



Cultural Capital Services Valuation Study

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Abstract

The aim of this study is to pilot an approach to estimate the value of a cultural asset, and where possible to disaggregate the services derived from it, in a way which can inform the potential for inclusion of such assets in the national accounts. The challenge is that many such assets have non-market aspects such as symbolic or cultural and heritage value, as well as generating income, for example, from visitors' fees. A companion paper (Bakhshi, Coyle & Lawton 2023) discusses the theoretical issues. This study tests a potential methodology and explores whether the results triangulate with other data, using the example of Blenheim Palace and Gardens.

Keywords: Cultural and Heritage Capital; Non-market valuation; Discrete Choice Modelling; Heritage Value; Travel Cost; Time Use

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Executive Summary

The aim of this study is to pilot an approach to estimate the value of a cultural asset, and where possible to disaggregate the services derived from it, in a way which can inform the potential for inclusion of such assets in the national accounts. The challenge is that many such assets have non-market aspects such as symbolic or cultural and heritage value, as well as generating income, for example, from visitors' fees. A companion paper (Bakhshi, Coyle & Lawton 2023) discusses the theoretical issues. This study tests a potential methodology and explores whether the results triangulate with other data, using the example of Blenheim Palace and Gardens.

Blenheim Palace is a World Heritage Site near Oxford, situated in a landscaped park created by the famous landscape gardener 'Capability' Brown. It was made a designated UNESCO World Heritage Site in 1987. The house and gardens are open to the public for an admission fee, though parts of the house and gardens are open to the public for free (e.g. the shop and wider landscape). From a capitals perspective, Blenheim Palace and Gardens provide cultural and heritage value through a combination of recreational, historical, cultural and educational services provided by a heritage asset with combined man-made cultural and heritage capital and semi-natural capital elements. The meaning of 'cultural value' is specified through a non-comprehensive list of sub-components as detailed by the Burra Charter.¹ The characteristics of cultural goods which give rise to their cultural and heritage value might include their aesthetic properties, their spiritual significance, their role as purveyors of symbolic meaning, their historic importance, their significance in influencing artistic trends, their authenticity, their integrity, their uniqueness, and so on.²

Stately homes like Blenheim Palace and Gardens constitute a 'quasi-public' good, because part of their welfare value is already captured in the prices people pay for entry. However, this is only a partial value, because the entry fee may not be set at maximum willingness to pay to support the full suite of cultural heritage services it provides (as demonstrated in the voluntary donations that visitors are willing to pay even after having paid).³

A Stated Preference (SP) contingent valuation survey was designed in alignment with previous research on the economic value of culture and heritage as published on the Department for Culture, Media and Sport's (DCMS) Culture and Heritage Capital Portal.

A total sample of 675 respondents completed the survey after data cleaning, split between 382 participants who had visited Blenheim Palace and Gardens in some way in the past year (defined as Blenheim Visitor) and 293 who had not visited (defined as Blenheim Non-Visitor). The survey also captured self-reported on-site spend, which, excluding travel and parking, was £17.12 per adult visitor and £37.33 per group.

¹ Australia ICOMOS, 'The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (the Burra Charter): Guidelines to the Burra Charter: Cultural Significance and Conservation Policy.' (Sydney, New South Wales, Australia: ICOMOS, 1987).

² David Throsby, 'Determining the Value of Cultural Goods: How Much (or How Little) Does Contingent Valuation Tell Us?', *Journal of Cultural Economics* 27, no. 3–4 (1 November 2003): 275–85, <https://doi.org/10.1023/A:1026353905772>.

³ Entry fees are also subject to concessions and aggregation within wider membership schemes (such as the annual pass and Historic Houses membership in the case of Blenheim), while others may be able to enjoy the cultural services associated with the house from accessing the wider landscape for free.

1. Willingness-to-pay estimates for the continued public access to the site (contingent valuation)

The willingness-to-pay question is designed to elicit the **welfare loss that visitors and non-visitors would experience if Blenheim Palace and gardens were to close to the public**. The valuation scenario aims to quantify this welfare loss in monetary terms by asking **how much they would personally be willing to pay to avoid that outcome**.⁴ The survey outlined the services that Blenheim Palace and Gardens provide to the public, information on current funding arrangements and the ongoing financial challenges for its management.

To avoid the closure of the house and gardens to the public (noting that its ongoing maintenance would still be assured by virtue of its private ownership to avoid deterioration of the heritage value), respondents were asked if they would be willing to pay a top-up **donation** (in the case of past visitors who had already paid for entry) or a donation (for non-visitors) to keep the house and gardens open to the public. The payment mechanism was a one-off voluntary donation to keep Blenheim Palace and its gardens open to the public in the face of increased operating and maintenance costs.⁵ This can be aggregated to the number of adult visitors per year for accounting purposes.

1A. The results of the contingent valuation survey show that **people who visit Blenheim Palace and gardens positively value the heritage site beyond what they pay to use its services and would be willing to pay a one-off donation of £9.26 on average per person, with a lower bound of £7.84**. *DCMS and Arts Council England guidance states that lower bound 95% confidence interval of WTP should be used for business case purposes, to offset risks of over-estimation due to hypothetical bias in surveys such as this.*⁶

1B. Blenheim non-visitors would be prepared to donate at £3.85 (lower bound £2.97).

To put these figures into context, the lower bound visitor WTP of a top-up donation of £7.84 represents around a quarter of the current full-price entry ticket to Blenheim Palace and gardens (£32).⁷

1C. Discrete Choice Experiments: Change in WTP for closure of different parts of the house and gardens. A Discrete Choice Experiment (DCE) elicits visitors' preference for paying to support the site under different hypothetical closure scenarios, **where different combinations of the house or gardens are to be closed for a year**. This is designed to capture the relative importance of different parts of the site as a source of cultural and heritage value. It is framed as a one-off payment, linked to peoples' visit either as a donation or an increase in ticket prices (payment vehicle varied between two survey sample groups).

⁴ Willingness to Accept (WTA) compensation was also considered in the design phase, but it was considered to be unrealistic that visitors would receive compensation payment for closures of parts of a privately owned house. It may have been more realistic for them to receive a rebate on their entry fee, and this was something that was in effect applied through the entry fee payment attribute version of the DCE exercise.

⁵ Visitors were reminded this donation would be on top of any ticket price, membership, or other payments they had made to support the site in the last year.

⁶ R. N. Lawton et al., 'Guidance Note: How to Quantify the Public Benefit of Your Museum Using Economic Value Estimates. A Resource for Understanding the Economic Value of Museums' (London, UK: Arts Council England, 2021), https://www.artscouncil.org.uk/sites/default/files/download-file/Guidance%20Note%20-%20How%20to%20estimate%20the%20public%20benefit%20of%20your%20Museum%20using%20the%20Economic%20Values%20Database_0.pdf.

⁷ Note that standard entry fee was £32 throughout 2022, but has increased in £35 in 2023, but that this falls outside of the recollection period for survey respondents.

This can enable us to rank visitor preferences for some types of cultural services over others, in ways that can potentially link to the conceptual typology of cultural services associated with heritage assets of this kind (as discussed in our companion paper); for instance, if respondents consistently select the lowest payment when the exterior park and gardens are closed, that would suggest that people gain most welfare from the areas of the site where the heritage services interact with the natural capital of the surrounding landscape).

Respondents were asked to think about how much they would be willing to pay based on which parts of the site would remain open to the public and which would close (**marginal closures to parts of the site**).⁸

For the payment vehicle, **two different modes of payment were tested on a split sample of respondents**. First, as in the willingness-to-pay CV, a donation was used (n=171 completed this DCE).⁹ Participants were shown multiple choice sets (the combination of attributes and their open/closed status along with a donation amount). Naturally it was expected that a lower donation value would be associated with the highest utility, holding other factors constant, because people are able to optimise their levels of cultural services for a lower budgetary outlay. Conversely, it was expected that the stated maximum donation value would be associated with the lowest utility. However, **visitor preferences are the opposite of this expected implied relationship, with participants on average selecting choice sets which had the higher donation price**. In other words, gain more utility from paying a *higher* donation, regardless of which parts of the house and gardens were open/closed in the DCE: higher donation amounts appear to exert dominance over respondent preferences.

To explore whether this counterintuitive finding reflects the donation payment mechanism, a second DCE was designed and tested on an independent sample of 144 visitors where a ticket price was proposed instead of donation, with the price attribute varying around the standard ticket price of £32.¹⁰

In this second DCE, utility distributions for the eleven sites are consistent with expectations (i.e., people prefer situations where more parts of the site were open than closed), at least for respondents whose survey answers suggest less 'attached' to Blenheim Palace (in that they said they were less likely to visit again in the future, had visited less frequently or had not paid to access the house). However, for those with affinity to Blenheim, **higher utilities are still observed for higher ticket amounts**, again suggesting that (these) respondents gain utility from giving more of their money to the site.

In principle, there are a number of possible explanations for this counterintuitive finding. It may be that respondents simply do not understand the DCE including donation/ticket prices (as standard DCEs typically do not include donations/ticket prices). There may also have been biases associated with the payment mechanism, and in particular donations, if the DCE participants take the view that these should be independent of services offered.

⁸ Note that due to the fact that the DCE asked about closure of specific parts of the house and gardens, it was assumed that only those who had previously visited would be able to answer these questions with sufficient knowledge of the different attributes. Therefore, to minimise the risk of hypothetical bias, the DCE was asked only of the 'visitor sample'.

⁹ Specifically, the WTP amount that they had selected in the CV question was piped into the DCE exercise, and varied by subtractions of 5%, 10%, 15%, 20%, 25%.

¹⁰ As in split sample 1, the price attribute varied by 5%, 10%, 15%, 20%, 25%.

However, the latter seemingly cannot be the only explanation as it does not explain the finding of dominance for participants with greater affinity for Blenheim Palace in the second-choice experiment where a ticket price mechanism was used. Another hypothesis consistent with our findings is that individuals who have an **attachment** to Blenheim palace are willing to pay a higher amount - donation or ticket price - in order to keep the site open regardless of whether specific parts of the site are closed or remain open.

Taken together, the DCE results do not provide meaningful WTP estimates for the closure of different parts of Blenheim House and Gardens. When overlaid onto the cultural services model proposed in the conceptual paper: the higher utilities observed for higher donation/ticket prices would counterintuitively mean that more preferred parts of the house/gardens (i.e., those parts of the house with higher utilities) would have *lower* WTP values. The estimates may further be distorted by biases arising from the use of a donation payment vehicle in a DCE. Further research is required to test the working hypothesis in this paper that different parts of a heritage asset provide different types of cultural services, and that the provision of one instead of another may help to explain why people are willing to pay for different services provided by a heritage site.

It is still possible to use the results of the second DCE to estimate the WTP associated with different parts of the site being open/closed, but only on the sub-sample of **respondents which the survey suggests have less of an affinity to Blenheim Palace**. In groups such as low/medium likelihood to visit, non-frequent visitors and unpaid entry free, there is a clear pattern of the lowest price having the highest utility and the highest price having the lowest utility (this pattern is also observed for the 55+ group). Although these respondents answer in a more intuitive fashion regarding price, it is quite likely that restricting focus to this lower affinity sample introduces significant selection biases, thereby limiting the generalisability of the estimates. Note that we do not report WTP for individual attributes for the first split sample DCE (donation payment) because even among the 'disengaged groups', preferences for the payment attribute do not behave in a rational way, which means that they would show lower WTP values for the attributes which were most preferred, which is a problematic but spurious result to report.

2. Triangulation of non-market valuation methods

A further contribution of this study to the ongoing discussions around accounting of cultural and heritage asset stocks and flows is to apply a range of methods to triangulate what values could be attributed to service flows stemming from Blenheim Palace and Gardens. This involves comparing the estimates elicited through the Stated Preference exercise with estimates derived from Revealed Preference measures based on actual prices paid for entry, in the shop etc, and travel costs, as well as measures based on the time involved in visiting the site. These methods can calculate a range of possible aggregate non-market valuation estimations for Blenheim Palace and Gardens. We note that that some of the methodologies applied (e.g., single-trip travel cost methods) are both methodologically flawed, and subject to data limitations in this survey, and should not be considered best practice.

Unsurprisingly perhaps, given the range of valuation methods, we get a range of results, which likely represent both the different dimensions of the economic value of culture and

heritage obtained through the different methods and potentially the different biases that arise in applying the different methods.

2A. Self-reported Travel Cost Method (including travel costs only)

Given that travel cost analysis is not the original focus of the study, the survey did not collect detailed information on how far respondents travel to visit the site. Instead, travel cost analysis had to be performed based on self-reported expenditure; based on respondent postcode, from which we estimate the distance travelled to Blenheim Palace. This is a significant limitation of our ability to implement the approach, given that many of the visitors will visit as part of a wider trip or holiday.¹¹ Due to the uncertainties in the single-trip TCM method, we apply self-reported travel spend for triangulation purposes. Average self-reported travel cost is estimated at £89.41 for the group and £38.53 per visitor.

3. Time-use value of time spent on site

The survey includes a time-use element, where respondents indicate how much they spend at the site in total, and how much of that time is spent in the different parts of the house and gardens.

The average time spent in total at Blenheim Palace and Gardens is 226 minutes (just over 3-and three-quarter hours). The average time spent in different parts of the site ranges from 9 minutes in the Blenheim Palace Shop, to 34 minutes walking around the formal and walled gardens.

We apply an upper and lower bound measure of the value of time. The lower bound estimate [£5.49 (£6.96 in 2022 prices)¹²] uses Department for Transport TAG guidance tables¹³ for non-work commuting is estimated at the upper bound, which is provided by Verbooy et al. and estimates the value of leisure time at £14.83 (£17.04 in 2022 prices).¹⁴ This is applied to self-reported survey data on the total time spent at Blenheim Palace and Gardens suggesting a gain on average between £26.17 and £64.07 worth of welfare benefit from their time spent at the site at the upper bound. The wide range underlines the uncertainty surrounding this method.

The upper-bound time-use average of £64.07 per person is significantly higher than the ticket price. We therefore caution against its use. These travel time values are problematic not only because of the uncertainties around the method, but also because they do not account for the differences in welfare gains/losses that can be experienced from time spent in different sites.

¹¹ The single-trip assumption that lays behind the TCM method is an oversimplification, as it assumes that the single purpose a person had for travelling from the home postcode to Blenheim was to visit Blenheim Palace and Gardens. This is a huge oversimplification, and one which leads to a large overstatement of value. For this reason, we urge caution interpreting these TCM figures.

¹² Department for Transport TAG guidance tables¹² for non-work commuting is estimated at £5.12 per hour for lower income groups and £5.49 for higher income groups in 2014 prices.¹² Given the higher average household income levels for Blenheim visitors compared to the general population in the survey samples (recall Table 2) we apply the higher income VTT estimate of £5.49 (£6.96 in 2022 prices).

¹³ <https://www.gov.uk/government/publications/tag-data-book>

¹⁴ Kaya Verbooy et al., 'Time Is Money: Investigating the Value of Leisure Time and Unpaid Work', *Value in Health: The Journal of the International Society for Pharmacoeconomics and Outcomes Research* 21, no. 12 (December 2018): 1428–36, <https://doi.org/10.1016/j.jval.2018.04.1828>.

Summary results table: Triangulation of valuation methods

	Revenue (admission income, retail and water, events)	1A. Visitor Willingness to Pay estimates for the continued public access to the site	1B. Non-visitor Willingness to Pay estimates for the continued public access to the site	2A. Travel Cost Method (TCM) (including travel costs)	2B. Travel Cost Method (TCM) (including travel and on-site costs)	3. Time-use value of time spent on site (lower bound)	Total (without double counting)
Per person	NA	£7.84	£2.97	£41.01	£62.38	£26.17	
Aggregation	£15,000,000	£5,498,325	£25,520,337	£28,761,010	£43,748,155	£18,353,185	
Total Blenheim Aggregation							
Revenue+ 1A+1B	£15,000,000	£5,498,325	£25,520,337				£46,018,662
Revenue+2A+1B	£15,000,000		£25,520,337	£28,761,010			£69,281,347
3+2A+1B			£25,520,337	£28,761,010		£18,353,185	£72,634,532

Note: DCMS and Arts Council England guidance states that lower bound 95% confidence interval of WTP should be used for business case purposes, to offset the risk for over-estimation of values due to hypothetical bias in surveys.¹⁵

The summary table above compiles the person-level welfare estimates for Blenheim Palace and Gardens obtained through three different non-market valuation methods. In all cases, we consider the extent to which these non-market valuation estimates can be counted together, and alongside accounting estimates of value taken from the Blenheim Economic Impact Assessment report, 2021/2022 (total revenue of £15m in 2021/2022).

The baseline approach is based on ticket revenue plus user top-up donation and non-user donation, while Travel Cost Methodology (TCM) and Value of Time approaches are alternatives in the triangulation section.

The most reliable estimate of total aggregate value for Blenheim Palace and Gardens in the summary table above may be the combination of actual revenue and willingness to pay among visitors as a top-up donation to support the site, and non-visitors as a donation for the same outcome (combined total £46million per year). This has conceptual consistency with the WTP question eliciting over and above any prices paid for entry. It is designed to capture the surplus welfare value of maintaining public access to the site for oneself and others, which aligns with the conceptual model described in our companion paper.

It is worth noting that none of the techniques are consistent with the methodology of the National Accounts, which require the use of exchange values. However, in the accompanying conceptual paper, we present the argument for why market prices alone are inappropriate for Culture and Heritage Capital (CHC) assets. While expenditure on cultural/heritage engagement is captured in current statistics, as are some of the associated CHC assets, this nevertheless leaves significant assets and the associated capital services unaccounted for. Just as with other missing capitals, enhanced measurement is desirable for decision-makers using official statistics so that decisions can be based on a full evidence

¹⁵ Lawton et al., 'Guidance Note: How to Quantify the Public Benefit of Your Museum Using Economic Value Estimates. A Resource for Understanding the Economic Value of Museums'.

base including the sustainability of the use of economically important assets.¹⁶ However, market prices do not exist for many significant CHC assets and alternative methods for estimating (shadow) prices are needed as explored in this empirical paper. There has been a move toward incorporating 'omitted' capital service flows at market prices (or an exchange value alternative) into the measurement of GDP, and subsequent growth accounting exercises, and the corresponding stocks; and more recently toward taking account of the (possibly increasing) wedge between GDP and a broader measure of economic welfare by applying shadow prices to the same quantities. As noted in the conceptual paper, non-market valuation methods may be needed as a supplement where markets or exchange values for cultural and heritage assets do not exist. These include stated and revealed preference methods, as set out in HMT Green Book (2022: Box 20. Valuation Methods for Non-Market Prices).

¹⁶ Carl Obst and Michael Vardon, 'Recording Environmental Assets in the National Accounts', *Oxford Review of Economic Policy* 30, no. 1 (2014): 126–44.

1 Introduction



Blenheim Palace and Gardens (referred to as 'Blenheim Palace') is a World Heritage Site near Oxford, situated in a landscaped park created by the famous landscape gardener 'Capability' Brown. It was built between 1705 and 1722 and is the seat of the Dukes of Marlborough, including Winston Churchill. It is one of England's largest houses, and the only non-royal, non-episcopal country house in England to hold the title of palace. It was designated as a UNESCO World Heritage Site in 1987. The house and gardens are open to the public for an admission fee in 2022 of £32 for an adult to the Palace, Park and Gardens; £22.50 for the Park and Gardens only, with concession prices available, and reductions for Historic Houses members¹⁷ and the ability to extend the ticket into an annual membership 'Privilege Pass' for an extra £8 (bringing it to £40 including 15% off in cafes and restaurants). Parts of the house and gardens are open to the public for free (e.g. the shop and wider landscape). Visitors to the site are able to access the interior of the house, including the Palace State Rooms, upstairs and downstairs rooms, its collections and curated exhibitions, e.g. Churchill Exhibition, as well as the exterior formal and walled gardens, parkland and wider landscape, and lake walk. The site includes the Blenheim Palace Shop and a number of Cafés and Restaurants (e.g. Orangery Restaurant, Stables Café, Oxfordshire Pantry). The Bugs & Butterflies Trail is available for younger visitors, and the site hosts special festive themes in the interior of the house and illuminated trails outside, and an online 360 Degree Virtual Tour.

The aim of the exercise is to estimate the economic value of a stately home and gardens which are both open to the public (for a fee) and holds a symbolic place in the cultural landscape of the country. The exercise, where possible, disaggregates the services from the site which may inform the inclusion of culture and heritage capital in the national accounts.

From a capitals perspective, Blenheim Palace and Gardens provides cultural and heritage value through a combination of recreational, historical educational, and cultural services (among others, as defined by Throsby¹⁸). It provides a heritage asset with combined man-made cultural and heritage capital and semi-natural capital elements. The meaning of 'cultural value' is specified through a non-comprehensive list of sub-components as detailed by the Burra Charter.¹⁹ The characteristics of cultural goods which give rise to their cultural

¹⁷ Blenheim Palace is a member of the Historic Houses group, which is a non-profit association comprised of independently owned houses, castles and hardens of historical significance providing advice, guidance, and political support to member sites. Members gain free access to all sites in the group.

¹⁸ *Economics and Culture* (Cambridge UK: Cambridge University Press, 2001).

¹⁹ Australia ICOMOS, 'The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (the Burra Charter): Guidelines to the Burra Charter: Cultural Significance and Conservation Policy.' (Sydney, New South Wales, Australia: ICOMOS, 1987).

and heritage value might include their aesthetic properties, their spiritual significance, their role as purveyors of symbolic meaning, their historic importance, their significance in influencing artistic trends, their authenticity, their integrity, their uniqueness, and so on'.²⁰

The advantage to considering one specific site is that we can more clearly define what the range of services are, and then categorise them according to our chosen typology. To do this we design a Discrete Choice Experiment (DCE), which forces respondents to choose between different combinations of services in a constrained way more accurately reflecting market behaviour, rather than relying on self-reporting which would introduce reporting error, heterogeneity, and greater, hypothetical bias.

The hypothesis is that cultural and heritage services link to the functionality of the space: derived from the aesthetics of the building and landscaped gardens, the recreation from the café experience, and the recreation from engaging with the landscape, as well as the historical and educational services provided by the information that is provided/curated on the heritage features.

The purpose of this study is to contribute empirical evidence to the companion conceptual paper which addresses the challenges in incorporating cultural and heritage capital (CHC) in the System of National Accounts (SNA) framework, as part of a suite of 'missing capitals', alongside natural capital and some intangibles not already included within the national accounts asset and production boundaries. In the case of stately homes, like Blenheim Palace, some part of the value of such assets are currently incorporated. However, it is likely that the prices attached to these capital assets only capture a part of the welfare value they provide to society, which presents a gap between private and social value in this category of assets.

In this empirical study we collect data from alternative valuation approaches that are used in the cultural economic literature. Our baseline approach is based on ticket revenue plus user top-up donation and non-user donation, while Travel Cost Methodology (TCM) and Value of Time approaches are alternatives in the triangulation section. This allows us to compare both market (national accounts-consistent) and also non-market approaches to valuation of CHC assets like stately homes, as well as physical measures of the assets. This contributes to the CHC evidence base to demonstrate the full set of benefits (in compensating/ equivalent surplus terms²¹) that non-market goods like heritage assets provide to individuals (both those who visit them and those who do not), to ensure that the full set of benefits of stately homes are understood and taken into account in national accounting.

Stately homes like Blenheim Palace and Gardens constitute a 'quasi-public' good, because part of their welfare value is already captured in the prices people pay for entry. However, this is a partial value, because the entry fee may not be set at maximum willingness to pay to support the full suite of cultural heritage services it provides (as demonstrated in the

²⁰ Throsby, 'Determining the Value of Cultural Goods'.

²¹ The value of a good or service relates to the impact that it has on human welfare and this can be expressed in terms of compensating or equivalent welfare measures as first devised by Hicks 1934: Compensating surplus (CS) is the amount of money, paid or received, that will leave the agent in their initial welfare position following a change in the good; Equivalent surplus (ES) is the amount of money, to be paid or received, that will leave the agent in their subsequent welfare position in absence of a change in the good. In essence, CS and ES refer to the change in income that holds welfare constant in light of the change in the provision of the good (which could be a change in the quantity and/or quality of the cultural heritage asset). See Bakhshi et al. 2015 for further discussion.

voluntary donations that visitors are willing to pay even after having paid). Entry fees are also subject to concessions and aggregation within wider membership schemes (such as the annual pass and Historic Houses membership in the case of Blenheim), while others may be able to enjoy the cultural services associated with the house from accessing the wider landscape for free.

To include CHC assets in the national accounts on the same basis as other assets, the valuation basis should be the exchange value, or a method approximating a market price such as replacement cost. This is the approach that has been taken with natural capital assets. However, even more than is the case with natural assets, it will be difficult to value CHC assets in this way: few markets exist for distinctive cultural assets, which may in some cases be irreplaceable. Our study contributes to the ongoing conceptual discussions and empirical work around the Culture and Heritage Capital (CHC) framework.²² This sets out DCMS's ambition for transformation in assessing value for money of CHC assets through robust appraisal and evaluation. The CHC framework looks at a range of impacts from market to non-market impacts.

The DCMS Rapid Evidence Assessment (REA) of economic value of culture and heritage studies from 2000-2019 identifies seven WTP studies of built heritage values including three WTP values in terms of an annual tax to preserve the built heritage interiors of stately homes in Europe from climate change damages. However, no consistent empirical evidence base has been produced and tested for its transferability to other sites, in the same way as other classes of cultural and heritage assets (museums, galleries, theatres, high streets, civic buildings, historic city cores) in the DCMS's, Arts Council England's and Historic England's programme of benefit transfer work.²³ This study seeks to address that gap.

Stated Preference valuation

Stated Preference, through Contingent Valuation (CV) or Discrete Choice Experiments (DCE), is an economic valuation method which enables the estimation of the value of 'non-market' goods and services in monetary terms (non-market goods/services are defined as those which do not have paid prices for their use in normal markets). Stated Preference allows estimation of the welfare impact of non-market and public or quasi-public goods: those which can either be enjoyed at no direct price to the consumer in the market, or at a price which is subsidized at the point of use or in some other way does not capture the full costs of maintaining or providing the good/service. This allows the researcher to quantify the flow of benefits in the same unit of account as costs. It does this by asking people's maximum willingness to pay (WTP) in a hypothetical scenario where they would no longer be able to enjoy the service under the current access arrangements, or their willingness to accept (WTA) compensation for loss of that good or service. In the literature it is commonly argued that this method is suited to capturing the flow of benefits associated with a

²² <https://www.gov.uk/guidance/culture-and-heritage-capital-portal>

²³ D. Fujiwara et al., 'The Economic Value of Culture: A Benefit Transfer Study' (London, UK: Department for Digital Culture Media and Sport, 2018); R. Lawton et al., 'The Economic Value of Heritage: A Benefit Transfer Study' (Arts and Humanities Research Council, 2018); Ricky Lawton et al., 'The Economic Value of Heritage in England: A Benefit Transfer Study', *City, Culture and Society*, 27 September 2021, 100417, <https://doi.org/10.1016/j.ccs.2021.100417>; R. N. Lawton et al., 'Regional Galleries and Theatres Benefit Transfer Report' (Arts Council England, 2021), <https://www.artscouncil.org.uk/sites/default/files/download-file/Arts%20Council%20England%20-%20Regional%20Galleries%20and%20Theatres%20Benefit%20Transfer%20Report.pdf>; R. N. Lawton et al., 'Local Museums Benefit Transfer Report' (Arts Council England, 2022), <https://www.artscouncil.org.uk/sites/default/files/download-file/Local%20Museums%20Report.pdf>.

cultural/heritage asset, in terms of both use and non-use values, in which added together constitute the asset's 'Total Economic Value' (TEV).

The TEV approach seeks to understand how much an individual values a good or service by considering value from the following perspectives:

- Use value - referring to the benefits that individuals gain through their use of cultural heritage assets like stately homes, which are split into direct and indirect use:
 - Direct use values stem from direct engagement with cultural and heritage sites. For instance, visiting Blenheim Palace and gardens for recreation, learning about local/national history and heritage by visiting the site, as well as the physical and mental health benefits from walking around heritage sites within a natural capital setting.
 - Indirect use values relate to the presence of a stately home in the local area as well as its function as a site of social interaction. Historic houses may also provide educational opportunities through outreach programmes and encourage social interaction, with people commonly visiting as part of a trip with family or friends.
 - Option value - can also be attached to potential future use of the site or of the services provided by different parts of the site, even if an individual has never visited previously.
- Non-use value – referring to the benefits that individuals derive from a historic house, without them personally engaging directly or indirectly. There are three forms of non-use value:
 - Altruistic values - welfare increases in association with knowing that others can enjoy in the presents.
 - Bequest values – welfare increases in association with knowing that future generations will benefit. Just as an individual may value the existence of a historic house for others to enjoy in the present, so that they may value its continued existence for the benefit of future generations in the same way, in that current generations have a duty to leave heritage assets to future generations.
 - Existence values – welfare enhancements from knowing that the historic house and gardens, its services and collections, exist even if an individual does not experience a use benefit now or in the future.

Although widely used in cultural and environmental economics, the categories do not map readily into standard price and production theory, which underpin economic statistics and analysis, and are therefore easily overlooked in much economic analysis and policy. They can all be considered as contributors to individuals' utility (although the distinctions between use and non-use value are not always clear, for example between bequest use values and philanthropic non-use values). Therefore, there is ongoing consideration of the suitability of

different elements of the TEV framework for each of the asset types being valued, as part of the DCMS CHC scoping research in the coming years.

In this study, we report on the results of a contingent valuation survey estimating willingness to pay for the continued public use of Blenheim Palace and Gardens among users (those who have visited previously) and non-users (those who have not in the general population). The SP survey includes a Discrete Choice Experiment (DCE), a design to elicit preferences for different parts of the site as a proxy for the value of the services, and explore whether it is possible to estimate WTP for different parts of the site, in a way that may be linked to the services we expect each part of the site to deliver, in a way that maps onto the services approach set out in the conceptual paper.

In addition, we apply a range of methods to triangulate what values could be attributed to service flows stemming from a heritage asset like Blenheim Palace and Gardens. Our baseline approach is based on ticket revenue plus user top-up donation and non-user donation, while Travel Cost Methodology (TCM) and Value of Time (VoT) approaches are adopted as alternatives in the triangulation section.

2 Literature review

The Culture and Heritage Capital (CHC) program (DCMS, 2021) was a result of the recognition that there is no agreed approach to measure the benefits of culture and heritage in ways that are consistent with the principles of the HM Treasury's Green Book (HM Treasury, 2022). As a result of this, the contributions of cultural and heritage assets can be underrepresented in funding bids and decisions. The CHC programme aims to overcome this by providing research, data, guidance and tools to support organisations in making a case for investment in culture and heritage assets, and policymakers in their decision making. To achieve this, CHC programme appeals to the capitals framework – a methodology used widely in government (HMT Treasury, 2020²⁴; DEFRA, 2020²⁵) - that is consistent with the underpinning principles of Social Cost Benefit Analysis (SCBA), and so economic statistics in the national accounts.

The publication of 'Valuing Culture and Heritage Capital: a Framework Towards Informing Decision Makers' (DCMS, 2021) was an important milestone. The document concludes that the existence of HM Treasury Green Book guidance specific to culture and heritage capital is needed; it also suggests that the development of a robust evidence base for decision making requires a cross-disciplinary approach connecting heritage science and economic valuation methodologies.

To date, SCBA is not applied and developed consistently for the range of 'services' that the arts, culture and heritage offer. Currently, the value of these 'services' can be 'missed': potentially leading to poor decisions around investments and maintenance, particularly when they are considered as inputs into other arenas of economic production.

Capital is a long-established concept in political economy, sociology, as well as economics. In the capitals framework, the nation's wealth comprises a great number of assets. These can be classified in different ways. One classification - the World Bank's Comprehensive Wealth framework - includes produced, natural, human and social capital (World Bank, 2021). The six capitals recognised in the Executive Summary to the Levelling Up White paper are: physical, human, intangible, financial, social and institutional.²⁶ This report distinguishes cultural capital as a further classification.

In all cases, capital is defined as having two characteristics:

- Unlike a pure consumption good, **a stock of capital delivers a stream of returns over time**. Those returns can be financial and non-financial;
- Further, **capital can depreciate**, absent adequate maintenance, and that depreciation can reduce the present value of expected future returns; or alternatively appreciate.

The two concepts essential to understanding the notions of capital are stocks and flows.

²⁴https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/937700/Green_Book_Review_final_report_241120v2.pdf

²⁵ <https://www.gov.uk/guidance/enabling-a-natural-capital-approach-enca>

²⁶ <https://www.gov.uk/government/publications/levelling-up-the-united-kingdom/levelling-up-the-united-kingdom-executive-summary>

- The **stock is the available amount of the asset at each moment in time**, reflecting the accumulation of past investment and maintenance spend;
- **Flows refer to the benefits over time**, which is derived from the stock of an asset. In alignment with the welfare economics principles of the HM Treasury Green Book (2022), these comprise the benefits to human wellbeing.

The long-term picture is that the sum of assets weighted by their 'true' societal shadow prices is definitionally equal to social welfare (in the classic economics sense).

As laid out in the AHRC Scoping Paper for CHC (2022)²⁷, a number of foundations need to be put in place to develop this framework:

- **Classification and measurement:** a robust and consistent, exhaustive and mutually exclusive framework for the assets, and data to measuring and monitoring changes in stocks and condition (including depreciation and any threshold effects);
- **Accounting:** comprehensive capital accounts at national and sub-national levels;
- **Valuation:** suitable economic valuation techniques to enable decision making that account for biases in the capitals framework:
- Clarity about the **foundational concepts** that are being referred to, used and operationalised.

To monetise the value that cannot be measured in the market, two main approaches can be used: one looks at the way people behave using alternative markets (revealed preference), while the other looks at the way people state they would (hypothetically) behave in the future (stated preference). A third, more novel, technique seeks to understand value in terms of the mental accounts of wellbeing as provided through self-reported subjective wellbeing measures.

Revealed preference valuation techniques are used to assess the impacts of phenomena ex-post, since they refer to ways people behave. Stated preference techniques can be successfully used ex-ante, since they identify possible future behaviour by eliciting people's preferences for hypothetical changes in the provision of a good or service. Contingent valuation is a stated preference survey-based methodology that elicits monetary values for non-market goods by directly asking individuals about their willingness to pay (WTP) or willingness to accept (WTA) a particular change.²⁸ Respondents are presented with a hypothetical situation that describes in detail the proposed change they are asked to value (e.g., fund-raising to support the continued existence of a heritage site or compensation desired for its closure), using baseline conditions (the current situation) as a reference point.²⁹

²⁷ <https://www.gov.uk/government/publications/scoping-culture-and-heritage-capital-report>

²⁸ I. Bateman et al., *Economic Valuation with Stated Preference Techniques: A Manual* (Cheltenham, UK: Edward Elgar, 2002).

²⁹ These provide estimates of compensating and equivalent variation, so may differ in theory and do so in practice; WTA generally exceeds WTP, sometimes by a large margin. See Robert Cameron Mitchell and Richard T. Carson, *Using Surveys to Value Public Goods: The Contingent Valuation Method* (Washington DC: Resources for the Future, 1989). And D McFadden & K Train *Contingent Valuation of Environmental Products: A Comprehensive Critique*, Edward Elgar; Cheltenham 2017.

From an economic point of view, non-market goods, such as cultural and heritage ones, have an economic value that is not captured by a market price and encompasses a series of components that can be broadly divided into use and non-use values.

The elicitation of any separate part of the total valuation is not an easy task to begin with, but is more complicated in the case of **non-use values**, since there is no market price, or the market price differs from the shadow price. They can only be estimated by asking a relevant sample - in a direct or indirect way – their maximum willingness to pay (or willingness to accept), to trace the latent demand curve. The available techniques for this purpose are the ones using a survey-based approach, and even in a well-designed survey it is difficult for respondents to disaggregate the different use and non-use values they hold for a cultural/heritage service (i.e., cognitively it is challenging for a person to quantify how much of their stated value is for their own option to use a site in the future, for other people's enjoyment, for future generations). Moreover, it is an inherent challenge that there is no budget constraint in stated preference approaches.

The previous literature on stated preference valuations for cultural and heritage assets provides a wide range of estimates, underlining the importance of context as well as uncertainties associated with a survey-based methodology. In 2020, the DCMS commissioned a Rapid Evidence Assessment (REA) of economic value of culture and heritage studies conducted from 2000-2019 to provide a systematic assessment of what valuations have been conducted in the international academic and grey literature over the past 20 years, and what gaps remain.³⁰ The REA was also designed to help direct ongoing research on monetary valuation of cultural and heritage assets to inform the DCMS's Cultural and Heritage Capital programme. The REA results are presented within an Evidence Bank of economic values that includes valuation details, such as the estimated monetary values for assets, a grading of the quality of each study, the article details, and an overview of valuation method in use.

The DCMS REA (2020) identifies seven WTP studies of built heritage values including three WTP values structured in terms of an annual tax to preserve the built heritage interiors of stately homes in Europe from climate change damages, in Italy (£44.61), Romania (£5.87) and Sweden (£4.34). The wide range of values for broadly similar heritage assets across these three studies (all per person WTP values drawn from Mourato et al. 2014)³¹ shows the importance of benefit transfer (BT) techniques for avoiding the influence of outliers. The study includes ten heritage sites (including historic houses, museums and churches) across five countries (the UK, Sweden, Germany, Romania and Italy), testing for transfer errors within categories of cultural site using three transfer tests: single-trip unit transfer; adjusted (income differential) unit transfer; and function transfer. Transfer tests are performed for both use and non-use values. The authors found that heritage conservation values can be successfully predicted via value transfer approaches. The REA also reviews WTP values

³⁰ R.N. Lawton et al., 'DCMS Rapid Evidence Assessment: Culture and Heritage Valuation Studies - Technical Report' (London, UK: Department for Digital Culture, Media and Sport, 2020), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/955142/REA_culture_heritage_value_Simetrica.pdf.

³¹ S. Mourato et al., 'The Economic Benefits of Cultural Built Heritage Interiors Conservation from Climate Change Damages in Europe' (London, UK: Grantham Research Institute on Climate Change and the Environment, 2014), https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjAx_WBIOTNAhXmAMAKHX9cAJ8QFggeMAA&url=http%3A%2F%2Fwww.climateforculture.eu%2Findex.php%3Finhalt%3Ddownload%26file%3Dpages%2Fuser%2Fdownloads%2Fproject_results%2FD_06.1_final_publish.pdf&usg=AFQjCNEmpINVVbd1Kr66uDCAHhWep4PYWw&sig2=vfs6lqUMCX-ccnm1HWP7w.

from three castle/stately homes in Lithuania, reporting non-use values ranging from £5.27 as a one-off WTP for the conservation and preservation of the Raudondvaris Manor, £22.54 for its renovation and adaptation, to £40.40 as an annual donation for a programme of preservation of *all* manor residencies of the Kaunas region.³²

The REA further identify two BT values as an annual tax to preserve the built heritage interiors of stately homes in Europe from climate change damages in the UK (£36.27, based on 3 study sites), and Germany (£28.05, based on 4 study sites). Both combine use and non-use values from the general public.³³

Our literature review finds that no consistent evidence base concerning public access to stately homes, and no formal testing of the transferability of such values to other stately homes sites, in the same way as other classes of cultural and heritage assets (museums, galleries, theatres, high streets, civic buildings, historic city cores) in the DCMS, Arts Council England and Historic England benefit transfer work.³⁴

³² Indrė Gražulevičiūtė-Vilenišké et al., 'Contingent Valuation of Built Heritage Properties in a Transition Country: A Case of Lithuania', *International Journal of Strategic Property Management* 15, no. 4 (2011): 393–415.

³³ Mourato et al., 'The Economic Benefits of Cultural Built Heritage Interiors Conservation from Climate Change Damages in Europe'. The categories of use and non-use value are found in the Total Economic Valuation approach – see below (cite Throsby).

³⁴ Fujiwara et al., 'The Economic Value of Culture: A Benefit Transfer Study'; Lawton et al., 'The Economic Value of Heritage: A Benefit Transfer Study'; Lawton et al., 'The Economic Value of Heritage in England'; Lawton et al., 'Regional Galleries and Theatres Benefit Transfer Report'; Lawton et al., 'Local Museums Benefit Transfer Report'.

3 Methodology

The Stated Preference (SP) survey concerning the value of Blenheim was designed to assess the following research questions:

Valuation question 1: What is the value of continued public access to Blenheim Palace and Gardens? (applying Contingent Valuation): Contingent valuation was the appropriate Stated Preference method for estimating the welfare value associated with the whole of a heritage asset like a stately home, and could have been designed to elicit the surplus value over and above what people have already paid for access to the site. In this case, the survey was designed to estimate the total current (use and non-use, recall Section 1) value of keeping a stately home and gardens (Blenheim Palace and Gardens) open to the public.³⁵

Valuation question 2: What is the value for individual aspects of the house and gardens (applying Discrete Choice Experiment): Discrete Choice modelling had the advantage that it could have elicited estimates of value for individual elements of the house and gardens by asking respondents to trade off the closure of different parts of the site against a payment (either a donation or an entry fee in this case).

DCE methods therefore presented a series of alternatives (with varying attributes and levels) from which respondents select their preferred option. The result was a complex decision-making scenario that was more reflective of the market.

A key challenge was that visitors already (partially) revealed their preferences through the market, in the ticket/membership prices they paid, their willingness to travel to the site, and the (costly) time they spent on site. The survey asks how much money and time respondents have spent on the visit, which could then be triangulated with the WTP results of the survey and other data on spending and revenue which were already included in principle in the national accounts. We turned to this triangulation below.

3.1 Survey Design

The SP survey was designed in alignment with best practice in previous research on the economic value of culture and heritage as published on the Cultural and Heritage Capital Portal.³⁶

The survey had four sections. First, it asked how respondents had travelled to and engaged with Blenheim Palace and Gardens, which parts of the site they had visited and for how long, their on-site expenditure, and their likelihood to visit again. The valuation sections of the survey then consisted of two elements:

³⁵ Note, the Cultural and Heritage Capital approach generally used the concept of Total Economic Value (TEV), whereby the total value of a cultural or heritage asset consisted of both use value (direct and indirect use, predominantly held by visitors, as well as the option to use in the future that can be held among both visitors and non-visitors), and non-use value (the value attributed by users and non-users for the mere existence of the site, and of the benefits it provides to others now and in the future). However, this conceptualisation was not a necessary feature of contingent valuation, and it may have been more useful to focus on the welfare value for different groups: 'users' who had engaged with the site previously, and 'non-users' who had not engaged with the site directly.

³⁶ <https://www.gov.uk/guidance/culture-and-heritage-capital-portal>

3.1.1 SP: WTP to keep Blenheim Palace open to the public

The first valuation section presented respondents with information about Blenheim Palace and Gardens (see text box). In particular, the survey outlined the services that Blenheim Palace and Gardens provided the public, information on its current funding arrangements and the ongoing financial challenges for its management.

Text Box 1. Information presented on cultural heritage services provided by Blenheim Palace and Garden



England has a large number of historic buildings, parks and gardens with significant cultural heritage importance. Although many historic buildings, parks and gardens are protected by planning designation (i.e. listing, scheduling, etc.), they still require continuous conservation and maintenance work to maintain them in good condition.

Conserving historic buildings parks and gardens remains a challenge across England, with over 5,000 assets on the Heritage at Risk register.

Historic houses which are open to the public have ongoing overheads and management costs. Public access increases the wear and tear and maintenance costs. Historic buildings and their gardens require regular management and maintenance to avoid natural wear and tear and deterioration. This is especially important in the face of extreme weather events like flooding, heavy rainfall and heat waves. The extended periods of closure during the COVID-19 pandemic also contributed to the ongoing challenge of maintaining historic houses and heritage sites. To ensure they can stay open to the public, continued funding is needed to ensure the continued resilience and sustainability of historic buildings and gardens.

The hypothetical scenario presented respondents with a situation where, *“Due to the ongoing challenge of managing historic buildings and gardens, and the cost of living challenge, there is a short-fall in the funding required to keep Blenheim Palace and its gardens open to the public...In this scenario, the current funding that is received from ticket sales, café and shop revenue and charitable funding would not be sufficient to cover the increased costs of operating and maintaining Blenheim Palace and its gardens and keeping it open to the public. If additional funding cannot be secured, Blenheim Palace and Gardens would have to close to the public indefinitely. The house would continue to be used as a family home, but the public would no longer be able to access any of the parts of the house and gardens currently open to the public.”*

Respondents were asked if they would have been willing to pay a one-off top-up donation to avoid this scenario (in the case of visitors who had already paid for entry) or a one-off donation (for non-visitors) to keep the house and gardens open to the public (noting that its ongoing maintenance would be assured through private ownership to avoid deterioration of the heritage value). In both instances this was a per person donation.

Visitors were reminded this donation would be on top of any ticket price, membership, or other payments they had made in the past year.

It is acknowledged in the literature that voluntary payment vehicles are more prone to hypothetical bias (responding in an unrealistic way due to the hypothetical and/or inconsequential nature of the payment question) and ‘free-riding’ (saying you would pay

nothing or a small amount in the knowledge that other people will pay the donation to support the site). However, consultation with stakeholder groups (DCMS, Historic Houses, Blenheim Palace representatives) found that entry fee or government-linked tax mechanisms would be too politically sensitive at a time of high inflation and cost of living challenges, meaning that on balance a voluntary donation was considered the most appropriate payment vehicle.

As a further methodological consideration, it could be argued that by giving background information on the variety of benefits that Blenheim Palace offers the survey may prime respondents to be more likely to pay to keep Blenheim open than they would if they were not given this information beforehand (and therefore were potentially oblivious to it). On the other hand, it is necessary as part of the SP method to provide respondents with sufficient information for making informed decisions about the value of the good or service they are being asked to support through a personal payment from their own budget.

3.1.2 DCE: Change in WTP to avert closure of different parts of the house and gardens

The DCE elicits visitors' preference for paying to support the site under different hypothetical closure scenarios, where different combinations of the house or gardens were to be closed for a year. This can be linked to the conceptual development of cultural services associated with heritage assets of this kind (developed in the conceptual paper). This potentially enabled us to test visitor preferences for some types of cultural services more than others (for instance, if respondents consistently select the lowest payment when the exterior park and gardens were closed, that suggested that people gain most welfare from the areas of the site where the heritage services interacted with the natural capital of the surrounding landscape). Respondents were asked to think about how much they would be willing to pay based on which parts of the site would remain open to the public and which would close. Note that due to the fact that the DCE asked about closure of specific parts of the house and gardens, it was assumed that only those who had previously visited would be able to answer these questions with sufficient knowledge of the different attributes. Therefore, the DCE was asked only of the 'user sample', to avoid significant hypothetical bias in the DCE responses.

For the payment vehicle, two modes of payment were tested on a split sample of visitors. First, a donation was used with 171 respondents. The WTP they had earlier selected in the CV question was piped into the DCE exercise, and varied by subtractions of 5%, 10%, 15%, 20%, 25%. When initial results showed that higher donation amounts appeared to exert dominance over respondent preferences (in other words, respondents choose the higher donation amount, *regardless of the combination of attributes which are closed in the choice set*, see Section 4.5), a second DCE was designed for an independent sample of 144 visitors, where a ticket price was proposed instead of donation, with the price attribute varying around the standard ticket price of £32, again by 5%, 10%, 15%, 20%, 25%.

The logic behind switching from a donation to an entry fee payment attribute in the DCE was that:

- Visitors were already familiar with the concept of paying entry to access the site. While a donation may have been appropriate for the CV question to support the continued existence to public of the site as a whole, it may conceivably have been harder for respondents to think of that donation amount varying based on which parts of the site were closed as attributes in the DCE.

- It may also have been that the donation payment vehicle was linked in the minds of respondents with charitable and altruistic support of the site in general 'warm glow terms'. Therefore, even if some parts of the site were presented as closed, people may still have been willing to pay the same donation amount for the support of the site in general terms, meaning there would have been a weaker link between closure of parts of the site and the amount a person would pay as a donation. Arguably the link between an entry fee payment and which parts of the house a person could visit is likely to be stronger, since at a certain point we would expect that people would refuse to pay, if too many parts of the house close and this impinges on their experience of visiting the site. These considerations suggest that some WTP payment vehicles, like donations, prime respondents to think in 'non-use terms' aligned with the altruistic and existence values of the TEV framework, while other payment vehicles, like entry fees, prime respondents thought in 'direct use value' terms.

Add to this the fact that the WTP donation amounts stated by respondents in the CV question were generally of a lower magnitude than the standard entry fee by a ratio of 3:1 (see Section 4). This may have meant that they were less inclined to vary their donation amount based on the closure of some parts of the site in the DCE, because the marginal utility of a portion of an already small donation amount may not affect their utility curve very strongly, and they might therefore have been inclined towards the status quo of their initial donation amount. In contrast, the entry fee varied at the same percentage figures around a higher value (£32), meaning that a 5% variation in the entry fee would equate to £1.75 compared with 5% of an average donation of £9 which would equate to only 45p. Lower variation in the price attribute may have made it more likely that respondents would express status quo bias and make a minimal change from their initial donation amount.

The final section of the survey asked a set of standard socio-demographic questions, including education level, marital status, employment status, self-reported health status, annual income, and number of dependent children.^{37 38}

3.2 Sampling and data collection

An **online survey of adults aged 16+ residents in the UK** was recruited via the Ipsos Interactive Services. Respondents were selected based on their responses to a set of questions about recent visits to historic houses, one of which was Blenheim Palace (more detail below).³⁹ This allowed the survey to be designed to split out those who had visited

³⁷ Bateman et al., *Economic Valuation with Stated Preference Techniques*. Edward Elgar, UK 2002.

³⁸ Following good practice, respondents were provided with oath script and cheap talk scripts asking them to be realistic, reminding them of their household budgetary constraints, and the existence of other things they may wish to spend their money on: Lawton et al. 'Comparing the Effect of Oath Commitments and Cheap Talk Entreaties in Contingent Valuation Surveys: A Randomised Field Experiment', *Journal of Environmental Economics and Policy*, 11 November 2019, 1–17, <https://doi.org/10.1080/21606544.2019.1689174>; Gregory Howard et al., 'Hypothetical Bias Mitigation Techniques in Choice Experiments: Do Cheap Talk and Honesty Priming Effects Fade with Repeated Choices?', *Journal of the Association of Environmental and Resource Economists* 4, no. 2 (20 February 2017): 543–73, <https://doi.org/10.1086/691593>; Fredrik Carlsson, Peter Frykblom, and Carl Johan Lagerkvist, 'Using Cheap Talk as a Test of Validity in Choice Experiments', *Economics Letters* 89, no. 2 (November 2005): 147–52, <https://doi.org/10.1016/j.econlet.2005.03.010>.

³⁹ All survey participants in this research were England residents aged 16+ and will have answered a detailed consent form. Ipsos UK is compliant with the highest regulatory standards for the legal and safe processing of personal and/or sensitive data, including the Market Research Society Code of Conduct, ISO 27001, 20252, 9001 and GDPR. We are also a Fair Data company and an MRS Company Partner and compliant with GDPR, the Data Protection Act, HMG Cyber Essentials, UK Statistics Code of Practice, the GSR Code and the MRS Code of Conduct. In terms of retention and destruction of personal data, our processes ensure that we meet client contractual requirements as well as GDPR legislation regarding how information

Blenheim Palace and Gardens at all in the previous year. Nationally representative quotas for age, gender and region were set for non-visitors. Visitors were obtained through natural fall-out in the panel.

To avoid response acquiescence (where people inaccurately say they have visited a site because they think it is the focus of the survey), a number of questions were asked before identifying respondents as users or non-users of Blenheim Palace and Gardens. Respondents were first asked if they had ever visited a range of cultural and heritage sites, including any historic building or structure open to the public (non-religious) (either free or paid), and any historic park or historic garden open to the public (either free or paid). They were asked when they last visited one of these, with a dropdown menu of years from 2016 to 2022. Only those selecting 2021 or 2022 were filtered into the next question which presented a list of nine historic houses and gardens, where respondents chose any they had visited in the past year. For those who chose Blenheim Palace and Gardens among their visited sites, the survey asked how often they had visited in the past year, and then asked when exactly they had visited (month and year). Only those who chose Blenheim Palace and Gardens out of the open list of nine sites, and who confirmed they had visited in the past year were classed as 'Blenheim users'. Blenheim users were then asked detailed questions about their visit, including whether/how much they had paid, what parts of the site they had visited, who they had visited with, how much they had spent on parking, and in the shop/café/restaurant, whether they were Historic Houses members⁴⁰ and if so what type of membership they held. All respondents were asked questions about the preferences for public spending and their attitudes towards culture and heritage, as a means of preparing them cognitively for the payment scenario, and providing attitudinal data which can be used in ex-post sensitivity analysis to test whether WTP for cultural/heritage assets is statistically associated with theoretically consistent drivers of cultural and heritage value (in line with Arts Council England good practice survey design guidance).⁴¹

The survey also included a time-use element, which asked respondents how long they had spent at the site, split across the different parts of the site they had visited, and which were later included separately in the DCE. There were also travel cost questions around their mode of transport, how far they had travelled, and how much they had spent on travel.

The survey took place over 3rd October-23rd November 2022.⁴²

should be labelled, handled, stored, transferred and destroyed. Any personal data is collected (usually two months after projects are completed). Identifiable data is anonymised when reporting. This will be outlined in a privacy notice available to participants, which would also provide details on why we are collecting the data, what is being used for and any further information for participants to make a subject access request, which we would promptly respond to. Alongside these measures, we would reassure DCMS that all work is conducted in-house by Ipsos staff and researchers who have undergone data protection and GDPR training.

⁴⁰Blenheim Palace is a member of the Historic Houses group, which is a non-profit association comprised of independently owned houses, castles and hardens of historical significance providing advice, guidance, and political support to member sites. Members gain free access to all sites in the group. Single memberships are £65 and doubles are £103.

⁴¹ <https://www.artscouncil.org.uk/sites/default/files/download-file/Guidance%20Note%20-%20How%20to%20estimate%20the%20public%20benefit%20of%20your%20Museum%20using%20the%20Economic%20Values%20Database.pdf>

⁴² This survey period was able to maximise on historic visitation of Blenheim Palace and gardens during the peak spring, summer, and early autumn periods, which provides a period of 18 months since the end of Covid lockdowns in March 2021. It was also just before the peak cost of living and cost of heating crisis of winter 2022/23. Although it was directly after the interest rate shock which occurred during the Liz Truss premiership, which may have exerted a sense of heightened budget constraint among some respondents. This data collection period also avoids to festive period, which may exert a non-representative influence on WTP results as well as a selection bias on the demographic groups who are more likely to visit in the festive period.

3.3 Exclusions

We removed survey ‘**speedsters**’ (those who complete the survey in an unreasonably short period of time). A threshold time of 3 minutes was set for user and non-user samples as the minimum period in which all the information provided in the survey could realistically be read and used to make informed preference decisions based on internal testing and exploration of the data.

The main variable of interest for this study is willingness to pay. For those who indicated that they would or might be willing to pay in principle, but then selected in the payment card “Don’t know/Rather not say”, it was not possible to infer any positive or non-positive WTP value. For this reason, these respondents were dropped from the analysis.⁴³ Following best practice in minimising hypothetical bias, we removed respondents who gave inconsistent follow up answers when asked why they gave their stated WTP value. This included those who selected an unrealistic option in follow-up responses: “I do not believe I would have to pay”.⁴⁴

3.4 CV design

The advantage of the CV method is that it could estimate the values that visitors, or users, obtained from a stately home over and above what they already pay in ticket fees (direct and indirect use value), as well as the values that individuals who do not use the historic house placed on its continued existence and provision of its services to others (non-use value), or the optional value that they got from being able to use it in the future.

The disadvantage of the SP method is that the WTP/MTA values elicited are dependent on how the good or service is described within the survey. Important issues considered in developing stated preference surveys are realism and minimising hypothetical bias (is the asset in question realistic and readily understood? Is it believable that the asset could be provided or taken away in the manner suggested?), and sample groups (which groups are most relevant to the research question? Can we clearly define a user and non-user population, and to what extent does this align to use and non-use value in the TEV?).⁴⁵

A crucial design issue for the CV survey was the choice of payment vehicle. Compulsory payment vehicles are preferable as in principle they increase the incentive compatibility of the survey design and avoid hypothetical bias caused by potential free-riding (everyone has to pay an entry fee or tax, but it is possible to not pay a donation and still enjoy the continued flow of benefits from the good/service if others are willing to pay). However, the practicalities of survey design for cultural/heritage assets often means that a voluntary donation is the only realistic and non-contentious option. In the case of Blenheim Palace, a tax increase to support Blenheim and allow it to stay open to the public was considered both unrealistic (there is no precedent of a tax being raised to support a single stately home) and potentially contentious (given that Blenheim Palace is owned by an aristocratic family and people may express protests at having to pay a tax to assist in its upkeep). An increase in entry fee might have been feasible, but the baseline amount that a person might pay varied depending

⁴³ 11 respondents were dropped from the total sample based on giving an unclear “Don’t know/Rather not say” response to the payment card question.

⁴⁴ 6 respondents were dropped from the total sample based on the follow up response: “I don’t believe I would really have to pay”. 11 respondents were dropped for giving ‘Don’t know’ WTP values

⁴⁵ Lawton et al., ‘Guidance Note: How to Quantify the Public Benefit of Your Museum Using Economic Value Estimates. A Resource for Understanding the Economic Value of Museums’.

on whether it was a group/concession ticket, an annual ticket, or free entry through Historic Houses membership, and this would have introduced uncertainty and heterogeneity into the estimation of mean WTP. An entry fee increase would not be relevant to non-visitors, who would have to express their WTP using another non-comparable payment vehicle to the visitor group.

A donation WTP payment vehicle was chosen because it was applicable to all visitor types, and applicable to both visitors and non-visitors as a top-up donation or standalone donation. The top-up donation for those who had already paid a ticket has been used previously in quasi-public cultural assets for which people already express their partial value for the site in entry fee/tickets (DCMS benefit transfer of theatres).⁴⁶ The pros and cons of different payment vehicles are outlined below:

- **Entry fee:** Applicable where access is currently free and public access can in principle be restricted (e.g. museums and galleries). Less applicable in situations where the asset in question is a public good and freely available.
- **Tax (local or national):** Applicable to all publicly funded cultural goods, whether paid or free, publicly accessible or excludable, but with potential issues around public sensitivity.
- **Donation:** Applicable to all cultural goods, whether paid or free, publicly accessible or excludable. One disadvantage is that it is a voluntary payment, where it is therefore possible to 'free-ride' and continue to enjoy the cultural good/service without paying.
- **Willingness to Accept (WTA) compensation** was also considered in the design phase, but it was considered to be an unrealistic that visitors would receive compensation payment for closures of parts of a privately owned house. It may be more realistic for them to receive a rebate on their entry fee price, and this was something that was in effect applied through the entry fee payment attribute version of the DCE exercise.

The choice of elicitation method related to how the WTP/WTA value should be elicited from the respondent. In other words, how do we get respondents to state a maximum £ value they would be willing to pay?⁴⁷ For example, the DCMS Culture and Heritage Capital research used payment cards, offered respondents a range of monetary amounts they could choose from. This provided respondents with a visual aid (which simplifies decision-making) and was more appropriate when sample sizes are smaller (i.e., below 300 respondents per sample group). Other options included dichotomous choice which randomly presented respondents with an initial bid ("would you be willing to pay £10?"). Best practice included 'double-bounded' dichotomous choice, which then asks a second question ("If yes, would you be willing to pay £15, or if no, willing to pay £5?"). Although the dichotomous choice method was in principle more incentive compatible (i.e. it follows how people make transactional decisions in real life) it was also more difficult to apply in practice as it requires large samples (500+) and extensive piloting.

⁴⁶ Lawton et al., 'Regional Galleries and Theatres Benefit Transfer Report'.

⁴⁷ Note that open ended elicitation is generally avoided in modern CV studies. This method asks respondents to give their maximum WTP with no visual guides. It is equivalent to 'picking a number from the air' and produces unpredictable and unreliable WTP estimates.

The CV adopted a payment card approach, and presented respondents with a range of monetary amounts from which they were asked to pick their WTP. We asked how much the continued public access to Blenheim Palace and Gardens would be worth to them, if anything, and presented respondents with a range of 27 values (payment card) from £0-£50, with an 'other' option for open-end responses. The payment card method was recommended for CV surveys of small to medium sample size because it reduced starting point or anchoring bias (i.e., minimised the influence of the values presented on the cognitive responses elicited from the respondent, because respondents saw the full range of 27 values at the same time) and provided a visual aid to the cognitive process of valuing the good or service in question.⁴⁸ However, use of a payment card elicitation mechanism meant that respondents' stated values must be taken as a lower bound of their actual WTP⁴⁹ because the actual amount they are WTP will lie somewhere in between the amount they chose and the next amount up on the payment card.

Following standard practice, all those who responded that they were not willing to pay in principle were coded as £0 bids. This ensured that the full range of values are included in the evaluation. Using the mean WTP, rather than the median WTP, is standard practice in CV studies where the objective was to aggregate values:⁵⁰ the mean WTP value was relevant if the context of the valuation exercise in Cost-Benefit Analysis because it represented an average WTP for the population which could be multiplied by population size to estimate the total WTP across the population.^{51,52}

The DCMS Rapid Evidence Assessment recommends 200 observations as a minimum sample size for the total sample of a CV survey of this kind, which we achieved through the 382 Blenheim visitors and 293 non-visitors in the general public.⁵³

3.5 Discrete Choice Experiment

Discrete choice experiments (DCE) are an established methodology for understanding the trade-offs involved when selecting between different products or service offerings.

The method worked by decomposing a product or service into its constituent parts, known as attributes. Within each attribute, different options known as 'levels' were defined. A number of choice tasks were generated through an experimental design each with different combinations of the site open/closed (see example below), each containing multiple options, which represented different combinations of the attribute levels being tested. Participants go

⁴⁸ Bateman et al., *Economic Valuation with Stated Preference Techniques*; David Maddison and Terry Foster, 'Valuing Congestion Costs in the British Museum', *Oxford Economic Papers* 55, no. 1 (1 January 2003): 173–90, <https://doi.org/10.1093/oepp/55.1.173>; David Maddison and Susana Mourato, 'Valuing Different Road Options for Stonehenge', *Conservation and Management of Archaeological Sites* 4, no. 4 (1 January 2001): 203–12, <https://doi.org/10.1179/135050301793138182>.

⁴⁹ Bateman et al., *Economic Valuation with Stated Preference Techniques*.

⁵⁰ William J. Vaughan et al., 'Uncertainty in Cost-Benefit Analysis Based on Referendum Contingent Valuation', *Impact Assessment and Project Appraisal* 18, no. 2 (1 June 2000): 125–37, <https://doi.org/10.3152/147154600781767466>.

⁵¹ Pearce and Özdemiroglu 2002

⁵² Note that CV results will always be constrained by income levels (indeed, this is one of the features that makes it consistent with equivalent income techniques required by the Green Book, and one of the reasons why a positive statistical association between income and WTP is considered a validity test of CV data). This means that WTP stated by lower income groups may be on average lower than those stated by higher income groups, even though the site may hold a higher relative value once the relative spending power of their budgets is taken into account. This should be considered when interpreting WTP split by demographic groups, and is one reason why researchers are increasingly calling for WTP values to be welfare weighted in line with Green Book guidance. Social welfare weighting could be a way in the future to overcome issues of income constraining ability to pay, but this can be applied retrospectively if required by applying standard welfare weightings to WTP values in line with HMT Green Book guidance (2022).

⁵³ Lawton et al., 'DCMS Rapid Evidence Assessment: Culture and Heritage Valuation Studies - Technical Report'.

through the choice tasks and select their most preferred option from the set of options available. Through their choices the relative preferences for the levels tested can be calculated for each participant. While participants are only subjected to a small number of options, using Bayesian analytical techniques it was possible to estimate the impact on utility of any combination of levels.

Figure 1 Example discrete choice task: Donation payment vehicle

Version 1
 Task 1

Previous Version
Previous Task
Next Task
Next Version

Which of these options, if any, do you prefer the most? You may choose 'none of these' if you wish

House: Walking around the exterior	✗	✗	Neither of these
House: Walking around the interior of the house	✓	✗	
House: Collections and curated exhibitions	✓	✗	
Gardens: Walking around the formal walled gardens/maze	✗	✓	
Access to Parkland and wider landscape	✗	✓	
Access to Lake Walk	✓	✗	
Walking over the Grand Bridge	✓	✗	
Blenheim Palace Shop	✓	✗	
Café/Restaurant	✓	✗	
On-site talks and tours	✓	✓	
360 Degree Virtual Tour	✓	✗	
Donation (annual, per household)	Stated price less 5%	Stated price less 20%	

☐ ☐ ☒

Figure 2 Example discrete choice task: Entry fee payment vehicle

Version 1
 Task 1

Previous Version
Previous Task
Next Task
Next Version

Which of these options, if any, do you prefer the most? You may choose 'none of these' if you wish

House: Walking around the exterior	✗	✗	Neither of these
House: Walking around the interior of the house	✓	✗	
House: Collections and curated exhibitions	✓	✗	
Gardens: Walking around the formal walled gardens/maze	✗	✓	
Access to Parkland and wider landscape	✗	✓	
Access to Lake Walk	✓	✗	
Walking over the Grand Bridge	✓	✗	
Blenheim Palace Shop	✓	✗	
Café/Restaurant	✓	✗	
On-site talks and tours	✓	✓	
360 Degree Virtual Tour	✓	✗	
Entry fee per person	£25.60	£30.40	

☐ ☐ ☒

For this DCE experiment, 11 areas of Blenheim Palace and Gardens were identified, each with two levels: the area is open to the public or closed to the public. In addition, a 'price' attribute was included, with 6 levels, which varied based on the study (see below). An experimental design was used to create a balanced set of choice tasks that participants answered. The experimental design was created by the researchers based on the definition of attributes and levels (parts of the house and gardens which are open and closed). The

DCE software created a set of choice tasks based on several criteria 1) that each level was shown approximately the same number of times across the design 2) the 2-way combinations (e.g. how often Attribute 1 level 1 appears together with attribute 2 level 1) were approximately equal for all combinations across the whole design and 3) the attributes were largely orthogonal (no correlation). When those conditions were satisfied, a balanced design was said to have been achieved. In this DCE, this consisted of 20 sets of 10 choice tasks. Participants were randomly assigned to one of the 20 sets and shown the 10 choice tasks within that set. For each choice task, participants were asked to compare two choice sets and to select the one they preferred the most when thinking about what they would be willing to pay to visit Blenheim Palace and Gardens if certain areas of the palace/gardens were closed to the public. The participants had the option to select neither of the choice sets presented to them. The combination of levels was varied across the choice tasks so that the trade-offs that participants were using in their choices could be identified.

The DCE made use of two samples, collected over two different periods in November 2022. In both cases, participants were explicitly asked prior to the DCE section the maximum they would be willing to pay as a donation on top of the ticket price to support the site. In the first split sample DCE carried out 3-4 November, their stated donation price was then presented in the survey as the 'price' attribute and additional price levels (5%, less, 10%, less, 15% less, 20% less, 25% less) were tested based on the stated maximum donation.

In the second split sample carried out 22-23 November, rather than a donation, participants were shown hypothetical ticket prices for a single adult ticket (full price, with the price attribute varied by the same percentage levels as previously between 5% less through to 25% less for consistency in levels). The ticket prices shown were the same for all participants and independent of any donation they had previously said they were prepared to make on top of the ticket price.

3.5.1 DCE: Data quality checks

For both samples, prior to the estimation, participants who selected the same concept position (e.g. consistently selected Option A, or consistently selected the 'Neither of these' option, despite the variation in services and price offered) in 8 or more choices (out of 10) were removed. Due to the randomness of the experimental design, it was statistically improbable that a participant making reasoned choices could choose the same concept position this frequently.

Post-estimation, the consistency of each participant's choices was calculated using a root likelihood (RLH) statistic, which measured the goodness of how well the solution fits the data. The RLH was the geometric mean of estimated probabilities associated with the choice sets chosen by participants and was computed by taking the n^{th} root of the likelihood, where n was the number of choice tasks. A null model where the utilities were the same for all choice sets, i.e. a model that randomly chooses alternatives with equal probability, had an RLH of $1/k$, where k was the number of alternatives. Participants with a RLH lower than 0.333 were removed from the analysis.⁵⁴

⁵⁴ For this study respondents were shown tasks with 2 concepts plus a None option, so the value of $1/k = 0.333$. Values below this threshold mean that the choice data is random and therefore the utility values are random.

3.5.2 DCE: Data analysis

The analysis of the choice data was conducted using a Hierarchical Bayesian (HB) algorithm. The HB technique fit a Multinomial Logit Model to each participant using an iterative approach that maximised the posterior likelihood. That is, it calculated the optimum set of parameters, known as part-worth utilities, given the observed participant choice data, and given the knowledge about the population data (other participants in the study). The model is called “hierarchical” because it had two levels:

- At the upper level, it assumed that participant utilities were described by a multivariate normal distribution;
- At the lower level it assumed that, given a participant’s utilities, their probability of choosing particular alternatives was governed by a multinomial logit model.

The additional information from the ‘population’ (Total sample / Upper model) strengthened the estimation for individual participants (Lower model) by looking at how different the participant data was compared to the population data. This “borrowing” of information gave HB the ability to produce robust estimates for each participant even when the data may have been too sparse for individual analysis.

The outcome of the Hierarchical Bayesian model are part-worth utility estimates for each level tested in the experimental design, for every participant. A part-worth utility was a measure of desirability where the higher the utility score the more desirable, or the more influential the level was in driving preference for one product over another. A ‘product’ utility could be derived by summing the individual utility scores of the levels that make up a product. This product utility was used to calculate the overall preference for a product.

In modelling the product preferences of each participant, the product utilities were used to predict what participants would select when faced with different options. To convert product utilities to preference shares the following calculation was used:

$$P_{ui} = \frac{\exp(U_i)}{\exp(U_i) + \exp(U_j) + \dots}$$

Where U_i represents the product utility for the product of interest; and $U_j + \dots$ are the product utilities for each of the competing products in the simulation. The total utility for each product is calculated by summing the utility scores for each level.

While the utilities estimated from a HB model are fundamental for all the subsequent analysis, the utility scores themselves were less meaningful as they were a *relative* measure of the attractiveness of the levels tested. As they were interval-scaled data, it was not possible to directly compare the utility scores of levels from different attributes and conclude that a level from one attribute is more or less preferred than a level from another attribute. Averaging the utility scores across all participants also provided misleading results, as the average utility value does not provide information about the underlying distribution of the individual participant utilities.

Therefore, in Section 4.5 below, we present the results of the simulation tool, which converted these raw utility scores to a (product) preference share as the best way to determine what participants would have preferred: Less engaged visitors (those who would

not be likely to visit again, those who visited less often, and those who did not pay to enter) operated in the expected direction in the entry fee DCE. For these individuals, WTP estimates can be developed from their utilities, because they chose lower payment amounts when more parts of the site were closed. However, these respondents were also less reliable arbiters of the value of different parts of the site, as they may have been considered less engaged. Therefore, these WTP estimates should be considered a partial (capturing only a less engaged sub-sample of visitors), more conservative sample than the total sample of visitors (in that their average WTP is lower overall in the CV question), and potentially problematic in terms of interpreting how they have engaged and what cultural and heritage value they hold in the site (especially those who did not pay an entry fee, potentially because they only accessed the publicly available parts of the whole site). Therefore, we urge caution in interpreting these WTP results without the benefit of follow-up qualitative interviews with a sample of these respondents to better understand their motivations and preferences, which was outside of the scope of this study.

4 Results

The results section of this report presents the estimates of the welfare benefits associated with Blenheim Palace and Gardens using:

1. Stated Preference non-market methods: (1A) contingent valuation survey estimating willingness to pay for the continued public use of Blenheim Palace and Gardens among users (those who have visited previously) and non-users (those who have not in the general population); and (1B) Discrete Choice Experiment (DCE) design to elicit preferences for different parts of the site as a proxy for the value of the services provided, and explore whether it is possible to estimate WTP for different parts of the site, in a way that links to the services we expect each part of the site to deliver, in a way that maps onto the services approach set out in the conceptual paper.

In addition, we apply survey data on travel behaviour and time spent on site to estimate welfare values using alternative non-market valuation techniques for the purposes of triangulation in the aggregation Section 5.

2. Single-trip travel cost analysis by applying single-trip Travel Cost Method (TCM) estimates to the time spent traveling to the site by different transport modes;

3. Time-use value by applying an estimate of the value of non-work travel time to the time-use reports in the survey by visitors to the site.

4.1 Demographic characteristics

A total sample of 675 respondents complete the survey after data cleaning, split between 382 participants who had visited Blenheim Palace and Gardens in some way in the past year (defined as Blenheim Visitor) and 293 who had not visited (defined as Blenheim Non-Visitor).

Table 1 Sample size

	Blenheim Visitor	Blenheim Non-Visitor
Raw sample (before exclusions)	392	300
Exclusion: Speedster	0	0
Exclusion: Don't Know / Rather not say in WTP question	7	4
Exclusion: Inconsistent reason: Don't believe I would really have to pay	3	3
N	382	293

Through the examination of the demographic characteristics of visitors compared with non-visitors, several notable differences emerge. While there is no substantial difference in average age between the two different sample groups, with Blenheim Visitors having an average age of 45 and non-visitors being slightly older with an average age of 49, the percentage of Blenheim visitors who are female, 56%, is higher than the percentage of non-visitors who are female, 47%. There is also a significantly higher proportion of visitors with dependent children, 52%, in comparison with non-visitors, 35%.

Examining the socioeconomic demographics reveals even more striking differences. When examining the employment status (full/part time employment), 77% of visitors are employed (full, part-time, or self-employed) compared with just 57% of non-visitors. 10% of visitors are retired, compared to 18% of non-visitors. There also exists large differences in the average household income and the social class of visitors versus non-visitors. The mean household income of visitors is £86,186 (median £77,500) whereas it is significantly lower for non-visitors at £45,655 (median £30,000) (this lower income level may be partly linked to lower employment rates among non-visitors).⁵⁵ According to the Office of National Statistics (ONS) in the financial year ending (FYE) 2021, the median household income in the UK before taxes and benefits was £34,000, increasing to £37,600 after taxes and benefits.⁵⁶ This suggests that Blenheim visitors have significantly higher household incomes than the national average.

It is therefore not surprising that the portion of visitors who place themselves within the 'Middle or Upper' social classes is notably higher in the visitor group, 89%, in comparison to the non-visitor group, at 80%. Individuals from BAME ethnicities make up a slightly higher percentage of visitors at 11% compared with 10% of non-visitors.

There are also notable differences between visitors and non-visitors in the behaviour and priorities of those who visit Blenheim Palace (noting that sampling was not designed to be representative of visitor demographics, but based on natural fall-out in the online panel). To begin with, the membership rates of various heritage organisations differ significantly between the two cohorts, with 63% of individuals within the visitor cohort being members of at least one heritage organisation, compared with just 36% of non-visitors. In particular, 30% of visitors have a membership for 'Historic Houses' compared with just 4% of non-visitors. Respondents have ranked the top 5 areas where they believe public funding should be spent. Within the visitor group 45% of respondents rank 'Culture/Heritage' within their top 5 compared with 27% of non-visitors. And 85% of visitors say they agree that '*Preserving historic houses for current and future generations*' is important to them compared with 68% of non-visitors. However, when asked whether they agree that '*There are more important things to spend my money on than historic houses*' the groups are much closer with 55% of visitors and 53% of non-visitors agreeing with this statement.

We note there may be possible selection bias amongst respondents in the non-user group, insofar as only among those who care about CHC would a significant number go to the effort of completing the survey – naturally, these people would likely have a higher WTP for CHC than average.⁵⁷ Consistent with this, roughly 60,000 people in the UK population are members of Historic Houses (roughly 0.09% of the total) compared with 4.1% of the non-users within the survey group. This is one of the unavoidable risks of small sample surveys of this kind, and should be considered when interpreting the results below.

⁵⁵ According to the Office of National Statistics (ONS) in the financial year ending (FYE) 2021, the median household income in the UK before taxes and benefits was £34,000, increasing to £37,600 after taxes and benefits.

⁵⁶ Note, household income is elicited as all household income sources (pre-tax): salaries, scholarships, pension and Social Security benefits, dividends from shares, income from rental properties, child support and alimony etc.

⁵⁷ This selection effect may also be the case for the visitor sample, though our assumption is that the visitor sample overall is more engaged with the site, such that the sample attrition from those less engaged visitors would have less of an impact on the sample, while noting that any impact that this selection effect would have would lead to an overestimation of visitor WTP.

Average group size reported in the survey is 2.6, although we note that this group includes all adults and children. To understand spend at the household level, we would need data on the number of adults and children in the group, but that data is not collected as part of the survey. Given that we are using the spend data to estimate the aggregate travel cost value of Blenheim in (2), we must make an adjustment to equalise the self-reported group size to an estimate of the number of adults in the group. Data on the proportion of adult to child tickets was not available from Blenheim Palace, so an adjustment was made based on Historic England data on the visitors to historic houses annually, which shows that on average 26% of total visits were family groups.⁵⁸ Using 2021 ONS data⁵⁹ on the average number of dependent children per family at 1.77, we adjust the average group size to 0.9 adults for 26% of this sample, which can be assumed to visit as a family. This provides an overall adult group size of 2.18.

Table 2 Demographics

	Blenheim Visitor	Blenheim Non-Visitor
	Mean	Mean
Average age	45	49
Female	56.3%	47.1%
Dependent children	52.1%	34.8%
Employed (full/part time)	77.0%	57.3%
Household income (average)	£86,186	£45,655
Social class: Middle or upper class	88.5%	79.9%
Ethnicity: Black Asian Minority Ethnic (BAME)	11.0%	9.8%
Culture/heritage TOP5 areas where public funding should be spent	44.5%	27.0%
Member Historic Houses, National Trust, English Heritage or other heritage organisation	62.6%	35.8%
Member Historic Houses	29.8%	4.1%
Somewhat agree/Strongly agree Preserving historic houses for current and future generations is important to me	85.1%	67.9%
Somewhat agree/Strongly agree There are more important things to spend my money on than historic houses	55.0%	52.6%
Likelihood to visit Blenheim Palace in the future	85.7%	Not asked of non-visitors
Number of different heritage sites visited in past five years	2.8	Not asked of non-visitors

⁵⁸ <https://historicengland.org.uk/content/heritage-counts/pub/2020/visitor-attractions-trends-england-2019/>

⁵⁹

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/families/adhocs/15662averagenumberofdependentchildrenperfamilyinenglandandwales2020and2021>

Familiarity with information about Blenheim Palace and gardens	92.4%	84.0%
Visited interior: Walking around house interior; collections; shop; cafe; tours	87.2%	Not asked of non-visitors
Visited exterior: Walking around exterior; gardens; parkland; lake	93.2%	Not asked of non-visitors
Virtual: 360 Degree Virtual Tour	17.3%	Not asked of non-visitors
Visitor type: Paid for entry to Blenheim Palace & Gardens	79.8%	Not asked of non-visitors
Visitor type: Free entry to Blenheim Palace or Gardens	8.4%	Not asked of non-visitors
Visitor type: Free access to parkland only	11.9%	Not asked of non-visitors
Visit: Group size (number of people paid for as part of trip, including adults and children)	2.6	Not asked of non-visitors
Adult group size (adjusted using Historic England data on proportion of family tickets to historic houses in England)	2.18	NA

The survey gathers detailed information on visitors' spending behaviour while at Blenheim Palace and Gardens. The purpose of these questions is to prepare respondents to think cognitively about the site in a market-based way, in terms of their spend on the site. This includes data on their spend on entry fees, for parking, at the café/restaurant, at the shop, and the total expenditure on their trip, both including and excluding travel expenses. The questions also provide a useful benchmark against which to compare non-market valuation estimates, which is the main focus of this study. However, this a partial and incomplete collection of data on the market prices paid for ancillary parts of their trip and as such are a partial proxy for their preferences for the site as a whole. That being said, data on on-site spend incorporates into Travel Cost Methods (TCM) in (2), and this is reported here for inclusion in TCM calculations in Section 4.7 to provide a fuller picture of the proxy markets, as we do below.

Table 3 Blenheim Visitor On-site Expenditure, excluding travel (self-reported)

	N	Mean estimated cost of visit to group (self-reported)	Mean estimated personal cost of visit divided by group size (average adult group 2.18)
Spend total entry fee	146	£55.16	£25.30
Spend Café/Restaurant	134	£23.39	£10.73
Spend Shop	181	£17.76	£8.15
Total Spend: Blenheim Site (excluding travel & parking)	339	£37.33	£17.12
Spend Parking	78	£17.81	£8.17

Total Spend: Blenheim Site (excluding travel but including parking)	339	£46.58	£21.37
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Average combined spend will not be equal to sum of average spending on individual elements of trip due to differences in the sample size for each variable.

Exclusions were made for outliers, defined by expenditure type: Those who claimed they spent a personal entry fee >£200 (n=7); those who claimed their spending on parking was >£100 (n=24); those who claimed their spending in the café/restaurant was >£200 (n=3); those who claimed their spending in the shop was >£100 (n=9). Sample size is lower than the total sample of visitors as some respondents did not answer these questions if they did not spend anything when visiting the site (e.g. those making use of the wider landscape for free).

The average estimated expenditure on a trip to Blenheim Palace and Gardens, excluding travel and parking, is £37.33 per group. The average estimate expenditure on a trip to Blenheim Palace and Gardens, excluding travel but including parking (which is covered in the next section), is £46.58 per group.

The average estimate spend on a trip to Blenheim Palace and Gardens, excluding travel and parking, is £17.12 per adult visitor. The average estimate spend on a trip to Blenheim Palace and gardens, excluding travel but including parking, is £21.37 per adult visitor.

The highest average self-reported amounts spent are the entry fee, at an average of £55.16 per group (£25.30 per visitor), and in the Café/Restaurant, at £23.39 per group (£10.73 per visitor). Visitors also report spending an average of £17.81 for parking fees (£8.17 per visitor). We note that parking at Blenheim is free outside of the Christmas period. This self-reported parking cost may therefore represent recollection bias, or could be another issue with multi-trip travel being interpreted as single trip (they may pay for parking in the town for the day, and only visit Blenheim as part of that wider trip. This adds further limitations to the self-reported travel cost data that was collected in the survey as ancillary data to the core willingness to pay data, and we therefore urge caution in the interpretation and extrapolation of the travel cost results.

4.2 Willingness to Pay: Donation to keep Blenheim Palace and Gardens open to the public (individual-level donation)

The willingness-to-pay question is designed to elicit the **welfare loss that visitors and non-visitors would experience if Blenheim Palace and Gardens was to close to the public**. The valuation scenario aims to quantify this welfare loss in monetary terms by asking **how much they would personally be willing to pay to avoid that outcome**.

Before eliciting their willingness to pay (WTP) to preserve the existence of Blenheim Palace and Gardens (reported in Table 5), as standard in CV design and analysis, respondents are first asked a screening question of whether they would be willing in principle to pay for the continued existence of the site. The payment scenario in use to elicit this WTP value was through a donation per visit on top of the per person entry fee. The value elicited via the survey represents willingness to pay to keep Blenheim Palace and Gardens open to the public in the face of increased operating and maintenance costs. The results are outlined in Table 4 show:

- **As expected, a significantly higher proportion of Blenheim visitors than non-visitors are willing to pay in principle to support the continued existence of the heritage site in the face of increased costs (81% yes or maybe for visitors compared with 52% yes or maybe for non-visitors). This is intuitive, since visitors**

are the main individuals enjoying, using and benefiting from the site's existence. The proportion of visitors who are willing to pay in principle is high in comparison with other CV studies of heritage assets, where typically between 40%-55% are found willing to pay in principle.⁶⁰

Table 4 Willingness to pay in principle to preserve the existence of Blenheim Palace and Gardens

	1A. Blenheim Visitor	1B. Blenheim Non-Visitor
Yes	45.0%	20.5%
Maybe	36.4%	31.7%
No	18.6%	47.8%
Sample Size	382	293

Group sample sizes in this table may differ from the full sample in Table 1 due to missing observations in subsequent survey questions.

Respondents were able to provide no response to survey questions to avoid forcing inaccurate responses.

The results of the survey show that **people who visit Blenheim Palace and Gardens positively value the heritage site and would be willing to pay a one-off donation on top of their ticket price of £9.26 on average per person, with a lower bound of £7.84** (Table 5). As standard, the mean WTP is based on the total sample of respondents who are yes or maybe willing to pay, as well as those not willing to pay, whose value for the site is imputed as £0. *Note: DCMS and Arts Council England guidance states that lower bound 95% confidence interval of WTP should be used for business case purposes, to offset the risk for over-estimation of values due to hypothetical bias in surveys.*⁶¹

As expected, visitors have a significantly higher WTP than non-visitors:

- **1A. £9.26 (lower bound £7.84) one-off individual-level donation per person:** for visitors of Blenheim Palace and Gardens, the willingness to pay to ensure the continued existence of the heritage site.
- **1B. Blenheim non-visitors have significantly lower WTP of £3.85 (lower bound £2.97)** than visitors, as would be expected given the theoretical connection between direct user experience and WTP.⁶²

The lower bound visitor willingness to pay a top-up donation of £7.84 represents around a quarter of the full-price entry ticket to Blenheim Palace and Gardens (£32), which can be considered a plausible donation amount for a World Heritage Site of this type.

Non-visitor WTP of £3.85 (lower bound £2.97) compares well with other WTP values in the literature. WTP for stately homes as reported in the DCMS REA noted that two WTP values were estimated for the same stately home surveying local residents ranged from £5.27 as a

⁶⁰ <https://historicengland.org.uk/content/docs/research/heritage-value-of-place/>

⁶¹ Lawton et al., 'Guidance Note: How to Quantify the Public Benefit of Your Museum Using Economic Value Estimates. A Resource for Understanding the Economic Value of Museums'.

⁶² Bateman et al., *Economic Valuation with Stated Preference Techniques*.

one-off WTP for the conservation and preservation of the Raudondvaris manor, £22.54 for its renovation and adaptation.⁶³

Note that median WTP is considerably lower than mean WTP, due to the skew to the left as a result of those who are not willing to pay in principle coded as £0. This is a necessary part of the estimation of WTP, as it is important that the full range of preferences are included in the calculation, to ensure that everybody's preferences are taken into account. It is good practice to report mean WTP rather than median in CV studies⁶⁴, especially in instances where the purpose of WTP is for use in cost benefit analysis because it represents an average WTP for the population which can be aggregated to derive the total WTP across the population.⁶⁵

Table 5 Willingness to pay to keep Blenheim Palace and gardens open to the public (one-off donation, individual-level)

	1A. Blenheim Visitor	1B. Blenheim Non-Visitor
Lower Bound 95% confidence interval	£7.84	£2.97
Mean (central estimate)	£9.26	£3.85
Standard error	£0.73	£0.44
Median	£3.25	£0.88
Sample Size	380	293

WTP estimated as the sample average and lower bound 95% confidence interval, including those not willing to pay in principle from coded as £0.

Arts Council England guidance states that lower bound 95% confidence interval of WTP should be used for business case purposes, to offset the risk for over-estimation of values due to hypothetical bias in SP surveys. Stated WTP is individual-level, with the wording clearly stating the donation is for you personally.

Table 6 displays the differences in the stated WTP of visitors split into categories based on the areas of the Heritage site they accessed during their trip. While the WTP values of those who visit the interior (£9.43 on average, lower bound £7.89) are similar to those who visit the exterior (£9.12 on average, lower bound £7.65), the values of those who engage in the virtual 360 tour are considerably higher (£20.28 on average, lower bound £15.55). However, a qualification to this finding is that the sample size of those who engage with the Virtual 360 tour is lower (n=65).

Table 6 Willingness to pay to keep Blenheim Palace and gardens open to the public (one-off donation): Visitors to interior, exterior, and virtual tour (note, categories not mutually exclusive)

	Visited Interior of House	Visited Exterior of House	Virtual 360 tour
Mean	£9.43	£9.12	£20.28
Lower Bound 95% confidence interval	£7.89	£7.65	£15.55
Standard error	£0.78	£0.75	£2.37
Median	£3.25	£3.25	£11.25

⁶³

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/955142/REA_culture_heritage_value_Simetrica.pdf

⁶⁴ Vaughan et al., 'Uncertainty in Cost-Benefit Analysis Based on Referendum Contingent Valuation'.

⁶⁵ Ricky N. Lawton, Daniel Fujiwara, and Ulrike Hotopp, 'The Value of Digital Archive Film History: Willingness to Pay for Film Online Heritage Archival Access', *Journal of Cultural Economics*, 24 June 2021, <https://doi.org/10.1007/s10824-021-09414-7>.

Sample Size	331	355	65
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WTP estimated as the sample average and lower bound 95% confidence interval, including those not willing to pay in principle from coded as £0.

Arts Council England guidance states that lower bound 95% confidence interval of WTP should be used for business case purposes, to offset the risk for over-estimation of values due to hypothetical bias in SP surveys.

Contingent valuation summary table

	1A. Visitor Willingness to Pay estimates for the continued public access to the site	1B. Non-visitor Willingness to Pay estimates for the continued public access to the site
Per visitor (Lower Bound 95% confidence interval)	£7.84	£2.97

4.3 Willingness-to-pay motivations

We asked respondents about the reasons behind their **willingness to pay to support Blenheim Palace and Gardens through a donation**, designed specifically to capture some of the dimensions of cultural and heritage value developed by David Throsby.⁶⁶

Respondents are asked to pick the main reason behind their stated WTP from a list of 10 motivations, plus one 'other' and a 'don't know' option. Those who state that they don't believe they would really have to pay are removed from the sample as their WTP responses are judged unreliable, as Section 3.3 discusses.

The most important reasons for being willing to pay among visitors are related to the historical and architectural value of the site: "Blenheim Palace is an important part of our history" (22% visitors, 23% non-visitors); and "Blenheim Palace contains features which should be open to the public for their historical and architectural interest" (22% visitors, 14% non-visitors). When motivations relate to the dimensions of inspiration ("The landscaped gardens are an inspirational place to walk" 9% visitors and non-visitors), social ("Blenheim Palace is a good place to socialise with family/friends", 7% visitors, 4% non-visitors), local pride ("Blenheim Palace is a source local pride" visitors and non-visitors 5%) and national pride ("Blenheim Palace is a source national pride", 8% visitors, 11% non-visitors) they are much less commonly selected as the primary motivation behind visitor's stated WTP.

The most commonly selected motivation by non-visitors is that "My willingness to pay is not just for Blenheim Palace, but also an expression of my support for all stately homes in England" (25% non-visitors, visitors 18%). This finding points to one of the common problems in CV surveys, where respondents may be stating their WTP for the overall concept of preserving heritage/culture/the environment, rather than the specific site. However, it is hard to draw firm conclusions based on a single follow-up question in a survey of this kind, where respondents are only able to choose one main reason for their stated WTP, and may not be fully considering the implications of their response.

⁶⁶ David Throsby, Anita Zednik, and Jorge E. Araña, 'Public Preferences for Heritage Conservation Strategies: A Choice Modelling Approach', *Journal of Cultural Economics* 45, no. 3 (1 September 2021): 333–58, <https://doi.org/10.1007/s10824-021-09406-7>.

Other important motivators of WTP among non-visitors are historical and architectural (23% and 14%) and national pride (11%).

Table 7 Reasons for Stated Willingness to Pay

	1A. Blenheim Visitor		1B. Blenheim Non-Visitor	
	N	%	N	%
Blenheim Palace contains features which should be open to the public for their historical and architectural interest	69	22.2%	21	14.2%
Blenheim Palace is an important part of our history	69	22.2%	34	23.0%
The landscaped gardens are an inspirational place to walk	27	8.7%	13	8.8%
Blenheim Palace is a good place to socialise with family/friends	22	7.1%	6	4.1%
Blenheim Palace is a good place to take children	17	5.5%	8	5.4%
Blenheim Palace is a source local pride	16	5.1%	7	4.7%
Blenheim Palace is a source national pride	26	8.4%	16	10.8%
The café/restaurant is a good place to go	7	2.3%	4	2.7%
My willingness to pay is not just for Blenheim Palace, but also an expression of my support for all stately homes in England	55	17.7%	37	25.0%
Don't know / Rather not say	1	0.3%	1	0.7%
Other	2	0.6%	1	0.7%
Total	311		148	

There are a number of different reasons respondents give for not being willing to make a donation to support Blenheim Palace and Gardens to stay open to the public (Table 8).

Among visitors, the most common reason for not being willing to pay relates to the sense that they are already paying through their entry fee, suggesting that the entry fee and other expenses capture all of their welfare gained from the site, with no additional consumer surplus (*"I already paid to visit the site and do not want to make another payment"*, 28% visitors, 1% non-visitors). This may also indicate the influence of budget constraints on people's ability to pay, as the third most common reason more strongly reflects: *"I cannot afford to pay to keep Blenheim Palace open to the public"* (visitors 16%, non-visitors, 24%).

The second most common reason for not being willing to make a donation relates to the fact that heritage sites like Blenheim Palace are in private ownership, with the sense that responsibility for their support lay with the owners (*"I don't agree with charging the public to help maintain privately owned buildings"*, 23% visitors, 16% non-visitors). This is one of the considerations taken into account in the design phase, but no alternative can be found to overcome this potential for strategic or protest responses related to the ownership model of the site.

Only a very small proportion of respondents are unwilling to pay due to the existence of alternative sites from which they could gain similar direct use benefits (*"I could just as easily visit another stately home"* and *"There are other stately homes that have greater historic value"* (both 1.4% visitors and non-visitors).

Table 8 Reasons for not being Willing to Pay

	1A. Blenheim Visitor		1B. Blenheim Non-Visitor	
	N	%	N	%
I have more important things to spend money on than keeping Blenheim Palace open to the public	6	8.5%	38	26.2%
I cannot afford to pay to keep Blenheim Palace open to the public	11	15.5%	35	24.1%
I don't agree with charging the public to help maintain privately owned buildings	16	22.5%	23	15.9%
I am already contributing to maintaining historic buildings through my taxes	4	5.6%	6	4.1%
I need more information to answer this question	4	5.6%	4	2.8%
There are other stately homes that have greater historic value	1	1.4%	2	1.4%
I already paid to visit the site and do not want to make another payment	20	28.2%	1	0.7%
I could just as easily visit another stately home	1	1.4%	4	2.8%
The owners should pay for upkeep and maintenance of the site	2	2.8%	19	13.1%
Don't know / Rather not say	3	4.2%	8	5.5%
Other	3	4.2%	5	3.5%
Total	71		145	

4.4 Sensitivity testing of statistical drivers of willingness to pay

Ordinary least squares (OLS) regression is used to identify the statistical drivers of WTP. A p-value of less than 0.1 is labelled with one asterisk, and shows that there is a 90% probability that the factor is statistically associated with WTP, holding the other factors in the table constant. Three asterisks indicate a 99% probability. Positive coefficients indicate that the factor is positively associated with WTP (i.e., those who live closer to the site on average report higher WTP, controlling for other factors like their income, gender, age etc). Negative coefficients indicate that this factor is associated with lower WTP.

For Blenheim visitors, those with higher household income (significant at the 99% confidence level) report higher WTP to keep Blenheim Palace and Gardens open to the public, holding other demographic factors constant. This aligns with theoretical expectations that those with higher incomes should be willing and able to part with more to support things like a World Heritage Site. Income is also a significant and positive driver of WTP among non-visitors though only at 90% confidence level. For both groups, the results suggest that the WTP estimates have a high degree of internal validity.

Visitor WTP to keep Blenheim Palace and Gardens open to the public is significantly higher among those who live closer to the site. This is consistent with the distance decay of stated welfare values, which we might expect to see as a theoretical driver of value if heritage sites like Blenheim Palace and Gardens contribute to the sense of place and local pride of residents. Distance was not a significant driver of WTP among non-visitors, which is also as expected, given that the non-use elements of the site that people value, such as its continued access to the public as a World Heritage Site, should be valuable to the public beyond the local area, at national, and potentially international levels.

Visitors with dependent children on average state a higher WTP for Blenheim Palace and Gardens, which may intuitively relate to the high direct use value that their children gain from accessing a heritage site of this type (and the value that parents gain from seeing their children occupied for a spell of time!). Other demographic factors are not statistically significant drivers of WTP (age, gender).

Indicators of interest in, and greater engagement with, Blenheim and heritage in general are also significant and positive drivers of WTP. This includes being a member of the Historic Houses group, and whether they state they are likely or very likely to visit again (in the case of Blenheim visitors), and agreeing or strongly agreeing that preserving historic houses for current and future generations is important in the case of non-visitors. Again, providing some supporting evidence that non-visitors' WTP are motivated by non-use elements relating to the existence of the site for others and future generations (although this agreement statement was not statistically significant among visitors, it still entered positively in the regression).

The Adjusted-R² statistic provides a measure of model fit (i.e., how well the variables in the model explain the variation in WTP). In the Blenheim visitor model, 30% of the variation in WTP is explained by the variables, which is high for a CV study of this kind, and compares well with previous DCMS studies which typically find R² values of 7-13% in benefit transfer studies if museums⁶⁷ or as low as 1-4% in the case of historic high streets.⁶⁸

The regression model for non-visitors is not as strong statistically, with lower model fit (adjusted R² of 12.5%) but still acceptable in comparison to previous CV studies with similar sample size.

In sum, validity testing suggests a high level of internal validity in the samples from which average WTP is estimated, especially for the visitor sample.

Table 9 Linear regression willingness to pay donation to keep Blenheim Palace & Gardens open to the public regressed on demographics and indicators of heritage engagement

	1A. Blenheim Visitor		1B. Blenheim Non-Visitor	
	Coefficient	P-value	Coefficient	P-value
Distance of residence from Blenheim (log)	2.429**	0.029	-1	0.103
Average age	-0.006	0.893	-0.054	0.315
Female	-0.665	0.668	-0.509	0.648
Dependent children	5.452***	0.000	-0.496	0.67
Household income (log)	2.313***	0.008	0.962*	0.088
Sport TOP5 areas where public funding should be spent	2.043	0.199	4.257***	0.003
Member of Historic Houses	8.926***	0.000	2.194	0.517
Somewhat agree/Strongly agree Preserving historic houses for current and future generations is important to me	1.61	0.445	1.523*	0.057
Somewhat agree/Strongly agree More important things to spend money on than historic houses	1.697	0.252	-0.703	0.481
Likely or very likely to visit in the future	2.532*	0.072		

⁶⁷ Fujiwara et al., 'The Economic Value of Culture: A Benefit Transfer Study'.

⁶⁸ Lawton et al., 'The Economic Value of Heritage: A Benefit Transfer Study'.

Number of different heritage sites visited in past year	0.706	0.232		
Familiarity with information about Blenheim Palace & Gardens	1.756	0.246	0.521	0.464
Paid entry to Blenheim on last trip	1.303	0.430		
Constant	-41.954***	0.000	-0.548	0.933
Observations	314		265	
R-squared	0.3		0.125	

Note: * p -value < 0.1, ** p -value < 0.05, *** p -value < 0.01. Heteroskedasticity robust standard errors. Ordinary Least Squares (OLS) Regression. Regression samples are smaller than total group samples due to missing observations in control variables where respondents were not forced to answer.

4.5 Discrete choice experiment

4.5.1 DCE Monetary Attribute 1: Donation

For each of the eleven parts of Blenheim Palace and Gardens listed in the DCE ('sites'), the results are consistent with expectations, where the level 'Open to the public' obtains a higher utility value than when the site would close to the public. Respondents are asked to think about how much they would be willing to pay based on which parts of the site would remain open to the public and which would close (marginal closures to parts of the site). Note that due to the fact that the DCE asks about closure of specific parts of the house and gardens, it is assumed that only those who had previously visited would be able to answer these questions with sufficient knowledge of the different attributes. Therefore, the DCE is asked only of the visitor sample, to avoid significant hypothetical bias in the DCE responses.

While the utility distributions for the eleven sites are consistent with expectations (i.e., people prefer situations where more parts of the site are open than closed), the price attribute results ran counter to what is expected. In study 1, participants are shown choice sets (the combination of attributes and their open/closed status) where the donation value varies between what they state they would be willing to pay a donation that was 5%, 10%, 20%, or 25% less than what they state they would be willing to pay.

Participants were shown choice sets (the combination of attributes and their open/closed status along with a donation amount). Naturally it is expected that a lower donation value would be associated with the highest utility, holding other factors constant, because people are able to optimise their levels of cultural services for a lower budgetary outlay. Conversely, it is expected that the stated maximum donation value would be associated with the lowest utility. However, **visitor preferences are the opposite of this expected implied relationship, with participants on average selecting choice sets which have the higher donation price.** In other words, visitors gain more utility from paying a *higher* donation, regardless of which parts of the house and gardens are open/closed in the DCE.

There are a number of possible explanations for this finding. It may be that respondents simply do not understand the DCE including donation/ticket prices (as standard DCEs typically do not include donations/ticket prices). There may also be biases associated with the payment mechanism, and in particular donations, if the DCE participants took the view that these should be independent of services on offer. However, the latter seemingly cannot be the only explanation as it would not explain the finding of dominance for participants with greater affinity for Blenheim Palace in the second choice experiment where a ticket price mechanism is used.

Another factor may be the magnitude of the donation levels. The average donation value across the sample who completed the DCE is £8.70 but the median value is £4.00. That means for half of participants the difference in donation values shown in the exercise varies by no more than £1. Compared with the price of the entry ticket, this difference is small, and as a result, participants are perhaps likely to not care much about paying the higher amount.

Another hypothesis consistent with our findings is that individuals who have an attachment to Blenheim Palace are willing to pay a higher amount - donation or ticket price - in order to keep the site open regardless of whether specific parts of the site are closed or open. Participants may also feel that since they have already stated what they would pay as a donation, they don't want to be seen to selecting lower values. As such, they may interpret the value as a charitable donation that they are willing to pay irrespective of whether the palace shuts parts of the grounds. Without further data collection (e.g., in-depth qualitative interviews and focus groups), it is not possible to move beyond speculating at this stage. This complicated relationship between donation amounts, motivations, and marginal closures to parts of a cultural/heritage site can be explored in more detail in future research (Section 5).

Despite these limitations we do find some other notable results in the donation model. Table 10 provides analysis of the utility scores by key groups of interest:

- Participants who have previously visited Blenheim Palace or intend to visit again were the most likely to pay the higher donation price.
- Participants who are more likely to select the concept with the maximum donation price are on average willing to pay a higher stated donation, typically by a factor of 3:1.
- In the donation DCE split sample, the highest utilities are observed for accessing the Lake Walk, and walking around the interior and exterior of the house. However, we are unable to assign WTP values to these utilities due to the direction of utilities for the payment attribute (i.e., respondents' preference for higher donation amounts regardless of which parts of the site are closed).

Table 10 Utility scores: DCE Monetary Attribute 1: Donation

		Total	Gender		Likelihood to Visit again		Visit Frequency		Entry Fee type		Age Band			Region		Entry Fee Amount		Membership Fee	
			Male	Female	High	Low/Medium	Frequent	Non-frequent	Paid	Unpaid	Under 35	35-54	55+	South East + London	Rest of UK	£50 or more	Less than £50	More than £100	£100 or less
House: Walking around the exterior	Open to the public	41	44	38	44	34	40	41	41	39	45	40	38	39	43	44	35	56	38
	Closed to the public	-41	-44	-38	-44	-34	-40	-41	-41	-39	-45	-40	-38	-39	-43	-44	-35	-56	-38
House: Walking around the interior of the house	Open to the public	46	34	56	41	55	27	57	47	34	50	34	69	43	50	48	59	27	18
	Closed to the public	-46	-34	-56	-41	-55	-27	-57	-47	-34	-50	-34	-69	-43	-50	-48	-59	-27	-18
House: Collections and curated exhibitions	Open to the public	13	10	15	12	15	10	15	13	15	12	9	22	12	14	6	16	-3	14
	Closed to the public	-13	-10	-15	-12	-15	-10	-15	-13	-15	-12	-9	-22	-12	-14	-6	-16	3	-14
Gardens: Walking around the formal walled gardens/maze	Open to the public	20	18	22	18	26	9	27	23	13	28	13	28	19	22	20	27	12	10
	Closed to the public	-20	-18	-22	-18	-26	-9	-27	-23	-13	-28	-13	-28	-19	-22	-20	-27	-12	-10
Access to Parkland and wider landscape	Open to the public	24	16	29	21	28	9	31	25	18	25	17	36	21	26	8	37	7	4
	Closed to the public	-24	-16	-29	-21	-28	-9	-31	-25	-18	-25	-17	-36	-21	-26	-8	-37	-7	-4
Access to Lake Walk	Open to the public	47	41	52	44	53	38	52	45	53	56	42	51	48	46	45	44	34	46
	Closed to the public	-47	-41	-52	-44	-53	-38	-52	-45	-53	-56	-42	-51	-48	-46	-45	-44	-34	-46
Walking over the Grand Bridge	Open to the public	4	2	6	5	3	-3	8	3	5	11	2	3	4	4	1	15	-7	0
	Closed to the public	-4	-2	-6	-5	-3	3	-8	-3	-5	-11	-2	-3	-4	-4	-1	-15	7	0
Blenheim Palace Shop	Open to the public	21	16	24	21	22	13	25	20	23	31	14	25	21	21	17	30	1	21
	Closed to the public	-21	-16	-24	-21	-22	-13	-25	-20	-23	-31	-14	-25	-21	-21	-17	-30	-1	-21
Café/Restaurant	Open to the public	33	24	39	28	41	16	42	33	26	37	22	50	30	35	19	42	8	1

	Closed to the public	-33	-24	-39	-28	-41	-16	-42	-33	-26	-37	-22	-50	-30	-35	-19	-42	-8	-1
On-site talks and tours	Open to the public	32	33	31	33	29	34	31	32	36	30	34	30	30	34	34	34	33	40
	Closed to the public	-32	-33	-31	-33	-29	-34	-31	-32	-36	-30	-34	-30	-30	-34	-34	-34	-33	-40
360 Degree Virtual Tour	Available online	24	27	22	24	23	29	21	23	23	26	26	18	24	24	21	24	24	33
	Not available	-24	-27	-22	-24	-23	-29	-21	-23	-23	-26	-26	-18	-24	-24	-21	-24	-24	-33
Donation (annual, per household)	Stated price	81	134	40	106	31	133	52	79	97	77	108	29	90	72	81	27	179	74
	5% less than stated price	39	75	11	56	3	79	16	38	49	26	63	2	43	34	53	8	103	44
	10% less than stated price	-1	-6	3	-6	8	0	-1	-1	2	-9	1	4	-2	1	2	-13	7	12
	15% less than stated price	-27	-37	-19	-32	-16	-36	-22	-27	-29	-25	-34	-14	-27	-27	-29	-5	-58	-26
	20% less than stated price	-37	-64	-16	-52	-6	-67	-20	-37	-44	-31	-53	-9	-39	-34	-44	-7	-92	-28
	25% less than stated price	-55	-102	-20	-73	-20	-108	-26	-52	-76	-38	-85	-12	-65	-46	-64	-10	-139	-76

4.5.2 DCE Monetary Attribute 2: Ticket Price

To test the relationship between donation amounts, motivations, and marginal closures to parts of the site in more detail, a second study (also on the visitor sample) is conducted using ticket price instead of donation. This alternative payment vehicle for the second DCE split sample is chosen because it appears to be less emotional than a donation, as well as being a higher price generally so the difference in prices tested in this DCE variant (Full ticket price versus 25% discount) would be much larger.

The price range for this study varies between £24 - £32, with the upper bound of £32 representing the cost of a single adult ticket. The rest of this study remains the same as in the donation case.

As before, the utility scores for each of the 11 sites is as expected, although the order of preference for individual sites changed. **For the price attribute there is a significant shift in utility score where the highest price tested obtains the lowest utility score on average.** However, for the other five price points there is no particular order to the average utility scores (

Table 11).

This meant that WTP cannot be estimated for the individual attributes of parts of Blenheim Palace and Gardens open/closed to the public. Since assigning WTP to attributes requires theoretically consistent results to be observed for each attribute (open/closure of different parts of the site). This is not possible in the current study, as the price is consistently the dominant attribute (in other words, there is a positive relationship between closure of more parts of the site and a higher price attribute). The assumption is that closure of more parts of the site would reduce people's WTP, but the opposite effect is observed: as price goes up, preference goes up. Therefore, rather than having a positive WTP from the site being unavailable to available, it will have a negative sign (i.e. they would pay more for the site not to be available). This means that utilities associated with each part of the site being open would be negative in comparison to the average value. In other words, higher utilities are observed for higher ticket amounts, which is the opposite of what we would expect under rational preference formation in a priced market. This may suggest that respondents instead gain some utility simply from giving more money to the site. Therefore, any variation in preferences for different parts of the site cannot be reliably linked to the price attribute as a robust expression of a person's WTP.

Despite these challenges around the payment attribute, examination of the utilities in Table 11 shows some interesting findings:

- In the ticket price DCE split sample, the highest utilities are observed for walking around the interior of the house, walking over the Grand Bridge, walking around the formal walled gardens/maze, and access to Parkland and wider landscape, with the café having the fifth highest utility score. However, we are unable to assign WTP values to these utilities due to the direction of utilities for the payment attribute (i.e., respondents' preference for higher donation amounts regardless of which parts of the site are closed).
- Looking at the key groups of interest, the entry fee results clearly diverge in some ways from the donation experiment. **For instance, for groups such as low/medium likelihood to visit, non-frequent visitors and unpaid entry fee, there is a clear pattern of the lowest price having the highest utility and the highest price having the lowest utility (this pattern is also observed for the 55+ group).** However, in other cases the pattern of responses is similar in the donation and the entry fee DCE's, with more affiliation to Blenheim Palace. Where frequent visitors are willing to pay £50+ for entry or more than £100 for membership, there is still a clear pattern of the higher price points being preferred. When running the same simulation tests (two identical choice sets except price), it is again seen that **participants who prefer the more expensive option are willing to pay around three times more than those participants selecting the cheaper option.**

Table 11 Utility scores: DCE Monetary Attribute 2: Ticket price

		Total	Gender		Likelihood to Visit again		Visit Frequency		Entry Fee type		Age Band			Region		Entry Fee Amount		Membership Fee	
			Male	Female	High	Low/Medium	Frequent	Non-frequent	Paid	Unpaid	Under 35	35-54	55+	South East + London	Rest of UK	£50 or more	Less than £50	More than £100	£100 or less
House: Walking around the exterior	Open to the public	18	19	18	18	17	20	17	21	9	8	23	21	23	14	23	21	8	13
	Closed to the public	-18	-19	-18	-18	-17	-20	-17	-21	-9	-8	-23	-21	-23	-14	-23	-21	-8	-13
House: Walking around the interior of the house	Open to the public	42	50	36	38	53	33	49	44	34	31	44	51	43	41	48	50	50	53
	Closed to the public	-42	-50	-36	-38	-53	-33	-49	-44	-34	-31	-44	-51	-43	-41	-48	-50	-50	-53
House: Collections and curated exhibitions	Open to the public	26	26	26	22	32	16	33	23	32	22	21	38	25	26	11	30	15	20
	Closed to the public	-26	-26	-26	-22	-32	-16	-33	-23	-32	-22	-21	-38	-25	-26	-11	-30	-15	-20
Gardens: Walking around the formal walled gardens/maze	Open to the public	32	28	35	24	51	13	47	32	36	44	15	53	33	32	30	30	13	50
	Closed to the public	-32	-28	-35	-24	-51	-13	-47	-32	-36	-44	-15	-53	-33	-32	-30	-30	-13	-50
Access to Parkland and wider landscape	Open to the public	31	25	35	27	44	24	36	28	40	39	23	38	29	33	41	19	16	28
	Closed to the public	-31	-25	-35	-27	-44	-24	-36	-28	-40	-39	-23	-38	-29	-33	-41	-19	-16	-28
Access to Lake Walk	Open to the public	22	17	26	23	20	24	22	25	18	28	23	14	21	24	29	21	20	10
	Closed to the public	-22	-17	-26	-23	-20	-24	-22	-25	-18	-28	-23	-14	-21	-24	-29	-21	-20	-10
Walking over the Grand Bridge	Open to the public	37	29	42	33	46	28	44	40	27	40	32	42	40	33	39	38	40	18
	Closed to the public	-37	-29	-42	-33	-46	-28	-44	-40	-27	-40	-32	-42	-40	-33	-39	-38	-40	-18
Blenheim Palace Shop	Open to the public	28	27	29	26	35	25	31	27	33	31	24	34	34	23	23	28	26	26
	Closed to the public	-28	-27	-29	-26	-35	-25	-31	-27	-33	-31	-24	-34	-34	-23	-23	-28	-26	-26
Café/Restaurant	Open to the public	35	29	40	36	34	35	36	38	31	38	35	33	36	35	34	41	37	16

	Closed to the public	-35	-29	-40	-36	-34	-35	-36	-38	-31	-38	-35	-33	-36	-35	-34	-41	-37	-16
On-site talks and tours	Open to the public	19	24	16	17	24	12	25	20	24	30	11	24	21	17	22	21	25	13
	Closed to the public	-19	-24	-16	-17	-24	-12	-25	-20	-24	-30	-11	-24	-21	-17	-22	-21	-25	-13
360 Degree Virtual Tour	Available online	28	24	31	28	28	28	29	31	21	30	29	25	28	28	28	34	21	25
	Not available	-28	-24	-31	-28	-28	-28	-29	-31	-21	-30	-29	-25	-28	-28	-28	-34	-21	-25
Entry fee	£24.00	-6	-18	2	-30	45	-70	43	-28	50	15	-47	48	3	-15	-76	-15	-107	-88
	£25.60	-6	-16	0	-18	19	-38	18	-20	29	0	-20	12	-10	-3	-52	-8	-52	-77
	£27.20	2	-10	10	-5	19	-19	18	-2	6	2	-6	16	-8	11	-19	-10	-27	-44
	£28.80	55	50	59	60	47	73	41	56	51	49	68	36	52	57	61	51	66	45
	£30.40	2	20	-10	18	-31	45	-31	16	-33	-10	25	-27	3	2	56	9	71	97
	£32.00	-46	-25	-60	-25	-98	10	-89	-22	-103	-56	-20	-86	-40	-52	30	-26	49	67

4.5.3 WTP (ticket price) by attribute: Subgroup of those less likely to visit (historically or in the future) and those who did not pay for entry

As outlined above, from the full ticket price split sample of Blenheim visitors, we identify three groups of respondents that answer in a more logical fashion regarding price (though not completely logical). This allows the potential for estimating WTP for closure of different parts of the Blenheim Palace and Gardens site, because the utilities for closure would be expected to be negative, in line with the expectations required for WTP estimates to be logical (i.e., it should not be the case that closing some parts of the site would increase a person's willingness to pay, but for the part of the sample which consistently select the highest payment amount on offer, that is what we would see). The subgroups of the ticket price visitor sample for whom selection of price attribute is consistent with expectations are:

- o Those with low/medium Likelihood to Visit again (those selection 0-7 on a scale where 0 is not at all likely and 10 is extremely likely)
- o Visit Frequency: Those who visit once or twice on a scale of 1-2, 3-4, 4-5, 6-10 and 10+
- o Those who access Blenheim Palace and/or Gardens without having to pay for a ticket

In total, there are 103 respondents in this cohort. Bayesian analysis is re-run with this group of respondents, which produces a new set of utility scores for this cohort (note this analysis differed slightly from the original data reports and therefore the relative preferences of different parts of the house will vary). We do not report WTP for individual attributes for the first split sample DCE (donation payment) because even among the 'disengaged groups', preferences for the payment attribute do not behave in a rational way, which means that they would show lower WTP values for the attributes which were most preferred, which is a problematic but spurious result to report.

WTP analysis is run on the constrained set of utilities from the 90 respondents using the WTP algorithm within Sawtooth Software, which uses a market compensation approach.⁶⁹ The method simulates random combinations of the attribute levels and comparing the share of preference for the randomised combination against the 'None' utility. Analysis was based on running 2,000 random combinations of the attribute levels, and the median WTP is reported across the 2,000 iterations.

⁶⁹ When running WTP analysis it is recommended to have the Price attribute constrained so a final Bayesian run was conducted where the levels of the price attribute are constrained such that the lowest price had the highest utility, through to the highest price having the lowest utility. Analysis was initially run unconstrained, and the respondent data reviewed for consistency in answer patterns in the Price attribute. N=13 respondents were identified as having price data very inconsistent with expectation (i.e., higher price = lower utility) and removed from the sample. Bayesian analysis was re-run (unconstrained) on N=90 respondents for a final check. The Sawtooth market compensation approach is an iterative procedure and therefore overcomes issues of other WTP methods e.g., there is no fixed product configuration. For more detail see Sawtooth WTP White Paper: <https://sawtoothsoftware.com/resources/technical-papers/estimating-willingness-to-pay-in-conjoint-analysis>

Table 12 WTP (ticket price) by attribute: Subgroup of those less likely visit (historically or in the future) and those who did not pay for entry

Attribute: Part of Blenheim Palace/Gardens	Willingness to Pay (WTP)
House: Walking around the exterior	
Closed to the public	-
Open to the public	£1.18
House: Walking around the interior of the house	
Closed to the public	-
Open to the public	£2.97
House: Collections and curated exhibitions	
Closed to the public	-
Open to the public	£3.00
Gardens: Walking around the formal walled gardens/maze	
Closed to the public	-
Open to the public	£4.69
Access to Parkland and wider landscape	
Closed to the public	-
Open to the public	£2.78
Access to Lake Walk	
Closed to the public	-
Open to the public	£1.42
Walking over the Grand Bridge	
Closed to the public	-
Open to the public	£1.70
Blenheim Palace Shop	
Closed to the public	-
Open to the public	£3.19
Café/Restaurant	
Closed to the public	-
Open to the public	£1.32
On-site talks and tours	
Closed to the public	-
Open to the public	£1.15
360 Degree Virtual Tour	
Not available	-
Available online	£1.32

Although these respondents answer in a more intuitive fashion regarding price, it is quite likely that restricting focus to this lower affinity sample introduces significant selection biases, thereby limiting the generalisability of the estimates.

Note that although a WTP analysis could be conducted for this subsample of less engaged Blenheim visitors, there are significant questions around the representativeness of this group compared to Blenheim visitors. These concerns mean that we urge considerable caution in interpreting the results as 'true' WTP for the services on offer. For instance, these WTP estimates should be considered a partial (capturing only a less engaged sub-sample of visitors), more conservative sample than the total sample of visitors (in that their average WTP is lower overall in the CV question). It is potentially problematic, in terms of interpreting, how they have engaged and what cultural and heritage value they hold in the site (especially those who did not pay an entry fee, potentially because they only accessed the publicly available parts of the wider landscape). Therefore, we urge caution in interpreting these WTP results without the benefit of follow-up qualitative interviews with a sample of these respondents to better understand their motivations and preferences, which is outside of the scope of this study.

With this caveat, we can explore the WTP values and see, for example, that some of the outdoor elements of the site are associated with the highest WTP. This includes the gardens (walking around the formal walled gardens/maze) which have the highest WTP of £4.69 among those who are less likely to visit or have not paid an entry fee. Additionally, accessing the Parkland and wider landscape has the fourth highest WTP at £2.78. This can be linked to the positive interactions that people experience when engaging with a heritage site in a semi-natural environment setting. We note, however, that the higher proportion of visitors who have not paid entry may skew this sample towards those who visit specifically for accessing the parkland (which does not require ticketed entry).

We note also that there is not a clear division between interior and exterior parts of the site in WTP terms. The second and third highest WTP are recorded for parts of the house: £3.00 for the collections and curated exhibitions and £2.78 for walking around the interior of the house. Conversely, walking around the exterior has the lowest WTP of any attribute (£1.18), which may be because the link between the natural and built environment is not as strong in the exterior. Conversely, it may be that the heritage services are stronger within the building itself, where they interact with curated exhibits and historical information.

The lowest WTP is observed for the café (£1.15). Further research would be required to understand if this low WTP relates to preferences, is offset by what they already spend in the café (i.e., their welfare gains from the café are already expressed through what they paid during their experience in the café), or as an artefact of this subgroup of the sample (potentially those who did not pay an entry fee were those who used the wider parkland and did not engage with the café). It is notable that in the total sample ticket price utilities the café is much more preferred among those who were likely to visit and have paid an entry fee (fifth highest utility), which demonstrates the limitation of any WTP analysis based on this less engaged subgroup of respondents.

Despite these cautions around interpreting WTP based on this less engaged subsample of visitors, there is some supporting evidence from the utilities observed for different parts of the site in the total sample (Table 11). A higher WTP in the less engaged subsample aligns

with the highest utilities in the total sample for walking around the interior of the house (first highest utilities), walking around the formal walled gardens/maze (third highest utilities), and access to Parkland and wider landscape (fourth highest utilities).

However, these WTP do give an indication of the kinds of WTP values that could be estimated for different parts of a stately home like Blenheim Palace and Gardens if the issues observed in the wider sample (visitor utilities being driven by higher levels of giving, rather than changes to the provision of services on site) are overcome.

DCE conclusions

The results of the split sample variation in payment vehicle from donation to entry fee appears to support the original hypothesis that certain participants may hold an emotional attachment to Blenheim and regardless of the situation are willing to pay a higher amount (donation or ticket price) in order to keep the site open. Although we cannot know the motivations behind people's choice responses in the DCE survey, one possibility is that the emotional attachment to the site, regardless of which parts of the house are closed, is driving the choice behaviour. It may also be that the use of the word 'donation' plays a key role. As we saw, when the payment attribute is changed from donation to ticket price in the split sample, we see results which align somewhat more with theoretical expectations for those groups with less emotional attachment (those who were less likely to visit again in the future and who had visited less frequently or not paid to access the house). However, for those with affinity to Blenheim, their price curve is still not as expected in their response to lower ticket price amounts (though closer to theoretical expectations) suggesting that the unusual findings are due to a combination of both factors underlying their preferences for payments to support the cultural services at Blenheim Palace and Gardens.

Taken together, the DCE results do not provide meaningful WTP estimates for the closure of different parts of Blenheim House and Gardens. This makes it impossible to overlay empirical results onto the cultural services model in the conceptual paper because the higher utilities for higher donation/ticket amounts means that more preferred part of the house/gardens (i.e., those parts of the house with higher utilities) would counterintuitively have *lower* WTP values. The estimates may further have been distorted by biases arising from the use of a donation payment vehicle in a DCE.

4.6 Triangulation of market and non-market valuation methods

A further contribution of this study to the ongoing discussions around accounting of cultural and heritage asset stocks and flows is to apply a range of methods to triangulate what values could attribute to service flows stemming from Blenheim Palace and Gardens. This involves comparing the estimates from the Stated Preference exercise with estimates deriving from Revealed Preference measures based on actual prices paid for entry, in the shop etc, and travel costs, as well as measures based on the time involved in visiting the site. These methods calculate a range of possible aggregate non-market valuation estimations for Blenheim Palace and Gardens. We note that that some of the methodologies applied (e.g., single-trip travel cost methods) are both methodologically flawed, and subject to data limitations, should not be considered best practice.

Although not the main focus of the Stated Preference survey, the survey was able to capture relevant data on the time spent traveling to and spending time on site at Blenheim Palace

and Gardens, as well as the amount spent on ancillary goods and services (e.g., in the shop and café/restaurants). This data estimates other non-market valuation techniques such as Travel Cost Methods (TCM) and value of time methods.

4.7 Blenheim Palace and Gardens: Travel cost

Table 13 shows the transport modes visitors used to get to Blenheim Palace and Gardens. The vast majority (over 80%) travelled in a private car, with 231 visitors being driven by themselves or other family members and 75 visitors being driven by someone else. The next most common options are buses and trains, 23 (6.0%) and 22 (5.8%) respectively, suggesting perhaps that the transport links and infrastructure of public transport around Blenheim Palace are poor. 15 (3.9%) visitors walk and 5 (1.3%) cycle when visiting the site suggesting that fewer individuals who live in the vicinity visit the site.

Table 13 Transport mode and travel cost of Blenheim visitors to the site (main transport mode, single choice option, excluding on-site and parking costs)

Main transport mode	N	%	Travel distance (return, km based on home postcode)	Average hourly speed (km/hr)	Time (hours)	TCM per group ⁷⁰	TCM per visitor (divided by adult group size of 2.18)
Train	22	5.8%	232.3	100.0	2.3	£151.65	£69.56
Bus	23	6.0%	258.5	80.0	3.2	£196.11	£89.96
Walking	15	3.9%		4.8	43.3		
Bicycle	5	1.3%		27.4	7.9		
Private car (driven by yourself or a family member)	231	60.5%	202.5	94.1	2.2	£137.56	£63.10
Private car (driven by someone else)	75	19.6%	224.9	94.1	2.4	£152.77	£70.08
Taxi	5	1.3%	222.0	94.1	2.4	£150.86	£69.20
Other	5	1.3%	210.4	70.6	3.0	£174.31	£79.96
Total	381		212.7	70.6	3.0	£176.28	£80.86

Travel distance based on first half of respondent postcode, with distance as the crow flies to Blenheim Palace, which introduces some lack of geographical specificity in the results, meaning they should be interpreted as indicative estimates (full travel cost analysis would model distance based on travel mode via road, rail networks etc). Walking and cycling removed from analysis due to unrealistic distances using postcode origin calculation. $TCM = ((T \times w) + (D \times v))$. Speed per hour for total time and other travel mode are unknown, so are estimated as an average of all other travel modes. In line with standard TCM estimation methods, the distance calculation should be doubled to account for the return journey. To calculate the value of the asset (V) for a single visit we apply the following equation: $V = ((T \times w) + (D \times v)) \times Va$. Where, T = travel time (in hours, estimated as a function of average time by travel mode and distance); w = average wage rate is typically set at the national average of £16.37/hour at 2022 GBP prices). However, based on survey data for the user group, average household annual income is higher than the national average at £86,000. This is equivalised to individual-level of £74,000 annually and pro-rata to an hourly rate of £42.29. D = distance (in km); v = marginal vehicle operating costs (indicative cost of maintenance and repair of vehicle per mile): £0.23 in 2022 GBP; Ca = cost of Admission to site and other reported spend on site including parking (calculated independently in 1B to avoid double counting with existing accounting/economic reporting data); Va = number of visits per year: $V = ((3 \times £42.29) + (213 \times £0.23) + £38.53) \times 1$

Given that travel cost analysis is not the original focus of the study, the survey does not collect detailed information on how far respondents travel to visit the site. Instead, this analysis has to be performed based on self-reported expenditure, and on respondent postcode, from which we estimate the distance travelled to Blenheim Palace. This is a significant limitation of our ability to implement the approach, given that many of the visitors visit as part of a wider trip or holiday. This leads to some undoubtedly spurious results, such as the average distance of over 200km travel for those on bike or on foot, which are removed from analysis.

Despite this, the single-trip assumption that lays behind the TCM method is an oversimplification, as it assumes that the single purpose a person had for travelling from the

⁷⁰ <https://www.gov.uk/government/statistical-data-sets/average-speed-delay-and-reliability-of-travel-times-cgn> supplemented by <https://www.gigacalculator.com/articles/what-is-the-average-speed-of-different-modes-of-transportation/>

home postcode to Blenheim was to visit Blenheim Palace and Gardens, which leads to a large overstatement of value.

In TCM, multiple purpose trips are methodologically more robust as they provide a more accurate attribution of the welfare gained from the site. However, multi-purpose trip information is difficult to collect and to disaggregate the value of the site in question in a survey of this type (whose focus was on SP, rather than TC data). In this TCM we collect single-purpose visit information, which presents disaggregation problems as it often ignores the other potential purposes (and values gained) from the greater location. The DCMS REA (2021) notes that there is no widely accepted method for dealing with this limitation.⁷¹ For this reason, we urge caution interpreting these TCM figures.

Given the uncertainties of the single-trip assumption, based on the distance between a respondent's home postcode and Blenheim Place, we believe that a more reliable approach to estimating the welfare value of Blenheim Place and Gardens through travel cost methods would be to make use of questions within the survey where respondents estimate how much they had spent for themselves and their group to travel to Blenheim Palace. The average self-reported spend on travel is £89.41 per group. The average self-reported travel spend on a trip to Blenheim Palace and Gardens was £41.01 per visitor for the average adult group size of 2.

When in combination with the average parking and on-site spending from Table 3, **the total self-reported monetary (revealed preference) value of a trip to Blenheim Palace and gardens is an estimate of £135.99 per group** (£46.58 on-site spend including parking + £89.41 travel cost), **and £62.38 per visitor** (£21.37 on-site spend and parking +£41.01 travel cost).

Table 14 Transport mode and travel cost of Blenheim visitors to the site based on self-reported survey data of personal travel cost to the site (excluding on-site and parking costs)

Main transport mode	N	%	Mean estimated travel cost to group (self-reported)	Mean estimated personal travel cost (divided by average adult group size of 2.18) (self-reported)
Train	22	5.8%	£86.33	£39.60
Bus	23	6.0%	£32.00	£14.68
Walking	15	3.9%	£167.31	£76.75
Bicycle	5	1.3%	£13.75	£6.31
Private car (driven by yourself or a family member)	231	60.5%	£87.01	£39.91

⁷¹ Some suggested approaches, outside of the scope of this study include: Using only a part of the total travel cost, which corresponds to the additional expenditures made to visit the area in question from the last stopover; • Distributing the total travel cost on the basis of the time spent by the visitor at each of the sites visited; Distributing the total travel cost on the basis of the welfare derived by each of the sites; • Identifying the various profiles of multipurpose trips undertaken by the visitors of the site in question and estimating the demand curve and the recreational value for each of them, while the recreation value of the area in question is estimated at a later stage as a percentage of the recreational value of each type of the multipurpose trips identified.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/955142/REA_culture_heritage_value_Simetrica.pdf

Private car (driven by someone else)	75	19.6%	£90.35	£41.44
Taxi	5	1.3%	£110.00	£50.46
Other	5	1.3%	£263.40	£120.83
Total	381		£89.41	£41.01

Self-reported travel cost question: "Approximately how much money did you spend travelling to Blenheim Palace on your most recent trip? This should include the travel cost for you and your whole group. If you drove, please estimate the petrol costs for this trip. If you took a combination of transport methods, please combine the total cost for the journey (excluding entry fees or parking charges)." Travel spending was truncated at outlier value of £200 in cases where outlier expenditure had been flagged in previous survey questions, to reduce inaccuracy of self-reported spending.

Summary table: Travel Cost Method (TCM)

	2A. Self-reported travel costs	2B. Self-reported travel costs (on-site costs)
Group	£89.41	£135.99
Per adult visitor	£41.01	£62.38

4.8 Blenheim Palace and Gardens: Time use values

The survey includes a time-use element, where respondents indicate how much time they spend at the site on their last visit in total, and how much of that time was spent in the different parts of the Palace and gardens. Table 15 shows the average amount of time, in minutes, that visitors spent in specific parts of the site.

Table 15 Time spent in different parts of Blenheim Palace and Gardens (user sample only)

	Mean time (minutes)	Mean time (converted to hours)	Lower bound Value of Travel Time £6.96/hr	Upper bound Value of Travel Time £17.04 /hr
House: Walking around the exterior	24.9	0.42	£2.92	£7.16
House: Walking around the interior of the house, including the Palace State Rooms upstairs and downstairs rooms	28.6	0.48	£3.34	£8.18
House: Collections and curated exhibitions, e.g. Churchill Exhibition	13.4	0.22	£1.53	£3.75
Gardens: Walking around the formal and walled gardens	34.2	0.57	£3.97	£9.71
Access to Parkland and wider landscape	28.5	0.47	£3.27	£8.01
Access to Lake walk	18.9	0.31	£2.16	£5.28
Blenheim Palace Shop	8.9	0.15	£1.04	£2.56
Café/Restaurant : E.g., Orangery Restaurant, Stables Café, Oxfordshire Pantry, Pizzeria	20.1	0.33	£2.30	£5.62
On-site talks and tours (e.g. upstairs/downstairs tour, Blenheim Lectures)	11.6	0.19	£1.32	£3.24

Accessing 360 Degree Virtual Tour online before or after visit to site	5.9	0.10	£0.70	£1.70
Total (mean)	225.5	3.76	£26.17	£64.07

Note, differences between mean total time and the sum of mean time spent in each part of the site (195 minutes) is due to missing observations among those who visited other parts of the house not listed.

The average time spent in total at Blenheim Palace and Gardens was 226 minutes (3- and three-quarter hours). The average time spent in different parts of the site ranges from 9 minutes in the Blenheim Palace Shop, to 34 minutes walking around the formal and walled gardens.

We apply an upper and lower bound measure on the value of time. The lower bound estimate is provided using Department for Transport TAG guidance tables⁷² for non-work commuting, which is estimated at £5.12 per hour for lower income groups and £5.49 for higher income groups in 2014 prices.⁷³ Given the higher average household income levels for Blenheim visitors compared to the general population in the survey samples (recall Table 2) we apply the higher income VTT estimate of £5.49 (£6.96 in 2022 prices).

The upper bound is provided by Verbooy et al estimates of the value of leisure time at £14.83 (£17.04 in 2022 prices) at the upper bound. This is applied to self-reported survey data on the total time spent at Blenheim Palace and Gardens, which would suggest that visitors gained on average between £26.17 and £64.07 worth of welfare benefit from their time spent at the site at the upper bound. Although the authors suggest that their figure is a lower bound, it is considerably higher than alternatives, such as the £5.49 an hour in Department for Transport guidelines on non-work delays. However, the wide range underlines the uncertainty surrounding this method. These travel time values are therefore problematic not only because of the uncertainties around the method, but also because they do not account for the differences in welfare gains/losses that can be experienced from time spent in different sites.

Applying the Value of Travel Time (VTT) estimate to the total time spent at Blenheim Palace and Gardens on average suggests that visitors gain on average between £25.17 and £64.07 worth of welfare benefit from their time spent at the site.

Summary table Time Use Values

3. Time-use value of time spent on site	Lower bound (DfT non-commuting time)	Upper bound (Verbooy et al. Leisure time)
Group	NA	NA
Per visitor	£26.17	£64.07

⁷² <https://www.gov.uk/government/publications/tag-data-book>

⁷³ <https://link.springer.com/article/10.1007/s11116-017-9798-7#Tab8>

5 Aggregation

In Table 16 we compile the person-level welfare estimates for Blenheim Palace and Gardens which were obtained through three different non-market valuation methods. In all cases, we consider the extent to which these non-market valuation estimates can be considered alongside each other, and alongside current accounting estimates of the value of a site like Blenheim Palace and Gardens based on income and expenditure (taken from the Blenheim Economic Impact Assessment report, 2021/2022). Blenheim income is generated from several activities, predominately admission income of £6.8m. Other income includes the retail and water business and other activities, including events, which amount to £8.2m. This gives total revenue of £15m in 2021/2022.⁷⁴

Blenheim Palace provides statistics that state in the 2021/22 financial year (the most recent at the time of publication), visitor numbers were 580,984, of which 163,810 were Annual Pass revisits. Therefore, we assume there were 417,174 unique visitors in the 2021/22 financial year.

Although there are two months remaining in the 2022/23 financial year at the time of writing this report (i.e., not including the remainder of Feb and March), visitor numbers are higher at 834,611, with 211,218 Annual Pass revisits, amounting to 623,393 unique visitors in the 2022/23 financial year. These higher visitor numbers may reflect the gradual readjustment after the COVID-19 lockdown. We therefore recommend aggregation based on 2022/23 visitor numbers upto January 2023, with an uplift of one and a half months (12.5%).⁷⁵ **This projection amounts to 701,317 unique visitors across the full 2022/23 financial year.**

For triangulation, the baseline approach is based on ticket revenue plus user WTP a top-up donation and non-user donation estimates through contingent valuation (1A and 1B), while (2) Travel Cost Methodology (TCM) and (3) Value of Time approaches are adopted as alternatives in the triangulation table below.

5.1 Contingent valuation: Aggregation of willingness to pay

Willingness to pay a donation to support continued access to Blenheim Palace and Gardens is obtaining a donation on top of any current entry fees, from visitors (1A) and non-visitors (1B). The design of the CV survey ensures that these values are additive to any current

⁷⁴ Other relevant information from Blenheim Economic Impact reporting: Donations: Restoration and long-term funding are received from land development within the Blenheim Estate, Blenheim Supporting Limited and The Blenheim Foundation in addition to Government grants. Blenheim Supporting Limited is a related entity which donates its profits to the Charity. The Blenheim Foundation is a related charity which fundraises for restoration within the Palace. Within restoration funding is grant funding received for the park and funding to contribute to the costs of being a World Heritage Site. Total donations and grants received accounts for 45% (£12.5m) (2021: 67% and £11.8m) of total income.

Expenditure: Income is applied in pursuance of the objectives. The largest proportion of expenditure is from operations ensuring a positive visitor experience to supporting functions. Another substantial cost is the restoration, preservation, maintenance and repair work which totalled £4.1m for the year (2021: £3.0m); At the year end, the Charity invested its cash held for restoration projects in a related entity, Blenheim Finance Limited. In return, the Charity receives interest income of c.5%. This is detailed in full in the tables from p23 to p25: Consolidated Statement of Financial Activities; Consolidated and Parent Charitable Company Balance Sheets; Statement of Cash Flows and Consolidated Statement of Cash Flows

⁷⁵ Note that we may expect to see seasonal differences in visits in the winter months of February and March. However, given that previous data was based on the post-Covid period, this may not be representative of the trends in subsequent years. As a simplifying assumption we take a pro-rata uplift of one and a half months of the year.

market-based prices charged (£15m as reported above). For aggregation of WTP values, the following steps are completed:

1. Estimate WTP values per visitor and per non-visitor in the general population and multiply by the relevant population size.

- 1A. Visitor aggregation is based on annual visitor numbers (using data on the number of unique visitors per year (701,317 unique visitors projected across the 2022/23 financial year.): $£7.84 \times 701,317 = £5,498,325$).
- 1B. Non-visitor aggregation is based on the relevant population of the general public in the south-east region (9,294,023, 2021 Census data, excluding Greater London), subtracting visitor numbers ($9,294,023 - 701,317 = 8,592,706$). Note that Blenheim's reach could be more widely spread than the local region, given it is a World Heritage Site, and attracts visitors from all over the country. However, following guidance on aggregation from Arts Council England, we adopt a more cautious approach to avoid over-attribution of non-visitor values which are subject to more uncertainties around the definition and measurement of non-use values. Annual unique visitor numbers should be subtracted from this non-visitor aggregate figure, to avoid double counting (noting that a number of visitors could be based outside of the surrounding region, meaning that this is a likely conservative under-estimate of the non-visitor population). $£2.97 \times 8,592,706 = £25,520,337$.

2. Visitor and non-visitor aggregate values can be added together with no risk of double counting: $£5,498,325 + £25,520,337 = £31,018,662$ welfare value per year from public access to Blenheim Palace and Gardens for visitors and non-visitors in the general population. Note this welfare value is additive to the £15m revenue from ticket prices, revenue and land value already accounted for in Blenheim's financial records.

Revenue + 1A (visitor WTP) + 1B (non-visitor WTP) = £15,000,000 + £5,498,325 + £25,520,337 = £46,018,662

Further triangulation is provided by comparing aggregate visitor WTP in this survey with actual donations reported in Blenheim annual reporting. The Blenheim Foundation is a related charity which fundraises for restoration within the Palace. Total donations and grants account for £12.5million of total income. Noting that this actual donation figure includes grants from organisations and wealthy individuals, there is nonetheless good supporting evidence that the £5.5million estimated annual donation figure from the WTP survey is conservative compared to the £12.5million in actual annual donations.

5.2 Travel cost aggregation

Travel cost estimates can be multiplied by annual (unique) visitor numbers. These non-market estimates are applicable only to visitors, and not to the non-visitor population.⁷⁶

⁷⁶ In theory, assuming minimal errors in self-reported on-site spend and sufficient sample size, the 2B TCM calculation including on-site entry fee and ancillary spend represents the total welfare value of a visit to Blenheim Palace and Gardens. This would be a replacement for the £15m revenue-based economic value estimates, and could not be added to standard economic reporting without double counting. However, we acknowledge that self-reported spend in a small sample survey is less reliable than financial accounting data on visitor revenue.

2A. TCM (excluding total spend) is calculated as £41.01 * 701,317 at £28,761,010.

Given that this does not capture any of the non-visitors' welfare value from knowing that Blenheim Palace and Gardens remain open to the public, TCM estimates could be combined with WTP among non-visitors (1B = £25,520,337) without risk of double counting, resulting in an aggregate value of £52.5million.

Revenue + 2A (TCM excl. ticket price) + 1B (non-visitor WTP) = £15,000,000 + £25,520,337 + £28,761,010 = £69,281,347

5.3 Time use aggregation

Time use estimates can be multiplied by annual (unique) visitor numbers. These non-market estimates are applicable only to visitors, and not to the non-visitor population. However, time-use estimates should not be combined with ticket price revenue, since it is assumed that respondents internalise the value of their time spent on site at the decision point of purchasing the ticket. Time use values on site essentially replace the welfare value as stated directly in entry fee and other on-site spend.

- At the lower bound of £26.17 per person, the aggregation welfare gain from visiting Blenheim Palace and Gardens in time use value is £18,353,186.
- At the upper bound of £64.07 per person, the aggregation welfare gain from visiting Blenheim Palace and Gardens in time use value is £44,933,380.

In terms of triangulation, even at the lower bound, travel time estimates are significantly higher at £18.4m in comparison to actual ticket revenue (£6.8million of the £15million total revenue). Potential reasons for this may be that the value of leisure time estimates are too high, or that respondents are over-estimating the amount of time spent on site. Alternatively, it may be that (as assumed) the ticket price does not capture the total welfare value of a visit to the stately home, and that time-use methods capture that surplus value. However, the upper bound of £64.07 per person is significantly higher than the ticket price, which suggests that the results from time use analysis are unreliable. We do not therefore estimate any combined aggregation of the upper bound figure with other non-market valuation methods.

We note that time use values could potentially be added to travel time TCM estimates in 2A, given that TCM captures the value of time for distance travelled to attend the site, while value of time captures the value of time for time spent on site, as well as the non-use value. Note that double counting may arise when combining ticket price paid (since the ticket price should capture the value of time spent at the site), and value of time with on-site spend, meaning that aggregate time use could only be added to travel time in 2A, and should exclude on-site spend in 2B.

3 (VTT) + 2A (TCM excl. ticket price) + 1B (non-visitor WTP) = £18,353,186 + £28,761,010 + £25,520,337 = £72,634,532

Conclusions: Triangulation of aggregate values

Triangulation of results show that the highest total aggregate value for Blenheim Palace and Gardens is estimated by combining ticket and rental revenue with the travel cost welfare estimate (excluding ticket prices) with non-visitor WTP (combined total of £65.8million per

year). However, we note the methodological limitations of single-trip TCM methods, which likely lead to an over-estimate of welfare value.⁷⁷

The next highest estimate of total aggregate value for Blenheim Palace and Gardens is gathered by combining travel cost methods (including self-reported on-site spend) with non-visitor willingness to pay (combined total of £57.6million per year). However, as above, this is subject to methodological limitations of single-trip TCM methods, which likely lead to an over-estimate of welfare value.

A more reliable estimate of total aggregate value for Blenheim Palace and Gardens may be a combination of actual revenue and willingness to pay among visitors as a top-up donation to support the site, and non-visitors as a donation for the same outcome (combined total £46million per year). This has conceptual consistency in that the WTP question elicits responses over and above any prices paid for entry. It is designed to capture the surplus welfare value of maintaining public access to the site for oneself and others, which aligns with the conceptual model as described in the conceptual paper.

We note that the highest aggregate estimate of the welfare value of Blenheim Palace and Gardens is more than double the lowest, which is a further indication of the uncertainty margins which sit behind many of the non-market valuation methods (in particular the travel cost and value of time estimates). This gives further justification to the decision to apply the combined revenue plus use and non-use contingent valuation figures, which are based on a more reliable methodology, and also provide the most conservative estimates in the aggregate.

⁷⁷ G Atkinson et al., 'Cost-Benefit Analysis and the Environment - Further Developments and Policy Use' (Berlin, Germany: Organisation for Economic Co-Operation and Development (OECD), 2018), <http://www.oecd.org/environment/cost-benefit-analysis-and-the-environment-9789264085169-en.htm>.

Table 16 Aggregation table: Non-market valuation methods

	Revenue (admission income, retail and water, events)	1A. Visitor Willingness to Pay estimates for the continued public access to the site	1B. Non-visitor Willingness to Pay estimates for the continued public access to the site	2A. Travel Cost Method (TCM) (including travel costs)	2B. Travel Cost Method (TCM) (including travel and on-site costs)	3. Time-use value of time spent on site (lower bound)	Total (without double counting)
Per person	NA	£7.84	£2.97	£41.01	£62.38	£26.17	
Aggregation	£15,000,000	£5,498,325	£25,520,337	£28,761,010	£43,748,155	£18,353,185	
Total Blenheim Aggregation							
Revenue+ 1A+1B	£15,000,000	£5,498,325	£25,520,337				£46,018,662
Revenue+2A+1B	£15,000,000		£25,520,337	£28,761,010			£69,281,347
3+2A+1B			£25,520,337	£28,761,010		£18,353,185	£72,634,532

Aggregation: Visitors: based on 2022/23 visitor numbers upto January 2023, with an uplift of one and a half months (12.5%). This amounts to 701,317 unique visitors projected across the full 2022/23 financial year; Non-visitors adult population for south-east England: 9,294,023. Note. WTP per person figures based on lower bound WTP based on 95% confidence interval below the mean, as recommended by Arts Council England and DCMS. Visitor and revenue figures based on <https://www.blenheim.org/flipbook/blenheim/2021/economic-impact/>

6 Recommendations for future research and methodological limitations

The survey is designed to explore the feasibility of expanding ONS accounts of stately homes using non-market valuation methods to augment evidence already available in company/charity accounts through ticket revenue and land value/rents. By comparing different non-market valuation methods, we are able to identify the methods which can be combined with other market (revenue) and non-market (stated preference, revealed preference, or time use values) with and without the risk of double counting.

The results of the survey show that triangulation of non-market valuation methods is possible, but that it is challenging to apply the more advanced methods within a single online respondent survey (e.g., multi-purpose trip travel cost method). Triangulation of results shows that the highest total aggregate value for Blenheim Palace and Gardens by combining ticket and rental revenue with the travel cost welfare estimate (excluding ticket prices) with non-visitor WTP (combined total of £65.8million per year). However, there are major methodological limitations of single-trip TCM methods, which likely lead to an over-estimate of welfare value. Using time use method, the average of £64.07 per person is significantly higher than the ticket price, which suggests that time use analysis results are unreliable.

A more reliable estimate of total aggregate value for Blenheim Palace and Gardens may be a combination of actual revenue and willingness to pay among visitors as a top-up donation to support the site, and non-visitors as a donation for the same outcome (combined total £46million per year). This has conceptual consistency since the WTP question elicits responses over and above any prices paid for entry. It is designed to capture the surplus welfare value of maintaining public access to the site for oneself and others, which aligns with the conceptual model as described in the conceptual paper.

In terms of isolating values for specific services in a Discrete Choice Experiment (DCE), as proposed in the conceptual paper, the results of the split sample variation in payment vehicle from donation to entry fee is consistent with the hypothesis that certain participants have an emotional attachment to Blenheim Palace. Therefore, regardless of the situation, people are willing to pay a higher amount (donation or ticket price) in order to keep the site open, regardless of whether specific parts of the site are closed or remain open. Although we cannot know the motivations behind people's choice responses in the DCE survey, one hypothesis is that the emotional attachment to the site, may be the major driving factor behind the unusual choice behaviour. It may also be that the use of the word 'donation' also plays a key role. As we see, when the payment attribute is changed from donation to ticket price in the split sample, we see more sensible results for those groups with less emotional attachment (those who were less likely to visit again in the future and who had visited less frequently or not paid to access the house). However, for those with affinity to Blenheim, the price curve is still not as expected in their response to lower donation amounts (though closer to theoretical expectations). This suggests that the unusual findings are due to a combination of both factors underlying their preferences for payments to support the cultural services at Blenheim Palace and Gardens. The complicated relationship between donation

amounts, motivations, and marginal closures to parts of a cultural and heritage site could be explored in more detail in future research.

The DCE element of the survey also provides areas for future research, in that it applies two payment vehicles in the DCE: variation on the donation amount in the WTP question, and variation around the entry fee. In the design phase, three different payment vehicles are considered for the WTP question: a government-linked tax, increase in entry fee, or donation. The design section of the report evaluates the biases/risks associated with these, and determines that a donation would be most appropriate. Given the hypothetical biases and potential free-rider problems from donations, future research could consider using all three payment vehicles (for 3 sample groups), to compare the results, and impact of the various biases. To our knowledge, there is no exploration in the literature on the influence of different choices of payment vehicle as the payment attribute, but this can be expected to have an influence on the realism of the DCE exercise and affect hypothetical bias as is the case in other forms of Stated Preference survey.

This would potentially build on previous research which shows that SP surveys are more likely to be demand-revealing if the respondent views their responses as consequential (i.e. the respondent cares about the policy in question)..⁷⁸ There are many potential reasons why hypothetical bias might arise (Loomis, 2014; Atkinson et al., 2018). It is more prevalent when voluntary payment mechanisms are in use, as respondents have incentives to free-ride; and when valuing distant and unfamiliar goods and services, where people may not have well-defined prior preferences (which may disproportionately affect non-use values for less known policy changes).⁷⁹ Champ et al.⁸⁰ apply an experiment in which the value for an unfamiliar environmental good, whose total value has a large non-use component, is verified using a revealed-preference method. They are unable to observe preferences via an incentive compatible mechanism and collected voluntary contributions toward the provision of the good. They argue that these contributions as a “theoretical lower bound” on the value of the public good and investigate whether contingent donation data can be used to estimate such lower bounds on values. They claim that they (a) explore the welfare implication of warm glow for Hicksian measures of value for public goods and (b) establish that actual donations place a “theoretical lower bound” on such values. This analysis extends elsewhere⁸¹ to show that warm glow introduces non-neutrality between the value of the good under public and private provision.

Further research is required to build on these indicative DCE results which suggest that choice of payment vehicle may influence people’s cognitive response. Further research is also required to test the working hypothesis in this paper that different parts of a heritage asset provide different types of cultural services, and that the provision of one instead of another may help to explain why people are willing to pay for different services a heritage site provides. One of the limitations of the current approach may be that use of a donation

⁷⁸ Katherine Needham and Nick Hanley, ‘Prior Knowledge, Familiarity and Stated Policy Consequentiality in Contingent Valuation’, *Journal of Environmental Economics and Policy* 9, no. 1 (2 January 2020): 1–20, <https://doi.org/10.1080/21606544.2019.1611481>.

⁷⁹ Lawton et al., ‘Comparing the Effect of Oath Commitments and Cheap Talk Entreaties in Contingent Valuation Surveys’.

⁸⁰ Patricia A. Champ et al., ‘Using Donation Mechanisms to Value Nonuse Benefits from Public Goods’, *Journal of Environmental Economics and Management* 33, no. 2 (1 June 1997): 1997, <https://doi.org/10.1006/jeem.1997.0988>.

⁸¹ Susan M Chilton and W. George Hutchinson, ‘Some Further Implications of Incorporating the Warm Glow of Giving into Welfare Measures: A Comment on the Use of Donation Mechanisms by Champet Al.’, *Journal of Environmental Economics and Management* 37, no. 2 (March 1999): 202–9, <https://doi.org/10.1006/jeem.1998.1062>.

payment vehicle cognitively links to donations that people have made previously, which are normally done without expectation of getting something back, and not well suited to a DCE scenario where parts of the house and gardens are closed off.

Other findings, such as that 18% of visitors and 25% of non-visitors are willing to donate to Blenheim as a measure of their support for all stately homes in England, proves the issue that consumers' WTP for a site may be influenced by their WTP for the concept of cultural and heritage preservation as a whole. Therefore, this is another idea to be explored in future research.

It could be argued that by giving background information on the variety of benefits that Blenheim Palace offers the survey may prime respondents to be more likely to pay to keep Blenheim open than they would if they were not given this information beforehand (and therefore were potentially oblivious to it). Generally the SP method provides respondents with sufficient information for making informed decisions about the value of the good or service they are being asked to support through a personal payment from their own budget.⁸² Future research could design experimental approach to determine the extent to which such information has an impact on respondents' WTP, for instance, relating it to typologies of cultural and heritage value such as those explored in work by David Throsby and colleagues on historic, aesthetic, social, and symbolic elements of value.⁸³

Recommendations: More challenges for ONS to include more assets, and measurement

The most commonly selected motivation by non-visitors was that *"My willingness to pay is not just for Blenheim Palace, but also an expression of my support for all stately homes in England"* (25% non-visitors, visitors 18%). This finding points to one of the common problems in CV surveys, where respondents may be stating their WTP for the overall concept of preserving heritage/culture/the environment, rather than the specific site being valued. However, it is hard to draw firm conclusions based on a single follow-up question in a survey of this kind, where respondents are only able to choose one main reason for their stated WTP, and may not be fully considering the implications of their response.

Ongoing mixed-methods research has been recommended in this area as part of the AHRC and UKRI Scoping Paper for the CHC framework (2022).⁸⁴

In general, as more types of assets including CHC are brought into consideration as part of national statistics, there is a growing need to develop methods for valuing those for which market prices/exchange values are unavailable or are insufficient due to obvious externalities. This is in addition to the classification and data collection issues we discuss elsewhere.

⁸² Asa Jose Sajise et al., *Contingent Valuation of Nonmarket Benefits in Project Economic Analysis: A Guide to Good Practice* (Asian Development Bank, 2021); Bateman et al., *Economic Valuation with Stated Preference Techniques*.

⁸³ Throsby, Zednik, and Araña, 'Public Preferences for Heritage Conservation Strategies'.

⁸⁴ [Full ref] <https://www.gov.uk/government/publications/scoping-culture-and-heritage-capital-report/scoping-culture-and-heritage-capital-report>

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