Economic valuation of Heyran telecabin recreational services

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A B S T R A C T

Poppulation growth and urbanization in recent years caused demand increase to utility of recreational services. Heyran telecabin recreational site is one of the most important place at the region and country due to tourism specification. So the study of Heyran telecabin recreational value can be significant to solve effect of this recreational places and tourism development. The aim of this research is the economic valuation of the Heyran telecabin recreational services. Logit model estimates on the maximum likelihood method to study in the effective factors on the people interest over the payment. Demanded data has been collected through questioner of 384 people of visitors from the corresponding forest by use of random sampling method. The results shows that 83.9 percent of visitors are interested on the payment in order to current forest. Also aducation variables,family size, sexuality, occupation, recommended price and income, have significant effect on the people willingness to pay but age variable, the importance of nature and marriage statue statically is not significant but it contains expected sign. The average of willingness to pay that it estimated about 32546 Rials for each visit.

INTRODUCTION

Daily population growth and economic development rapidity has had more impacts on the natural resources during recent decates therefore attention to the natural resource effects has specifice significant. so that one of the most government challenges is natural disaster during twenty one century .Therefore there is affort to solve problems by decision making and serveral planning approaches based on the results of field acquisation.But due to fault of experimental studies in this field and lack of the scientific books in case of evaluation and quantity of natural resource effects has not had significant growth in decreasing of this disaster. So complete and intergrated book publication seems simple and fluent in case of quantity of natural resource values and effects (Karami and Amiri,2015).

Tourism industry with own specialties is a dynamic industry with clear future. Investment on this industry in all over the world has increase in tourism attractions. Today foreign tourist's attraction converted to the extensive competition between tourism industry sectors. Because this industry not only plays an important role in the national economic increase and foreign exchanges earning but it is a clear industry without of pollution the opportunity to create new job opportunities. In fact tourism industry is the third current industry in the world after oil and automobile and it plays very important role in country s job creations and revenues. Eco tourists mostly has environment trend and it can play role in environment protection and environmental culture spread in the communities. So that ecotourism attraction is significant factor that all countries with tourism attractions should have special attention to that. In this regards environment and tourism function evaluation is important step towards economic decision making which looks to the environment resource and tourism as a goods and free of costs. Also environmental recognition, expression and presentation of the country environment issues give opportunities to planner for suitable decision making, valuation of role and impotency of environmental resources to support of human recreation and sustainable development to prevent the most of risky environmental functions to improve national sources such as national improve production and to prevent the destroying of natural resources and over using of resources that it is one of the other evaluations of environmental function and tourism (Saudi Shahabi and Esmaili,2006). It should be taken in account that it is possible some of the tourism and environmental resources to be invaluable at the moment but in the future it can include several functions. The existent of rarely natural resource in Iran, various climate and existing of various antiquities have prepared very suitable condition for tourism development and ecotourism industry in the country. By using of tourism functions and attention to the its high potential can help to increase state incomes and development in the private sector from one side and to protect environment from the other side and following them it is step toward sustainable development. Also creation of health society for development and economic development and need to protection and tourism region development for answer to human daily demand. Analysis of effective factors in people interests in case of economy and social part can help considerably in needs predictions and loss of tourism regions. These factors is including of the value that people take in account for visiting and use of these tourism areas which are part of direct recreational benefits and

people express it with payment (Raheli and his associations, 2013).

Various methods has been used in the natural and environment economic valuation method discussion which contingent valuation method (CVM) between them applies generally as the standard and flexible tools for indirect values and direct values assessment in the environmental resources. Contingent valuation method tries to define people willingness to pay in the specified scenarios hypothetical market. In the other world, basely this method tries to define how responders are satisfy to pay in the certain scenarios hypothetical market. This hypothetical market developed through questioner distribution during mentioned society and through this method, people willingness to pay defines for studied goods. Contingent valuation method, it suggested first by Wantrup- Ceriacy in year 1947, but Davis for a first time in year 1963 used this method experimentally.

The dichotomous choice method is attractive during several extraction methods in the contingent valuation method that this method presented by Bishop and Heberlin during year 1979. Finally, there are two kind of dichotomous choice: single-bounded dichotomous choice and double-bounded dichotomous choice that Hanemann and Carson has improved and ranked dichotomous choice method in year 1985 for a first time and its result was double-bounded dichotomous choice (DDC). So that, there is various studies has been done by these two method. But unlike inner researches, outer studies has been used more than single-bounded dichotomous choice. There is less studies also in Iran that it is used of single-bounded dichotomous choice (DDC). But in the most studies, the double-bounded dichotomous choice has been used. Also there are other researches that it is pointed to Emami Meybodi and Ghazi, 2008, Peron and Esmaili, 2008, Khodaverdizadeh and his association, 2008, Molaei and his association, 2010. Also among models which has been pass in the different studies of the contingent valuation method, is Logit Model that as a sample can point to the studies of Khaksar and his association (2011), Amir nezhad and his association (2009) and Mirzaei and his association (2009). From one side due to functions and natural ecosystem services and necessity of optimized planning in utility of them, nowadays its real value definition has most importance. Therefore natural resource economists gave more attention to the assessment and valuation of natural resource role in human recreation during recent years and it has earned significance improvement in environment service valuation. In contingent valuation method, it is requested from the people with measure methods that its payment rate express in case of one of the environment dimension. For example it is supposed that one area with less density but beautiful subjected in the smoke of one powerhouse which works with coal. This smoke decrease number of tourists after powerhouse establishment. In this situation, the delicious do not have any application. Because local population is low and therefore, information related to the fees and

property values is not enough. Davis (1963), Bohm (1972), Hammock and Brown (1974), Randal and his associations (1974) and Brookshire and his associations (1976) were the

first economists that they used measured method for specialty of Environment valuation.

Contingent valuation method (CVM) tries to define a value that people earn it through one environmental advantages, in this way it is making questioner for some people to know their maximum willingness to pay that whether they have ready to pat for its advantage value or they are satisfy to lose advantage for taking compensation payment, that means acceptation of the lack of benefit. In this level must mention that willingness to pay or willingness to acceptation is same. Actually, the difference between these two concepts are spread and the economic theory cannot make us ready for its forecast. Experimental and empirical researches defines that willingness to pay is several times less than its acceptation, something around one third to one fifth. Answering this question stands in human psychology, people mostly pay attention to the things that they are already own it and now they have lose it more than attention to something that they have not had it already.

Heyran region in Astara road to Ardebil, one of the cultural heritage and tourism organization of Ardebil district is part of natural tourism development and it is intersection of common border among Gilan, Ardebil state and Azerbaijan Country. Heyran Telecabin path started from Astara road toward Ardebil in the Heyran at Ardebil district and entered to the Fandoghlou Jungle that in addition to its tourism and economic revenue increase, it is suitable opportunity to tourism attraction. Heyran tourism area has special recreational characteristics so that at first it is constructed recreational facilities, Hotel and restaurant to the passengers whom come to this area to make them satisfy. Heyran telecabin has two independent station which one of them are in the Fandoghlou jungle and another one is in Heyran part of Gilan. Heyran neck is one of the attractional tourism area that Heyran telecabin stablishing can be consider as an important step toward Gilan and Ardebil tourism development. Telecabin is placed in area of Heyran neck which is connected to the Caspian Sea and Astara city and Heyran beautiful landscape from east part and from west and south reaches to the Fandoghlou beautiful jangle and from north also has access to the Azerbaijan border cities. Heyran neck Telecabin is one of the biggest country Telecabin with length of 1500 Meter which is one of the national specific tourism area. So in this study it is aim to plan questioner for considering of each explanatory variables effect such as age, revenue,… on the people willingness to pay.

Materials and Methodologies

Recent study in terms of objectives is practical because it was following applied science development in terms of valuation and it can used by authorities and politicians. In aspect of information collection was measure research kind and based on the monitoring rate and control grade was sort of field research that in order to data collection was surveying of society about some characters in the one period of time therefore it is in terms of sectional researches. Also useful information has been done through interview for economic valuation of Heyran Telecabin services.

Case of study

Heyran tourist village construction plan (Telecabin) started by private section stakeholders Mr. Ahmad Ali Rostami

Namin from ٢٠٠٥ and during 6 months and it is started to work from year ٢٠١١. This touristic village goes with 250 Milliard Rials cost also to equip and compete for present recreational services and tourism to visitors and tourists. Heyran tourist and visitors collection placed on the 35 kilometer of Astara road to Ardebil in border of beautiful Heyran mountain in the famous area named as Haji Amir border side between Ardebil and Astara and Azerbaijan country and it is directed to the Namin Fandoghlou jungle from upside .

Beautiful landscape of this touristy area can be pointed to Sheyndan or Shendan castle that it is from Sassanid historical monument and belongs to the Iran which currently placed in the Azerbaijan territorial. Other name of this famous castle is Babak Gur which is visible during Telecabin passenger way from inner cabin and also up station.

Society and statical sample

Considered society in this research includes all telecabin users in year 2016. Which is unlimited society. Number of considerable sample has obtained 384 people by use of pre-examine information and by Cochran formula. If the volume of the society do not be specified (unlimited society) we will have:

It is used of this sampling for the unlimited societies like as people of one city or state or student population in the state or country….. 384 people are able to connect to the all. Totally if the society was more than 10 thousand or it was heterogeneous, this method will be used. Also allocated sampling method was kind of random sampling. Due to impossibility to use of all theories of static society, the random sampling method has been used.

Data collection method

Data collection method in this research was in form of library (theoretical writing) and field work (information collection). The applied method for needed information collection of this study was surveying method that the planned questioner distribution among visitors deals with established stations in Fandoghlou Jungle. This questioner includes of 14 Items that it measures two components of frequency and natural landscape (7 questions) and frequency and economic value of telecabin services. Stations in Heyran touristy areas (telecabin) constructed for administrating of recent study after harmony with related organization and after preparation of primarily questioner with advisor and professors cooperation started to distribute questioner in form of random sampling from Heyran tourist area visitors (telecabin).

There is complete explanation in terms of subject and the way of answering to the responders before answering to the questioner. It is analyzed after data collection and its register by current method in the study.

Data analysis method

In this research, it is used logit regression model for study of different explanatory variable effect on people willingness to economic valuation of Heyran recreational tourist service (Telecabin).

Logistic estimation is one regression model for double dependent variables such as illness or health, death or life. This model can be taken in account as a generalized lineal model which has applied logit function as a link function

and its error follows multinomial distribution. Logistic regression can be a special case of general linear model and linear regression. Logistic regression model based on the totally different hypothesis (about dependent and in depended variables connection) of linear regression. The significant difference between these two models can be seen in two logistic regression characteristics. First conditional distribution is Bernoulli distribution instead of Gaussian distribution because it is a binary dependent variable.

The second is probable predicted amounts and it is limit between one and zero and it achieves by logistic distribution function. The Logistic regression predicted output probable. In this study, the logistic regression model has been used to study of different explanatory variable effect on the rate of people willingness to pay in case of Ardebil Fandoghlou Jungle. Logistic probable model has applied normal and Logistic distribution and probable predicted amounts is between zero and one. Logit has based on the logistic collection probable. According to this model, one's probable participation has used following link in regarding activities (like offering price acceptation) that this link shows what is famous to Logistic function (Madalla, 1983).

Parameters of Logistic model estimated by maximum likelihood method, then expected amount of willingness to pay calculated through numerical integral during zero to highest offered (A) in form of bellowing function:

$$E(WTP)=\int_{0}^{Max.\ A} F_{\eta}\ (\Delta U)dA$$
$$=\int_{0}^{Max.\ A}\left(\frac{1}{1+\exp\{-(\alpha^*+\beta A)\}}\right)dA$$

Furthermore, statically soft wares such as SPSS20 applied for variable analysis and parameter estimation.

1- Research Findings

Whole Studied responders is 384 people in this research. In this regard ٦٩.٨ percent (268 people) of responders were men and 30.2 percent (116 people) were women. Also 48.2 percent (189 people) of responders were young people that the most percent belongs to this group of people in this study and the lowest one belongs to the people under 18 years old and it was something around 1.0 percent of people. According to the earned results 38.8 percent (149 people) of statistic specific members hold bachelor degrees and the most percent belongs to them and also low education under diploma people with 9.1 percent (35 people) hold the lowest education level during responders. Also 18.5 percent (71 people) of responders were single and 81.5 percent (313 people) were married. Studied statistics explanation results about family revenue variable of responders show that totally 384 people presented their family revenue rate. In this regard 25.3 percent (97 percent) includes of family revenue more than 30 million Rials, 18.2 percent (70 people) includes of family revenue under 5 million Rials. From one side 37.0 percent (142 people) of responders include of 4 people family that it holds most amplitude in the recent study and lowest amplitude was up to 5 people about 16.7 percent. According to the earned results, 36.2 percent (139 people) of statistic sample members were self-employed and it holds the most amplitude rate and also people include of other jobs with 30.5 percent (117 people), it holds the lowest amplitude rate in job sort. The results show that entrance accept ion

situation in case of Heyran Telecabin visitors and willingness to pay in 16.0 percent (62 people) unwilling to pay and 42.9 percent (15 people) with 300000 Rials hold the most number of them. The most rate to willingness to pay is related to the group with willingness to pay of 30 thousand

Rials. In the chart below, the entrance acceptation situation indicated in point of Fanduglu Jungle visitors views.

Table 1 :Condition of entrance accept ion in terms of Heyran Telecabin visitors

Percent	Numbers	Condition of acceptation
23.6	90	150 Thousand Rials
10.6	41	200 Thousand Rials
42.9	165	300 Thousand Rials
55	21	400 Thousand Rials
1.3	5	500 Thousand Rials
16.1	62	Not have willingness to pay
100	34	Totally

Non parametric statistical number which forms in lack of Second World War, stands in front of parametrical statistic number. Parametric statistic needs some assumptions in case of society which was sampling about it. It is predicted as a importance prediction in parametric statistics that the society distribution is normal but nonparametric statistics do not need any hypothetical cases regarding distr. Regarding. Due to this, the most of the human science researches are used of nonparametric statistical indexes which is free of distribution and it is measured by quality scales. Parametric

statistic technics is hardly under influence of valuation scale variables and society statistic distribution. If variables were in sort of nominal and ordinal ones, it is used certainly of nonparametric methods. If variables are in sort of comparative and spatial ones. If it is assumed as a normal or unmoral society statistic distribution, it is used in form of parametric method in otherwise it is used as a nonparametric method. Upcoming results has reported from Logit analysis in the bellowing table.

Table 2: results of Logit Model estimation for calculation of Heyran Telecabin recreational value

Final effect	Significant level	t Statical value	Coefficients	Variables
-	0.000	-11.06	-3.654	Intercept
0.214	0.347	0.652	0.132	Age
2.352	0.021	2.187	0.471	Sexuality
0.652	0.001	3.241	1.985	Education
2.658	0.000	4.805	2.254	Revenue
-1.329	0.011	-2.741	-0.351	Households Number
-1.954	0.002	-7.124	-0.486	Occupation
-0.915	0.465	-.573	-0.625	Marriage statue
2.324	0.254	1.864	0.152	Emphasize nature
-0.468	0.001	-3.11	-0.023	Suggested Price

Likelihood examine Ratio = 184.05 Correct predicted percent = 84 Percent of sample number = 384 Coefficient of McFadden definition = 75 Percent

The studied result of logit model estimation in the table shows that statistical value the likelihood ratio (LR) is equal to 184.05 in the 8 degrees of freedom and whereas this amount is presented upper than possibility value therefore all estimated model is significant in one significant percent level, It has estimated by value of McFadden defined coefficient for logit model it is desirable type in order to the number of depended variable observation. The correct prediction percent of estimated model is also more than 84 percent and as there is acceptable type of predicted correct percent for logit and probity model equal to 75 percent so the obtained value of correct predicted percent in this model shows favorable amount, therefore regarding model is

certain able for next analysis. As the table shows the estimated coefficients for explanatory variables are significant statistic education level, offered price, family number, sexuality and the revenue in rate of 5 percent in case of significant statistic. Offered price variables and occupation includes of negative effect whereas sexuality and revenue variables includes of positive effect on the willingness of visitors to pay from Heyran Telecabin. These results fit in the study result of Amir nezhad and his association in year 1385 and Nubbin and his association in year 2008. As the size of family and offered price has negative effect in the Nubbin and his association study and other variable has positive effect, it has negative effect in

the Amir nezhad study and offered price year and it has positive effect and also offered price and family size has negative effect and education and revenue rate has positive on the people willingness to pay in the researchers study. The first estimated coefficient shows only signs of explanation variable effect on the dependent variable accept ion probability in the logit model but it do not have value explanation. But there are final tension and effects that it stands under interpretation. The willingness of pay mean was about 32546 Rials for each visitors which gain by use of bellowing link for Heyran Telecabin .

$Y = -3.65 + 0.471\ GEN - 1.985\ EDU + 2.254\ REV – 0.486\ JOB – 0.351\ Kh – 0.021\ BID$

$Y = -3.65 + 0.471 *1 - 1.985* 3.33 + 2.254 * 3.065 – 0.486 * 1.351 – 0.351 * 2.429 – 0.023\ BID$

$Y = 10.535 – 0.023\ BID$

$Y = \int^{300000} (1/ (1-e(10.535+0.023bid))) dBID- 32546\ R$

Conclusion

According to the necessity of tourism development plans administration in different recreational area, there is necessity to estimation of its benefits. Contingent valuation method has been used for Heyran telecabin valuation in this study. The result of this research shows that variables such as age, education level and revenue rate of visitors had significant effect on people using of promenade. The study on the revenue level of visitors show that there is high correlation between the rates of this variable and the number of visiting days from promenades and also willingness to pay for entrance purposes. These results was not far from exceptions. So that Donnely and his associations (1998) and Emmert (1999) also get similar results for American state park. This study shows that education level also plays important role in tourism attraction for promenades, as the most visitors' number were people with academic educations. The education level has direct relation with revenue rate, so that with increasing of education level, the people recreation time increase which can be confirmation of high results. While educated people interested in filling own free times with entertainments which encourage them to natural attractions and increase their awareness in compare to nature and finally it empower and actuate conservation and maintaining feeling in regard to the natural environment. Recognition of the age groups of visitors is one of the important part in social researches of recreational areas. This information are prerequisites of recreational plans and prediction to secure facility which is required for free time of visitors. The survey of the study in some recreational area of the country shows that this area had more attraction for youth and middle aged people. Therefore it should be more attention to the recreational needs of this group of age. But our results show that the most number of visitors placed in the 30-34 years age range which can be for less than 20 years old and up to 50 years old of aged group due to lack of current recreational facilities.

This research determined that 55 percent of visitors have been used Heyran telecabin for several times which in its turn shows high potential of region in tourism attraction and needs to create more facilities. According to the tourism distribution such as recreational area and government disability to in conservation and supporting all of them,

there is necessity to use of people financial participation in conservation and prevention of destroying them. Therefore it is suitable to know the awareness of people sights in their participation for maintaining of these tourism area. The willingness of people to pay estimated for each visitors around 32546 Rials in this study by using of contingent valuation method and logit model estimation based on the highest correctness method. The results show that current facilities of Heyran telecabin is unsuitable and weak for tourism attraction but according to the high potential of this region in tourism attraction and its high impotency that tourism allocates to visit of virgin nature such as jungle. In time of recreational facilities improvement, the number of visitors and their high willingness to pay will increase. Also according to the obtained results variables of education, emphasized on the nature of the users, age, family size, revenue and offered price have significant influence on the people willingness to pay.

Recreational valuation pond of Anzaly (Suadi shahabi and Esmaili, 2006) and Taleghani jungle (Pishkar and Esmaili, 2007) has defined for three regions around 156, 12, 42 Million Tomans respectively. Even the results show through numeration of price increase during this study that Heyran telecabin has very high recreational value and there should be more attention and definition of the tourism development plan. This study also shows that contingent valuation method is a suitable tool for estimation of promenade economic value (Amir nezhad and his associations, 2009). There is need to stablish efficient management in development case and prevention of recreational values for admiration of this promenade center. So it is necessary to apply other methods for service valuation and quality benefits of this promenade especially in case of its environmental values this is due to access to the current objectives.

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