International Journal of Engineering Research & Technology (IJERT)

Understanding the Dynamics of Heritage Property and its Economic Valuation

Nishant
Assistant Professor
RV College of Architecture
Bengaluru, India

Nidhi Bhadram
8th Semester Student
RV College of Architecture
Bengaluru, India

Meera Viswanath
Research Scholar
National Institute of Advanced Studies
Bengaluru, India

***Abstract*— Heritage property / resources are combinations of mainly four types of independent elements, i.e. social, cultural, economic and environmental; therefore, it requires almost all types of economic valuation methods for its holistic evaluation. In the past three decades the researchers and scholars suggest that the standard economic analysis gives several models that can effectively evaluate the economic aspects of a heritage property. Heritage specialists have further added several factors, particularly to assess the impact of cultural aspects on economic valuation. For example, the valuation of a heritage restoration project is completely different from the economic valuation of a heritage property. While the former includes all transactional assessment and the latter includes transactional as well as non-transactional assessment.**

The heritage valuation process includes different dimensions of values such as use value (direct, indirect and option) and non-use value (existence and bequest). The impact method which has been developed to capture all use values associated with the environment, the same has been extended to the heritage valuation. Two factors which make the application process of economic valuation to a heritage resource a complex affair are the non-use values associated with a cultural heritage and assessment of lifetime maintenance cost for a heritage property.

This paper will try to list down all the traditional methods and current development in the field of heritage valuation (economical), its potential and limitations. It will further try to explore national and international case studies and best practices; the paper will conclude with application of one selected method in the Indian context.

Keywords—cultural heritage, heritage economics, heritage valuation and evaluation

I. CONCEPT OF VALUE

What is value? How many types of values are there? Is there any correlation between these values - moral value, aesthetic value, numerical value, cash and economic value? In economic terms roughly means usefulness relative to the cost of other similar items.

John Hicks's big book Value and Capital does indeed struggle with the issue of why people desire what they desire, but concludes that value is essentially just what his colleagues assumed - naturally recognised and sought by human beings, an elaboration of natural drives.

A. Value in the field of economics

From reference [1], [2] a distinction can be drawn between the two general senses in which the term "value" is used: (a) the evaluation of an object or phenomenon; and (b) the standards, or criteria, in terms of which such an evaluation is made in a narrower classification. [3] Goes on to distinguish between the intentions of three different types of concepts (synthetic, analytic, and singular), and derives three types of value. (a) Systemic value is the extent to which the intention of a synthetic concept is fulfilled. A synthetic concept is a construct of the human mind instead of an empirical thing. Synthetic concepts have finite and denumerable properties because they come into being by definition. Systemic value is the match between a thing and the definition of its concept because this definition is equal to the intention of the concept. (b) Extrinsic value is the value that empirical objects have to the extent that they fulfil the intention of an analytic concept. Because the intention of an analytic concept derives from the abstraction of common attributes of a class of objects, it can contain an infinite but denumerable number of properties. Empirical objects (chairs, for example) do not need to possess all the attributes prescribed by the intention of their concept; they may possess them to a degree, and to that degree they have extrinsic value. (c) Intrinsic value is the value found in any uniquely individual object, fulfilling the intention of a singular concept. A singular concept is not based on common attributes of a class of objects; rather, it defines one, and only one unique object with infinite and non-denumerable properties. In this classification, the complexity of value increases from the systemic level (for example the class of human beings) to the extrinsic (an abstract person in society) to the intrinsic (a particular, unique individual).

B. Fundamental basis of valuation

Reference [4] says two approaches are the foundation of valuation, discounted cash flow valuation and relative valuation. The first one is a bottom-up approach where the present value of an asset's future cash flows is calculated, the second determines the value of an asset by comparing it to similar other assets.

According to the [5] basis of value are defined as; market value, market rent, investment value (or worth), fair value. Market value is defined as: 'the estimated amount for which an

asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.' Market rent is defined as: 'the estimated amount for which an interest in real property should be leased on the valuation date between a willing lessor and a willing lessee on appropriate lease terms in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.' Investment value (worth) is defined as: 'the value of an asset to a particular owner or prospective owner for individual investment or operational objectives.

C. *The dynamics of heritage property and valuation methods*

Heritage property / resources are combinations of mainly four types of independent elements, i.e. social, cultural, economic and environmental; therefore, it requires almost all types of economic valuation methods for its holistic evaluation. In the past three decades the researchers and scholars suggest that the standard economic analysis gives several models that can effectively evaluate the economic aspects of a heritage property. Heritage specialists have further added several factors, particularly to assess the impact of cultural heritage on economic valuation. For example, the valuation of a heritage restoration project is completely different from the economic valuation of a heritage property. While the former includes all transactional assessment and the latter includes transactional as well as non-transactional assessment. Here one important observation one can make is that valuation of a heritage property is an essential part of evaluation of heritage projects.

The current development in the field of heritage valuation is, at present there are numerous scholarly conducted studies available where environmental assessment methods have been effectively used in the context of heritage valuation. As similar to environmental value assessment, the heritage valuation process too includes different dimensions of values such as use value (direct, indirect and option) and non-use value (existence and bequest). The impact method which has been developed to capture all use values associated with the environment, the same has been extended to the heritage valuation. Two factors which make the application process of a complex affair are the non-use values associated with cultural dimension and assessment of lifetime maintenance cost.

D. *Net present value and Internal rate of return*

The most common type of valuation in the field of economics is assessment of potential of the future profitability. Derived from the concept of financial management, internal rate of return (IRR), which is defined as the discount rate where net present value (NPV) becomes zero. In most of the cases IRR essentially becomes the indicator for selection of a project (based upon potential of profit).

In case of heritage valuation there is very strong evidence of use of NPV and IRR, as in case of urban heritage development projects funded by the World Bank uses IRR and NPV as an instrument of economic valuation. There are seven projects of the World Bank where these basic economic valuation techniques have been used, out of seven, four have used NPV & IRR, and the rest three projects used the cost effectiveness methods

TABLE I.

Project	***NPV***	***IRR***	***COST BENEFIT***
Title: Cultural Heritage, Tourism and Urban Development, Jordan (Amount: USD 56m, Period: 2007-2010)	No	No	Yes
Title: Cultural Heritage Project, Tunisia (Amount: USD 17m, Period: 2001-2006)	Yes	Yes	Yes
Title: Ethiopia Sustainable Tourism Development Project (Amount: USD 35m, Period: 2010-2016)	Yes	Yes	No
Title: Urban Environment Project, Chongqing China (Amount: USD 200m, Period: 2000-2006)	No	No	Yes
Title: City Port of Limon Project, Costa Rica (Amount: USD 72.5m, Period: 2008-2013)	Yes	Yes	No
Title: Pilot Cultural Heritage Project, Mostar (Amount: USD 4m, Period: 1999-2002)	No	No	Yes
Title: Renovation Project for the Medina of Fez (Amount: n.a. Period: 1999-2003)	Yes	Yes	No

Source: Jordan: Cultural Heritage, Tourism, and Urban Development Project

Here one can clearly see the limitation of NPV and IRR in case of heritage valuation in estimation of profit or loss from cultural heritage projects.

E. *Comparison method*

According to [6] & [7] a comparative valuation is based on the economic theory of substitution where a purchaser buyer would not pay more for an item than the cost of buying an alternative item. A comparable can be broadly defined as an item used during the valuation process as evidence in support of the valuation of a different item of the same general type. The primary condition for use of a comparison method is to have numbers of similar or same projects which have been valued. In the case of traded items this method works well. The problem starts when there are non-traded items or items having significant differences, to be valued.

F. *Profit method*

This method is designed for the valuation of commercial buildings such as shops, warehouses, public buildings etc. this method has been used to derive the discount rate in NPV calculation and it also includes growth rate, discount rate, costs and disposal price at the end of an investment period. For the application of comparison method one need market data for exchange of similar items but profit method is used when the market data for similar exchange are not available. Here valuation is achieved by reference to the future profit which an owner/tenant can achieve from the occupation of property.

G. *Cost method*

This method is also called contractors method or summation method. It can be applied for those properties whose exchange doesn't happen so often such as public buildings (government buildings, police station, public libraries etc.) or which involve non domestic rates (the public buildings, which are different in their nature and application of

commercial rate would lead to wrong outcome). This method involves estimation of the cost for replacing the site and building, with an additional cost for depreciation

The basic idea of this method relies on a hypothetical assumption i.e. the cost and values of a property are the same. The basic foundation itself flows here as - 'cost' is a well-defined and a definite term but 'value' is contextual and a dynamic construct

H. Residual method

The residual method tries to estimate the cost of a project and the extra value which will be added with new development of the site. Here the value and cost are two separate entities, the difference between improved and unimproved property is same as cost and value.

Residual method combines the elements of the profit method and cost method. In this method with the help of market transactions experts try to assess the value of a project. We need to get similar projects for analysing the indicators, which can be used later for other projects. Where there is less market transaction data available for application of comparative method, residual method gives a new way of valuation. In this method there is some input data required and some assumptions should be made. These inputs are assumed with some objectivity; else it may significantly affect the valuation result. For example, the profit margin, or return required, varies depending upon whether the client is a developer, a contractor, an owner occupier, an investor or a lender, as well as with the passage of time and the risks associated with the development [8].

II. RECENT DEVELOPMENT OF VALUATION METHODS IN CASE OF HERITAGE PROPERTIES

Generally, heritage properties are a mix of both tangible (monuments, archaeological sites, artefacts) and intangible (tradition, practices, ritual art, and performing art) goods. At a conceptual level it seems similar to environmental resources. In recent times many valuation methods of environmental assessment have been superimposed on heritage properties valuation, impact assessment is being one of the popular techniques. Both contain a wide range of values which are almost impossible to measure in monetary terms. In particular social and cultural values have an important role in society's wellbeing and quality of life [9]. In cultural economics, [9] describes the basic principles and limitations of the non-market valuation methods which include the Travel Cost and Contingent Valuation method. [11] Comments on future potential use of choice experiment and valuation of cultural heritage. A comprehensive literature review has been performed with the bibliography on Contingent Valuation [12], [13]. Comparative studies of two particular methods at a time are found in [19]. In the area of architectural heritage, [45] describes a multi criteria weighting method for the evaluation of individual buildings.

A. Impact method

The limitations of transaction based valuation methods have led the scholars to explore the method which can interpret heritage as an economic flow, and it can assess the values of created demand as well as the economic assets associated with heritage property.

The macroeconomic values of heritage can be broken down according to the fundamental macroeconomic supply-use equation:

$$Y + M = C + X + I + G \quad (1)$$

The generated income (Y) plus imports (M = heritage related expenses made outside the considered territory) refers to four types of demand:

1. Domestic consumption = C
2. Non-resident consumption = X
3. Public Expenditure = G
4. Private Investments = I

The core of this method is breaking down the economic value; it attempts to evaluate the value through all the associated expenses (residents, non-residents, public and private). The unique element in this valuation is the assessment of outward oriented expenses, which can be considered as the dedicated expenses of a non-resident (travelling and visiting the heritage property due to its cultural / non-monetary value). Because of this outward oriented expense assessment, the process of impact assessment becomes a difficult task. As the expenses by a non-resident can depend upon various factors (in economic terms it's called multiplier effect), an assessment of the same depends upon significantly strong assumptions (various studies suggest the use of expense multiplier of Keynesian economic model).

In the field of heritage, the aim of heritage impact assessment is to cover all the impact (direct, indirect and induced) of a heritage property on a given region. The impact method can not only provide the estimate of all relevant expenses but it can also provide an estimate of the total employment volume associated with a heritage property. One of the best examples of this impact assessment in the heritage sector is, by using a database of 3396 monuments, a methodological guide developed by the French PACA region and Ministry of Culture for French cultural heritage at national level.

The main difficulty related to the application of this impact method in the heritage sector lies in estimating the proportion of expenses (e.g., for tourism) and jobs (especially in the arts and crafts sector) that effectively derives from heritage. To estimate the induced jobs, the whole difficulty lies in the choice of multiplier that, from one study to the next, varies from 1 to 9 [14].

The impact method, though they have the advantage of highlighting the economic stakes of the heritage, also suffer from two main limitations. It is very difficult to estimate the multiplier effects, and it is difficult to transpose existing estimates to areas with different characteristics. Especially, such methods do not allow the evaluation of a renovation project, nor a comparison with a status quo situation or with alternative projects, thus strongly reducing their reach [14]. However, they can be mobilised to analyse the impact of a renovation project compared to the initial expectations. In the real world scenario, using impact assessment the World Bank funded urban heritage project of the Medina of Fez (World

Bank 2001) estimated 10030 job creation but the ex post evaluation showed that only 6000 jobs were created.

B. Concept of Total Economic Value

In the field of environmental value assessment, for more rational assessment scholars have further analysed the associated values and that led to the concept of Total Economic Value (TEV), which covers both use values and non-use values.

Same concept of TEV later being transposed into the field of heritage valuation but as it is a "multi-dimensional, unstable, contested, without a common accounting unit, and may contain elements difficult to express according to a quantitative or qualitative scale" [15], The non-traded values of a heritage property poses further complexity by adding the elements like culture and identity. "The cultural/historical/monumental capital of a town is an element that contributes, even indirectly, to the stability and resilience of an urban ecosystem and that, as such, has an intrinsic value (I) as it will contribute to the production of social capital, i.e. of the 'glue' that binds the subjects of a community, reflecting their common history, and a collective accumulation of knowledge, of creativity, of values" [16].

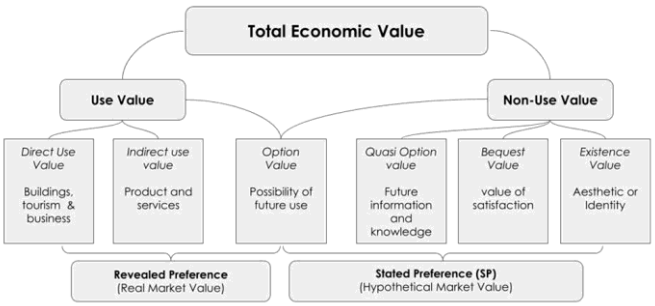

Fig. 1. Components of T.E.V and its economic valuation methods

Source: Author, after referring to various research papers

Now the major question is, can transposition of the environment evaluation methods to assess the indirect use of heritage property, like culture and identity?

As per literature review there are four major categories of environmental economics which have been applied in the field of heritage valuation - direct, indirect, multi criteria and macroeconomic accounting method.

The Revealed Preference technique and the Stated Preference techniques are the two broad categories of economic valuation methods. The same categories have been extended for the valuation of a heritage property.

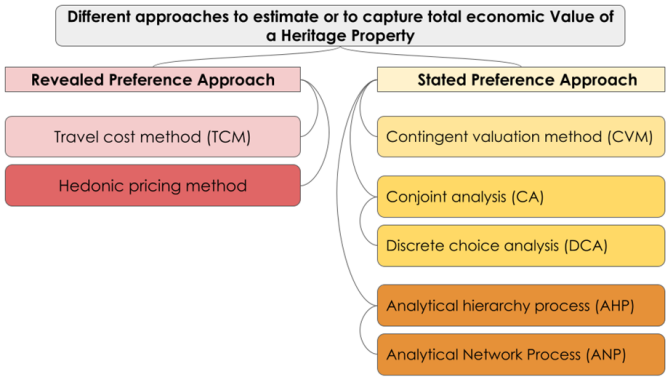

Fig. 2. Components of T.E.V and its economic valuation methods

C. Direct method/ Stated Preference Method

The method which uses direct data from the stakeholders for their willingness to pay, and willingness to accept? for the maintenance or loss of the property. All such methods come under direct method or stated preference method. In this process, the stakeholders are either given the hypothetical choices (for addition of a goods or services or loss of the same) or they can directly state their preferences for the same elements, as the method fundamentally depends upon the choices or declarations of the stakeholders, therefore called stated preference methods.

1) Contingent valuation method

This method is one of the best known methods under the stated preference category. It is considered to be one of the best methods for estimation of non-use values (culture or identity) associated with goods and services.

In this method with the help of survey of individuals, they are directly asked for their own willingness to pay (WTP) / consent to pay (CTP) for maintaining the existence of element (natural or cultural) or willingness to accept (WTA) / consent to receive for the loss or compensation of the element (natural or cultural). In fact, [17] stated that four cases are possible, two cost measurements of the advantage of an improvement and two cost measurements of the deterioration of a situation:

1. The CTP for obtaining an advantage;
2. The CTP for not suffering a cost;
3. The CTR for giving up an advantage;
4. The CTR for accepting a cost.

Theoretically for a project evaluation the value of WTP and WTA should be the same, but various studies show systematic differences. This technique is now widely accepted as a real estate appraisal technique and particularly in contaminated property or other situations where revealed preference models or transaction pricing fail due to disequilibrium in the market [18].

Being the most used model in the valuation of non-use elements, this method raises many questions of reliability too. Due to the hypothetical survey nature, sample size, statistical limitation on survey option (open ended or closed) the validity of this method is still debated. Irrespective of all its limitations the CVM method is used for environmental evaluation in the

US. Following is the table which contains all published studies in the field of heritage valuation through CVM method.

2) Attribute based methods

Attribute-based method comprises three different methods: Choice experiment, Conjoint analysis (rating based) and Contingent analysis (ranking based) method. All three methods can be performed by using both (stated preference and revealed preference) ways. These studies can be done separately as well as a combined study. All three methods require survey based data as input.

i. Choice experiment - different combinations of scenarios concerning the attributes are presented to the participants, who have to choose their own preferred scenario

ii. Conjoint analysis - similar to the above scenarios are presented and the participants need to rank them in order of their preferences.

iii. Contingent rating - similar to the above scenarios are presented and the participants, in addition to the ranking, values are attributed to each scenario.

In environmental economics, the choice experiment method is generally preferred to the other two options [19]. The conjoint and contingent analysis requires deeper understanding of the subject from the respondents; hence gets rejected for non-trading elements valuation purposes. From here one can easily conclude that the choice experiment method is the best option among all three attributes based methods. However, designing the experiment and survey requires a high level of expert knowledge.

D. Indirect methods/ Revealed Preference Methods

In an indirect method the expert tries to evaluate those elements for which there is no direct market and price exists. With the help of real market behaviour of economic agents on goods and services the non-traded values are revealed, hence this indirect method also called revealed preference method.

3) Hedonic price method

In the hedonic prices method, a substitution market is sought on which goods and services are bought and sold, for which the environmental costs or advantages represent attributes or characteristics [20]. This method breaks down the asset values into separate components and for each value, by using data on market transactions the overall worth of the asset gets determined. The hedonic pricing approach is considered to be more realistic than other methods, as values are determined by direct market behaviour and evidence.

This method has been widely used in the valuation of the real estate market. The impact on the valuation of a real estate unit, of distance from a park, lake, noise and air pollution can be easily estimated. Only limitation here is it cannot be used for valuation of the non-traded values.

4) The travel cost method

The TCM is used for estimation of non-traded values, based on observation of consumer behaviour. The sample consumers are being surveyed to determine the information such as visit frequency, distance travelled, time taken, time spent and travel cost incurred.

Reference [21] argues TCM produces more reliable estimates than other valuation techniques such as, for example, the contingent valuation methodology and the reason is TCM uses observed data (on site) instead of hypothetical data to generate results. There are two types of TCM - visitation frequency model (what is the frequency of a consumer visiting a particular site) and choice model (in the given site which site should be chosen). Especially in the USA and UK the TCM has been used for evaluation of national parks and protected sites.

For TCM evaluation the theoretical model which has been used is random utility model, and this model performs better in-case of multiple site valuation in comparison to a single site valuation. After visiting several sites by a consumer, with the help of a random utility model their expected utility is considered. Based on revealed preference a probability function for a given site is constructed. The holistic value and impact of changes (any proposed intervention) can also be measured.

E. Benefit transfer approach

The benefit transfer method is application of quantitative estimations of existing studies to a proposed study. Value estimation of one site (study site) with minor or major adjustments can be applied to a proposed site (policy site). The other name for benefit transfer is value transfer; often it is used for cost benefit analysis of a project. This method is not a singular approach but a range of different approaches, primarily dependent upon the availability of similar studies and data. Unit value transfer, adjusted unit value transfer, value function transfer and Meta-Analytic function transfer, are different approaches which can be used in the benefit / value transfer approach.

F. Multi criterai analysis method

All methods which have been discussed above revolve (directly or indirectly) around the monetary or traded value as a core element for evaluation, but there are a few valuation methods which conceptually combine multiple methods and create a model where money or traded values are not the core element.

Heritage as a concept is a multidimensional domain, which raise conflict of interest because of its own inherent undefined values related to its environmental, social, technical and economical character. Due to this inherent complexity and multidimensional characteristic scholars have unanimous agreement that; use of money or trade as a fundamental unit for its evaluation cannot give justification to its holistic value assessment. Hence it becomes almost unavoidable that valuation methods as a tool of decision making process leads to compromise between contradictory requirements. MCA gives us a set of methods that provide a certain synthesized value of such compromise.

There are a few diverse multi criteria analysis methods such as; MAUT (Multi Attribute Utility Theory) and a family of ELECTRE methods

G. Macroeconomic accounting method

The economic valuation of the environment as a capital has been explored multi-fold, the macroeconomic framework of 'green accounting' accepted by the World Bank is the most recent development.

The total wealth concept as developed by [24] and adopted by the World Bank proposes the integration into national accounting of all capital sharing in income creation. The underlying hypothesis is that countries have an asset portfolio comprising three types of capital: physical capital (value of produced goods), natural capital (value of natural resources) and intangible capital (assimilated to the value of human and social competence).

Formula for the assessment

Genuine saving = gross saving - Amortisation + Cost of education - reduction of fossil energy, mineral and forest stocks at market price - impact of value of CO2 emission (at price of EUR 20/ton carbon), assessment time period is considered as 25 years (one generation)

This approach needs to be explored in the field of heritage.

III. Research Trends and Gap

Inclusion of life cycle cost and benefit in the valuation method: Today's heritage properties were yesterday's source of wealth and well-being, at some point in time in the past they were actively participating in the local and regional economy. At present its renewal and maintenance often surpasses the budget of the owner (in case of private property) or local communities and other users (in case of social or public property). Conservation (identification, documentation, restoration and preservation) of heritage property is an exhaustive task as it takes a great amount of time and wealth. Restoration and preservation are just one part of the total cost (traded value), the main challenge is continuation of regular operation and maintenance cost (much higher and longer than contemporary buildings). Financing this continuity is the main challenge. In other words, one may say the selection of valuation methods and efficient financial instruments are the key.

Therefore, for holistic heritage conservation 'valuation' is just one part, the life cycle operational and maintenance cost should be integrated with return on investment and cost benefit analysis. In the last decade, cultural heritage has come to the fore in ensuring sustainable development. While there are a number of cases worldwide proving the effectiveness of cultural heritage in ensuring sustainable development (e.g., job creation, tourism development, social cohesion, urban enhancement, citizens' well-being, etc.), the sustainability of cultural heritage has rarely been at the forefront of public policies [25].

Other complexity of heritage property valuation methods: There are very few studies available which include the life cycle cost in the valuation process. All the valuation methods available treat the heritage property similar to the current real estate property (there is huge gap in the average life of a current building and a heritage building), whereas the use of material and maintenance plays an important role in heritage value. Therefore, one may say the assessment of lifecycle cost is an important factor of heritage valuation. Another important limitation is availability of data for comparative valuation, as the expert knows for application of conventional methods there is requirement of transactional market data.

IV. Conclusion

This chapter starts with understanding of the term value and its use significance and types in economic terms. Further it goes with major classification (stated and revealed preference) of valuation methods used in the domain of heritage. It finally lists out all the methods which have been used to value extremely complex heritage goods and services. To get the potential investment on the basis of traded or monetary parameters there are several methods such as NPV, IRR, cost method, profit method and intrinsic method. The limitation of all such methods is that they fail to capture the holistic economic value of a heritage property, in other words one can say it fails to assess the non-use value and non-traded values. The other limitation of these methods is assessment and inclusion of long term maintenance cost.

With modern development of economic valuation methods, one tried to capture the non-use and non-traded values too. Methods such as; Contingent valuation, Choice experiment (Conjoint rating analysis & Conjoint ranking analysis), Hedonic price method, the travel cost method, Multi criteria analysis method, Benefit transfer approach and Macroeconomic accounting method all comes with some or other advantages with each other, at the same time all methods have been critically questioned for their usefulness and accuracy of holistically capturing the value of a heritage property. For example, philosophically the travel cost method only measures the use value and to get the TEV we need to combine several methods like TCM and CVM.

The main conclusion from this discussion is that a heritage property which is an intimate mixture of use and non-use values also carries its own multi-objective and multi-functional character. Any single method cannot claim unquestionable valuation of all the attributes of heritage property. The approach which might help in capturing a larger dimension is development of a tool (a combination of several methods) and it will depend upon the specific context of the application. Next step of this research would be shortlisting of the case studies for various methods, detailed study of its potential and drawbacks and finally validation of these methods in the Indian context.

References

[1] Turner, F. (1990). The Meaning of Value: An Economics for the Future. New Literary History, 21(3), 747–762. https://doi.org/10.2307/469137

[2] Brown, T.C. (1984). The concept of value in resource allocation. Land Economics 60(3):pp. 231-246.

[3] Hartman, R.S. (1967). The structure of value. Southern Illinois University Press, Carbondale.

[4] Basics of Valuation. (2008). In: Valuation in Life Sciences. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-540-78248-3-2_3

[5] International Valuation Standards (IVS). (2017). RICS. London.

[6] CHERVEL, M. (1987), Calculs économiques publics et planification les méthodes d'évaluation de projet, PubliSud, Paris.

[7] Royal Institution of Chartered Surveyors. (2012). Comparable evidence in property valuation, 1st edition. RICS Information Paper.

[8] Royal Institution of Chartered Surveyors. (2008). Comparable evidence in property valuation, 1st edition. RICS Information Paper.

[9] Throsby, D. (2001), Economics and Culture Cambridge University Press, Cambridge.

[10] Navrud, S and Ready, R. (2002), Valuing Cultural Heritage: Applying Environmental valuation Techniques to Historic Buildings, Monuments, and Artifacts, Edward Elgar Publishing, Cheltenham and Northampton, MA.

[11] Mazzanti, M. (2002), "Cultural Heritage as a multidimensional, multi-value, multi-attribute economic resource", Journal of Socio-Economics, Vol. 31 No. 5, pp. 559-558.

[12] Noonan, D. (2003), "Contingent valuation and cultural resources: a meta analytical review of the literature", journal of cultural Economics, Vol. 27 Nos 3-4, pp.159-176.

[13] Noonan, D. (2007), Contingent valuation and cultural resources: a meta analytical review of the literature, Recent development in Cultural Economics, Ed. Ruth Towse, Edward Elgar Publishing, Cheltenham and Northampton, MA.

[14] GREFFE, X. (1999), La gestion du patrimoine culturel, Anthropos, Economica, Paris. GREFFE.

[15] THROSBY, D. (2003b), Cultural Capital, in: R. Towse (Ed.), Handbook of Cultural Economics, Edward Elgar, Cheltenham, UK.

[16] FUSCO GIRARD, L. AND P. NIJKAMP (1997), Le valutazioni per lo sviluppo sostenible delle citta e del territorio, F. ANGELI, Milan.

[17] PEARCE, D.W., (1989), Environmental Policy Benefits: Monetary Valuation, OECD, Paris.

[18] Mundy, B. and McLean, D. (1998). The Addition of Contingent Valuation and Conjoint Analysis to the Required Body of Knowledge for the Estimation of Environmental Damage to Real Estate, The Journal of Real Estate Practice and Education.

[19] HOLMES, T.P. AND W.L. ADAMOWICZ (2003), Attribute-based Methods, in Champ, Boyle and Brown (Eds.), A Primer on Nonmarket Valuation, Kluwer Publishing, Dordrecht.

[20] ROSEN, S. (1974), Hedonic prices and implicit markets: product differentiation in pure competition, Journal of Political Economy, 82, 34-55.

[21] Smith, V.K., Desvousges, W.H. and Fisher, A. (1986). `A comparison of direct and indirect Method's for estimating environmental benects', American Journal of Agricultural Economics, vol. 68, pp. 280-90.

[22] Morkunaite, Zydrune & Kalibatas, Darius & Kalibatiene, Diana. (2019). A bibliometric data analysis of multi-criteria decision making methods in heritage buildings. JOURNAL OF CIVIL ENGINEERING AND MANAGEMENT. 25. 76-99. 10.3846/jcem.2019.8315.

[23] ROY, B. (1985), Méthodologie multicritère d'aide à la décision, Economica, Paris.

[24] HAMILTON, K. (1994), Green adjustments to GDP, Resources Policy, 20, 155-168. HAMILTON.

[25] Crossik, Geoffrey, and Patrycja Kaszynska. 2016. Understanding the Value ofArts & Culture. The AHRC Cultural Value Project. Swindon: Arts and Humanities Research Council.