Ecological Economics 130 (2016) 277–284

Contents lists available at ScienceDirect

Ecological Economics

journal homepage: www.elsevier.com/locate/ecolecon

ANALYSIS

Drivers of heritage value: A meta-analysis of monetary valuation studies of cultural heritage

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ARTICLE INFO

Article history:
Received 12 January 2016
Received in revised form 15 July 2016
Accepted 3 August 2016
Available online 10 August 2016

Keywords:
Cultural ecosystem services
Conservation investment
Cultural economics
Historical heritage
Meta-analysis
Valuation

ABSTRACT

Decisions about cultural and historical heritage conservation can be contentious. Improved insight into the economic benefits derived from preservation could be achieved through a better understanding of the underlying economics. In response to this challenge, a growing number of studies estimate the economic value of heritage sites. The purpose of this study is to identify common drivers of the economic value of cultural and historical heritage by conducting a meta-analysis of heritage valuation studies. We find that heritage sites in areas with higher population density hold higher value, and conservation that supports adaptive re-use of sites generates higher values then passive protection. Valuation studies of tangible heritage dominate our dataset, but our findings are robust across model specifications. We identify a need for more economic and interdisciplinary research on the value of non-built heritage to improve understanding of the composition and drivers of heritage value.

1. Introduction

Whether or not to protect cultural and historic heritage from development interests has long been a matter of debate (McClelland et al., 2013). Heritage sites are now commonly viewed as having characteristics of a capital asset, which can help decision making about its conservation (Licciardi and Amirtahmasebi, 2012; Throsby, 1999, 2007). The economics of intangible and tangible heritage, however, remain little understood. Tangible cultural heritage refers to any specific site or location that is endowed with cultural significance; this may include a particular building or structure, an archaeological site, a natural landscape with cultural significance, or a particular location that is strongly associated with a cultural practice or traditional knowledge (e.g. a traditional fishing ground) (Throsby, 1999). Without understanding the full scope of the value generated by such sites, adverse management actions, including demolition, become much more likely (Bullen and Love, 2010). We therefore seek to identify the drivers of value of tangible heritage sites by conducting a meta-analysis of economic valuation studies of heritage sites.

Throsby (2001, 2010, 2012) developed the Cultural Capital framework to better understand the economics of cultural heritage conservation. This framework adapts the Total Economic Value framework (Pearce and Turner, 1990) from environmental economics to cultural heritage. Cultural value is a multidimensional aspect of the value of a heritage site, and is related to attributes such as its aesthetic quality, spiritual meaning, social function, and historical significance.[1] The characteristics that make up an asset's cultural value are likely to greatly influence its economic value, although a perfect correlation between the two values is not likely. Mason (2002) also proposes that heritage is multivalent and that no single method or discipline can yield a complete assessment of heritage values. Nevertheless, economic and monetary valuation would be expected to capture much of the cultural importance of heritage qualities and cultural value (Throsby, 2012).

Adapting methods from environmental economics is a developing trend within cultural economics nonetheless, and many primary valuation studies use techniques from this field (Mourato and Mazzanti, 2002; Nijkamp, 2012). In their report, eftec (2005b) suggest that the uniqueness and non-substitutability of cultural assets present issues for their economic valuation. Riganti and Nijkamp (2005) note that the validity and reliability of cultural heritage valuation studies can be questioned because values are site-specific and sensitive to the valuation method used.

[1] The definition of cultural heritage provided in Article 1 of the UNESCO (1972) Convention Concerning the Protection of the World Cultural and Natural Heritage explicitly link structures and landscapes to a number of values. In its preamble, the UNESCO (2003) Convention for the Safeguarding of the Intangible Cultural Heritage recognises "the deep-seated interdependence between the intangible cultural heritage and tangible cultural and natural heritage", and the definitions also present the tangible and intangible as inseparable. In our view, these terms are fluid rather than strictly defined and we have made no attempt to develop strict definitions. Although we attempt to remain consistent in our use of the terms, some inconsistency in usage may be perceived.

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http://dx.doi.org/10.1016/j.ecolecon.2016.08.001
0921-8009/

Primary economic valuation studies have nonetheless been conducted for a wide range of tangible heritage sites. The vast majority of studies use contingent valuation methods (CVM), including pioneering studies by Grosclaude and Soguel (1994) and Willis (1994). CVM has been used to estimate the total economic value (TEV) of heritage sites (Morey and Rossmann, 2003), as well as existence values (Whitehead and Finney, 2003), bequest values (Navrud and Strand, 2002), option values (Santagata and Signorello, 2000), tourism values (Kim et al., 2007), aesthetic values (Maddison and Mourato, 2001), and place-related value (Kling et al., 2004). Fewer in number, choice experiment (CE) methods have also been used to estimate a wide range of values. The first choice experiment in this area published in 2003 was a valuation of the TEV of marble monuments in Washington DC by (Morey and Rossmann, 2003). Subsequently, CEs have been used to estimate existence values (Rolfe and Windle, 2003), bequest values (Tuan and Navrud, 2007), tourism (Riganti and Nijkamp, 2004), and place-related values (Alberini et al., 2003). The travel cost method (TCM) has been used solely to estimate the value of tourism (Melstrom, 2014; Poor and Smith, 2004), and the hedonic pricing method has been applied to aesthetic (Leichenko et al., 2001) and place-related (Hicks and Queen, 2007) values.

With such diverse applications and techniques being used, qualitative and quantitative structuring of the literature is needed to develop general insights into economic valuation of tangible heritage. Noonan (2003b) provides an annotated bibliography of contingent valuation studies, while eftec (2005a) provides the same for heritage valuation studies. An early value transfer study by Ulibarri and Ulibarri (2010) obtains an estimate of the heritage value of the Petroglyph National Monument, Albuquerque, New Mexico. Noonan (2003a) conducts a meta-analysis of contingent valuation studies of culture and the arts. His results suggest that a multivariate approach allows for a better description of the patterns in the literature (Noonan, 2003a).

Our study builds on these earlier exercises by updating the literature review with studies from recent years and expanding the meta-analytic method used to generate the results. The meta-analysis presented in this paper assesses a wide range of explanatory variables, including the spatial distribution of several socio-economic variables. We add contextual data to get a richer data set for identifying drivers of value, which are generally found to improve such models (Bateman et al., 2011; Kaul et al., 2013; Johnston et al., 2016) and has been applied in many studies (Brander et al., 2006, 2007; Ghermandi et al., 2010; Hussain et al., 2011; Ghermandi and Nunes, 2013). The meta-analysis in this paper focuses on tangible heritage sites, heritage goods that are situated in specific locations, but also includes intangible heritage. The following sections describe the data set and the results from the meta-analysis. We conclude by placing the results in a wider context in the discussion section.

2. Data description

In total, we collected 63 monetary valuation studies of heritage using combinations of the search terms “cultural” and “heritage” with “value”, and “valuation” in Thomson Reuters Web of Science and Google Scholar and collecting studies cited in the publications thus found. We removed duplicate studies, benefit transfer studies, and studies whose value estimates could not be standardised to total US$ per year at 2012 price levels. Values reported per visitor or household were converted by multiplying the per person value for the relevant population using information from the study itself or government data. Values given as present value were converted to annual values using a 5% discount rate over 30 years following Whitehead and Finney (2003). Values reported in other currencies or years were converted to US$ at 2012 price levels using purchasing parity adjusted exchange rates and GDP deflators as reported by the World Bank.

We normalised value observations using logs, and further excluded values whose log value was further than two standard deviations away from the mean as outliers. Without excluding outliers, the results were dominated by a number of extreme values and statistical associations were found that were not present in the rest of the sample. We decided to truncate the data to values that were within two standard deviations of the mean. This provided a sample that yields results robust to removing the most extreme values. This left 87 value observations from 48 studies (see Table 1). Studies can produce multiple observations if they present distinctly different value estimations, and these observation characteristics are controlled for in the regressions (see Table 2). The maximum number of values obtained from a single study is 8, while the mean is 1.79. There were a few cases of one author producing multiple studies, but 43 different authors produced the 48 studies in the data set. Authors provided a maximum of 8 value observations with a mean of 2.00. These insights are discussed in more detail below.

Fig. 1 shows the geographic location of the 87 values used in the meta-regressions. Value observations come from 24 countries across 6 continents, but are concentrated in Europe and the United States. To address differences in studies in the regression, we constructed several categorical variables using information about the primary valuation studies. These included the asset type that was valued, the valuation method used, the benefit type that was considered, and the valuation scenario presented in the primary studies.

Asset type defines the nature of the heritage, i.e. built, archaeological, or natural. In addition, the data set includes a number of studies that value traditional knowledge. Built and archaeological sites were differentiated by whether they were constructed more or less recently than 2000 years ago. The dataset generally contains sites that are much younger than this cut-off date and, considering the variation in countries' cultures and historical paths, setting more refined distinctions was deemed to require too much interpretation of the study descriptions. Valuation method indicates which valuation technique was used in each study. Welfare measure indicates whether studies provide value estimates in total value, average value per person or marginal value per person.

For benefit type and scenario, we defined categories based on definitions from the literature. Benefit type defines which (non-) market value was investigated, i.e., tourism, bequest, existence, or aesthetic value. Scenario indicates what service or activity was valued, including conservation, preservation, access, adaptive reuse, renovation/restoration and area conservation planning. We based these scenario categories on definitions suggested by Throsby (2012): preservation (ensuring the continued existence of the asset), conservation (caring for the asset and maintaining it in proper condition according to accepted professional standards), renovation or restoration (returning an asset that has deteriorated to its original condition), adaptive reuse (ensuring continuity of use through minimal changes to the asset), and area conservation planning initiatives (ensure the value of historic buildings and sites to the economic buoyancy of whole areas).

Table 2 summarises the statistical characteristics of the dependent variable in our analysis. The mean value of the 87 value observations is $29,700,000 per year and the median is $2,064,292. This indicates a long right tail in the value distribution even after outliers have been removed from the sample. We therefore take logs to normalise the observations. The mean of the logged value observations is 14.50 and the median is 14.59.

The mean and median of the value observations vary across continent, benefit type, and valuation method (Fig. 2). Of the continents, Africa has the highest mean and median value (see Fig. 2a) with the two statistics approximately equal. All other continents have a mean that is noticeably higher than the median. The variation in value mean and median by benefit type and valuation method is shown in Fig. 2b and c, respectively. The two stated preference valuation methods (CE and CVM) have much higher mean and median values than the two revealed preference methods (TCM and HPM), and overall show a