Economic Valuation of Cultural Goods

(Case Study: Isfahan City of Arts)

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Abstract

In today's world, no one can deny the expansion of economic influence in the various aspects of social life and economization of immaterial issues of social life is becoming more obvious every day. The valuation of cultural goods, as one of the most important economic aspects related to arts and culture, is chosen to be considered in this study. The necessity of considering the economic valuation of the arts and culture comes from the competition between different public and merit goods which seek government. Considering this, the present study is conducted in order to determine the economic value of "*Isfahan City of Arts*" as a cultural center which is planned to be built in Isfahan as the largest center of supplying, educating and presenting cultural and artistic events in the whole country. In order to make this happen, we need to know how people value different parts and activities of this complex. Regarding different strength and week points of various economic valuation techniques, the Choice Experiment method (CE), as one the most efficient methodologies in estimating different aspects of nonmarket goods, has been used in this study for measuring WTP estimates. The results indicate that among eleven activities (aspects) of the complex, all activities, except for galleries, had positive and significant effects on choosing designed scenarios, and among the listed activities, Concert Hall, Cineplex and Fashion Hall had, relatively, the highest willingness to payment.

Keywords: Economic Evaluation, WTP, Choice Experiment method (CE), Isfahan City of Arts.

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1. Introduction

In developing countries, like Iran, there are many things that government funds need to be spent on and some of them such as healthcare and education are sometimes regarded as more important than arts and culture. So, when lobbying for public funds, particularly in the context of a developing country where so many demands are made on the public purse, arts and culture are becoming under more and more financial pressure and providing a justification for attracting financial support and increasing their budget is becoming more problematic every day. It has been shown in many studies (Morrison and West 1986, Dobson and West 1990, Hendon 1990, Blaug 2001, Borgonovi 2004, Snowball 2005 amongst others) that arts attenders (particularly at "high" culture events) tend to represent the educated, prosperous minority of society and the governments focusing on development issues may be reluctant to make expenditures on cultural goods, because it may be considered as providing subsidies for the affluent.

Throsby (2001) by offering different arguments suggests the point that this is the culture that provides the foundation for economic development and "strategies which are used to reduce poverty in the third world and to promote economic developments, should consider the process of cultural developments that could have a determinant role in their success or failure". In many countries this problem has shown itself in the form of setting goals such as "enhancement of national identity and pride and international prestige" and financial assistance especially in order to support artists and art audiences who have been disadvantaged historically.

In order to provide a justification for attracting government financial supports for the arts and culture we need to measure the benefits of such activities. In other words, the idea of valuation of art and culture was introduced as a tool for justifying the allocation of financial resources to such activities. Although arts and culture in the form of and cultural goods and activities can contribute to the local economy in different ways of production, employment and attracting tourists, the role of arts and culture in "enhancing national and religious identity and differences" and "fostering personal development through strengthening confidence and self-esteem" are among the non-economic interests of the art that should be considered along with its economic benefits. In other words, it is the positive spillovers provided by the arts to society, the primary

cause of market failure, which should be used to motivate for public support to the arts and not the more frequently cited economic benefits.

"*Isfahan City of Arts*" as a cultural-artistic center which is planned to be the largest center for supplying, educating and presenting cultural and artistic events in the whole country, like other cultural goods, can bring about a lot of economic and non-economic benefits to the society.

The presence of such benefits which can be realized in the form of different values, can be reflected in the individual's preferences and their willingness to pay for constructing the complex. Therefore, the present study is conducted to determine people's preferences regarding different parts of the complex and its activities using appropriate valuation method.

2. Theoretical Background

Each economy provides a combination of marketed and non-marketed goods and services. A marketed good involves explicit exchange between buyers and sellers and prices are posted in the market place. A non-marketed good has no market, or it may have a limited, or 'incomplete' market. But, provided the relevant good contributes positively to human wellbeing, it has *economic value.* Similarly a disservice or 'bad' has negative economic value –it detracts from human wellbeing. Most economists would agree that culture and the arts do not operate like normal goods (even normal public goods) in the market. In fact, cultural goods have some non-marketed aspects which makes their value hard to reveal in the existing markets. In economic valuation of non-marketed goods, we are particularly concerned with techniques which, directly or indirectly, elicit individuals' money valuations of costs and benefits. Broadly, there are two ways of uncovering the economic values attached to non-marketed goods and services and bads: by seeing if they influence actual markets for some good (known as *revealed preference techniques*) and by asking people what economic value they attach to those goods and services (known as stated preference techniques).
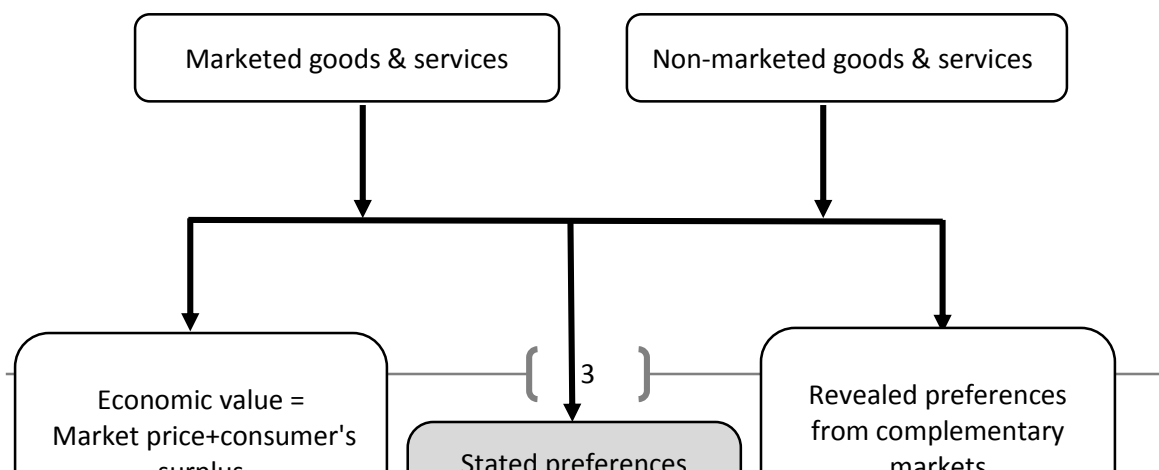
Figure (1). The structure of economic valuation

There are various reasons why markets may fail to provide the data necessary for WTP[5] to be inferred. The most obvious is that no market exists for the benefit or cost in question, as in the case of many public goods. In such cases revealed preference techniques have rely on information from markets for *proxy* private goods, consumption of which is precondition of benefiting from the relevant public goods. For example, we might try to infer WTP for a cultural heritage or event by studying the costs that people are willing to pay in order to visit it; or we night try to infer WTP for the absence of traffic noise by studying the difference in prices between houses affected by different levels of noise. But this approach is liable to understate the value of public goods, by not capturing all of the ways in which people benefit from them. In particular, some important measures of WTP are associated with individuals who would not buy a good or service even if there was a market. Such people may want the product to be available even though they do not purchase it at the moment, or they may simply want it to be available even they have no intention at all of purchasing it at any time. These are the so-called *option users* and *non-users*. In the case of a cultural heritage or event, for example, people who have no specific intention to visit it may still be willing to pay something in order to preserve that option for

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[5] . Willingness To Payments

themselves in the future. Or they may be willing to pay to preserve the heritage itself, whether they visit it or not.

Even where relevant proxy markets exist, they may fail to provide adequate information about WTP. For any given individual at any time, observations of her behavior in markets can only set limits to WTP. For example, suppose it would cost a person X Tomans to travel to a cultural heritage site. If he decides to go, we can infer that the benefit of the trip- though not necessarily of the site itself- to him is *at least* X Tomans. If he decides not to go, we can infer that the benefit is less than X Tomans. In order to be able to infer actual values of benefit it is necessary to have data from a cross- section of cases in which similar individuals have faced a sufficiently wide range of different prices. Such data are not always available.

On the other hand, stated preference techniques, refer to any questionnaire-based technique which seeks to discover individual's preferences, relying on hypothetical scenarios and constructed markets in which we directly ask respondents what value they place on a good.

The total gain in wellbeing arising from a project or policy and for any one individual is given by that individual's WTP or WTA[6] for the change in question (WTP if the individual prefers the change to the *status quo*, WTA if the *status quo* id preferred). But, there are different types of economic values or the motivations underlying WTP or WTA statements which are discussed below.

The net sum of all the relevant WTPs and WTAs defines the total economic value (TEV) of any change in wellbeing due to a policy or project. TEV can be characterized differently according to the type of economic value arising. It is usual to divide TEV into *use* and *non-use* (or *passive use*) values. Use values relate to actual use of good in question (for example, visit to a museum), planned use (a visit planned in the future) or possible use. Actual and planned uses are fairly obvious concepts, but possible use could also be important since people may be willing to pay to maintain a good in existence in order to preserve the option of using it in the future. *Option value* thus becomes a form of use value. Non-use value refers to willingness to pay to maintain some good in existence even though there is no actual, planned or possible use. The types of non-use

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[6] Willingness To Accept

value could be various, but a convenient classification is in terms of (a) existence value, (b) altruistic value, and (c) bequest value. Existence value refers to WTP to keep a good in existence in a context where the individual expressing the value has no actual or planned use for himself or herself or for *anyone else*. Motivations here could vary and might include having a feeling of concern for the asset itself (for example, a threatened heritage site) or a 'stewardship' motive whereby the valuer feels some responsibility for the asset. *Altruistic value* might arise when the individual is concerned that the good in question should be available to others in the current generation. A *bequest value* is similar but the concern is that the next and future generations should have the option to make use of the good.

Figure (2) shows the characterization of TEV by types of value. Stated preference techniques are suited to eliciting all these kinds of value, although in practice it is usually not possible to disaggregate individual types of non-use value. But differentiating use and non-use values can be important because, the latter can be large relative to the former, especially when the good in question has few substitutes and is widely valued.
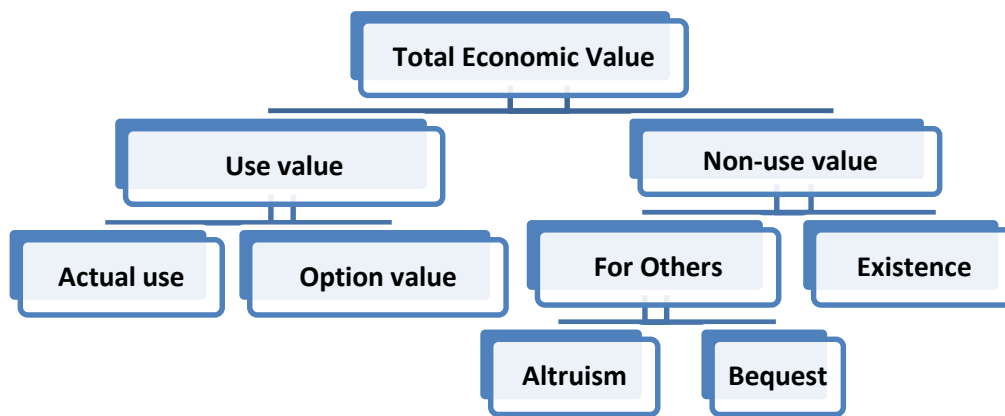

Figure2. Total economic value

Figure (3) shows how the various valuation techniques apply to the major component parts of TEV. Non-use values, which are likely to be especially important in contexts where the good being valued has few or no substitutes, can only be estimated using stated preferences techniques. Since non-use values tend not to leave a 'behavioral trail', that is, some behavioral changes which affects a price or quantity which can be observed, revealed preference techniques are unlikely to elicit non-use values. But since use of a service or good leaves a behavioral trail, both revealed and stated preference techniques can be used to elicit use values.

'Dose-response functions' or 'production functions' link some change in the state of nature or a policy measure to some response. Economists have no particular expertise in this area and it will be important to ensure that research or policy analysis involving the use of such functions involves the relevant experts.

Stated preference techniques are usually used for studies in transportation, environmental sectors. The relatively new choice experiment (CE) or conjoint analysis method is a type of contingent valuation stated preference technique, but with significant advantages over willingness to pay studies. While conjoint analysis has been used for some time in other branches of economics, it has only recently made its appearance in the cultural economics field. Rather than being asked their willingness to pay for one scenario, respondents in this method are asked to choose between bundles of attributes at different levels that make up the cultural good. Price is usually one of the attributes, which enables the calculation of marginal willingness to pay for each attribute, as compared to the composite value for the whole good obtained with WTP studies.
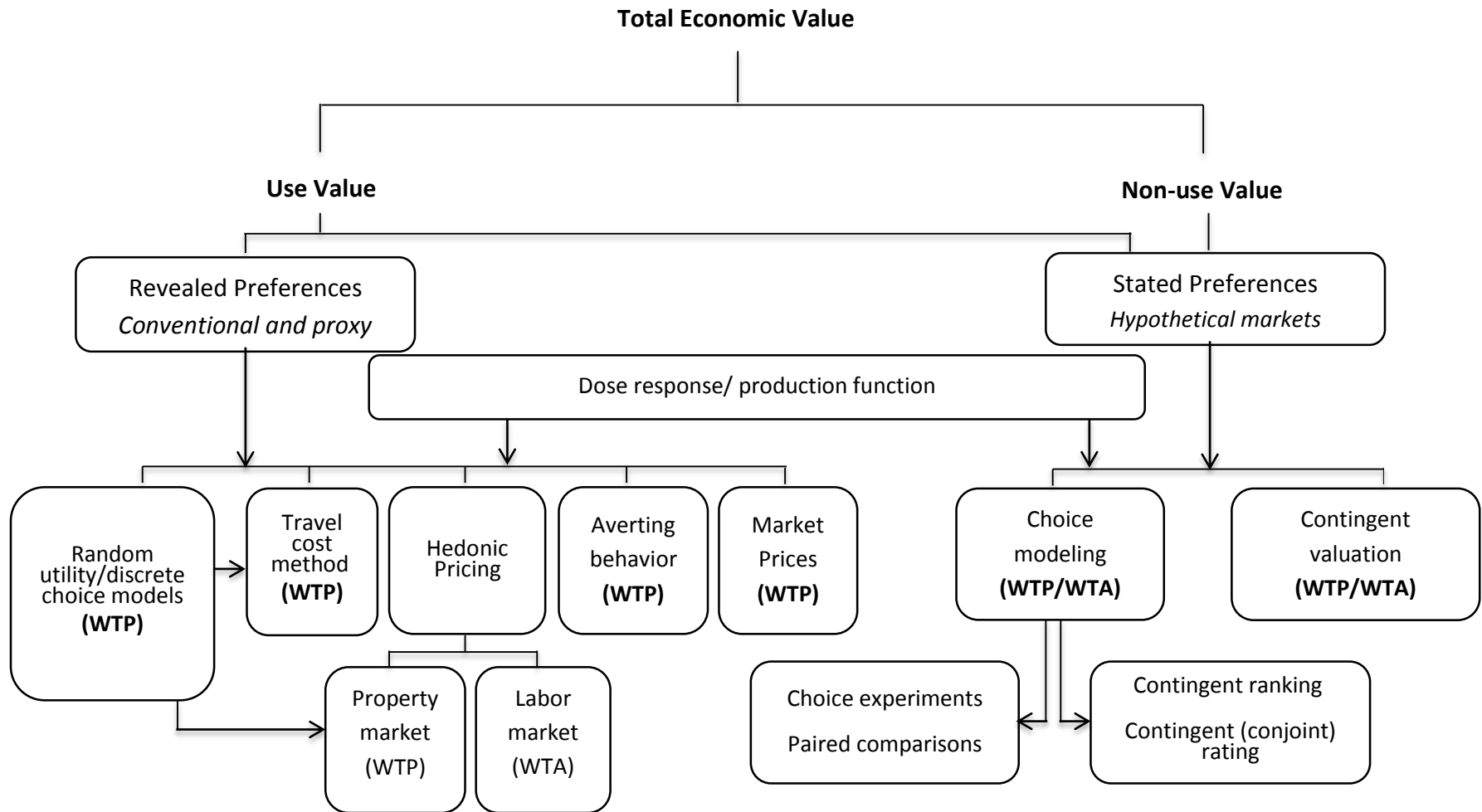
Total Economic Value

Use Value

Non-use Value

Revealed Preferences
Conventional and proxy

Stated Preferences
Hypothetical markets

Dose response/ production function

Random utility/discrete choice models **(WTP)**

Travel cost method **(WTP)**

Hedonic Pricing

Averting behavior **(WTP)**

Market Prices **(WTP)**

Choice modeling **(WTP/WTA)**

Contingent valuation **(WTP/WTA)**

Property market (WTP)

Labor market (WTA)

Choice experiments

Paired comparisons

Contingent ranking

Contingent (conjoint) rating

Figure3. Economic ValuationTechnique

For example, the attributes of a study to value an archaeological site might include the degree of preservation of the artifacts, the infrastructure around the site, other facilities (like restaurants and child care centers) and information provision (audiovisual presentations, printed material etc.). Levels could be defined in qualitative terms (high, medium, low) or quantitatively (hectares preserved, kilometers of road, number of restaurants, etc.). The price attribute could refer to ticket price for visitors or tax increases for a wider population. Using statistical design procedures, choice sets showing different levels for each attribute are constructed. Respondents are then asked to choose between pairs of sets, sometimes including a status quo or "no change" option. While comparatively few choice experiments have been used to value cultural goods, they have been used successfully in quite a wide variety of cases. These have included cultural events, cultural heritage, archaeological sites, and cultural institutions, like museums. Most of the studies have been fairly successful and positive about the use of choice experiments in cultural economics.

Choice modelling is based on Lancaster's (1966) characteristics theory of value which stated that the utility derived from a good is the sum of the utility of the good's attributes or characteristics. "Utility or preference orderings are assumed to rank collections of characteristics and only to rank collections of goods indirectly through the characteristics they possess" (Lancaster 1966:133). Since each individual is asked to choose one alternative from the choice set (made up of various levels of the good's characteristics), Random Utility Theory (RUT) is used to model the choice as a function of the attribute levels. According to Hanley et al. (2001:438) choice modelling has four main alternatives; choice experiments (that provide the most information about attributes and welfare consistent estimates, if they include a status quo option), contingent ranking, contingent rating and paired comparisons.

The CE approach was originally developed by Louviere and Hensher (1983) and has a common theoretical framework with dichotomous choice contingent valuation in RUT, which assumes that individuals will make choices based on the attributes and attribute levels (an objective component observable to the researcher) along with some degree of randomness (a random, unobservable component). This random component arises either because of randomness in the

preferences of the individual or because some attributes of the good have been left out of the research design. Referring to equation (1), the utility that person i gets from choice set j is equal to Vij, which is the systematic, observable component and εij, which is the random, unobservable component.

$$U_{ij} = V_{ij} + \varepsilon_{ij} \qquad (1)$$

If it is assumed that Vij is a linear utility function, then the utility of person i for good j is equal to some base level of utility β0 plus the sum of the attributes of good j, plus the random component. The βj coefficients show the contribution of each attribute to total utility of good j.

$$U_{ij} = \beta_0 + \sum \beta_i X_{ij} + \varepsilon_{ij} \qquad (2)$$

Assuming that each respondent maximizes their utility and gains some utility from each attribute, the choice of one option over another indicates that the utility gained from the chosen option is greater than that from the alternative. That is, the individual (i) will choose good j over alternative good k if Uij > Uik. The probability that any individual will choose good j over good k can thus be expressed as the probability that good j's utility (given by the observable attributes plus the unobservable random component), is greater than the observable and random utility of good k. Selecting an alternative is expressed as

$$U_{ij} > \mathbf{max}_k \quad {}_{Ci,k \neq j} U_{ik} \qquad (3)$$

In order to calculate the trade-offs made between attributes, leading to the choice of the preferred option, a conditional multinomial logit model (CLM) is used (Willis 2002b). The CLM is derived by placing restrictive assumptions on the random component of the utility: error disturbances are assumed to have a Type 1 extreme value (Weibull) distribution with the distribution function

$$\exp(-\exp(-\varepsilon_{ij})) \qquad (4)$$

From the Type 1 extreme value distribution, the probability of choosing an alternative j among ni choices of individual i

$$P_i(j) = P[\mathbf{X}'_{ij}\beta + \varepsilon_{ij} \quad \geq \quad \mathbf{max}_k \quad {}_{ci}(\mathbf{X}'_k\beta + \varepsilon_k)$$

$$= \exp\left(\mathbf{X}'_{ij}\beta\right) / \sum_k \quad {}_{ci} \exp(\mathbf{X}'_{ik}\beta) \qquad (5)$$

(Willis and Garrod 1999)

An assumption of the CLM is the independence of irrelevant alternatives (IIA) property, which states that "the relative probabilities of two opinions being selected are unaffected by the introduction or removal of other alternatives" (Hanley et al. 2001:439). IIA assumes all cross-effects are equal, so that if one attribute of the good gains in utility it draws shares from other attributes in proportion to the current market share of these sections. Different assumptions about the error term lead to different multinomial logit models. A distribution of εij that is independent and non-identical leads to a heteroskedastic extreme value (HEV) model; whilst a mixed logit (MXL) permits parameter heterogeneity by allowing the random error components to have different distributions.

Once a random utility model is estimated, welfare estimates of alternatives, projects, or policies of concern can be calculated relative to the status quo. In many choice models, like the present study researchers are interested in the value of a marginal change in a single attribute. The WTP for the marginal change in the kth attribute (bk) (also known as a 'part-worth' or 'implicit price') can be described as Equation (6):

$$WTP = -\frac{\beta_i}{\beta_k} \qquad (6)$$

3. Specifying and estimating the model

The present study is conducted to elicit people's preferences and their willingness to pay relative to construction of '*Isfahan City of Arts*' as a cultural center using choice experiment method. '*Isfahan City of Arts*' is a complex which is planned to be built inside or near the city of Isfahan in the near future as the largest center of supplying, educating and presenting cultural and artistic events in the whole country. The main goal of the planers is to provide an environment for all kinds of economic, social and tourism events in world of arts and culture. This project is planned to be constructed according to the principles of Iranian-Islamic architecture and design with a focus on Isfahan architecture school and with the aim of restoration, preservation, development and promotion of cultural-artistic events and activities in the country and enrichment and enhancement of Iranian-Islamic culture and art in the international arena.

As the name implies, '*Isfahan City of Arts*' will be built with focus on art and culture events and activities such as Cineplex and theater, galleries, museums, concert hall, traditional games center and etc. In addition to such facilities, however, other complementary activities and facilities such as restaurants, recreational and commercial areas are considered to be available inside the complex.

Since this complex is not currently in existence, there is no market available for revealing people's preferences and their willingness to pay related its artistic and cultural goods and services. Therefore, stated preference techniques which are mainly based on hypothetically constructed markets are the only available methods to infer the value of this complex and its activities and among these techniques, the *choice experiment method* is used due to its ability in determining the value of different aspects of the good in question and estimating all kinds of *use* and *non-use* values. Consequently, in the present study we have considered 11 cultural or artistic amenities including: 'Cineplex and theater', 'art galleries', 'concert hall', 'fashion hall', 'museums', 'art workshops', 'professional art studios (for film, music and photography)', 'internet café, library and bookstores', 'traditional games' center', 'auction hall' and 'bazaar' in order to elicit preferences of individuals in relation to the combination of the facilities in the complex. By combining these 11 activities which actually are considered as the aspects of '*Isfahan city of Arts*' with the characteristic of 'price' and by using orthogonal design method in Spss software program, 32 scenarios have been obtained, and after removing dominant scenarios, the remaining 24 scenarios were used to design the 'choice cards'. At each choice card two "A" and "B" scenarios and an "opt-out" option were put ahead of respondents. So that every individual could choose the "opt-out" option if he/she was not willing to choose any of the designed scenarios. Therefore, our questionnaire was designed using 12 choice cards in three versions and in each version of the questionnaire only 4 choice cards were put before anyone (an example of the choice cards is presented in the appendix). Finally, 100 copies of each version of the questionnaire (totally 300 hundred questionnaires) completed using face to face interviews with citizens of Isfahan and tourists and the resulting data were used to estimate the experimental model.

Accordingly, our random utility model is designed as follows:

$$Choice_i = \beta_1 Price + \beta_2 cineplex\_theater + \beta_3 concert\_hall + \beta_4 fashion\_hall + \beta_5\ gallery +$$
$$\beta_6\ museum + \beta_7\ studios + \beta_8 arts\_workshops + \beta_9 coffenet\_library + \beta_{10} traditional\_game +$$
$$\beta_{11}\ auction\_hall + \beta_{12}\ bazzar + e_i \tag{7}$$

Where:

'Choice': is the selected scenario or the choice made by each individual and takes the value of 1 for each scenario if the individual choses it and zero otherwise.

'Price': is the variable showing the 'ticket price' or 'entrance fee'. Which could take five different levels (30'000, 40'000, 50'000, 60'000 and 70' 000 Tomans) in different scenarios.

'Cineplex_theater': is the variable for presenting 'Cineplex and theater' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'Concert_hall': is the variable for presenting 'concert hall' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'fashion_hall': is the variable for presenting 'fashion hall' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'gallery': is the variable for presenting 'art galleries' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'museum: is the variable for presenting 'museum' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'studios': is the variable for presenting 'professional studios' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'arts_ workshops': is the variable for presenting 'arts workshops' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'coffenet_library ': is the variable for presenting 'internet café', library and book stores' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'traditional_game': is the variable for presenting 'traditional games center' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'auction hall': is the variable for presenting 'auction hall' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

'bazaar': is the variable for presenting 'bazaar' attribute which would take the value of 1 if the scenario in question had this facility in zero otherwise.

The results of estimating mixed logit model using data obtained from the questionnaire with Stata software program are summarized in the table (1).

Table(1). The results of estimating mix logit model for different attributes of 'Isfahan city of arts'

Independent variables (attributes)	β (standard Error)	z -value	Prob	WTP* (95% confidence intervals)
Price	-0.0000895 (0.0000158)	-5.66	0.000	-
Cineplex-theater	1.071801 (0.2522358)	4.25	0.000	11'966 (6'729-17'209)
Concert_hall	1.850032 (0.3430596)	5.39	0.000	20'659 (15'013-26'305)
fashion_hall	0.910631 (0.2553196)	3.57	0.000	10'169 (4'784-15'554)
gallery	0.4195468 (0.3395447)	1.24	0.217	-
museum	0.7460372 (0.3079116)	2.42	0.015	8'331 (2'889-13'773)
studio	0.6401221 (0.324755)	1.97	0.049	7'148 (1'123-13'174)
arts-workshops	0.6658461 (0.2351368)	2.83	0.005	7'436 (2'135-12'736)
coffenet-library	0.6065266 (0.2875561)	2.11	0.035	6'773 (1'195-12'351)
traditional_game	0.5910597 (0.2403342)	2.46	0.014	6'600 (1'847-11'354)
auction_hall	0.6900064 (0.2463183)	2.80	0.005	7'705 (3'041-12'370)
bazaar	0.5654282 (0.243174)	2.33	0.002	6'314 (1'344-11'285)
Number of respondents	300			
Number of observations	3600			

*Obtained willingness to pay is according to Iranian Toman.
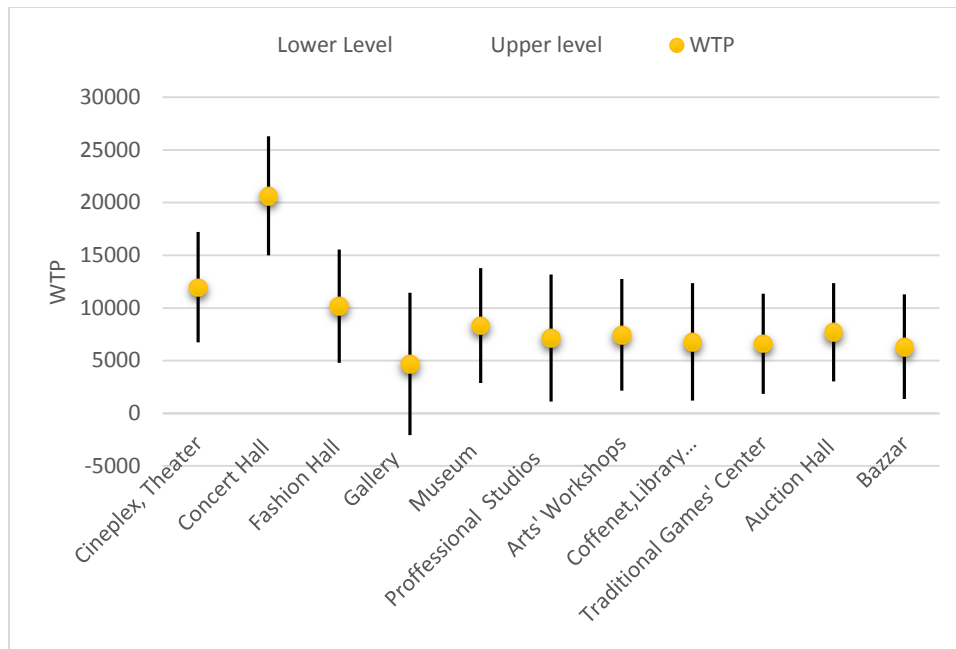
Figure (4). WTP estimates and 95% confidence intervals for different attributes of 'Isfahan City of Arts'

4. Interpretation of results

As the results of estimating the mixed logit model shows (Table .1), among twelve attributes considered for '*Isfahan City of Arts*', including: 'price' and eleven cultural-artistic activities, all attributes except 'art galleries' have significant coefficients. The estimated coefficient for 'price' which is representing ticket price or entrance fee is statistically significant and negative, which is consistent with the theoretical framework of demand. This means that the people's willingness to pay for each scenario will decrease as the price increases. However, this estimated coefficient for this variable although significant is very small. This implies that the price variable has relatively low importance in comparison with other attributes (i.e., activities considered in each scenario) to the respondents. Coefficients related to other attributes (cultural and artistic amenities such as 'Cineplex and theater', 'concert hall', 'fashion hall', 'arts workshops', 'auction hall' and 'bazaar' are positive and significant at the 99% confidence level and this means that the presence of these options in each scenario has a positive effect on the probability of choosing it. Similarly, coefficients related to the attributes of 'museums', 'professional studios', 'internet cafe, library and bookstores', and 'traditional games center' are also positive and significant at the 90% confidence level and therefore, presence of these options in the scenarios increases the

probability of choosing them. Finally, the coefficient related to 'art galleries' is not significant, although positive, and this shows that, on average, this attribute has no significant effect on individual's decision to select a scenario. Therefore when estimating the willingness to pay for each attribute and activity, WTP is not estimated for this attribute. Because when the coefficient for a variable is not significant, it implies that there is no significant WTP for the related attribute. The last column of Table (1) contains the WTP and/or the price estimations for each attribute based on the coefficient obtained from the mixed logit model. According to estimations, 'concert hall', 'Cineplex and theater' and 'fashion hall' have the highest WTPs which are respectively equal to, 20'659, 11'966 and 10'169 Tomans and 'bazaar'. 'traditional games center' and 'internet cafe, library and bookstores' with WTPs respectively equal to 6'314, 6'600 and 6'773 Tomans, have the lowest willingness to pay.

In the CE method, the total WTP for the good in question is calculated by adding up the estimated WTPs for the different attributes constructing it. This way we can conclude that, if "Isfahan city of Arts' is built with its all significant attributes, each individual on average will be willing to pay 93'101 Tomans for visiting it.

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An example of the choice cards

Attribute	Option (scenario) A	Option (scenario) B	Option C
Cultural Amenities	**Cineplex and Theater** **Fashion Hall** **Art Galleries** **Museum** **Traditional Games Center** 	**Concert Hall** **Fashion Hall** **Art Galleries** **Bazaar** 	I will not visit either of the two
Price	**50'000 Tomans for an entire day of using all cultural artistic amenities in scenario "A"** 	**50'000 Tomans for an entire day of using all cultural artistic amenities in scenario "B"** 	
Choice	☐	☐	☐