donation amounts, individual cultural authenticity rating, and demographic variables, respectively. In addition, Equation (5) identifies the economic benefits the respondent can obtain by making the monthly preservation payments; α^* is the coefficient of the constant, calculated as the sum of the estimated constant plus the product of the other coefficients of explanatory variables times the mean amount:

$$CV = \int_0^\infty F_\eta(\Delta v) dA = \int_0^\infty \frac{1}{1 + e^{-(\alpha^* + \beta^* \text{bid})}} dA \quad (5)$$

There are two methods for estimating WTP: (1) obtain the mean of the probability accumulation area in the range from 0 to infinity, or (2) obtain the integral area by setting a maximum value as a cutoff and excluding the subsequent area [21]. These options are reflected in Equations (6) and (7), respectively:

$$WTP_{mean} = \int_0^\infty F_\eta(\Delta v) dA = -\frac{1}{\beta_1} \ln[1 + \exp(\alpha)] \quad (6)$$

$$WTP_{truncated} = \int_0^\infty F_\eta(\Delta v) dA = -\frac{1}{\beta_1} \ln \left[\frac{1 + \exp(\alpha)}{1 + \exp(\alpha^* \beta_1 \text{Max} \cdot A)} \right] \quad (7)$$

Of the above two methods, the truncated method is preferred because it can satisfy the conditions of consistency with theoretical constraints, statistical efficiency, and the ability to be aggregated [42]. Additionally, the method is known to produce conservative results [43]. Given these features, we selected the truncated method to measure the study's respondents' perceptions of the value of preserving the Jeju Haenyeo culture through monthly payments.

3.3. Research Design

3.3.1. Hypothetical Scenario

Because the culture of Jeju Haenyeo is a non-market good, a hypothetical scenario was required in order to use CVM to estimate the economic value of preserving it [44]. Because the scenario could have resulted in hypothetical bias, respondents were provided with a realistic scenario that was designed to minimize such bias [18]. For this study, we used the following hypothetical scenario:

The culture of Jeju Haenyeo is a symbol of Jeju Island's spirit, a marine cultural heritage that represents the identity of a coastal Korean village. The culture has been passed down for generations and has been recognized for its value as a historical, communal, and academic cultural resource. The Jeju Haenyeo culture was listed on UNESCO's Intangible Cultural Heritage list in November 2016. However, the traditional culture is slowly disappearing in a rapidly changing cultural environment, and the rapid decline in the number of Haenyeo, due to aging, poses a direct threat to the transmission of the tradition; there is no real solution. Raising funds would allow for the continuous preservation of the culture of Jeju Haenyeo.

The hypothetical bias, or the threshold of CVM, leads to an exaggeration of respondents' WTP [22,23,45]. To minimize this bias, we repeatedly confirmed respondents' answers and used only those we were able to verify as truthful. Following this two-step approach, we estimated the respondents' WTP to preserve the Jeju Haenyeo culture.

3.3.2. Payment Vehicle

We used WTP monthly donations to preserve the culture to estimate the economic value of saving the resource. In general, entrance fees reflect the value of the direct use of a resource and taxes reflect the value of preserving that resource [41]. We set the monthly payment amounts in the hypothetical scenario based on relevant prior research and expert opinions. Specifically, we used the following amounts: 100 KRW, 500 KRW, 1000 KRW, 3000 KRW, 5000 KRW, 10,000 KRW, 50,000 KRW, and 100,000 KRW (note that 1 USD was equivalent to 1185 KRW in Sep 2020). To measure WTP, respondents were presented with one randomly selected amount and asked whether or not they would pay it in a yes/no format, as follows:

Q1. *Would you pay (A) per month to preserve the Jeju Haenyeo culture?*

① Yes ② No

To reduce the hypothetical bias traditionally associated with contingent valuation, we confirmed respondents' intentions by asking follow-up questions of any participant who answered yes to Q1. The follow-up questions asked respondents about their willingness to have the given amount automatically transferred or to disclose their personal information. For respondents who answered yes to both questions, we considered their response to the first question to be true. If a respondent answered yes to the first follow-up question but no to the second, we considered the respondent to be highly unlikely to pay the given amount in a real-world situation. The two verification questions were the following:

Q2. *If you answered yes to Q1, would you agree to electronic invoicing of your donation amount?*

① Yes ② No

Q3. *If you answered yes to Q2, would you be willing to give me your e-mail address and name to deliver the electronic bill?*

① Yes ② No

4. Data Collection

Data were collected from November 25 to 27, 2019, from returning travelers at the Jeju International Airport departure lounge after traveling to Jeju Island. In addition, only those with prior knowledge

of Jeju Haenyeo culture were asked to participate in the survey. The participants were randomly assigned questionnaires with different prices and were asked to fill the questionnaires out. Specifically, the survey data were collected using convenience sampling by three investigators who thoroughly understood the survey purpose and methods. Prior to the survey, the respondents confirmed that they recognized the culture of Jeju Haenyeo, and after the study purpose was fully explained, respondents who agreed to participate in the study completed a self-administered survey questionnaire. A total of 280 questionnaires were distributed and 15 returned surveys were excluded due to missing data, leaving 265 for the final analyses.

5. Results

5.1. Demographic Characteristics

Table 1 presents the respondents' demographic characteristics. There were slightly more men than women (139, 52.5%), and the highest proportion, 27.9%, were in their 40s. The average monthly income was between 2 million and less than 3 million won, with 57 people (21.5%, the highest proportion) reporting this income range. Most respondents, 59.2%, were college graduates, followed by 74 high school graduates (27.9%).

Table 1. Demographic characteristics of respondents (N = 265).

		# Of Respondents (%)
Gender	Male	139 (52.5)
	Female	126 (47.5)
Age	20s	86 (32.2)
	30s	67 (25.3)
	40s	74 (27.9)
	50s	25 (9.4)
	60s or over	13 (4.9)
Monthly household income (KRW)	Less than~1,000,000	51 (19.0)
	1,000,000~1,999,999	36 (13.6)
	2,000,000~2,999,999	57 (21.5)
	3,000,000~3,999,999	39 (14.7)
	4,000,000~4,999,999	39 (14.7)
	5,000,000 or over	43 (16.2)
Academic background	Middle school or less	6 (2.3)
	High school or less	74 (27.9)
	University or college	157 (59.2)
	Graduate school or over	28 (10.6)

5.2. Measuring the Value of Preserving the Haenyeo Culture

In this study, we estimated the value of preserving the culture of Jeju Haenyeo by confirming the respondents' responses two times to minimize hypothetical bias. In Table 2, the column labeled "WTP1" presents the findings for the respondents' "yes" or "no" responses to the first survey question. WTP2 presents the findings for the responses to Q2, which respondents answered if they had answered "yes" to Q1. Finally, we confirmed respondents' WTP with "yes" or "no" responses to Q3, which respondents answered if they had answered "yes" to Q1 and Q2 (WTP3).

Table 2. Probability of Willingness to Pay (WTP) to preserve the culture of Jeju Haenyeo.

Bid Amount (KRW: South Korean Won)	Sample	WTP1			WTP2			WTP3			Final WTP		
		Yes	No	Yes %	Yes	No	Yes %	Yes	No	Yes %	Yes	No	Yes %
100	30	29	1	96.7	28	2	93.3	27	3	90	27	3	90
500	30	26	4	86.7	19	11	63.3	17	13	56.7	17	13	56.7
1000	30	23	7	76.7	22	8	73.3	17	13	56.7	17	13	56.7
3000	29	21	8	72.4	19	10	65.5	16	13	55.2	13	16	44.8
5000	30	20	10	66.7	16	14	53.3	13	17	43.3	12	18	40
10,000	29	14	15	48.3	11	18	37.9	9	20	31	9	20	31
30,000	30	11	19	36.7	11	19	36.7	6	24	20	6	24	20
50,000	29	8	21	27.6	7	22	24.1	5	24	17.2	4	25	13.8
100,000	28	4	24	14.3	1	27	3.6	1	27	3.6	1	27	3.6
Total	265	156	109	58.9	134	131	50.6	111	154	41.9	106	159	40

The use of the two follow-up questions reduced the hypothetical bias of the CVM, which is reflected in the findings shown in Table 2 and Figure 1. For instance, even if a respondent indicated an unwillingness to pay to preserve the culture of Jeju Haenyeo on the first survey question (WTP1), their initial untruthful response would likely be modified in the course of further questioning. We could thereby empirically confirm that using a two-step approach to response verification resulted in more true responses, which contributed to a reduction in exaggerated WTP [24,46]. As illustrated by the data shown in Table 2 and Figure 1, the respondents' yes ratios decreased as the donation amount increased, suggesting that the size of the donation is a strong factor in WTP.

**Figure 1.** WTP: comparison between hypothetical and real settings.

5.3. Logit Model Estimation Results

Table 3 shows the results of the logit model estimated by maximum likelihood. The results show that gender, age, and the amount presented to respondents (bid) affected their WTP to preserve the Haenyeo culture of Jeju Island. The higher the suggested donation amount, the lower the respondent's WTP, and the results were statistically significant in the negative direction. Gender showed a statistically significant relationship such that women were more willing to pay into the preservation fund ($p = 0.021$), and age had a positive relationship with WTP as well, in that WTP increased with increasing respondent age.

Table 3. WTP Logit Model Estimation Results.

Variable	Coefficient	Standard Error	Wald	Significance	Exp (β)
Bid	−0.000	0.000	24.306	0.000	0.999
Gender	0.687	0.297	5.324	0.021	1.988
Age	0.524	0.136	14.695	0.000	1.689
Monthly household income	0.068	0.092	0.549	0.459	1.070
Academic background	0.116	0.238	0.239	0.625	1.123
Constant	−2.539	0.916	7.675	0.000	0.078
−2 log likelihood: 280.369			Cox & Snell R^2 : 0.250		
Nagelkerke R^2 : 0.338			Percent of correct prediction: 70.9%		

5.4. Estimating Value through Truncated Mean WTP

As discussed above, the two most common methods of calculating WTP are mean and truncated WTP. Investigators have shown that truncated mean satisfies conditions like theoretical agreement, the utility of statistics, and the possibility of totaling, so it is the more commonly used of the two [42]. For this study, whereas the calculated mean WTP was estimated at 17,567 KRW, the truncated WTP was 17,308 KRW (14.81 USD), making 17,308 KRW the value of preserving the historic culture of Jeju Haenyeo, according to the participants in this study. Mean and truncated WTP were calculated as follows:

$$WTP_{mean} = \int_0^{100000} F_{\eta}(\Delta v) dA = -\frac{1}{\beta_1} \ln[1 + \exp(\alpha)] = 17,567 \text{ KRW}$$

$$WTP_{truncated} = \int_0^{100000} F_{\eta}(\Delta v) dA = -\frac{1}{\beta_1} \ln \left[\frac{1 + \exp(\alpha)}{1 + \exp(\alpha * \beta_1 100000)} \right] = 17,308 \text{ KRW}$$

6. Conclusions and Implications

Without care, cultural heritages tend to become less valued over time, with a trend towards extinction. Korea's culture of the Jeju Haenyeo, the famed free diving women, is a world heritage with high recognition and value as a symbol of Jeju Island culture, but the rapidly changing environment and the aging of the women pose the threat of extinction, and there are no proposed practical solutions for preserving it as a cultural resource. The culture has multiple meanings and purposes for both the island itself and Korea more broadly, and preserving it through wide-ranging efforts should be a long-term goal. Furthermore, the successful preservation of the culture of Jeju Haenyeo could serve as a model for future sustainable tourism efforts. Therefore, the main goal of this study was to reassess the culture in the context of its value as a sustainable cultural resource from a tourism point of view by estimating its preservation value.

To this end, contingent valuation, which enables estimating the value of non-market materials, was used to estimate the value to a group of travelers at Jeju Island's departure hall of preserving the island's culture of women free divers. We attempted to reduce the inherent exaggeration bias of CVM by confirming the respondents' responses and calculated that the estimated value to the study participants of preserving the culture, specifically, their WTP monthly toward its preservation, was 17,308 KRW. Logit model analysis showed that WTP decreased as the amount presented increased, and that older respondents and females showed a greater likelihood of paying the given amounts; this latter finding suggests that women in Korea find particular appeal in the symbolic image of the Haenyeo and their status in the community. The value of culture is variable and subjective, so objective evaluation is difficult; there are relatively few studies on estimating the value of intangible cultural heritage in general, and what research has been done is primarily qualitative [14,26,47]. With this study, we attempted to re-recognize the importance of intangible cultural heritages by calculating the objective value of preserving one example: Korea's historical culture of the free-diving women of Jeju Island. We determined that it is theoretically possible to empirically assign a value to efforts to preserve

the Haenyeo culture; indeed, we confirmed the effectiveness of contingent valuation for estimating the abstract concept of the worth of intangible cultural heritage as a non-market good. Our efforts identified 17,308 KRW as the value to the study's participants of preserving the Haenyeo culture.

The academic implications of the study are as follows. Our society has rapidly changed with informatization, industrialization, and globalization. An intangible cultural heritage based on the community that has been passed down to many generations, mainly through traditional methods, is disappearing because it is difficult to adapt to societal changes. Especially in the digital age, personalization, with a particular focus on direct exchange for the preservation of each intangible heritage in accordance with its importance, is rising. Numerous previous studies on Jeju Haenyeo have focused on the issues and alternatives faced by the Haenyeo culture of Jeju Island; there is a lack of research dealing with the economic value of the culture of Jeju Haenyeo as an intangible cultural heritage. The current study is meaningful because it uses CVM to shed light on the crisis facing an intangible cultural heritage as an endangered tourism resource. Most endangered intangible cultural heritages go through a stage of being forgotten, due to their failure to keep up with the changing trends in modern society, but we expect that this type of value estimation can serve as a basis for an alternative solution to increase awareness and preserve cultures. In addition, the study makes a slight methodological contribution in that an effort has been made to reduce CVM's traditional problem of exaggeration bias.

The most important practical implication of this study is that we obtained quantitative data to guide any efforts to sustain and improve the Haenyeo culture of Jeju Island. The figure of 17,308 KRW, which is the monetary value of preserving the culture and ensuring its sustained existence, according to the study participants, can guide preservation-related policies and help to secure financial aid. We can interpret this value as reflecting the respondents' perception of the culture as a valuable tourism resource, and we believe that informed efforts to preserve and sustainably promote the culture for tourism could help boost the local economy in addition to keeping the tradition alive. In addition, at a time when active digital restoration of cultural resources using smart technology is being carried out, the results of this study can be used as a basis for assessing and screening the value of intangible cultural heritages and providing the grounds for the selection of digital restoration of tourism resources.

Tourism resource contents restored using digital technology are also used as educational materials to inform the history, function, and cultural excellence of cultural heritage. Digital restoration of tourism resources by applying Virtual Reality (VR) technology and games containing stories can indirectly increase the value of resources. In addition, increasing the opportunities for experience through technology, as well as simple restoration, can increase the level of immersion and interaction, thereby increasing the understanding of the value of intangible cultural heritage. For example, increasing opportunities for experiencing the culture of Jeju Haenyeo through smart technologies in various institutions, such as museums, is thought to be a way to induce visitors' experience and enhance understanding of the culture in the young generation. In this regard, the use of digital technology could be an appropriate means of preserving sustainable intangible cultural heritage. Despite these implications, this study has some limitations. We addressed the culture of Jeju Haenyeo as an intangible cultural heritage, but it is difficult to generalize these findings because the culture may have significant differences from other intangible heritages or other cultural assets. Moreover, we failed to account for a wide variety of variables that could affect the preservation of the Jeju Haenyeo culture. Future studies could produce more significant results if researchers consider sociocultural factors, such as social distance and authenticity that could affect WTP for preserving intangible cultural resources. Also, methodologically, it is necessary to systematically set the categories of 'given price' in order to make an elaborate value estimation in a CVM study. Unfortunately, sophisticated price investigations for the category have not been conducted due to time and cost reasons. Therefore, in further CVM studies, more careful efforts should be made for this.

Author Contributions: S.P. writing original draft, N.C. project administration and W.S.L. supervision. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by Kyonggi University's Graduate Research Assistantship 2020 and the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2019S1A3A2098438).

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

References

- Cellini, R. Is UNESCO recognition effective in fostering tourism? A comment on Yang, Lin and Han. *Tour. Manag.* **2011**, *32*, 452–454. [\[CrossRef\]](#)
- Chhabra, D. *Sustainable Marketing of Cultural and Heritage Tourism*; Routledge: Abingdon, UK, 2010.
- Choi, H.C.; Turk, E.S. Sustainability indicators for managing community tourism. In *Quality-of-Life Community Indicators for Parks, Recreation and Tourism Management*; Springer: Dordrecht, The Netherlands, 2011; pp. 115–140.
- Liu, Z. Sustainable tourism development: A critique. *J. Sustain. Tour.* **2003**, *11*, 459–475. [\[CrossRef\]](#)
- Chhabra, D.; Healy, R.; Sills, E. Staged authenticity and heritage tourism. *Ann. Tour. Res.* **2003**, *30*, 702–719. [\[CrossRef\]](#)
- Esfehani, M.H.; Albrecht, J.N. Roles of intangible cultural heritage in tourism in natural protected areas. *J. Herit. Tour.* **2018**, *13*, 15–29. [\[CrossRef\]](#)
- González, M.V. Intangible heritage tourism and identity. *Tour. Manag.* **2008**, *29*, 807–810. [\[CrossRef\]](#)
- Blake, J. *Developing a New Standard-Setting Instrument for the Safeguarding of Intangible Cultural Heritage: Elements for Consideration*; Unesco: Paris, France, 2001.
- Labadi, S. *UNESCO, Cultural Heritage, and Outstanding Universal Value: Value-Based Analyses of the World Heritage and Intangible Cultural Heritage Conventions*; Rowman & Littlefield: Lanham, MA, USA, 2013.
- Vecco, M. A definition of cultural heritage: From the tangible to the intangible. *J. Cult. Herit.* **2010**, *11*, 321–324. [\[CrossRef\]](#)
- Lee, J.Y.; Lee, H.H. Korean women divers 'Haenyeo': Bathing suits and acclimatization to cold. *J. Hum. Environ. Syst.* **2014**, *17*, 1–11. [\[CrossRef\]](#)
- Choi, Y.J.; Lee, W.S.; Moon, J.; Kim, K.B. The value of preserving endangered folk games using the contingent valuation method. *Curr. Issues Tour.* **2020**. [\[CrossRef\]](#)
- Yolal, M.; Gursoy, D.; Uysal, M.; Kim, H.L.; Karacaoğlu, S. Impacts of festivals and events on residents' well-being. *Ann. Tour. Res.* **2016**, *61*, 1–18. [\[CrossRef\]](#)
- 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. [\[CrossRef\]](#)
- Mitchell, R.C.; Carson, R.T. *Using Surveys to Value Public Goods: The Contingent Valuation Method. Resources for the Future*; RFF Press: Washington, DC, USA, 1989.
- Hanemann, M.; Loomis, J.; Kanninen, B. Statistical efficiency of double-bounded dichotomous choice contingent valuation. *Am. J. Agric. Econ.* **1991**, *73*, 1255–1263. [\[CrossRef\]](#)
- Carson, R.T.; Mitchell, R.C. The value of clean water: The public's willingness to pay for boatable, fishable, and swimmable quality water. *Water Resour. Res.* **1993**, *29*, 2445–2454. [\[CrossRef\]](#)
- 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. [\[CrossRef\]](#)
- Lee, W.S.; Lee, C.K.; Yoon, Y.; Kim, J. Research note: Exaggeration bias-corrected contingent valuation method: The case of Olle Trail. *Tour. Econ.* **2015**, *21*, 1323–1330. [\[CrossRef\]](#)
- Bishop, R.C.; Heberlein, T.A. Measuring values of extramarket goods: Are indirect measures biased? *Am. J. Agric. Econ.* **1979**, *61*, 926–930. [\[CrossRef\]](#)
- Hanemann, W.M. Welfare evaluations in contingent valuation experiments with discrete responses. *Am. J. Agric. Econ.* **1984**, *66*, 332–341. [\[CrossRef\]](#)
- Choi, Y.; Lee, W.S.; Lee, C.K.; Dattilo, J. Valuation of mudflats in nature-based tourism: Inclusion of perceived value of festival experiences. *Tour. Econ.* **2015**, *21*, 833–851. [\[CrossRef\]](#)
- Harrison, G.W.; Rutström, E.E. Experimental evidence on the existence of hypothetical bias in value elicitation methods. In *Handbook of Experimental Economics Results*; North Holland: Amsterdam, The Netherlands, 2008; Volume 1, pp. 752–767.

24. Lee, W.S.; Graefe, A.R.; Hwang, D. Willingness to pay for an ecological park experience. *Asia Pac. J. Tour. Res.* **2013**, *18*, 288–302. [\[CrossRef\]](#)
25. Lee, W.S. A Study on the Value of Preserving a Parasitic Volcanic Sieve as a Tourism Good for Sustainable Management: Using the Contingent Valuation Method. *Sustainability* **2020**, *12*, 2825. [\[CrossRef\]](#)
26. Lenzerini, F. Intangible cultural heritage: The living culture of peoples. *Eur. J. Int. Law* **2011**, *22*, 101–120. [\[CrossRef\]](#)
27. Baghli, S.A. The convention for the safeguarding of the intangible cultural heritage and new perspectives for the museum. *ICOM News Mus. Intang. Herit.* **2004**, *57*, 15–17.
28. Alberti, F.G.; Giusti, J.D. Cultural heritage, tourism and regional competitiveness: The Motor Valley cluster. *City Cult. Soc.* **2012**, *3*, 261–273. [\[CrossRef\]](#)
29. Du Cros, H. A new model to assist in planning for sustainable cultural heritage tourism. *Int. J. Tour. Res.* **2001**, *3*, 165–170. [\[CrossRef\]](#)
30. Cuccia, T.; Guccio, C.; Rizzo, I. The effects of UNESCO World Heritage List inscription on tourism destinations performance in Italian regions. *Econ. Model.* **2016**, *53*, 494–508. [\[CrossRef\]](#)
31. Ryan, C.; Chaozhi, Z.; Zeng, D. The impacts of tourism at a UNESCO heritage site in China—A need for a meta-narrative? The case of the Kaiping Diaolou. *J. Sustain. Tour.* **2011**, *19*, 747–765. [\[CrossRef\]](#)
32. World Tourism Organization. *Tourism and Intangible Cultural Heritage*; World Tourism Organization: Madrid, Spain, 2012.
33. García-Almeida, D.J. Knowledge transfer processes in the authenticity of the intangible cultural heritage in tourism destination competitiveness. *J. Herit. Tour.* **2019**, *14*, 409–421. [\[CrossRef\]](#)
34. Park, S.M.D.; Giudici, E.; Melis, C.; Dessì, S.; Ramos, B.F.P.G. Is intangible cultural heritage able to promote sustainability in tourism? *Int. J. Qual. Serv. Sci.* **2013**, *5*, 101–114.
35. Smith, M.K. *Issues in Cultural Tourism Studies*; Routledge: Abingdon, UK, 2009.
36. Wray, K.; Espiner, S.; Perkins, H.C. Cultural clash: Interpreting established use and new tourism activities in protected natural areas. *Scand. J. Hosp. Tour.* **2010**, *10*, 272–290. [\[CrossRef\]](#)
37. Kirshenblatt-Gimblett, B. Folklore's crisis. *J. Am. Folk.* **1998**, *111*, 281–327. [\[CrossRef\]](#)
38. Kim, S.; Whitford, M.; Arcodia, C. Development of intangible cultural heritage as a sustainable tourism resource: The intangible cultural heritage practitioners' perspectives. *J. Herit. Tour.* **2019**, *14*, 422–435. [\[CrossRef\]](#)
39. Yoo, J.H.; Jung, Y.K. A Study on the Applications of ICT/IoT for Jeju Haenyeo Culture, an UNESCO Intangible Cultural Heritage. *J. Inf. Technol. Serv.* **2017**, *16*, 213–222.
40. Manski, C.F. The structure of random utility models. *Theory Decis.* **1977**, *8*, 229–254. [\[CrossRef\]](#)
41. Lee, C.K.; Mjelde, J.W. Valuation of ecotourism resources using a contingent valuation method: The case of the Korean DMZ. *Ecol. Econ.* **2007**, *63*, 511–520. [\[CrossRef\]](#)
42. Duffield, J.W.; Patterson, D.A. Inference and optimal design for a welfare measure in dichotomous choice contingent valuation. *Land Econ.* **1991**, *67*, 225–239. [\[CrossRef\]](#)
43. Bateman, I.J.; Langford, I.H.; Turner, R.K.; Willis, K.G.; Garrod, G.D. Elicitation and truncation effects in contingent valuation studies. *Ecol. Econ.* **1995**, *12*, 161–179. [\[CrossRef\]](#)
44. Sellar, C.; Chavas, J.P.; Stoll, J.R. Specification of the logit model: The case of valuation of nonmarket goods. *J. Environ. Econ. Manag.* **1986**, *13*, 382–390. [\[CrossRef\]](#)
45. Báez, A.; Herrero, L.C. Using contingent valuation and cost-benefit analysis to design a policy for restoring cultural heritage. *J. Cult. Herit.* **2012**, *13*, 235–245. [\[CrossRef\]](#)
46. Park, S.Y.; Lee, W.S. Valuation of the Jidong Mural Art Alley Using the Contingent Valuation Method: An Application of Nostalgia. *J. Tour. Sci.* **2017**, *41*, 45–62.
47. You, W.H.; Seo, S.J.; Choi, B.K. A Study of Jeju Haenyeo's (Women Diver) Awareness on Self, Community and UNESCO Intangible Cultural Heritage of Humanity (ICH) Designation. *J. Korean Inst. Tradit. Landsc. Archit.* **2018**, *36*, 89–96.

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