Evaluating Foreign Tourists' Willingness to Pay for Ancient Gobeklitepe-Sanliurfa, Turkey

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ABSTRACT

The goal of this study is to determine entrance fee and factors that affecting willingness to pay (WTP) for ancient Gobeklitepe-Sanlıurfa-Turkey by using contingent valuation method (CVM). In this context, randomly selected 338 foreign tourists were the main material of the study. It was used two sorts of questions that were closed-ended (or dichotomous choice) and open-ended at the same time according to questionnaire format. The probit model and 2SLS (Two-Stage Least Squares) models were used to identify goals of the study. At the same time the factors that affect tourists' WTP have been done by using maximum likelihood method (MLM) instead of LSE(Least Square Estimation) method. As a result the average WTP for the probit model is estimated the amount of $25 for Gobeklitepe and the stated WTP was estimated to be $22.04 by 2SLS. Accordingly, aggregate use value from probit model and 2SLS model were estimated 1,042,500 $/year and 919,068 $/year respectively. This study is the first of its type in the region and based on an analysis of face to face questionnaires. The study determines the primary factors influencing tourists' WTP for the optimal management of a cultural site. The results are extremely important for policymakers and contain useful information for Turkey and other countries with similar archaeological cultural heritage characteristics.

Key Words: Willingness to pay, probit model, 2SLS model, culture economy, Sanliurfa, Gobeklitepe

1.Introduction

The definition of cultural heritage is made as the overall collection of possessions, real estate, tangible as well as intangible properties, private belongings, public and semi-public organizations' properties, and material goods belonging to churches and nation which are significantly valuable in terms of history, arts, science and culture for this reason, deserve protection and conservation by the nations and societies (Bedate et al., 2003).

Economy of culture, cultural economics or economics of historical heritage is a subdiscipline of economics which means combines the culture and economics to analyze the effects of economic factors on cultural heritage. As Montenegro et al. (2009) suggest, the "economics of historical heritage" has developed as an analytical field by its own owing to the uniqueness of the included properties, which are usually matchless, not duplicatable, and exposed to endurability in time.

By the way, the Contingent Valuation Method (CVM) is used to value these sites by determining the entrance fee. In order to get informations from tourists who are asked Willingness To Pay(WTP) to facilitate the services, hypothetical market should be developed. There are many researchers who conduct this type of studies particularly about cultural heritages (Sanz et al., 2003; Bedate et al., 2004; Salazar and Marques, 2005; Venn and Quggin,

2007; Kinghorn and Willis, 2008; Montenegro et al., 2009; Bostedt and Lundgren, 2010; Choi et al., 2010; Poor and Snowball, 2010; Necissa, 2011; Raheem, 2012; Barrio et al., 2012; Gomes et al., 2013; Voltaire et al., 2013).

Depending on the agreement in 2015 the world heritage committee convention confirmed 1031 heritages have particularly universal worth in many countries worldwide. These world heritages include 802 cultural, 197 natural and 32 mixed properties(UNESCO, 2016a).

On the other hand, Turkey is listed among the countries with deep cultural heritage which are taken over through several civilizations from the beginning of the history. Fifteen natural and cultural heritages of Turkey were confirmed by UNESCO. In addition, The archaeological site of Gobeklitepe is considered as a tentative heritage by UNESCO in tentative list since Gobeklitepe will be able to become an important representative tourism resource of Turkey, especially Sanliurfa (UNESCO, 2016b). Many scientists assume that the Gobeklitepe is an original, unique and first temple in the history. Despite the fact that some other heritage sites which are less significant in archaeological terms have been visited with large quantities of foreign tourists, Göbeklitepe, which is of outstanding value for the human kind, has gathered less attention from visitors.

The problem about this site is how to preserve the cultural, archaeological properties and how to ensure attraction of tourists. Moreover, they may spend money to get tourism products and services. It means economy of Sanlıurfa is affected positively in case of collecting revenue from tourists, employments and other economic variables. This site currently charges no entrance price. Although the city has a rich cultural heritage, most of Sanlıurfa's economy is currently dependent on agriculture. So there is lack of service quality for foreigners and insufficient tourist attractions. It is observed that in order to raise the competitiveness and attractiveness of this type of cultural heritage, it is crucial to note that there must be a linkage between preservation and services which tourists' prefer.

The primary intention of this study is to determine entrance fee, economic value of Gobeklitepe and specifically, to identify the WTP determinants. In order to achieve these intentions, CVM is employed for approximating the economic values for the entire ecosystems and environmental provisions. It is possible to employ CVM to approximate use as well as non-use values. In this technique, directly contacting a person through questions in a survey to learn how much they would be WTP for certain environmental, cultural and historical values. This is named as contingent valuation due to the fact that it is requested from a person to express their WTP subject to a certain hypothetical scenario and explication of these values. The feature of CVM, which is depending on the expressions of individuals concerning their future actions rather than what they are actually observed to do, is the most important weakness as well as the most important strength of it (Chiam et al., 2011). For any further theoretical investigations, researchers should see in these studies (Schkade and Payna, 1994; Bjornstad and Kahn, 1996; Bateman and Willis, 1999; Vossler and Kerkvliet, 2003; Loomis 2011; Hausman, 2012; Haab et al, 2013).

2. Literature review

Within the literature, there are considerable amount of studies concerning the effects of cultural heritages on local societies, communities as well as on the global economy. The statement that heritages are shared prosperity and create surplus benefits have been under debate among various scholars (Fonseca, 2010). Thus, the benefits of public goods e.g recreational places, cultural heritages (tangible and intangible), man-made historical monuments, works of art (traditions, paintings, sculptures, collections and museums), archeological spots and so on can be identified through the usage of economic valuation

techniques such as contingent valuation, hedonic pricing and travel cost (Ortacesme et al., 2002). That are widely used to monetize their values.

When cultural heritages are being valued, several academics have chosen to employ CVM which obtains tendencies for public goods through contacting people directly and asking them their WTP for the services (Mitchell and Carson, 1989).

It is accepted that this remains a research field to be completed and it should hearten the scholar to perform in such a manner to create a diversity of spillover impacts over alternative economic deeds which are particularly linked to tourism by appealing customers, cuisine, local offerings, and etc. (Fonseca, 2010). For this reasons, cultural heritages are becoming increasingly important on the economics of cultural heritages including demand for archaeological sites which is analyzed in this paper.

A CVM survey builds scenarios which present alternative probable government actions ahead. Following the establishment of the scenarios, the respondents are forwarded the question to express their inclinations about those actions. Afterwards, the collected responses are put under analysis in a resembling way with the responses of those in actual markets. Under both circumstances, expressed in a hypothetical setting or in a real market, the economic value is obtained from the selections of the subjects (Carson, 2000).

According to Chiam (2011), the indication of CVM execution in different researches need to be essentially understood for the purpose of allowing for the method to be debated. For approximating the use-value of the common goods, the WTP assesses for example Hicksian Consumer Surplus Measures depending on utility-theoretic analysis (Hanemann, 1984) and usually, the net of the price paid in reality is measured (Carson, 2000).

Some studies using CVM are as follows (Tumay and Brouwer, 2007; Jun et al., 2010; Raheem, 2012; Barrio et al., 2012; Tehrani et al., 2013; Lavee and Baniad, 2013; Gomes et al., 2013; Voltaire et al., 2013).

3. Methodology

3.1. Study site description

Gobeklitepe is a man-made archeological and ancient site about 15 km away from the city of Sanliurfa, Southeastern Anatolia (figure 1). It is a distinctive temple was built 11,500 **years ago for spiritual ceremony reason.**

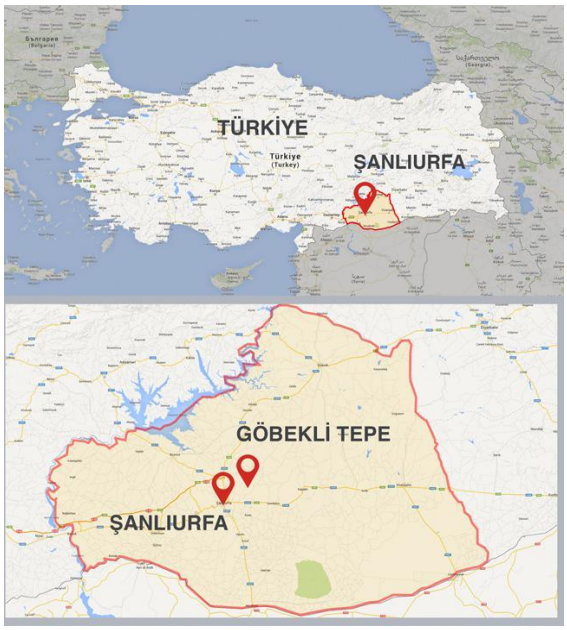

Figure 1. The location of Gobeklitepe (Source: www.gobeklitepeturkey.org)

Figure 2. Göbeklitepe cult center(Source: www.urfahaber.net).

Among its different characteristics include T-shaped pillars which have foxes, snakes, wild boars, cranes, wild ducks pictures 6 meters heights and 60 tonnes(figure 2). In addition, Gobeklitepe is considered the beginning of the history of architecture, first settlement for mankind and religious temple which is a building devoted to the worship of a Good or Goods by archeologists. Finally Gobeklitepe is still an enigma for many scientists(Anonymus, 2016).

3.2. Measurement

There are different types of question formats using CVM to get hypothetical WTP in cultural heritage literature. The types of question used in this study were closed-ended or dichotomous choice and open-ended at the same time. In closed-ended format, or in double-bound dichotomous choice model, asked respondents' in the case of the presence of facilities or improvements in the study area whether they were WTP a specified bid amounts that was each respondents were asked to pay for entrance fee for Göbeklitepe. The bid price was selected randomly from $5 to $60, increasing $2.5, which was determined according to pre-test results in each questionnaire. To decide on bid prices, a pretest was conducted on randomly selected foreign tourists who visit Gobeklitepe. Based on the results of the pretest, bid prices for the first closed-ended question were divided into 23 categories and bid prices were selected randomly in each questionnaire.

After being provided with detailed information about services which reflect improvement for touristic and cultural value of the Gobeklitepe archaeological site, extended question was asked in questionnaires. *Suppose that local authorities have planned to improve facilities at Göbeklitepe such as showrooms, shopping center, traditional handicrafts, bookstore, hotels, traditional food serving restaurants, information center, sanitation place and other facilities including landscaping. However, these new facilities will definitely cost more than the entrance fee to visit the Göbeklitepe. In this case, would you be WTP additional cost to operating authority for this proposed plan? If yes, please indicate your maximum amount that you are WTP for the proposed improvement? If no, then please indicate your least amount including zero that you are WTP for the proposed improvement?* In the second closed-ended question with the improvements, bid prices were divided into 25 categories from $5 to $125, increasing with $5.

The main survey was administered via face-to-face interviews. Sample size were selected randomly with the help of given formula below:

$$n = \frac{Nt^2 pq}{d^2(N-1)+t^2 pq} \qquad \text{(Yamane, 2009)}$$

(1)

Where: n: number of sample size, N: number of population, Numbers of foreign tourists were 41,700, t: Z value within %99 confidence interval as 2.58 because sample size is greater than 30, p: probability of foreign tourists to visit cultural heritage sites 0.50, q:1-p: 0.50, probability of foreign tourists not to visit, d: Margin of error 0.07 thus the sample size was calculated as 338.

3.3. Model specification

3.3.1. Probit model

In this paper, the theoretical specification of the CVM has been based on Hicksian utility-theoretic analysis (Kim et al., 2007). A probit model is defined in statistics as a kind of regression in which the dependent variable can merely get two values. The probit name comes from the words *probability* + *unit.* The model aims at approximating the probability which an observation having certain features will be classified under one of the particular categories. Furthermore, in case approximated probabilities with values higher than ½ are considered as classifying an observation into a forecasted class, the probit model is a kind of binary classification model. A probit model is a general arrangement for an ordinal or a binary response model. It handles the same problem groups by itself like logistic regression which makes use of similar methods. The probit model adopts a probit link function and is frequently assessed employing the standard maximum likelihood process. In such a case, this approximation is named as a probit regression.

3.3.2. Two-stages least square (2SLS) model

In disciplines including statistics, econometrics, epidemiology and so on, the instrumental variables technique is employed in order to approximate cause and effect relationships when there is not a chance to make controlled experiments or when an action is not transported to each unit in a randomized experiment. Instrumental variable methods enable consistent estimation when the explanatory variables (covariates) have a correlation with the error terms of a regression relationship. This kind of a correlation can take place when the dependent variable drives minimum one of the covariates ("reverse" causation), when a number of related explanatory variables can be ignored from the model, or when the covariates are exposed to measurement error. Under these circumstances, ordinary linear regression usually creates approximations which are biased and inconsistent. On the other hand, consistent approximations can again be acquired in case of the presence of an instrument. An instrument is a variable which is not a part of the explanatory equation by itself and is related with the endogenous explanatory variables and subject to the other covariates. In linear models, two major prerequisites call for the employment of an instrumental variable. Firstly, the instrument needs to be related with the endogenous explanatory variables, conditional on the other covariates. Secondly, the instrumental variable cannot be related to the error term in the explanatory equation; which means that the instrument cannot be disadvantaged by the same problem as the original predicting variable(Jia et al., 2013). The inconsistency of ordinary least square is due to endogeneity of x, which indicates that changes in x are related with the changes in y, while they also change in the error u. A technique for creating merely exogenous variation in x is required. An understandable approach is employment of an experiment; however, for

most economics purposes experiments are too expensive or even inapplicable. The model is as follow: Name of variables(X_i) are shown in table 1.

$$\begin{aligned} I_i &= X_i\beta + \varepsilon_i \\ X_i\beta &= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} \end{aligned} \quad (2)$$

4. Findings

Majority of respondents were male (53%). 60% of them were between 18-44 ages. 50% married. The monthly income of them $1000-3000 (34%) and have no child (59%). 84% of respondents were university graduated. 22% of respondents were retired and 62% of them come from Europe. 88% of them visited for cultural, religious and historical purposes, that means Şanlıurfa is rich-city with its cultural heritages. Because 59% of respondents have beliefs about "Sanlıurfa is one of the oldest city in the world".

The probit model and 2SLS were used in this research in order to determine entrance fee and the socioeconomic determinants of WTP of foreign tourists who have been visiting Göbeklitepe by using limited dependent variables programme. According to probit and 2SLS model, entrance fee of the site was estimated $25 and $22.04 respectively. The economic value of the site was $1,042,500/year and $919,068/year on the assumption that 41,700 foreign tourists visited Göbeklitepe. According to results of probit model estimation, the gender, American, travel cost, call frequencies and bid price were important parameters affected the WTP significantly (Table 1).

Table 1. The probit model results for WTP

Variables	Probit model coefficients	t-value
Constant	-1.96	-1.58
Gender	**-0.27**[a]	-1.73
Maritial Status	-0.05	-0.27
Education	0.12	1.21
Age	0	-0.67
European	-0.08	-0.34
Australian	-0.12	-0.38
American	**0.54**[a]	1.75
Number of Children	0.08	0.91
Group Travel	0.16	0.79
Travel Cost	**0.21**[b]	2.45
Call Frequency	**0.73**[c]	3.67
Perception of cultural heritages	0.02	1.57
Income	0.58	0.82
Bid prices	**-0.05**[c]	-8.28
Chi-square	119.628	

[a,b,c]orderly indicates the degree of statistical significance of 10%, 5% and 1%

It was expected to decrease WTP with the rising bid prices similar to demand model. The result was consistent with the priority perception (intuitive knowledge) when looked at the other CV studies. The coefficent of parameter is statistically significant (P≤0.01). Male respondents have less WTP than female. There was a positive relationship between travel cost and WTP (P≤0.05). It means if the travel cost of respondents increase, WTP of them increase, too. Because travel cost of respondents reflect their disposable income. Likewise, high call frequency of respondents caused pushing up the WTP (P≤0.01). Frequent visitors have much opinion on historical monuments. That is they are ready to pay higher price for protection of

this site with their income. When looking at the overall condition of the model, all exogenous variables simultaneously made contribution in the probability of WTP from Chi-square statistical point of view was observed. Therefore, the variables used in the probit model be able to explain the probability of WTP (Table 2).

Table 2. The 2SLS model results for WTP

Variables	2SLS model coefficients	t-value
Constant	**29.03**[a]	**1.71**
Gender	2.62	0.84
Single	0.86	0.12
Married	**13.54**[a]	**1.94**
Bachelor Degree	0.39	0.09
MS and PhD	0.49	0.09
European	**-11.61**[b]	**-2.24**
Australian	**-18.19**[c]	**-2.68**
American	**-11.27**[a]	-1.82
Pensioner	**12.143**[b]	**2.33**
Travel Alone	3.33	0.81
Travel with family	**-8.21**[b]	-2.01
Business travel	5.02	0.78
Age	**-0.41**[b]	**-1.83**
Travel costs	-2.58	1.30
Bid prices	**-0.02**[c]	**-8.07**
WTP	-8.25	-1.24
Chi-square	**120.22**[c]	

[a,b,c]orderly indicates the degree of statistical significance of 10%, 5% and 1%

2SLS model was analyzed for Göbeklitepe. In this analysis, statistically significant variables were focused on. Married visitors have positive WTP when compared with widowed visitors. Married visitors' WTP is about $14. Under these circumstances, when single visitors have tendency to save from their disposable income, married couples want to make a sacrifice from their disposable income. In this case most probably arose from economic situation between disposable incomes of visitors. In other words, this situation are caused that married couples have high disposable income than single visitors, at the same time married couples give more attributes to cultural monuments.

Although coefficients are not statistically significant, tourists who have high education level specify superior stated WTP. On the other hand, both probability of WTP and stated WTP amount vary from for tourists in terms of their residential. European, American and Australian tourists, have lesser WTP compare with Asian ones. Between these tourists, Australians stated lesser significance in terms of both probability of WTP and WTP amount. Pensioners compared to employee, have positive propensity in terms of both probability and WTP amount. In addition, pensioners compared to employee have 92.5% more WTP and in case of establishment of better social conditions for Göbeklitepe and want to pay $12 more. Tourists that travel with their family have $8 less WTP than tourists who travel alone. This negative amount may be caused by high cost of travel with family.

In general, tourists who travel for business purpose to have more overall tendencies of WTP, however the coefficients are estimated statistically insignificant. As the age of visitors increases, the probability of WTP decreases. There is an inverse relationship between them. As a result, it is expected for young visitors sacrifice their disposable income quite easily in order to access new vision of historical sites. New generations want more attractiveness and social competence to historical sites. Because they take advantages of these type of activities. Travel costs variable is not estimated statistically significant despite our expectations.

It is estimated that there is a negative relationship between probability of WTP and bid prices expectedly (P<0.01). In case of increasing bid prices, WTP will decreases in accordance with demand law. Thus, when bid prices are increased it is expected that the number of visitors will decrease. But these will overcompensate with the help of functional reform of historical sites. Collective or group visiting may be possible by engaging in promotional activity for this type of historical sites in national and international arena and increasing the more opportunities and facilities for tourists. 2SLS model's WTP coefficient is estimated negative but statistically insignificant in consequence of t- value is -1.24. It is clearly understood that using other model instead of 2SLS, parameters will not be unbiased and efficient. If explanatory power of the 2SLS model is examined by the help of chi-square test, external variables explained enough both probability of WTP and stated WTP simultaneously.

5. Conclusions

This paper examined the use of CV to value cultural heritage for Göbeklitepe in Şanlıurfa-Turkey. Although there are sources of biases, this analysis indicates that CV can be successfully applied to historical sites in developing countries. The econometric analysis undertaken indicates a linkage between various socio-economic variables of interest and the expressed WTP. The theoretical approach has been founded on the premise that a person increases his/her gains to the highest possible level in view of the socioeconomic variables in this study.

The main material of study is selected by simple random sampling survey of foreign tourists. The probit model is created by using CVM and the study created in the form of survey question types according to the characteristics stated WTP of the additional ordinary two-stage least square method (2SLS) is conducted.

The factors that affect tourists' WTP have been done by using MLM. Then some other specific factors which are statistically significant, increases continuously with the offer price, suggesting that the effect of the probability of WTP are simulated. As a result, the amount of WTP as an entrance fee for visitors. The average WTP for the probit model is estimated the amount of $25 and the stated amount WTP was estimated by 2SLS $22,04. In addition, the estimated annual economic values attributed to historical monuments calculated and $1,042,500 was found. According to the 2SLS model, the average annual benefits have been revealed and $919,068 benefits were estimated.

It is rational to impose entrance fee according to results of the study, wherein no entrance fee currently and the visitors have $22 mean WTP for this site. The financial income from entrance fee can be used to improvements in the site, such as additional resource for archeological excavation, undertake research, touristic services, promotion of the site, increasing awareness of domestic people, tourists attractions, etc. On the other hand, there may be an over-estimated WTP because of biases of respondents. In the theoretical debates, foreign tourists may have told that prices because they know that will not able to pay more for a hypothetical market now. On the other hands, the results of the study were consistent with other applied research and in practice applications. Such as Stonehenge's entrance fee is £14.90, entrance fee of Statue of Liberty is $17 and the Pyramids of Giza's entrance fee between 30 LE (Egyptian Lira) and 100 LE and visiting inside the Great Pyramid costs to tourists 100 LE ($14.36).

There isn't enough of such type of scientific research in valuing cultural heritages despite their importance in tourism sector specifically in cultural tourism in Turkey. The obtained results of this study will encourage other researchers. The other researchers may be achieved certain results by using this method to the other cultural assets of Sanlıurfa-Turkey as well.

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