

[Research]

## Recreational value of Javaherdeh Village in north of Iran

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### ABSTRACT

Nowadays, tourism related activities are widely regarded as key tools for rural development. Accordingly, it would be worthwhile to estimate the recreational value of Javaherdeh Village, in order to propose a better management plan for attracting more tourists to this place. This research employed a contingent valuation method to determine the recreational value and individual willingness to pay (WTP) for outdoor recreation of Javaherdeh. Logit model and maximum likelihood method were employed for determining WTP and its' determinants. The data were collected by completing double-bounded dichotomous choice questionnaires and interviewing with 220 individuals who visited the village. Results revealed that 96% of individuals were willing to pay for visiting the village. Additionally, results indicated that the variables including monthly income, overnight staying, number of visits, attitude, satisfaction with the quality of facilities and proposed fee (bid) had a significant effect on the probability of individuals' willingness to pay. Mean value of willingness to pay for each visitor per year was 41,960 Iranian Rials (IRR) and annual outdoor recreation value of Javaherdeh was 6,128,430,000 IRR. The tourists' WTP will be helpful to prepare guidelines for possible increases in entrance fees and efficient sustainable management of the village.

**Key words:** Contingent valuation method, Recreational value, Willingness to pay, Rural tourism.

### INTRODUCTION

**Problem statement.** In general, developing countries have numerous plans for development. One of the plans recommended by theoreticians and planners is tourism development in less populated rural areas that have beautiful landscapes and pristine natures (Sharpley 2002). If properly managed, rural tourism would bring more tourists to the area and make an extra source of income and employment; meanwhile, it would help to break social isolation and encouraging the repopulation of such non-urban communities (Cavaco 1995). Although it appears that rural tourism is not a panacea for a rural renaissance and is still a controversial entity, the rural tourism policy can arguably be considered as a way to revitalize rural societies around the world (Sharpley 2002; Devine & Devine 2011). In this context, given the increasing demand for the public resorts and the recreation issue in

developing countries, analysis of factors affecting the people requests from economic and social points of view can help to predict the recreational needs. One of these factors is the value that people put on the benefits of visiting public promenades. The utility generated from these places is a direct benefit of resorts or recreational sites that are used by people for entertainment, walking, mount-climbing and aesthetics. This system provides a mechanism for enhancing human well-being; thus, it is highly important to quantify and understand these benefits (Khorshid Doost 1997). In other words, estimating the monetary value of these services will play an extra role in the integrated management of human and natural systems. At the micro level, evaluation-based studies will cause to access to information about the structure and function of ecosystems and their diverse and complex role in supporting human well-being and sustainable development.

Economic valuation can be positively involved in improving environmental policies. Today, it is more sensible that we need to identify and consider values of environmental investments, industry-civil projects and policy-related decisions (Ibid, 1997).

### Review of literature

In general, few studies have been conducted in resorts and the value of recreational rural areas in Iran, whereas these few studies have used similar methodologies. One of them is the contingent valuation method (CVM) that is widely used especially in the developed countries, in which the visitors are asked about their maximum willingness to pay in order to calculate the value of outdoor services. This method is used as a standard and flexible tool for measuring the value of non-use and non-market use-values for recreational profits (Emami-Meybodi & Ghazi 2008). Contingent valuation has proven particularly useful when implemented alone or jointly with other valuation technique for non-market goods, such as the travel cost method or hedonic approaches. It remains the only technique capable of placing a value on commodities that have a large non-use component of value, and when the environmental improvements to be valued are outside of the range of available data (Whittington, 1998). In fact, CVM relies on using a questionnaire that determines the willingness to pay (WTP) for a non-market resource, which is based on a survey of respondents using hypothetical questions. Several studies have been carried out to determine the benefits of tourism areas. For instance, Krieger (2001) revealed that recreational value of American East Forest was 10.43\$ per household, using contingent valuation.

Lee & Han (2002) estimated the recreational value of five national parks in South Korea to be on average 10.54\$ per family per year by dichotomous choice contingent valuation method. Leinhoop & MacMillan (2007) estimated recreational value of desert areas in Iceland Island as €243.16 each year.

In a study on Annapurana protected area in Nepal by Baral *et al.* (2008) using CVM, mean WTP of visitors to protect this area was found to be 2.69\$. Majumdar *et al.* (2011) investigated the willingness of tourists to pay costs for urban forest in the Savannah, Georgia, USA, using CVM. The mean and median WTP were estimated to be 11.25\$ & 2.10\$, respectively, the annual value was 11.55\$ million based on the estimated median WTP, assuming at least 50% of the tourists in Savannah would pay the median amount. In Iran, Amirnejad *et al.* (2006) used willingness to pay method and estimated annual conservation and recreational values of Sisangan Park in Noshahr, Iran to be 666\$ and 291\$, respectively. Khodaverdizadeh *et al.* (2008) reviewed the recreational value of Kandovan Village by contingent valuation method. Mean willingness to pay for each visitor per year was 3905 IRR and annual outdoor recreation value of Kandovan Village was 1171500 Internal Rate of Return. Raheli *et al.* (2010) reviewed the recreational value of Band Village by contingent valuation method. Mean willingness to pay for each visitor per year was 6250 IRR and annual outdoor recreation value of the village was amounted to 500 million IRR. Raei Jadidi & Sabouhisabuni (2011) reviewed recreational value of Kordasht Village in East Azerbaijan province by contingent valuation method. Visitors' expected willingness to pay was estimated to be 2800 IRR and the recreational annual value of the village to be 280 million IRR. Rezai *et al.* (2013) studied the recreational value of Jamshidieh Park in Tehran, Iran by contingent valuation and the average willingness to pay for each visitor was estimated to be 23 IRR, the recreational value to be 203 million IRR per hectare, and the average annual recreational value of Jamshidieh Park to visit per household to be approximately 844,000 IRR. Furthermore, Rahimi (2011) estimated the value of recreational forest parks and identified factors influencing visitors' willingness to pay of Bonab Forest Park in Arsanjan City, Central Iran. The results showed that the average willingness to pay for each visitor was 10193.68

IRR and recreational value per hectare was 9285423.11 IRR. Mazandaran Province is a major tourist destination in Iran.

Coastal areas and plains of the province have been saturated because of high density and this is one of the reasons that tourists proceed to visit the rural and mountainous areas of the region. This means that the aspects of life, working and function of these villages have been changed (Aqajani *et al.* 2014).

In this regard Javaherdeh Village with the recreational function is worthy of attention. Given the tourism opportunities and strengths of Javaherdeh and the fact that one of the services provided by the village resources is ecotourism benefits, hence planning for the protection of the sets, making infrastructures and tourist facilities, including safety, roads, transportation, accommodation, health care services, green space, etc.

has become necessary. Government budget constraints and high costs of providing facilities, maintenance of natural resources and historical monuments as well as developmental infrastructure in these areas, pointed out the need to finance through visitors. Whereas now, in Javaherdeh Village only in some holiday (about two months) the amount of 20,000 IRR receive from non-native visitors as the entrance fee and in return, less services present to them. Therefore, estimating the recreational value of the village is very important, so that the people and officials will inform about its real economic

value and attempt to maintain and plan to develop this area

### Aim of the study

This paper aimed at estimating the recreational value of Javaherdeh Village in North of Iran.

In this study the CVM with open-ended questionnaire format was applied to estimate WTP values and factors affecting respondents' WTP for visiting Javaherdeh Village.

## MATERIALS AND METHODS

### Study area

"Javaherdeh", the village studied in this research, is one of the ecotourism destinations around Ramsar City in Mazandaran Province and one of the few mountainous areas that is about 2000 meters above the sea level in spite of having little distance from the Caspian Sea; (Fig. 1) in addition, it is an important tourism zone of Iran because of its favorable country climate and many attractions such as beautiful mountains, waterfalls, springs, forest parks and historical monuments like the old neighborhoods, Gabri cemeteries, a thousand years old revealed traces, historical building of "Agha Saeed" mosque (about 700 years ago), "Adine" and "Haji Mirza" Mosques that are the historical signs of the Javaherdeh long antiquity, so that according to the available reports, annually over 500,000 people visit this village (Department of Culture and Islamic Guidance 2013).

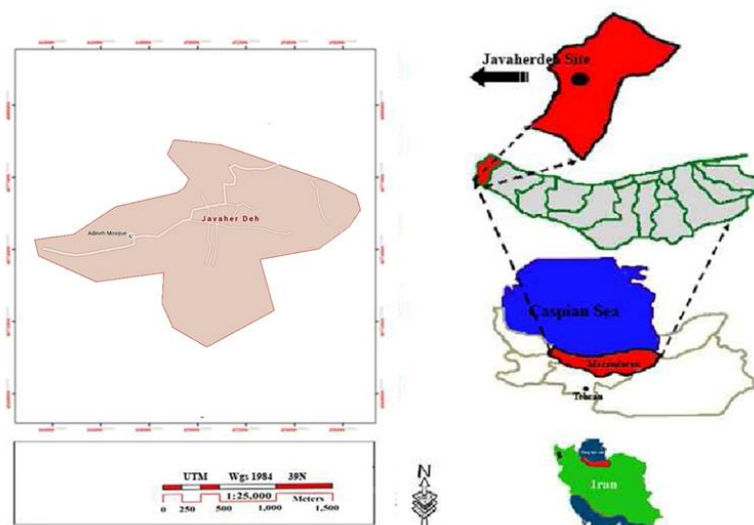


Fig. 1. Location of Javaherdeh Village in Ramsar, Mazandaran Province, Iran

### Data analysis

The CVM is an applicable option for environmental and recreational valuation as it provides a basis for eliciting non-use values directly (Pearce & Moran, 1994). The CVM has been applied for the first time in the early 1960's in order to estimate the benefits of outdoor recreation in a backwoods area of Maine (Mitchell & Carson 1989). This method also provides a platform for understanding interrelated socio-economic information on recreation planning and management policy based on public preferences. The explanatory variables includes bid (BID), monthly income (REV), overnight staying experience in this village (NS), the number of visits (VN), attitude towards Javaherdeh Village about recreation (TA), and satisfaction with the quality of recreational, health and safety facilities in Javaherdeh Village (FS). Assuming that the visitors' utility function from the village is a function of recreation in the village, income and socio-economic features of visitors, the utility function of each visitor will be calculated as follows (Amirnejad *et al.* 2006):

$$U = U(C, Y, S) \quad (1)$$

In equation (1), if an individual was willing to pay for visiting Javaherdeh Village, C equaled 1 and otherwise, it equaled 0. Also, Y and S show the income and vector of respondents' socio-economic feature, respectively. Each visitor is willing to pay amount of his/her income to use environmental resource as a bid (A) that would cause the utility for him/her. The utility created by using an environmental resource is more than when an environmental resource has not been used. It is showed in the following equation (Hanemann 1984):

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

Where,  $\varepsilon_0$  and  $\varepsilon_1$  are random variables whose average is zero and are randomly distributed independent from each other. The difference in utility (DU) on the use of environmental resource can be defined as follows:

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

According to the usage of DDC valuation approach in this study and the double values of the dependent variable values or responses expressed by visitors (acceptance of the proposed fee = 1, and rejection = 0), econometric model of Logit binary choice was used to form the recreational value function. Based on the Logit model, the probability (Pi) that a person accepts one of the bids is expressed as the following equation (Hanemann 1984):

$$P_i = F_{\eta}(\Delta U) = \frac{1}{1 + \exp(-\Delta U)} \quad (4)$$

$$= \frac{1}{1 + \exp\{-(\alpha - \beta A + \gamma Y + \theta S)\}}$$

Where,  $F_{\eta}(\Delta U)$  is the aggregate distribution function with a standard logistic difference and some social and economic factors are included in the study such as income, bid, age, gender, household size and education.  $\beta$ ,  $\gamma$  &  $\theta$  are estimable coefficients expected to be  $\beta \leq 0$ ,  $\gamma > 0$  &  $\theta > 0$ .

Maximum likelihood had been used for estimating the Logit model parameters. Then the expected value of willingness to pay by numerical integration in the range of zero to the highest bidder is calculated as follows (Rahimi, 2011):

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

$$= \int_0^{maxA} \left( \frac{1}{1 + \exp[-(\alpha^* + \beta A)]} \right) dA,$$

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

Where, E (WTP) is the expected amount of willingness to pay and ( $\alpha^*$ ) is adjusted intercept added to the original intercept term ( $\alpha$ ) by socio-economic term. Logit models may be estimated in the forms of linear or logarithmic functions. A linear function form is easier to calculate the average WTP and it has been used in most studies. The elasticity of the explanatory variable ( $X_k$ ) in Logit model could be estimated from the following equation (Judge *et al.* 1982):

$$E = \frac{\partial(B'X_k)}{\partial X_k} \cdot \frac{X_k}{(B'X_k)} = \frac{e^{B'X}}{(1+e^{B'X})^2} \cdot B_k \cdot \frac{X_k}{(B'X_k)} \quad (6)$$

In this study, given the pre-test data based on Mitchell and Carson's method (1989) at the 5% significance level and the actual and the estimated WTP difference of 10%, 220 questionnaires were filled out in the study area and the required data were collected in the summer of 2015. Mitchell and Carson believe that in contingent valuation approach the percentage of estimated deviation of willingness to pay must be subtracted from real willingness to pay instead of subtracting absolute value of the estimated willingness to pay from real willingness to pay (Fattahi & Fathzade, 2012). This condition requires providing a primary estimate of visitors' willingness to pay (WTP) coefficient of variation. The following equation was used to calculate the coefficient of variation (V) (Molaei & Kavooosi Kalashami 2011).

$$V = \frac{\delta}{TWTP} \quad (7)$$

Where,  $\delta$  is SD values of the expressed WTP in the pre-test and TWTP is the actual amount of WTP. To determine the coefficient of variation ( $\hat{V}$ ) with the use of pre-test data, the sample size can be estimated by following equation (Molaei & Kavooosi Kalashami, 2011).

$$n = \left[ \frac{t \times \delta}{d \times RWTP} \right]^2 = \left[ \frac{t \times \hat{V}}{d} \right]^2 \quad (8)$$

where,  $n$  is the sample size,  $t$  is the statistic amount of t-student, RWTP is the estimated amount of WTP from pre-test and  $d$  is the difference percentage of RWTP from TWTP. The  $d$  value shows how much deviation of the actual value of WTP is acceptable for the researcher. In valuation studies, the acceptable amount of  $d$  is between 0.05 and 0.3 (Molaei & Kavooosi-Kalashami 2011).

Additionally, statistical analysis of data collected in this study is done by Excel, Shazam and SPSS software packages.

With regard to the normal statistical distribution in answers expressed to open-ended questions in the pre-test, double

dichotomous choices (DDC) questionnaires were used to estimate WTP.

The questionnaire was prepared in two sections: the first was related to visitors' socio-economic characteristics including monthly income, the number of visits per year, overnight staying, visitors' attitude toward choosing the village for recreation, and assessment of the quality of recreational facilities. To specify attitudes, 24 items within six parts were designed in the format of Likert type scale. The titles of these parts were considered as including interest in ecotourism, awareness of the benefits of tourism, awareness of natural resources and tourist services in the desired destination, interest in local arts, seeking diversity or adventure, the others' encouragement, and the resorts' comforting and reliability. Hence, four statements were designed in each part. In order to determine the visitors' satisfaction with the quality of recreational facilities, 11 items were considered in Likert type scale about the resorts' conditions such as the conditions of the roads, parking lots, recreational facilities within the resort, the resorts' security, the availability of medical emergencies, public transportation, water closets, natural landscapes, historical monuments protection, etc. Then, the mean scores were determined as attitude index and visitor satisfaction index, respectively. Based on "Interval of Standard Deviation from the Mean" approach, the attitudes and satisfactions of all respondents were classified in four groups of poor to excellent, which are expressed in the following ISDM equation (Sadighi & Mohammadzade 2003):

$$\text{(Poor): } A < \text{Mean} - \text{SD} \quad (9)$$

$$\text{(Moderate): } \text{Mean} - \text{SD} < B < \text{Mean}$$

$$\text{(Good): } \text{Mean} < C < \text{Mean} + \text{SD}$$

$$\text{(Excellent): } \text{Mean} + \text{SD} < D$$

where, Min, Max, Mean and SD indicate minimum, maximum, mean and standard deviation of the indexes, respectively. The second section was assigned to examine WTP with questions that presented three bids

including 15,000, 30,000 & 60,000 IRR in three interrelated questions.

These values were determined based on pre-test. So that based on the amount of median obtained from the data of 30 questionnaires, the average amount of bid was determined about 30,000 IRR. Thus, according to the deviations in the pre-test responses, low and high bids were considered 15000 & 60000 IRR respectively. These three proposed fees presented in the form of three interdependent questions.

## RESULTS

As shown in Table 1, the majority of surveyed visitors had monthly incomes of over 13 million IRR and that about 41.1% of visitors came to the village for the first time.

In addition, 55.9% of visitors had stayed overnight in the village.

According to the information from the respondents (see Table 1), the highest visiting frequency was related to tourists that had moderate and good attitude about choosing Javaherdeh for recreation as well as for facilities conditions while some visitors were not satisfied with roads, recreational facilities,

water closets (WCs) and parking lots in the village.

Therefore, fixing these problems will increase the number of tourists and rural employment resulting in rural people's higher income.

The results of probability of individuals' willingness to pay (Table 2) showed that 54 individuals (24.5%) rejected the first bid to pay 30,000 IRR of their monthly income for visiting Javaherdeh Village, while 166 individuals (75.5%) accepted that. When the cheaper bid (15,000 IRR) was offered for those who did not accept the first bid, 14 individuals (6.4%) rejected it, while 40 ones (18.2%) accepted it. Those respondents who accepted the first bid (30,000 IRR) were placed in higher proposed group to find whether they were willing to pay 60,000 IRR to visit Javaherdeh Village. About 152 respondents (69.1%) rejected the third bid while 14 individuals (6.4%) accepted it.

The results indicated that tourists expressed their satisfaction to pay for visiting Javaherdeh Village so that 96% of surveyed visitors were willing to pay for the use of this village which provides the appropriate field for this village to develop.

**Table 1.** Socio-economic characteristics of respondents (n = 220).

Socio-economic characteristics	frequency	% of total
<b>Household monthly income*</b>		
<7	29	13.2
7-9	27	12.3
9-11	30	13.6
11-13	34	15.5
13-15	48	21.8
>15	52	23.6
Overnight staying		
Positive answer	123	55.9
Negative answer	97	44.1
Attitude level		
Poor	28	12.8
Moderate	96	43.6
Good	66	30.0
Excellent	30	13.6
The number of visits per year		
1	91	41.4
2	50	22.7
3	30	13.6
4	7	3.20
5	14	2.70
>6 times	28	12.9
Satisfaction level of facilities		
Poor	30	13.6
Moderate	86	39.1
Good	77	35.0
Excellent	27	12.3

\*Household monthly income is according to Million IRR

As noted, according to the results of previous studies, Logit model was applied to estimate

the recreational value of Javaherdeh Village and its parameters were estimated by

maximum likelihood approach using Shazam software. Presence or absence of the multi-collinearity between mentioned explanatory variables was tested as the first stage to estimate Logit model for which variance proportion was used. Given that there was no pair element to be >0.5 in per characteristic root in each row, it can be argued that there was no multi-collinearity among explanatory variables

used in the model. The results of estimating the Logit model are presented in Table 3. The regression coefficient reflects the effect of change in examined explanatory variables on the probability of acceptance or rejection of bid for the recreational use of Javaherdeh Village, the t-statistic indicates whether the regression coefficient of explanatory variable is significant.

**Table 2.** Individual's response to the proposed bids.

Status of acceptance		Initial Bid (30,000 IRR)	Higher Bid (60,000 IRR)	Lower Bid (15,000 IRR)
Acceptation of bids	frequency	166	40	14
	percentage	75.5	18.2	6.4
Rejection of bids	frequency	54	14	152
	percentage	24.5	6.4	69.1
Sum	frequency	220	54	166
	percentage	100	24.5	75.5

**Table 3.** Results of Logit model for the recreational value of Javaherdeh.

Variable	Estimated coefficient	t-value	Weighted elasticity	Marginal effect
Constant	1.6175	2.5689	0.40506	-
REV	0.35934*	4.2845	0.34836	0.089595
NS	0.82259*	2.7428	0.10463	0.20198
VN	-0.20187*	-5.0515	-0.16774	-0.050332
TA	0.48898*	2.9626	0.29818	0.12192
FS	0.32569***	1.9549	0.20684	0.081207
BID	-0.00012739*	-11.441	-1.1561	0.000031763

Likelihood-ratio test (L.R. Statistic): 258.5

Accuracy percentage of forecast: 84%

significant at the 1% level, \*\*\* significant at the 10% level

Statistically talking, the estimated coefficients of the explanatory variables including income, overnight staying, the number of visits, visitor's attitude and bid were significant at the 1% level and satisfaction with facilities was significant at the 5% level. Variables such as income, overnight staying, attitude, and the satisfaction with facilities had a positive effect and the number of visits and bid had negative effects on the willingness to pay for Javaherdeh Village. The estimated coefficients for the explanatory variables of monthly income, attitude and satisfaction with facilities reflected their positive effects on WTP, while coefficients of variables such as the number of visits and bid had a negative effect on the willingness to pay for recreational use of Javaherdeh Village.

Actually in Logit model, the estimated coefficients just show indications of the impact of the explanatory variables on the probability of the dependent variable acceptance and they have no numerical interpretation, but the elasticity and marginal effects have been interpreted in this study. So weighted aggregate elasticity and marginal effects have been used for interpreting in the results. For example, based on the weighted aggregate elasticity of the monthly income and respondents' attitude variables (see Table 3), the probability of accepting bids was increased by 0.35% and 0.3%, respectively for 1% increase in their values assuming other factors being constant. Also, according to the marginal effects of these variables, the probability of

accepting the proposed amounts for recreational use of village has been increased to 0.08 and 0.1 units for each unit increasing in the amount of monthly income and respondents' attitude variables.

Due to weighted aggregate elasticity of bid, 1% increase in its value reduced the probability of accepting the bids by 1.15%. In addition, according to the marginal effect of this variable, the probability of accepting the proposed amounts for the use of the village has been reduced by 0.003 units for 100 units increase in the amount of this variable.

According to the weighted aggregate elasticity of the number of visits, probability of acceptance of bid for recreational use would decline by about 0.17% for each 1% increase in the amount of this variable.

The marginal effect for the number of visits revealed that one unit increase in the mentioned variable resulted in 0.05 unit reducing the probability of willingness to pay by visitors. The amount of weighted aggregate elasticity of overnight staying variable was not included because of its dummy nature; hence, due to its marginal effect, the probability of accepting the proposed amounts for recreational use of village increased by 0.2 units for each unit increase in the amount of this variable.

The LM2 statistic equals 9.03; so, given its probability level (11%), there is no heteroscedasticity in the estimated model.

The Likelihood Ratio Test (LR) statistic equals 258.5 that given the probability value of 0 and  $df = 6$  indicate an overall significant of estimated Logit. The amounts of Estrella, Maddala, Cragg-Uhler, Mcfadden & Chow R-Squares equal 0.53, 0.44, 0.59, 0.42 and 0.51, respectively. The percentage of the right prediction of the estimated model equals 84% which emphasizes the high prediction power of the Logit model.

After Logit model estimation, the expected average willingness to pay for recreational value was calculated as to be 41,690 IRR per person per visit based on Hanemann method. Finally, total of recreational value for

Javaherdeh Village was calculated by the following equation:

*Total of annual recreational value = annual number of visitors × mean of WTP*

*Total of annual recreational value = (147,000 × 41,690) = 6,128,430,000 IR*

## DISCUSSION

The majority of visitors were willing to pay the entrance fee for Javaherdeh Village (96%) showing the high importance of this region for the tourists and that the public knowledge is considerably high about environmental and ecotourism values and would be an encouraging outcome for managing rural tourism.

The results of estimating factors affecting willingness to pay showed that the monthly income, overnight staying, number of visits, visitors' attitude, visitors satisfaction with the facilities and the amount of proposed fee have significant effect on the probability of WTP for the village that were in agreement with most studies.

For example, variables such as number of visits and the proposed fee had negative effects and the other factors had positive effects on WTP that was consistent with some studies, e.g. Manafi & Hayati (2010). Positive sign of income coefficient was in accordance with the results of Kiami *et al.* (2016); Naji *et al.* (2011) and Khan & Giurca Vasilescu (2008) and showed an increase in the probability of willingness of people who have higher income to pay. Positive sign of overnight staying was consistent with the results of Rezaee *et al.* (2013). Positive sign of visitors' attitude matched the results of Kavooosi-Kalashami *et al.* (2014).

The results of estimation for each visit were in line with Rezaee *et al.* (2013) that found WTP for Jamshidieh Park to be 23,448 IRR.

In other words, the recreational value of Javaherdeh Village was more important than other recreational areas.

Positive sign of satisfaction with facilities matched the results of Raheli *et al.* (2013).



## CONCLUSION

Therefore, considering the high value and high ecotourism potential of Javaherdeh Village as well as the positive effects of visitors' attitude and satisfaction with recreational facilities on the willingness to pay for this village, it can be concluded that increasing affinity toward rural natural attractions should increase tourists' willingness to engage in rural tourism development with paying entrance fee for recreational use. In this context, affective promotional messages might work especially well for ecotourism offerings. On the other hand, the expectation of rural areas visitors is not less than the urban or coastal areas tourists, so they demand a variety of attractions and facilities with good qualities; thus, the number of visitors may be increased and its economic benefits would be exploited in rural development projects. Hence, it is recommended that investments are made on this area to attract tourists and satisfy them and policy-makers and managers of rural areas pay more attention to planning for tourism development and better protect these areas for future generations.

The results of the present study might be exploited in improving the quality of tourism and environmental services of Javaherdeh Village and expanding the variety of services that are based on people demands.

## REFERENCES

- Abdollahi, B, Raheli, H & Sajedinia, A 2011, Willingness to Pay and Related factors in Sardabeh of Ardabil. *Journal of Agricultural Economy*, 2: 37-59.
- Aghajani, m, Zandavi, SM & Atai, A 2014, The role of tourism in the functional change of rural areas, with an emphasis on sustainability indicators, Case study: Arbakaleh and Larsanvar villages in Ramsar City. *Journal of Geography and Environmental Studies*, 3: 7-22.
- Amirnejad, H, Ahmadi Khaliji, S & Aminravan, M 2013, The application of the contingent valuation method to estimate the recreational value of Sari Forest Park. *International Journal of Agriculture and Crop Sciences*, 5: 1080-1083.
- Amirnejad, H, Khalilian, S, Assaresh, MH & Ahmadian, M 2006, Estimating the Existence Value of North Forests of Iran by Using a Contingent Valuation Method. *Ecological Economics*, 58: 665-675.
- Baral, N, Stern, MJ & Bhattarai, R 2008, Contingent valuation of ecotourism in Annapurna conservation area, Nepal: Implications, for sustainable park finance and local development. *Ecological Economics*, 66: 218-227.
- Cavaco, C 1995, Rural tourism: the creation of new tourism spaces. In Montanari, A. & Williams, A. (eds.) *European Tourism: Regions, Spaces and Restructuring*. Chichester: John Wiley and Sons, pp. 127-150.
- Crouch, GI 1994, The study of international tourism demand: a survey of practice. *Journal of Travel Research*, 32: 41-55.
- Devine, A & Devine, F 2011, Planning and developing tourism within a public sector quagmire: lessons from and for small countries. *Tourism Management*, 32: 1253-1261.
- Emami-Meybodi, A & Ghazi, M 2008, An estimation of the recreational value of the Sae Park in Tehran using the Contingent Valuation Method (CV). *Iranian Economic Research*, 12: 187-202.
- Fatahi, A & Fathzadeh, A 2012, Preserving valuation of watershed areas using the contingent valuation method. *Iran-Watershed Management Science and Engineering*, 5: 65-72.
- Firoozan AH, Hakimi Abed, M, Bahmanpour, H & Hashemi, A 2012, Estimated recreational value of Lahijan forest using by contingent valuation method. *ARP Journal of Agricultural and Biological Science*, 7: 1990-6145.
- Foucat, VSA 2002, Community-based ecotourism management moving towards sustainability, in Ventanilla, Oaxaca, Mexico. *Ocean & Coastal Management*, 45: 511-529.

- Ghanbarpour MR, Sajjadi Sh, Hajiseyedjavadi ST & Chen X 2011, Investigation of visitors' participation and willingness to pay for the Baba Aman recreational Park, Iran. *Research Journal of Environmental and Earth Sciences*, 3: 722-728.
- Hanemann, WM 1994, Valuing the environment through contingent valuation. *Journal of Economic Perspectives*, 8: 19-43.
- Hanemann, WM 1984, Welfare evaluations in contingent valuation experiments with discrete responses. *American Journal of Agricultural Economics*, 71: 332-341.
- Judge, G, Hill, C, Griffiths, W, Lee, T & Lutkepohl, H 1982, Introduction to the theory and practice of econometrics, New York: Wiley p. 231.
- Kavoosi-Kalashami, M, Tahamipour, M & Heidari-Shalmani, M 2014, Estimating consumers' willingness to pay for organic broiler by Heckman two-stage approach. *Quarterly Journal of Economics and Modeling, Shahid Beheshti University*, 4: 115-130.
- Khaksar Astaneh, H, Daneshvar, M, Kalateh Arabi, V & Akbari, MR 2011, Estimated value of forest Recreation Park in Mashhad using contingent society valuation. *Journal of Agricultural Economics*, 3: 61-78.
- Khan, H & Giurca Vasilescu, L 2008, The willingness to pay for recreational services: An empirical investigation with the application of multivariate analysis of two public parks in Northern Pakistan. Social Science Electronic Publishing, Inc. Electronic copy available at: <http://ssrn.com/abstract=1279466>
- Kiami, F, MS, Allahyari & M Kavoosi-Kalashami 2016, An investigation on the recreational value of Masouleh village, Iran. *Tourism Planning & Development*, 13: 111-119.
- Khodavrdizadeh M, Hayati B & Kavoosi-Kalashami M 2008, The estimation of recreational value of Kandovan, a tourist village in East Azerbaijan using the contingent valuation method. *Journal of Environmental Sciences*, 4: 43-52.
- Khorshid Doost, A 1997, The role of economic analysis and pricing methods in environmental assessment. *Environmental Biology*, 20: 10-34.
- Krieger, DJ 2001, Economic value of forest ecosystem services: A review. The Wilderness Society, Washington DC, USA.
- Lee, C & Han, S 2002, Estimating the use and preservation value of national parks tourism resources using a contingent valuation method. *Tourism Management*, 23: 531-540.
- Lee, SW & Kim, HJ 2011, The effects of rural settlement projects on the living environment in Korea. *Harvard Asia Quarterly*, 13: 6-13.
- Leinhoop, N & Macmillan, D 2007, Valuing wilderness in Iceland: Estimation of WTA and WTP using the Market Stall approach to contingent valuation. *Land Use Policy*, 24: 289-295.
- Majumdar, S, Deng, J, Zhang, Y & Pierskalla, CH 2011, Using contingent valuation to estimate the willingness of tourists to pay for urban forests: A study in Savannah, Georgia. *Urban Forestry & Urban Greening*, 10: 275-280.
- Manafi Molayousefi, M & Hayati, B 2010, Estimation of recreational value of Maharlo Lake in Shiraz city using contingent valuation method. *Journal of natural environment, Journal of Iran Natural Resources*, 63: 291-302.
- Mitchell, RC & Carson, RT 1989, *Using surveys to value public goods: The contingent valuation method*. Washington DC: Resources for the Future, 488p.
- Molaei, M & Kavoosi Kalashami, M 2011, Estimating the preservation value of *Lilium Ledebourii* using single bounded dichotomous choice contingent valuation method. *Journal of Agricultural Economics and Development*, 25: 322-329.
- Park, DB & Yoon, YS 2009, Segmentation by motivation in rural tourism: a Korean case study. *Tourism Management*, 30: 99-108.
- Pearce, DW & Moran, D 1994. The economic value of biodiversity. Earth scan, London.

- Public Relations Group Report 2013, Department of Culture and Islamic guidance in the city of Ramsar, Iran. [Online available in <http://ershad-ramsar.blogfa.com/archive>].
- Raei Jadidi M & Sabuhi Sabuni M 2011, Estimation of the willingness to pay of Kordasht recreational village visitors in East Azerbaijan province. *Environmental Sciences*, 8: 47-56 (in Persian).
- Raheli, H, Heidari Chyanh, R & Khodaverdizadeh, M 2013, Estimating the recreational value and factors affecting visitor's willingness to pay for Asiyab Kharabeh waterfall using contingent valuation method. *Journal of Geography and Planning*, 17: 95-117.
- Raheli, H, Khodaverdizadeh, M & Najafi, H 2010, Using contingent valuation to examine recreational value of Band Village in Urmia, *journal of agricultural economy*, 4: 49-62.
- Rahimi, M 2011, Estimated value of forest recreation parks and identify factors influencing willingness to pay Bonab Arsanjan visitors (tourists). *Australian Journal of Basic and Applied Sciences*, 5: 1802-1805.
- Rezaee, A, Nakhaei, N & Mohammadzade, SH 2013, The determination of recreation values of Jamshidieh Park in Tehran by using contingent valuation method. *Journal of Environmental Studies*, 39: 25-32.
- Sadighi, H & Mohammadzadeh, G 2003, Extension professional staffs' attitude toward participatory approach of extension activities and rural development. *Journal of International Agricultural and Extension Education*, 9: 7-15.
- Sharpley, R 2002, Rural tourism and the challenge of tourism diversification. *Journal of Tourism Management*, 23: 233-244.
- Venkatachalam, L 2004, The contingent valuation method: a review. *Environmental Impact Assessment Review*, 24: 89-124
- Whister, D 1999, An introductory guide to SHAZAM. Logit Test for Heteroskedasticity. [on-line available in <http://www.shazam.econ.ubc.ca>]
- Whittington, D 1998, Administering contingent valuation surveys in developing countries. *World Development*, 26: 21-30.
- Xuewang, D, Jie, Z, Ruizhi, Z, Shien, Z & Min, L 2011, Measuring recreational value of world heritage sites based on contingent valuation method: A case study of Jiuzhaigou. *Chinese Geographical Science*, 21: 119-128.

## ارزش تفریحی روستای جواهرده در شمال ایران

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### چکیده

امروزه فعالیت‌های مرتبط با گردشگری به طور گسترده‌ای به عنوان ابزاری کلیدی برای توسعه روستایی شناخته می‌شود. لذا برآورد ارزش تفریحی روستای جواهرده به منظور ارائه برنامه‌ی مدیریتی بهتر برای جذب گردشگران بیشتر به این منطقه ارزشمند خواهد بود. این پژوهش از روش ارزش‌گذاری مشروط برای تعیین ارزش تفریحی و تمایل به پرداخت افراد (WTP) به منظور تفریح در فضای باز جواهرده بهره گرفته است. مدل لاجیت و روش حداکثر راست‌نمایی برای تعیین WTP و عوامل مؤثر بر آن به کار گرفته شد. داده‌های مورد نیاز از طریق تکمیل پرسشنامه انتخاب دوگانه دو بعدی و مصاحبه حضوری با ۲۲۰ بازدیدکننده از روستای مذکور جمع‌آوری گردید. نتایج نشان داد که ۹۶٪ از بازدیدکنندگان، حاضر به پرداخت مبلغی جهت استفاده تفریحی از روستای جواهرده می‌باشند. علاوه بر این، نتایج نشان داد که متغیرهای درآمد ماهیانه، اقامت شبانه، تعداد دفعات بازدید، نگرش، رضایت از کیفیت امکانات و مبلغ پیشنهادی اثر معنی‌داری روی احتمال تمایل به پرداخت افراد دارند. میانگین تمایل به پرداخت هر بازدیدکننده در هر سال ۴۱۹۶۰ ریال و ارزش تفریحی سالانه روستای جواهرده حدود ۶۱۲۸۴۳۰۰۰۰ ریال برآورد گردید. میزان WTP بازدیدکنندگان برای آماده‌سازی دستورات عمل‌ها جهت افزایش احتمالی در مبلغ ورودیه و مدیریت پایدار و کارآمد روستا مفید خواهد بود.

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