ECONOMIC VALUATION OF HERITAGE: Final report

For English Heritage

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There is also a separate Excel™ spreadsheet that can help with value transfer and contains examples showing how the spreadsheet should be used.

EXECUTIVE SUMMARY

English Heritage (EH) is the government's statutory advisor on the historic environment, with the role of championing and caring for historical assets. It plays a fundamental role in the maintenance and protection of historic properties, buildings, and archaeological sites of national importance; provides conservation grants, advisory and education services; and improves the understanding of the past through research and study.

EH requires economic evidence about the costs and benefits of maintaining and protecting heritage sites. This project generated some evidence on the benefits of maintaining and keeping open to the public two such EH sites. The stated preference questionnaires produced for these two sites can be adapted to other sites. The project also shows how the results can be used for other heritage sites managed by EH.

The two study sites chosen were Castle Acre Priory and Walmer Castle and Gardens in order to reflect the variation in the types of EH sites in terms of location, size, facilities, and popularity. The former is a smaller site based in Norfolk, while the latter is in Kent and nationally one of EH's top 20 sites. In each site, two different groups were identified: users (visitors of the sites) and non-users (residents of the local area, who have not visited the survey site in the last 12 months). A stated preference questionnaire (using the contingent valuation design) was used to interview around 300 people in each of the four groups (visitors and non-users at each site). The fieldwork was conducted between April and June 2014.

The results, i.e. the benefits of maintaining a heritage site, are expressed in terms of individuals' willingness to pay (WTP) to protect the site over and above what they currently pay for their entrance fee/membership fee/general taxes. Therefore, the results can only be used in similar decision contexts: to maintain a site and keep it open to public. They cannot be used for marginal improvements to the fabric and facilities of a site, which would not make a material difference to the sustainability of the site.

Table ES.1 shows the average willingness to pay results, which are expressed in different units, depending on the type of group. All results exclude protest responses, i.e. those who said they were not willing to pay not because they do not value a site but because they do not accept the scenario or do not want to take part in the survey for other reasons. About 5% (for Castle Acre Priory) and 7% (for Walmer Castle and Gardens) of respondents were identified as protestors, which are rather low (and hence good) results compared to other similar surveys.

The statistical analysis of the responses shows that the results are valid and robust. Looking at all samples across the two sites show socio-economic group is a significant determinant of WTP, age and gender is significant for some samples, but not all. Respondents who are more likely to be visiting a site for its historic characteristics and those who are more frequent visitors are more likely to have a positive WTP than those who (also) visit to use gardens and picnic areas. The historic characteristics of a site are also important for non-visitors: those who said they'd be interested in visiting the museum or taking the audio tour on site, are more likely to have a positive WTP.

Table ES.1: Willingness to pay to maintain the site (over and above what is paid already)

Site and type of sample	Unit	£ value[a]
Castle Acre Priory		
Visitor - EH member	£ *increase in membership fee* per year	2.14 (0-5)
Visitor - non-EH member	£ *increase* per ticket	2.66 (0-9)
Non-user – non-EH member	£ *increase in general taxes* per year	1.83 (0-8)
Walmer Castle and Gardens		
Visitor - EH member	£ *increase in membership fee* per year	3.99 (1-10)
Visitor - non-EH member	£ *increase* per ticket	2.73 (0-7)
Non-user – non-EH member	£ *increase in general taxes* per year	1.77 (0-6)

a. The numbers in brackets are statistical confidence intervals and should be used in further analysis
b. For both sites: due to low sample size, estimation was not possible for visitors who purchased family tickets, and non-users who were EH members.

The study produced two types of results: WTP evidence and preferences for actual and potential future visits. Such preferences can be used as inputs to site management planning. Future users of these results can apply the mean WTP estimates reported in Table ES.1 to other sites that are sufficiently similar to Castle Acre Priory and Walmer Castle and Gardens. Similarity should be based on site characteristics, as well as socio-economic and other observable characteristics of the visitors and non-users.

Alternatively, the 'value transfer function' can be used. This function shows the relationship between different factors and how they affect individuals' WTP. Only the factors that have a statistically significant effect on WTP *and* are possible to collect data for in other sites are included in this function:

- The value function for visitors includes: income of the visitors (data for individual sites are available from English Heritage Taking Part survey) and 'site' (whether the site being considered is like Castle Acre Priory or Walmer Castle and Gardens). While the site variable is a coarse grouping of different EH sites, this is the best that can be done to distinguish between EH's top 20 sites and others, given that only two case studies were surveyed in this study. This function applies to EH member and non-member visitors, as well as all ticket-type purchases.

- The value function for non-users also has two variables - income and age of the non-users. For individual sites, this information is available from census data for the local area from the Office of National Statistics, but also requires a definition of the local area for a given site. In this study, local area was defined to include the population in major towns / cities sufficiently close to the site, so that residents would know of the site but far away enough that they do not visit it (at least not in the last 12 months). It is also a good idea to limit the non-user population to those within the same County as the site. Alternative definitions can be tested.

The function has a linear form. Future users will need to insert the values for each variable relevant to their site. The spreadsheet attached to the report shows how the function can be used.

Overall, when choosing between unit and function transfers, the similarities of the two sites and populations must be considered. If the two sites and/or populations are similar (based on the characteristics looked at in this study), unit value transfer can be used. If the sites and/or populations are dissimilar, and data on explanatory variables exists, the value transfer function may be a better option.

Based on the testing done in this study, using the mean (unit) WTP estimate is advisable for a visitor population (being more likely to be similar across sites than non-users) and value transfer function is advisable for a non-user population. However, both can be used for both groups for sensitivity analysis.

TECHNICAL SUMMARY

English Heritage (EH) is the government's statutory advisor on the historic environment, with the role of championing and caring for historical assets. It plays a fundamental role in the maintenance and protection of historic properties, buildings, and archaeological sites of national importance; provides conservation grants, advisory and education services; and improves the understanding of the past through research and study. The types of heritage sites which EH are charged with protecting include prehistoric stone circles, castles and gardens, ruins and historic industrial sites, museums of local importance, as well as objects and photographs in public archives.

In making decisions about the protection of heritage sites, EH requires economic evidence about the costs and benefits of such protection. This project aims to help EH fill this gap in the evidence for the latter. In particular, the study designs a valuation questionnaire for two case study sites, so that both the questionnaire and the results can be transferred to other EH sites. Results are presented in terms of the willingness to pay (WTP) of visitors and others ('non-users') to protect the site, and a 'value function' that shows different factors which determine WTP. By using the average WTP estimates and the value function in other sites, future expenses to undertake site-specific valuation surveys can be avoided.

The two study sites chosen were Castle Acre Priory and Walmer Castle and Gardens. They were chosen in order to reflect the variation in the types of EH sites in terms of location, size, facilities, and popularity. The former is a smaller site based in Norfolk, while the latter is in Kent and nationally one of EH's top 20 sites. In each site, two different groups were identified: users (visitors of the sites), and non-users (residents of the local area, who have not visited the EH site in the last 12 months). The fieldwork was conducted between April and June 2014.

Stated preference surveys were conducted to determine users' and non-users' WTP to maintain the site. The method of payment was a rise in entry fees for users who were not EH members; membership fees for EH members (visitors and non-users); and general taxes for non-users who were not EH members. If respondents said "yes" to the initial amount (£ per ticket or £ per year), they were asked a second question with a higher amount, and vice versa. All respondents were then asked a third, open-ended question about their maximum WTP. Design followed state-of-the-art practice and also asked respondents questions about their usage of heritage sites, opinions about maintaining such sites and why they were (or were not) willing to pay for the scenario presented to them. The questionnaires presented in Annexes 2 and 3 (alongside the debriefing in Annex 1) can be adapted to other English Heritage sites.

TS.1 Value Transfer Function

Value transfer, also known as benefit transfer, is a process of using existing economic evidence in different contexts. Two value transfer methods are tested here, in order to value other English Heritage sites without the need of running another primary study (see Annex 8):

1. Mean (unit) value transfer: this simply assumes that the mean WTP estimate in the case study sites apply to other sufficiently similar EH sites. Similarity should be based on site characteristics, socio-economic factors and other observable characteristics of the

visitors and non-users. The mean results are reported in Sections ES.2 and ES.3, as well as in Sections 3 and 4 of the main report.

2. Value function transfer: this shows the relationship between different factors (or 'explanatory variables'), and how they affect WTP. This function should only include those variables that have a statistically significant effect on WTP *and* have the potential for data to be collected in other sites.

   The value function for visitors includes two variables: income of the visitors (data for individual sites are available from English Heritage Taking Part survey) and 'site' (whether the site is valued like Castle Acre Priory or Walmer Castle and Gardens). While the site variable is a coarse grouping of different EH sites, this is the best that can be done given that only two case studies were surveyed in this study, and that it distinguishes between EH's Top-20 sites and others. This function applies to both EH member and non-member visitors as well as all ticket type purchases.

   The value function for non-users also has two variables: income and age of the non-users. This data is available for individual sites from census data for the local area from Office of National Statistics. This requires defining what the local area is for a given site. In this study, the local area was defined to include the population in major towns / cities sufficiently close to the site, so that residents would know of the site, but far away enough that they do not visit it (at least not in the last 12 months). It is also a good idea to limit the non-user population to those within the same County as the site. However, alternative definitions can be tested.

   The function has a linear form. Future users will need to insert the values for each variable relevant to their site into this function. The spreadsheet attached to the Annex shows how the function can be used in future site assessments.

Overall, when choosing between unit and function transfers, the similarities of the two sites must be considered. If the two sites are similar (based on the characteristics looked at), unit value transfer can be used. If the sites are dissimilar and data on explanatory variables exists, the value function transfer may be a better option.

Based on the testing done in this study, unit value transfer is advisable for the visitor population and value transfer function is advisable for the non-user population. However, both can be used for both groups for sensitivity analysis.

T.2 Castle Acre Priory Summary

Castle Acre Priory (Norfolk) dates back to 1090, and is one of the largest and best preserved monastic sites in England. It was the home of the first Cluniac order of monks to England, whose love for decoration is reflected in the extensive ruins.

In total, 300 visitors (on site) and 301 non-users (in and around Norwich, Fakenham, Dereham, and Swafham) were interviewed. Quotas for gender, age, and socio-economic group were set for the non-user samples, in order to ensure that a representative sample of the population of England (for transferability across EH sites) was interviewed. These quotas were met

sufficiently. However, there were no quotas set for users, as their population characteristics are not known. The resulting value function was found to be statistically robust and passed validity checks. The results are presented in Table TS.1.

Table TS.1: Summary of Castle Acre Priory results

	Unit	Sample size	Value
Average spend	£ per group	-	45
Entrance fee adult ticket	£ per ticket	-	6.00
Entry fee family ticket (includes 2 adults and 3 children)	£ per ticket	-	15.60
Average WTP: maximum WTP question (over and above the entry fee or membership fee)			
Visitor (EH member)	£ per year	164	2.14 (CI: 0-5)
Visitor (non-EH member, single ticket)	£ per ticket	112	2.66 (CI: 0-9)
Non-user (non-EH member)	£ per year	291	1.83 (CI: 0-8)

CI represents the confidence interval
Due to low sample size, estimation was not possible for visitors who purchased family tickets, and non-users who were EH members
All results exclude protest responses, i.e. those who said they were not willing to pay not because they do not value a site but because they do not accept the scenario for other reasons. Approximately 5% of respondents were identified as protestors.
Items for the average spend include accommodation; eating and drinking in cafes, pubs, restaurants and hotels; purchasing food, drinks and snacks from shops; shopping; entrance fees; travel and transport;car parking; and any other items.

As expected, users have higher WTP values on average compared to non-users. Across all groups, the key findings are that lower increases in entry / membership fee[1] are more likely to be accepted (as expected); those who go out for the day specifically to visit an EH site are more likely to pay and so are those who are visiting for the historic elements of the site (as opposed to gardens). Entry fees are included in all of the WTP models. Some further group-specific findings are summarised below:

<u>English Heritage member visitors:</u>

- Respondents are more likely to accept lower membership fee increases;
- Older respondents are more likely to be willing to pay to help maintain the site;
- Those who were out that day mainly to visit Castle Acre Priory, are more likely to be willing to pay;
- Those who visited many English Heritage sites in the last 12 months are more likely to be willing to pay;
- Those who took an audio tour are more likely to be willing to pay; and
- Those who used the picnic area are less likely to be willing to pay. This may be due to the fact that these users do not derive utility from the heritage aspect of the site, but from the open space. Also, since open space has more substitutes, it is likely to fetch a lower value than heritage aspects.

[1] Entry and membership fees were taken into consideration when determining the price change levels to include in the questionnaire.

For this sample, the following variables were tested and not found statistically significant, and hence are not included in the model: length of journey to Castle Acre Priory; whether the respondent had visited the site previously; frequency of visits to the site; agreement statements related to heritage sites; possible activities to undertake (those that are significant are included in the model); total time spent at the site; SEG (socio-economic group); income; education; gender; and the number of household members.

Non-EH member visitors:

- Respondents are more likely to accept lower entry fee increases;
- Lower SEGs are less likely to be willing to pay;
- Those who visited the garden and the picnic area are less likely to be willing to pay. Similar to the results of those who visited the picnic area detailed earlier, gardens may be considered more substitutable, lowering the WTP value for any given site;
- Respondents who believed that the maintenance of English Heritage sites should extend beyond just their areas are more likely to be WTP; and
- Those who were out that day mainly to visit Castle Acre Priory are more likely to be willing to pay.

For this sample, the following variables were tested and not found statistically significant and hence are not included in the model: length of journey to Castle Acre Priory; whether the respondent had visited the site previously; frequency of visits to the site; agreement statements related to heritage sites (those that are significant are included in the model); possible activities to undertake (those that are significant are included in the model); total time spent at the site; frequency of visits to heritage sites; age group; education; gender; and the number of household members.

Non-users (not EH members):

- Respondents are more likely to accept lower entry fee increases;
- Lower SEGs are less likely to be willing to pay;
- Females are more likely to be willing to pay; and
- Those who would like to visit an English Heritage site to visit the museum are more likely to be willing to pay.

The following variables were tested in this model, and not found statistically significant: whether the respondent had visited the site previously; agreement statements related to heritage sites; frequency of visits to heritage sites; number of household members; age group; possible activities to undertake (those that are significant are included in the model); and gender.

TS.3 Walmer Castle and Gardens Summary

Walmer Castle and Gardens (Kent) is a larger site, and one of English Heritage's top-20 sites. The site was built during the reign of King Henry VIII, and is quite popular for its gardens. Her Majesty Queen Elizabeth, the Queen Mother, has made regular visits to the castle.

The quotas set for non-users were met sufficiently (the same quotas for gender, age and SEG as Castle Acre Priory were used for this site). There were no quotas for visitors, as the visitor population characteristics are not known. Similar to the results for Castle Acre Priory, the functions were statistically robust and passed validity checks. The results are presented in Table TS.2.

Table TS.2: Summary of Walmer Castle and Gardens results

	Unit		Value
Average spend	£ per group	-	56
Entrance fee single adults	£ per ticket	-	7.90
Entry fee family	£ per ticket	-	20.50
Average WTP: closed maximum WTP question (over and above the entry fee or membership fee)			
Visitor(EH member)	£ per year	217	3.99 (CI: 1-10)
Visitor (non-EH member, single ticket)	£ per ticket	84	2.73 (CI: 0-7)
Non-user (non-EH member)	£ per year	293	1.77 (CI: 0-6)

CI represents the confidence interval
Due to low sample size, econometric estimation is not possible for visitors who purchased family tickets and non-users who were EH members.
All results exclude protest responses, i.e. those who said they were not willing to pay not because they do not value a site but because they do not accept the scenario for other reasons. Approximately 7% of respondents were identified as protestors.
Items for the average spend include accommodation; eating and drinking in cafes, pubs, restaurants and hotels; purchasing food, drinks and snacks from shops; shopping; entrance fees; travel and transport;car parking; and any other item.

Visitors have higher WTP values than non-users. Across all groups, the key findings are that: lower increases in entry / membership fee / general taxes are more likely to be accepted (as expected); those who go out for the day specifically to visit an EH site are more likely to pay and so are those who are visiting for the historic elements of the site (as opposed to gardens). Some further group specific findings are summarised below:

<u>EH member visitors</u>:

- Respondents are more likely to accept lower membership fee increases;
- Lower SEG groups are less likely to be willing to pay;
- Respondents who do not believe that all EH sites should be maintained are less likely to be willing to pay for the maintenance of EH sites;
- Respondents who believe that only EH sites in their area should be looked after are more likely to be willing to pay; and
- Respondents who visited an exhibition at the site are less likely to be willing to pay. This could be because visitors do not wish to see the same exhibition more than once.

From this sample, the following variables were tested and found to be insignificant: length of journey to Walmer Castle and Gardens; whether the respondent had visited the site previously; frequency of visits to the site; agreement statements related to heritage sites (those that are

significant are included in the model); total time spent at the site; education; gender; and the number of household members.

For non-EH member visitors, only the rise in the entrance fee proved to be the statistically significant determinant of WTP, which could be due to the relatively small sample size of this group. In line with intuition, the WTP model shows that the higher the entrance fee rise, the lower the probability of being willing to pay.

The EH member non-user sample is very small and therefore a WTP model could not be created, although 94% of this group stated that they were WTP.

Non-EH member non-users:

- Respondents are more likely to accept lower increases in general tax;
- Those respondents who believe that preserving all EH sites is important are less likely to be willing to pay. Although these respondents believe that preserving EH sites is important, they may not believe that the onus of helping to preserve the sites may be on them;
- Those respondents who stated that they are likely to take an audio tour are more likely to be willing to pay;
- Those who have visited the site in the past are less likely to be willing to pay. This could be due to the fact that they already experienced visiting Walmer Castle and Gardens; and
- None of the socio-economic variables have been found significant in explaining WTP for this group, which could be due to the small sample size.

For this sample, the following variables were tested and found not significant: age group; education; gender; and the number of household members

TS.4 Using the Results

The value and function estimates are for use in the economic appraisal of decisions, like purchasing new sites or spending on existing sites to maintain their current condition. They are likely to overestimate marginal improvements or marginal deterioration in site quality and hence are not advisable. Annex 8 shows how to use the value function transfer.

In addition, the results can be used to facilitate policy related to entry pricing, in order to maximise revenue (as is detailed in Annex 9).

Finally, information other than WTP (e.g. opinions and uses of EH sites) can be used in general site level, or more strategic planning. Overall, respondents had the following attitudes towards heritage (statistical summaries of the qualitative statements are included in Annex 4 and 5):

- Over 90% of respondents agreed or strongly agreed with the statement that it is important to them that heritage buildings and places are well looked after;
- 58% of respondents either disagreed or strongly disagreed with the statement that it is important to them that the heritage of only their local area is well looked after. They showed interest in heritage sites in general, rather than only the ones they have the closest access to;

- 88% of respondents either agreed or strongly agreed with the statement that it is important that heritage buildings and places that are interesting to them are well looked after; and
- 87% of respondents disagreed or strongly disagreed with the statement that overall, the maintenance of heritage buildings and places is not important to them.

The survey also produced information on the visitors' actual use, and non-users intended use, of site facilities such as audio tours, holiday cottages, gardens, picnic areas, and which factors they consider the most when deciding to visit a heritage site. These, and other results from each survey, are summarized in Annexes 4 and 5.

1. Introduction

1.1 Background

English Heritage (EH) is the government's statutory advisor on the historic environment, with the role of championing and caring for historical assets. It plays a fundamental role in the maintenance and protection of historic properties, buildings, and archaeological sites of national importance; provides conservation grants, advisory and education services; and improves the understanding of the past through research and study.

There is plenty of evidence that heritage sites provide financial (or market) values through tourism, education, media and so on. There are, however, other economic (or non-market) values generated by heritage sites such as sense of identity, place, history, and culture for which there is a lack of sufficient evidence. There is some literature such as a review by eftec (2005), which found that there are overall positive values attributed to the conservation/restoration of heritage assets. Similarly, work edited by Navrud and Ready (2002) also analyses various studies that estimate the economic value of cultural heritage.

However, we still lack a body of empirical evidence on the economic value of individual English Heritage sites that covers all components of total economic value[2] and that is comparable and transferable. Primary studies that are replicable across different sites and hence generate comparable and transferable results are needed to support cultural heritage management decision making by EH.

Such studies serve several purposes: demonstrating the total economic value of heritage sites; improving our understanding of the factors that affect this value and how this value is distributed between users (visitors) and non-users; and inputting into site acquisition and management decisions. In addition to generating economic value evidence for a given site, the research also creates a replicable study that could be used as a guide for other sites.

1.2 Research Objective and Requirements

The objective of this research is to generate economic value evidence for the heritage benefits provided by two English Heritage sites and generate average values and test a value function that can be used for other sites. The evidence is collected through primary research and a literature review was not required.

At the two English Heritage sites chosen, Castle Acre Priory and Walmer Castle and Gardens, surveys for both users and non-users of the site were implemented. There are three important factors that were considered in the design:

The use of results: It was important to ensure the results from the case study sites can be used in other sites. This is why they are presented in terms of economic value for the sites and value

[2] Direct and indirect use (visits or benefiting through documentaries etc.), option value (desire to visit in the future) and non-use values (to ensure others enjoy the site – altruistic - it's conserved for the benefit of future generations - bequest - and for its own sake - existence).

transfer functions. The decision making context in which this value evidence can be used include acquisition of new sites and cost benefit analysis of management options to maintain the current state of the site. The scope does not include marginal improvements or degradations.

Whose values: Both users (visitors) and non-users values were of interest. Non-users were limited to the 'local' area – defined as the area in which respondents may be aware of the site and the substitutes are limited. This does not mean there is no value from a given site beyond its local area. It's simply the case that we didn't have the fieldwork budget to test at different distances from the site to see how large the area the site benefits is.

The survey also distinguished between EH members and others. Many visitors to an English Heritage site will have an annual membership, and be admitted free of charge. Such visitors may judge a survey asking their willingness to pay above the site admission price somewhat incredulous. Indeed, the utility for a site to some people with an annual membership may be less than the admission price to the site. Thus, the stated preference survey required different sets of prices presented to respondents: one for English Heritage members, and one for non-members. Non English Heritage member bid prices are also determined based on the type of respondent (i.e. non-user, single adult/concession ticket users and family ticket users).

What type of value: Total economic value is estimated for visitors and non-users. It's not possible to disaggregate to individual components of value due to limited sample size. It could be argued that such disaggregation is not necessary for economic analysis of this kind. In order to define the change to be valued a hypothetical scenario was presented, detailing that without raising membership fees/entry fees/general taxes, English Heritage might not be able to continue the maintenance of the site in question.

1.3 Report Outline

This report presents the approach and results from the Economic Valuation of Heritage study. It is structured as follows:

- **Survey design and testing:** Section 2 documents the development of the questionnaire, covering the findings from pilot testing, and the survey administration and sampling.
- **Analysis and results – Castle Acre Priory:** Section 3 summarises results for the Castle Acre Priory survey, including sample profile and representativeness, perceptions and experience, willingness to pay (WTP) results, and validity testing.
- **Analysis and results – Walmer Castle and Gardens:** Section 4 summarises results for the Walmer Castle and Gardens survey, including sample profile and representativeness, perceptions and experience, WTP results, and validity testing.
- Val**ue transfer function:** Section 5 presents the WTP values and function we think is the most feasible to use for future value transfers, as well as testing of unit value transfer and value function transfer.
- **Conclusions:** Section 6 concludes with a summary of the main findings and policy implications of the study.

The content of the report is supported by the following annexes:

Annex 1: Questionnaire Design Briefing Note
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There is also a separate Excel™ spreadsheet that can help with value transfer and contains examples showing how the spreadsheet should be used.

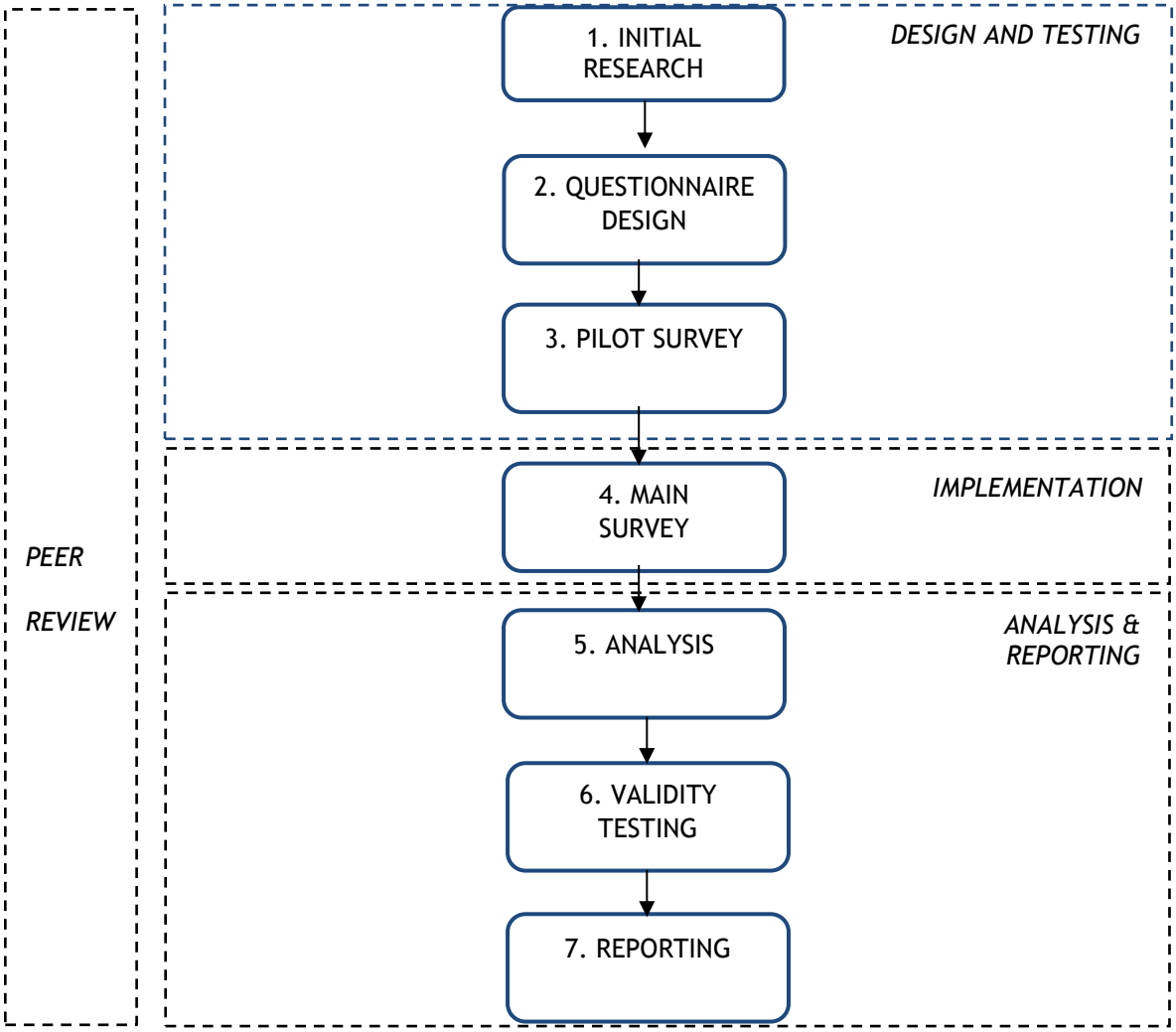
2. Survey Design and Testing

This section of the report presents the approach taken in the design, testing and implementation of the stated preference survey. Best practice of implementing a stated preference study (Bateman et al., 2002) involves the following steps (also see Figure 2.1):

1. Initial analysis: understanding the good and the change to be valued, whose values to elicit and which method(s) to use;
2. Focus groups: to test the overall approach to the good and change definition, specific wording and elicitation formats of the valuation section of the questionnaire;
3. Initial questionnaire design: to ensure data are collected on WTP as well as all factors that could potentially influence the WTP responses and hence can be used to explain the variation in WTP across respondents. The design also needs to address factors that may cause biases in the results;
4. Cognitive interviews: one-to-one interviews in which respondents answer the questionnaire and also some debriefing questions. The debriefing questions focus on the critical content of the survey to establish: (a) whether the respondent understood the purpose of the question; and (b) why they answered the way they did;
5. Questionnaire revision: following the debriefing from cognitive interviews, necessary revisions are made;
6. Pilot survey: implementing the questionnaire to a small representative sample to test that it works in the field, before going ahead with the full scale survey – to avoid any last minute hitches and be more cost-effective;
7. Final questionnaire: based on the pilot responses;
8. Main fieldwork: implementation of the questionnaire in the field to the sample chosen and using the survey mode;
9. Data analysis: statistical summaries of responses and econometric analysis of the results, and
10. Reporting: to include WTP results, validity testing and value transfer functions.

Since both EH and eftec have undertaken similar surveys and analysis in the past, there was already sufficient knowledge about what questions to ask in the survey. Therefore, qualitative testing (steps 2, 4, and 5) was not undertaken.

Figure 2.1: Stated preference study design and implementation



2.1 Initial research

2.1.1 What's being valued

Before undertaking questionnaire design, the good being valued must be determined; this study aims to value users and non-users valuation of English Heritage sites. Heritage encompasses the historical environment, which English Heritage manages. Heritage sites include prehistoric stone circles, castles and gardens, churches, ruins and historic industrial sites, as well as objects and photographs in public archives. They also include historic churches, museums and so on of local importance.

The change valued was presented as the continued maintenance of the given site. Respondents were told: "due to budgetary limitations, English Heritage might not, in future, be able to maintain and keep Castle Acre Priory open to the public. There are other similar sites around the country but if additional funding is not found this one might fall into disrepair." The hypothetical nature of this scenario was emphasised but the overall possibility being realistic

had to be maintained to ensure budgetary limitations (for EH and the individual) are taken into account.

2.1.2 Specifications of case study sites

The two case study sites chosen were Castle Acre Priory, and Walmer Castle and Gardens.

Castle Acre Priory is one of the largest and best preserved monastic sites in England dating back to 1090, located in Norfolk. It was the home of the first Cluniac order of monks to England and the Cluniac love of decoration is reflected in the extensive ruins. This site was chosen due to the size and location; it is not one of the top EH sites, and therefore should provide accurate analysis of EH sites that are not regarded as outliers (e.g. the WTP derived from Stonehenge may not be representative of the WTP for other lesser known EH sites). Visitors were sampled while on the site; non-users were interviewed in and around the surrounding cities/towns of Norwich, Fakenham, Dereham, and Swafham.

Walmer Castle and Gardens is located in Deal, Kent, and is a top-20 EH site. It is a larger site than Castle Acre Priory, so can be used to assess the difference in WTP based on the type of site, facilities, etc. The site was built during the reign of King Henry VIII, and is quite popular for its gardens. Her Majesty Queen Elizabeth the Queen Mother has made regular visits to the castle. Visitors were sampled on-site, non-users in and around Deal.

2.1.3 Whose values

The sample for both sites included users and non-users. Users referred to visitors of the site, while non-users include residents of the surrounding area who have not visited the specific EH site in question within the last 12 months. Quotas for gender, age, and socio-economic group were set for the non-user samples, in order to interview a representative sample of the population in England. The population was set to England to ensure better transferability to sites elsewhere in the country. No quotas could be set for visitors as the characteristics of the visitor population are not known. This did not have an adverse effect on results, as the visitor sample proved to be similar to the profile of other English Heritage sites.

Furthermore, respondents were split based on whether they are English Heritage members or non-members. This split is necessary as the two groups have different payment mechanism (or vehicles) to pay for sites.

The value estimates corresponds to all four components of Total Economic Value as explained above. Disaggregation at individual component was not possible due to limited sample but neither is it necessary for the purposes of economic analysis for which the results will be used.

2.2 Questionnaire Design

A questionnaire design briefing note is included in Annex 1, explaining the reasons why each question in the survey is asked. There are three main reasons why a question is asked (not all three apply to all questions):

1. To ensure that a representative sample of the relevant population is captured in the survey (in this case, the resident population in England),
2. To warm up the respondent to the survey topic (in particular in the sections before the valuation questions), and
3. To collect information that would be interesting for economic analysis.

The surveys were structured as follows:

Section A – Screening and quota questions

These questions were used to screen respondents to ensure that those selected fit quota and criteria. For both surveys, only UK residents were interviewed. The non-user survey only interviewed respondents who have not visited the site in question in the last 12 months, to ensure that they were non-users. For the user questionnaires, quotas for gender, age, and SEG were set.

Section B – Attitude and experience

Both general heritage site and site-specific questions were asked. Heritage sites were defined as prehistoric stone circles, castles and gardens, churches, ruins and historic industrial sites, as well as objects and photographs in public archives. They also include historic churches, museums of local importance and so on. Respondents were first asked about their views on heritage sites in general: their views of heritage sites, how frequently they visit heritage sites, and the factors they consider when choosing a heritage site to visit.

Following this, respondents were asked about the heritage site in question (i.e. Castle Acre Priory or Walmer Castle and Gardens). Questions were asked about the activities they took part in while at the site, how long they spent at the site, and their overall opinion of the site.

Section C - Willingness to pay

The contingent valuation (CV) method was used for the design of this section. This design was preferred as (a) only the total value for the whole site is needed, as opposed to value for individual attributes of a site (the latter would require a choice experiment design) and (b) the survey needed to be relatively easy and quick especially for visitors as it was to take place during their visit on site.

The section included information on:

- What change is being presented (EH no longer funding the maintenance of the site, leading to closure)
- What respondents are being asked to pay for (the maintenance of the site)
- What method of payment respondents are being asked to use (i.e., the payment vehicle): Three payment vehicles were used: entry fee for visitors who are not EH members, general taxes for non-users and membership fee for EH member visitor and non-users. Amounts were set so as not to be too much higher than the entry fee for each site. Due to the higher entrance fees for Walmer Castle and Gardens vs. Castle Acre Priory, higher bid amounts were set for visitors to Walmer Castle and Gardens.
- WTP was asked using a dichotomous choice design: respondent was first asked to pay £x, if they accepted this, a higher amount was asked. If they rejected, a lower amount was

asked. These two are 'close-ended' questions. Finally, a third, open-ended, question asked them to state their maximum WTP. Annex 1 provides further detail on how this design works.

- Finally, follow-up questions were asked to establish why the respondents were or were not willing to pay for the scenario presented.

Section D – Travel Cost questions (visitor questionnaire only)

These questions are asked to determine the cost of the time to travel to and from the site, in order to test a travel cost model, to supplement the WTP values. It provides analysis about the significant factors affecting respondents' cost of travelling to the site. Travel cost analysis is included in Annex 6.

Section E – Socio-economic and demographic profile

Data on socio-economic variables are collected to ensure (a) representativeness of the sample and (b) to include as explanatory variables in the WTP (value) function to ensure that responses are 'valid'. Such variables include the number and age of members of the respondent's household; level of education; type of employment; whether they are the main income earner in the household; SEG of the main income earner; income; post-code; and ethnicity.

2.3 Pilot Survey

A pilot survey implements the questionnaire to a small representative sample to test that it works in the field, before going ahead with the full scale survey. A pilot survey is needed to provide a 'field-test' of the final version of the questionnaire and survey material. It provides a basis for fine-tuning the survey (i.e. small amendments to questions/coding) and is also a valuable means for training interviewers.

Data from the pilot survey at Castle Acre Priory (25 visitor, 25 non-user interviews) showed the expected patterns. The pilot survey took place in April over approximately one week. Non-users were interviewed in Swaffham and Horsford. All interviews were conducted face-to-face, testing the suggested survey format. The robust results from the pilot survey were added to the main fieldwork data for Castle Acre Priory.

The pilot surveys were overall successful, and intuitive results were found. It helped with the design of the main questionnaire, calling for the following changes to the survey:

- The 'resident' sample name was changed to 'non-user';
- The description of what constitutes a heritage site was modified to give further explanation;
- Guest of a lifetime EH member, and corporate member was included as an option in the visitor survey;
- A question asking whether respondents reported WTP based on themselves, or based on their families were asked, to ensure that individual WTP values were being determined;
- Non-user non-English Heritage member bid amounts were adjusted, and
- Additional options were added to determine why respondents were, or were not, willing to pay.

2.4 Main survey sampling and administration

Main survey administration took place from April – June 2014:

- **Non-users:** the survey was completed as a face-to-face interview using pen-and-paper. Respondents were interviewed at home, and were a sufficient distance from the site to ensure that the relevant components of total economic value could be picked up. Castle Acre Priory non-users were interviewed in and around Norwich (approximately 30 miles from the site), Swaffham (about 4.5 miles from Castle Acre Priory), Fakenham (about 12.5 miles from the site), and Dereham (about 14 miles from the site); Walmer Castle and Gardens non-users were interviewed in Deal (approximately 2 miles from the site).

  The sampling approach included respondents who have not visited the EH site in the last 12 months, and were UK residents. Quotas were set for gender, age, and socio-economic group, in order to interview a representative sample of England (see Annexes 4 and 5).

- **Visitors:** the survey was also completed as a face-to-face interview using a pen-and-paper, on site; random sampling was used. Only UK residents were interviewed.

2.5 Analysis

Statistical/econometric analysis is provided in order to interpret the data obtained from the fieldwork. The following types of analysis are presented:

- Descriptive statistics: These detail a general view of respondents, illustrating how respondents answered the questions through statistical parameters. Descriptive statistics tables can be found in Annexes 4 and 5.
- WTP results: WTP results are determined through econometric methods for both the closed and open-ended WTP question.
- Value transfer analysis: Value transfer functions are created through econometric analysis, and tested against unit value transfers. This is to aid future value transfer studies for English Heritage sites.

In the main report the average (mean) of the maximum WTP values (open-ended question) are reported, while the econometric models (both parametric and non-parametric) are reported in Annex 7:

- Parametric analysis involves making assumptions about the type of relationship between WTP and the factors that determine it. In the case of the models used, we assumed that this relationship is linear and the error term (part of the variation in WTP that cannot be explained by the known factors) has a normal distribution.
- Non-parametric analysis does not impose any kind of relationship on the shape of the data, and can be used to determine the shape of the data. Non-parametric analysis tends to take more time and is usually used if parametric models do not work well.

Annex 9 uses the parametric and non-parametric analysis further in revenue maximising price analysis, to determine the revenue maximising value of EH site entrance fees.

2.6 Validity Testing

WTP responses need to be analysed to test whether they are reliable and valid, i.e. whether they are statements of true preferences or zero answers protesting the survey (a valid zero would be because someone did not care about what was valued) or very high amounts thinking they would never have to pay anyway (hypothetical bias or strategic behaviour).

Validity concerns are reflected in the questionnaire design such as the wording of the valuation scenario and follow up questions. The following are the main components of validity testing:

- **Content validity**: this concerns how the stated preference questionnaire was developed and takes into account fundamental issues such as respondent understanding of the survey, the perceived credibility of the hypothetical scenarios presented, and responses to follow-up questions to help determine valid and invalid answers. For more detail on the design see Annexes 1, 2 and 3.
- **Construct validity:** this focuses on the analysis and econometric estimation, in terms of how well estimated models fit data (i.e. how well do they explain the WTP of users and non-users) and the extent to which results conform to prior expectations (i.e. as income increases WTP should increase, all else equal, i.e. income should have a positive and significant sign). Econometric results reported for each site reflect the validity of the results.
- **Convergent validity:** Compares the results to other similar studies. A comprehensive literature review was not part of the scope of this project. The results are not too different to other known studies in terms of the magnitude of the values. The WTP responses also compare well against the entry fee to the sites.

2.7 Reporting

This report and its annexes detail the results from the analysis and validity testing of the survey results.

3. Analysis and Results – Castle Acre Priory

This section of the report presents the main results from the Castle Acre Priory visitor and non-user survey. It covers the sample representativeness and respondent profile, and the analysis of the contingent valuation components of the stated preference survey. Travel cost results can be found in Annex 6.

3.1 Sample representativeness

A total of 301 non-users and 300 visitors (users) were interviewed. Full summary statistics for the sample representativeness and sample profile for Castle Acre Priory respondents can be found in tables in Annex 4.

Table 3.1 details the gender split. The proportion of males is lower than the quota, while the proportion of females is slightly over-sampled.

Table 3.1: Respondent gender (percentage) – Castle Acre Priory

	Visitors (n=300)	Non-users (n=301)	Target quota (for non-users)
Male	46	48	49
Female	54	52	51
Total	100	100	100

The breakdown of respondent age is provided in Table 3.2. The non-user sample results are closely aligned to the quota. Due to low numbers of visitors at Castle Acre Priory, meeting a target quota proved to be difficult. The sample reached, though, is representative of the English Heritage visitor profile, as is detailed in their Visitor Survey Profile[3]. Therefore, quotas were not implemented for the visitor sample.

Table 3.2: Respondent age (percentage) – Castle Acre Priory

Age	Visitors (n=300)	Non-users (n=301)	Target quota (for non-users)
18-24	3	10	12
25-34	12	15	17
35-44	14	17	17
45-54	21	15	18
55-64	23	17	15
65+	27	26	21
Not stated	0	0	0
Total	100	100	100

[3]EH provided eftec with data from their Visitor Survey Profile.

Turning to respondent socio-economic group (SEG), there is a mix of under and over sampling. Users were not restricted to the quotas. For the non-user sample, the percentages are closely aligned to those of the quota.

Table 3.3: Respondent socio-economic group (SEG) (percentage) – Castle Acre Priory

	Visitors (n=300)	Non-users (n=301)	Target quota (for non-users)
AB	65	26	23
C1	17	30	31
C2	15	19	21
DE	3	25	26
Total	100	100	100

3.2 Visitor sample

3.2.1 Sample profile – demographics and household income

Household size: The average household size for the Castle Acre Priory user sample is approximately two people (with an average of 2.5), with single-person households the second most popular household type.

Employment: The majority of the sample is employed full-time (30+), at 41% of respondents. The second most common category is retired, followed by part-time employed.

Education: Attainment of a first degree is most common within this sample (22%), with professional qualifications following (18%).

Income: 29% of respondents stated that they prefer not to state their income level (29%). Of those who reported, most respondents earn £25,000-£39,999 per year.

Due to the high number of missing values in for the income variable, SEG was used as a proxy for income in the WTP analysis.

Membership: 55% of respondents are English Heritage members. 43% are members of the National Trust, while 5% are members of a local charity or group that looks after heritage sites.

3.2.2 Perceptions and experience

Here a summary of some key findings is provided. Full summary statistics can be found in Annex 4.

Figure 3.1 below shows the frequency that users have visited heritage sites over the last 12 months. The majority of respondents stated that they visit heritage sites three to four times a year (42%), with 90% of respondents having visited a heritage site in the last 12 months.

Figure 3.1: Frequency of visits to heritage sites in the last 12 months (percentage) – Castle Acre Priory Visitors

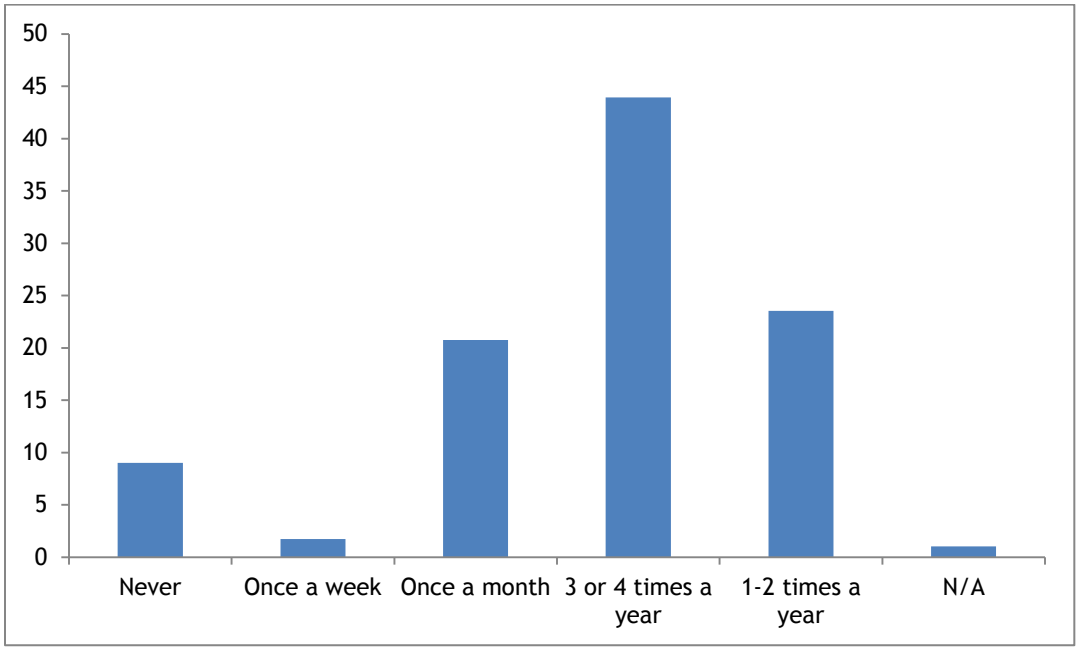
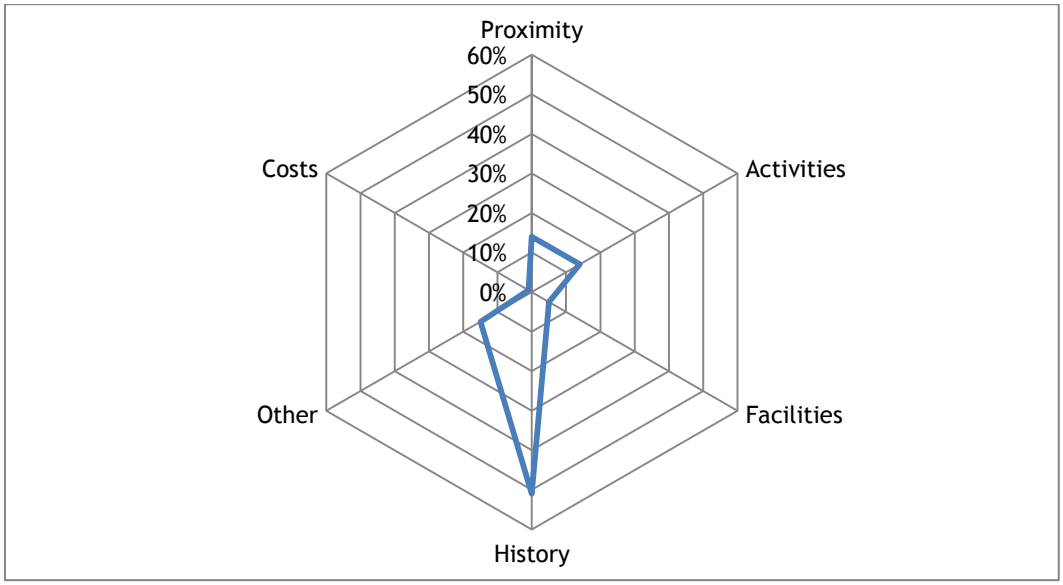


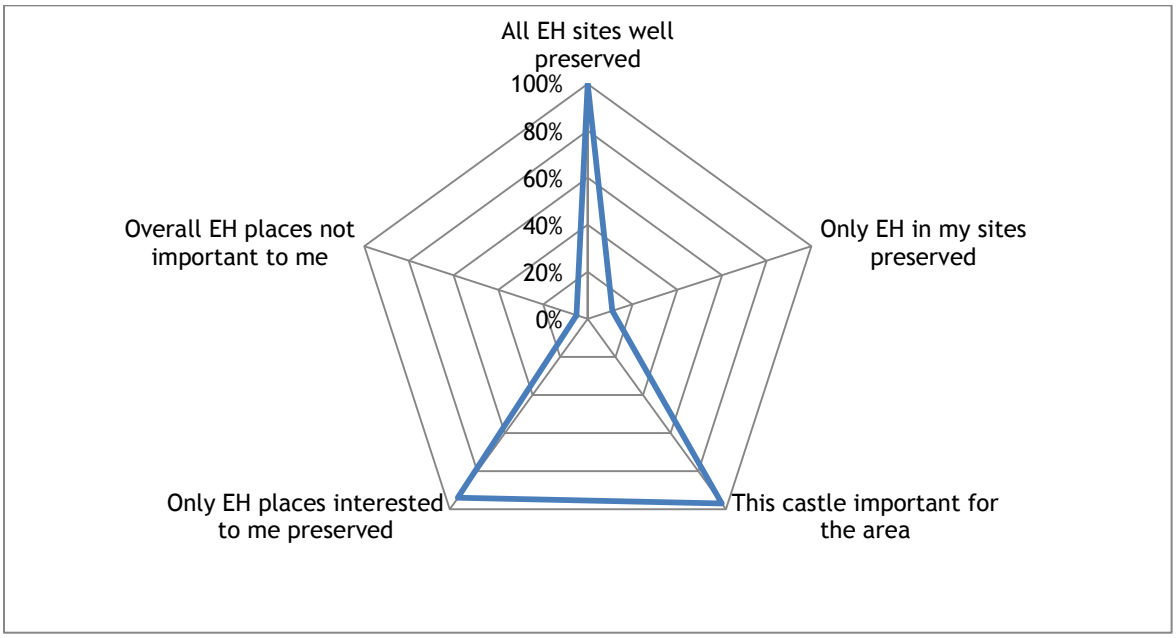
Figure 3.2 shows which factors visitors considered when deciding which heritage site to visit, including proximity, activities, facilities, history, costs and other. A larger number (51%) consider the history of the site, with 'other' falling second (which includes whether the site is a dog friendly place, on the route of a holiday, or has disabled access).

Figure 3.2: Factors considered when choosing what heritage site to visit (percentage) – Castle Acre Priory Visitors



Overall, respondents have positive perceptions towards the preservation of heritage sites. Most respondents strongly agree that heritage buildings and places in general should be well looked after (see Figure 3.3).

Figure 3.3: Agreement with preserving heritage sites (percentage) – Castle Acre Priory Visitors



On average, respondents spent approximately 1.5 hours on the site, with the majority of respondents (60%) having never visited Castle Acre Priory before.

Most respondents stated that Castle Acre Priory was a very good place to visit (76%), and would recommend visiting the site to a friend or relative (99%).

Most respondents (62%) stated that visiting Castle Acre Priory was the main purpose of their journey.

The majority of the visitors (82%) undertook four or more activities during the visit at the site. Visiting the Prior's lodging and the West End church gable proved to be the most popular activities which respondents participated in (87% and 86% respectively).

3.2.3 WTP results

This section presents the results of the contingent valuation study. Travel cost model results are presented in Annex 6.

Several econometric models were tested to find the best fit for the WTP responses. Separate analysis was undertaken for different categories of users (i.e. English Heritage member, non-member with single ticket, non-member family ticket) and non-users (i.e. English Heritage

member or not). Where the sample was not sufficiently large for a given category, analysis could not be undertaken.

Table 3.4 reports average maximum WTP per person – in response to the third, open-ended question they were asked. Results from the dichotomous choice questions are presented in Annex 7. The average WTP estimates are in the middle column, with the confidence intervals in brackets underneath. The number of protesters is shown in the final column. Protesters are respondents who stated a zero value not for their disinterest in Castle Acre Priory, but for dislike of the payment vehicle (i.e., entry fees or a raise in English Heritage member fees), or other reasons (e.g. English Heritage or the government should pay for maintenance). Protest zeros are excluded from the analysis. Those who stated valid zero responses are included in average WTP estimates.

Table 3.4: Average WTP estimates for open-ended questions – Castle Acre Priory Visitors

User type	WTP excluding protesters (confidence interval)	Number of protesters
EH member – additional membership fee (£ per person per year)	2.14 (0-5)	15
Non-EH member single ticket – additional entry fee (£ per person per visit)	2.66 (0-9)	4
Non-EH member family ticket – additional entry fee (£ per person per visit)	0.88 (0-5)	2

Part of the explanation for WTP can be demonstrated through the type of ticket holder. Table 3.5 details the total average spending for each type of respondent at Castle Acre Priory, along with the standard deviation. The standard deviation describes the amount of variation from the average. Therefore, a high standard deviation means that the data are quite spread out compared to the mean. Annex 4 shows the mean, median, mode, max and min of respondent expenditure.

Table 3.5: Average spend (£) per visit per visitor type – Castle Acre Priory Users

User type	Average spend on site (£)	Standard Deviation (£)
EH member	44.89	48.01
Single Ticket	48.89	48.01
Family Ticket	30.93	20.37

Non-EH member single-ticket holders (adult/concession tickets) spent the most on site, and were willing to pay the most as well. This could be explained by group size; family ticket holders would be visiting with a larger group, and would therefore be considering more individuals when spending. Visitors who purchased a family ticket had a lower WTP. One explanation for this could be that 67% of the sample stated that they cannot afford to pay any more for an entrance fee ticket.

English Heritage members – WTP function

Below are the results from the econometric analysis for the CVDB questions. Before choosing the best-fit model, other variables were tested before they were determined to be statistically insignificant (see Annex 7 for a list of tested variables[4]). The WTP model excludes protesters (5% of the sample); 37% of respondents are not WTP; the average WTP for the remaining is found to be £3.08 per person per year.

Only the best fit model excluding protesters is reported. There are only 15 respondents that fall into this category, making it 9% of the sub-sample, which is a very low and acceptable proportion.

The signs of the statistically significant variables overall agree with intuition:

- Respondents are more likely to accept lower membership fee increases;
- Older respondents are more likely to be willing to pay to help maintain the site;
- Those who were out that day mainly to visit Castle Acre Priory are more likely to be willing to pay;
- Those who visited many English Heritage sites in the last 12 months are more likely to be willing to pay;
- Those who took an audio tour are more likely to be willing to pay; and
- Those who used the picnic area are less likely to be willing to pay. This may be due to the fact that these users do not derive utility from the heritage aspect of the site but from open space. Also, since open space has more substitutes it is likely to fetch a lower value than heritage aspects.

Checking a cross-tab of respondent frequency of visiting Castle Acre Priory and use of the picnic area shows that there is no strong relationship between the two variables (see Annex 4 for a cross-tab). The model displayed is overall significant.

A cross-tab with the *Audiotour* variable and distance travelled is also estimated. Overall, respondents who took the audio tour did travel slightly more miles, but there is no significant difference in the results, and correlation between distance travelled and undertaking the audio tour cannot be inferred.

Non-English Heritage members (single-adult/concession ticket) – WTP function

Once again, a series of variables were tested before choosing the best-fit model without protesters (see variables tested and model in Annex 7[5]).

The signs of the statistically significant variables overall agree with intuition, and the model is overall significant:

[4] The following were tested in the WTP model and found statistically insignificant: length of journey to the site; whether the respondent had visited the site previously; frequency of visits to the site; agreement statements related to heritage sites; possible activities to undertake (those that are significant are included in the model); total time spent at the site; SEG; income; education; gender; number of household members.

[5] The following variables were tested and found insignificant: length of journey to the site; whether they had visited Castel Acre previously; frequency of visits to the site; agreement statements related to heritage sites; possible activities to undertake (those that are significant are included in the model); total time spent at the site; frequency of visits to heritage sites; age group; education; gender; number of household members

- Respondents are more likely to accept lower entry fee increases;
- Lower SEGs are less likely to be willing to pay;
- Those who visited the garden and the picnic area are less likely to be willing to pay. Similar to the results of those who visited the picnic area detailed earlier, gardens may be considered more substitutable, lowering the WTP value for any given site.
- Respondents who believed that the maintenance of English Heritage sites should extend beyond just their areas are more likely to be WTP.
  Those who were out that day mainly to visit Castle Acre Priory are more likely to be willing to pay.

The WTP models used the first and second of the closed-ended questions to determine WTP. The analysis showed that there is only a moderate relationship between the choices the respondents made between the first and the second questions (i.e., respondents tended to decide their answer to the second question independent as to how they answered the first question). Because of this independence, the results from the first question should be focused on for analysis.

Non Members Family ticket – WTP model

Due to the low number of observations, the econometric model cannot be estimated. Therefore, the results for the single adult ticket purchasers, reported above, are assumed to apply to all types of non-English Heritage member visitors.

3.2.4 Validity testing

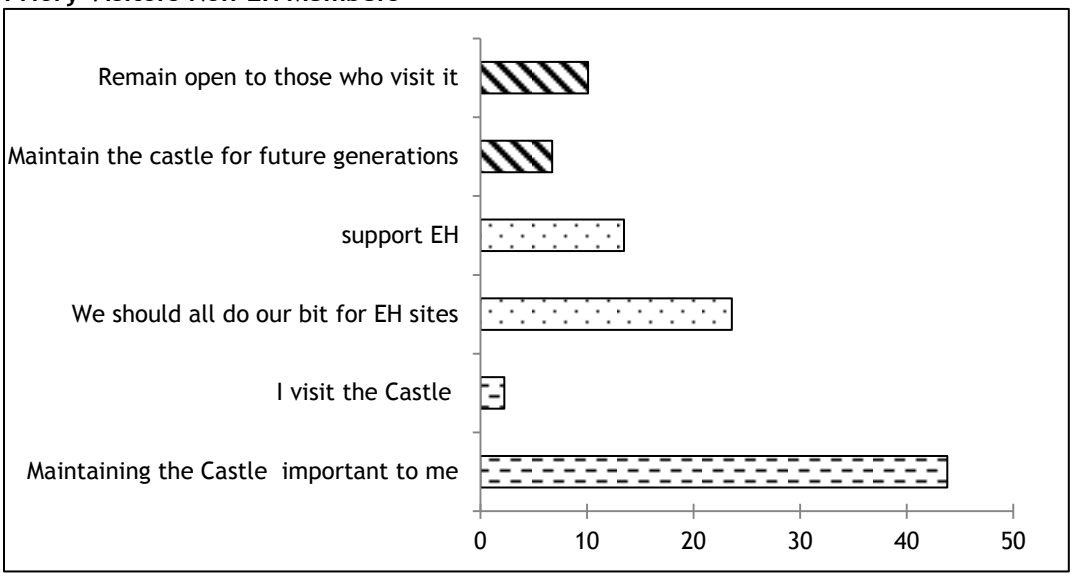
English Heritage members

The visitor EH member WTP model is highly significant with intuitive coefficient results, reinforcing the construct validity of the estimation. The main motivations for being willing to pay higher fees are motivated by self-interest and altruistic reasons, as is highlighted in Figure 3.4[6].

The "warm glow" (altruistic) respondents could be omitted, but this would decrease the number of observations significantly. In addition, warm glow could be seen as a valid reason for WTP in this context. Therefore, those respondents stating this motivation are also included in the analysis.

[6] In the main survey, respondents only gave one reason for being WTP, or not being WTP; in the pilot, respondents could respondent with multiple reasons.

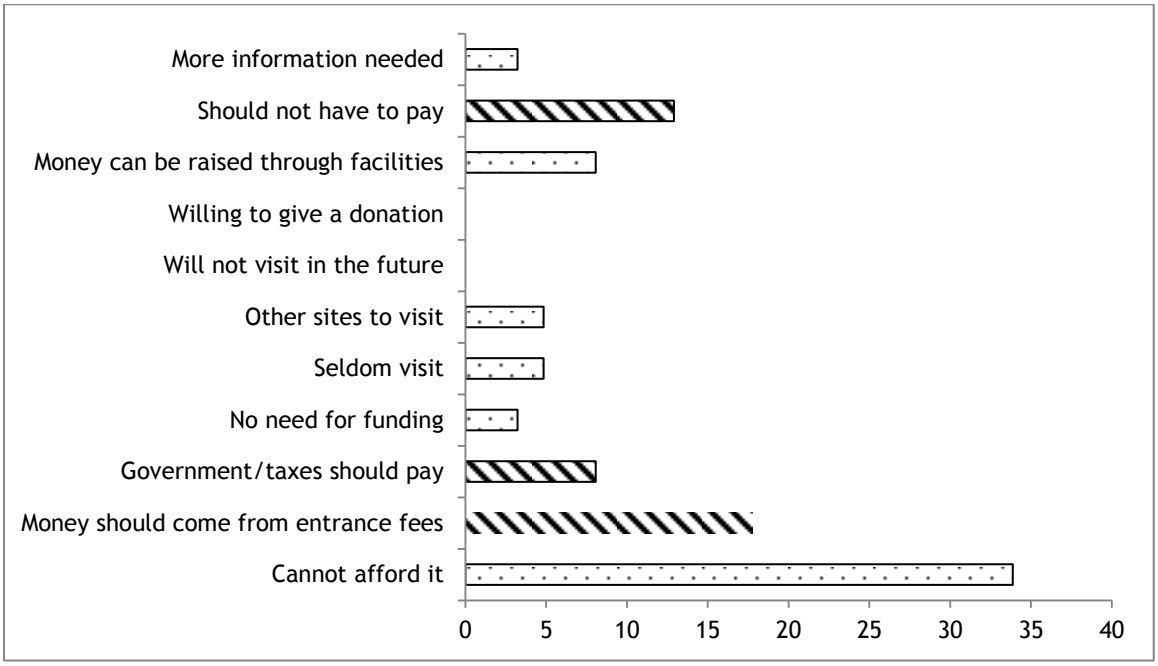
Figure 3.4: Reasons for being willing to pay higher member fees (percentage) – Castle Acre Priory Visitors Non-EH Members



Diagonal lines altruistic reasons; dots support to EH; dashed lines personal reasons

Figure 3.5 identifies the reasons that respondents stated why they are not WTP. Most users stated that they are not WTP due to financial reasons (34%).

Figure 3.5: Reasons for not being willing to pay higher membership fees (percentages) – Castle Acre Visitors EH Members



Protest responses are diagonal lines. Valid responses are dots.

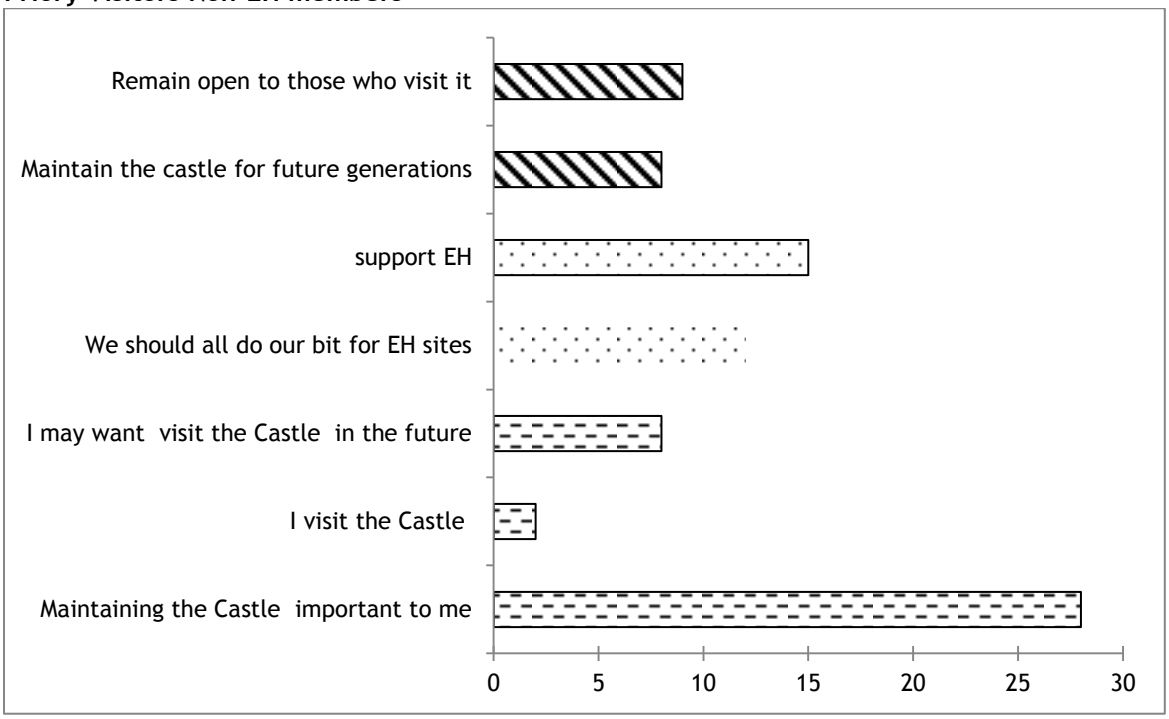
Non English Heritage Members

The WTP model for non-EH members is highly significant but the two equations (i.e., the first equation looks at the first bid amount, and the second equation looks at the second bid amount in the dichotomous choice questions) are only moderately dependent which means that respondents treated the two questions differently. This is not a failure of the model but a reason to focus more attention on the first answer. Another explanation for this characteristic of the sample is the smaller sample size. The construct validity of the model is confirmed by the significance of the variable SEG.

Figure 3.6 displays the reasons why non-English Heritage members are willing to pay higher entry fees; the reasons are driven by interest for visiting the site and general interest in supporting English Heritage, which confirms the content validity of the estimation.

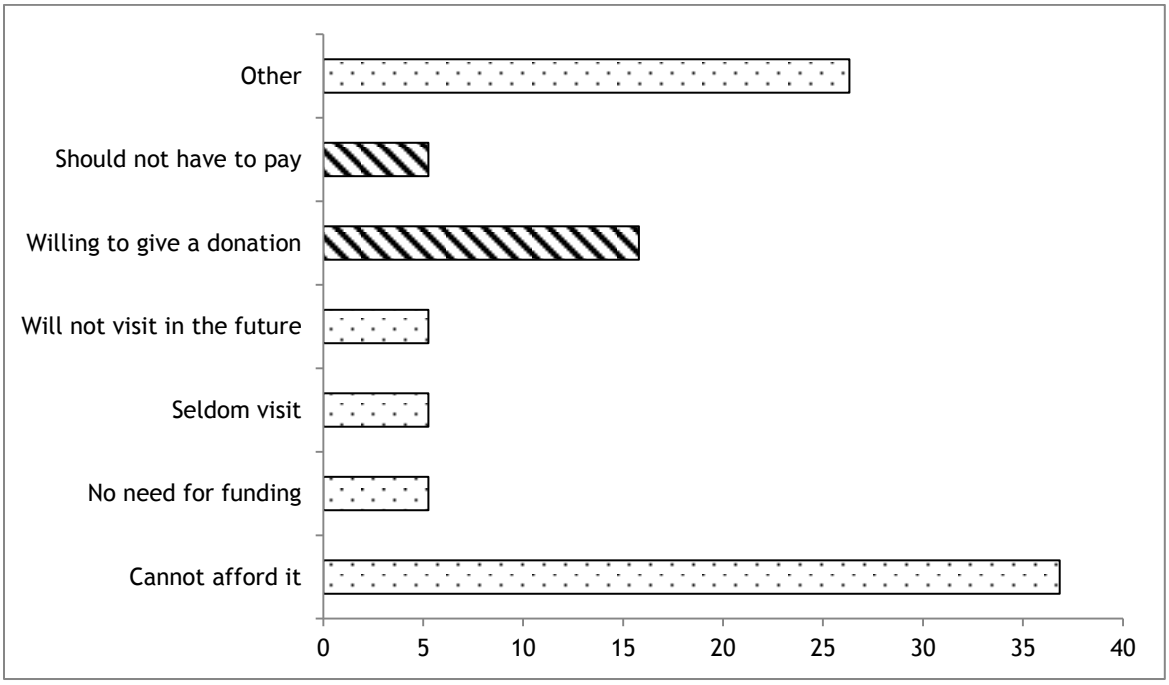
Similar to the English Heritage member sample, most visitors who stated that they are not willing to pay due to reasons of budget constraint (see Figure 3.7). A similar result is found for the family ticket sub-sample (Figure 3.8).

Figure 3.6: Reasons for being willing to pay higher entry fees (percentage) – Castle Acre Priory Visitors Non-EH members



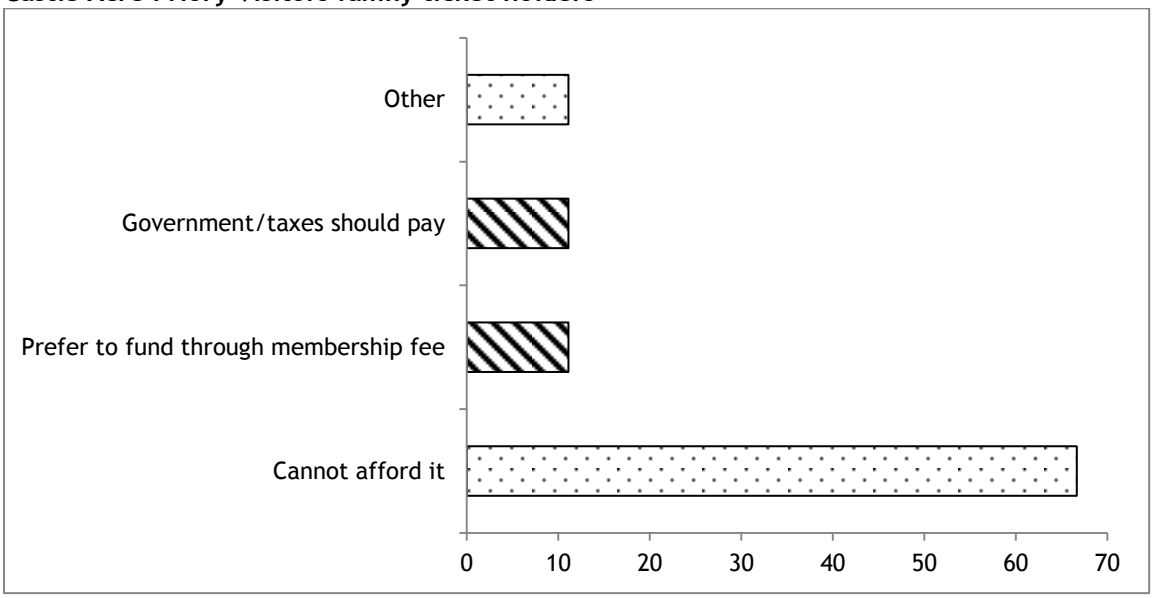
Diagonal lines altruistic reasons; Dots support to EH; dashed lines personal reasons

Figure 3.7: Reasons for not being WTP higher membership fees (percentages) – Castle Acre Priory Users adult/concession ticket holders[7]



Protest responses are diagonal lines. Valid responses are dots.

Figure 3.8: Reasons for not being willing to pay higher membership fees (percentages) – Castle Acre Priory Visitors family ticket holders



Protest responses are diagonal lines. Valid responses are dots.

[7] Valid responses from respondents who stated "other" in the reasons for being willing/not willing to pay were included in the WTP models.

3.3 Non-user sample

3.3.1 Sample profile – demographics and household income

Household size: The average household size is approximately three people (average of 2.7), with more users with larger households as compared to the user sample. Single-person households are the second most popular household type.

Employment: The majority of the sample is retired, differing from the user sample. This is followed by full-time employment (27%), and part-time employment (18%).

Education: There are differences with the user sample, with the highest percentage of respondents in this sample having obtained their O levels / CSEs / GCSEs (any grades), followed by other qualifications.

Income: 21% of respondents earn between £15,500 and £24,999 per year, followed closely by £25,000 and £39,999 (20%). More respondents were willing to report their total household income compared to the user sample (17% vs. 29% stating they preferred not to say).

Membership: Only 2% of respondents are English Heritage members, and 14% are members of the National Trust.

3.3.2 Perceptions and experience

Figure 3.9 below details the frequency with which the non-user sample visits heritage sites. Overall, 51% of respondents have visited a heritage site in the last 12 months, with 20% visiting a heritage site once or twice in the last 12 months.

Figure 3.9: Frequency of visits to heritage sites in the last 12 months (percentage) – Castle Acre Priory Non-Users

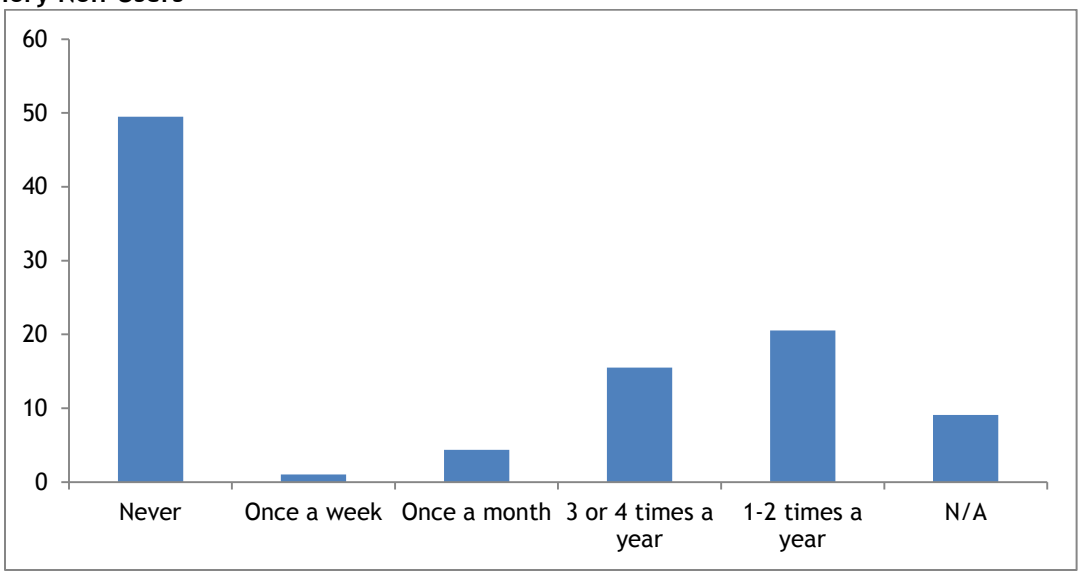
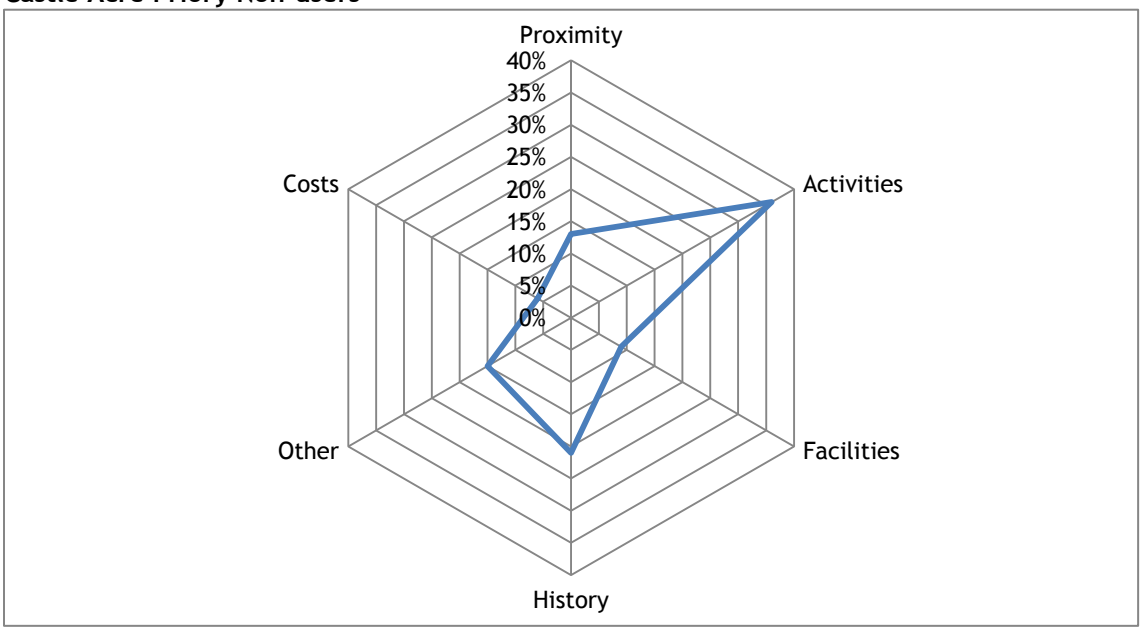


Figure 3.10 illustrates the factors respondents consider when deciding to visit a heritage site. Activities such as walking, picnicking, and enjoying the gardens prove to be the main reasons, with history being second most important.

Figure 3.10: Factors considered when choosing what heritage site to visit (percentage) – Castle Acre Priory Non-users



From the full Castle Acre non-user sample, 26% of respondents have visited Castle Acre Priory, and the majority of those who visited the castle rate the site as very good or good, and would recommend visiting the site to others (see Annex 4). Most respondents stated that if they visited Castle Acre Priory, they would be interested in visiting the garden (69%) and the museum (59%).

3.3.3 WTP results

This section presents the results of the contingent valuation study. Econometric models were used to determine non-user's WTP values for Castle Acre Priory. In order to derive an accurate estimation, respondents were reminded that they have constraints, such as their budget, to consider when stating their WTP. Parametric estimation can be found in Annex 7.

Table 3.6 reports average WTP in terms of £ per person per year for Castle Acre Priory.

Table 3.6: Average WTP estimates for open-ended questions – Castle Acre Priory Non-users

User type	WTP excluding protesters (confidence interval)	Aggregate WTP excluding protesters (confidence interval)	Number of protesters
EH member – additional membership fee (£ per person per year)	-	-	0
Non-EH member – additional general taxes (£ per person per year)	1.83 (0-8)	455,187 (0-1,989,880)	3

Table 3.6 also includes aggregate results, summing the population of the locations where the non-user population was sampled (Norwich, Swaffham, Fakenham, Dereham). Population statistics were taken from ONS[8] data; the sum of the population is 248,736, from mid-2010 estimates. This represents the total WTP of the population of the areas that were sampled. The aggregation here uses the same method that is used in the value transfer spreadsheet.

Only six respondents were English Heritage members, and four of these were willing to pay. All four respondents stated that they were WTP £3. Looking at non-EH members, 50% of respondents stated that they were willing to pay, with an average of value of £1.81 per year.

Non-English Heritage members – WTP model

Before choosing the best-fit model for the dichotomous choice questions, other variables were tested before they were determined to be statistically insignificant (see Annex 7 for a list of tested variables and the WTP model[9]). Only the best fit model without protesters is reported.

The following are the overall findings from the statistically significant variables:

- Respondents are more likely to accept lower entry fee increases;
- Lower SEGs are less likely to be willing to pay;
- Females are more likely to be willing to pay, and
- Those who would like to visit a English Heritage site to visit the museum are more likely to be willing to pay.

[8] http://www.ons.gov.uk/ons/datasets-and-tables/index.html

[9] The following variables were tested and found insignificant: whether the respondent had visited the site previously; agreement statements related to heritage sites; frequency of visits to heritage sites; number of household members; age group; possible activities to undertake (those that are significant are included in the model); gender

3.3.4 Validity testing

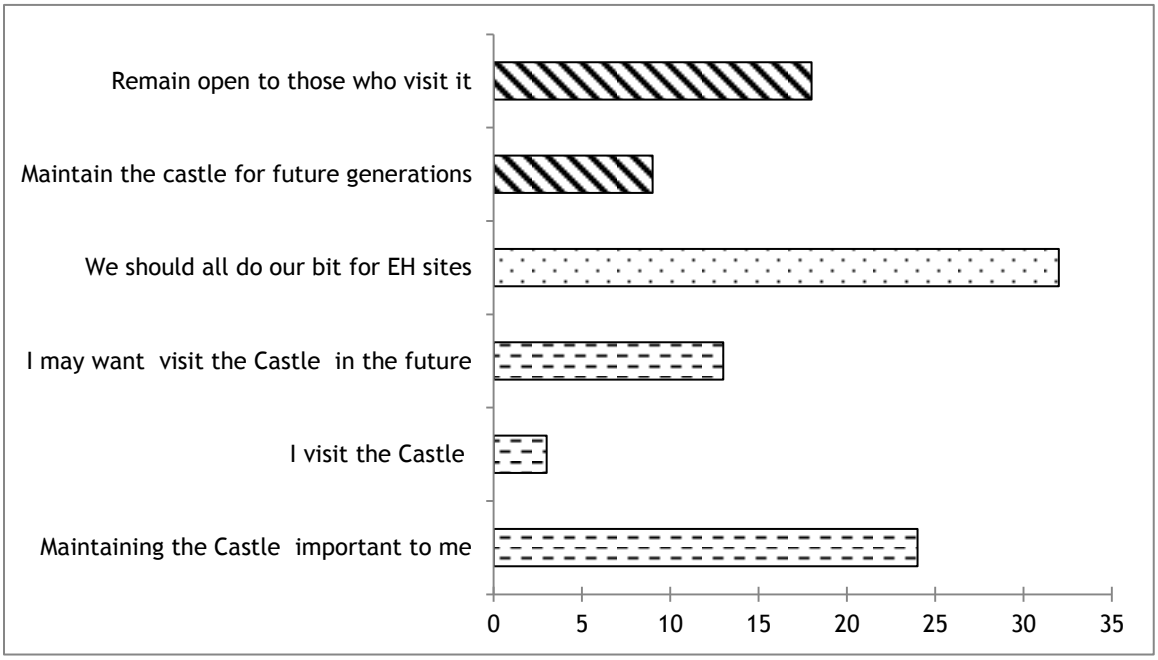
English Heritage members

From the English Heritage member sample, two of the respondents stated that "maintaining Castle Acre Priory and keeping it open to the public" as their main reason for being WTP, while the other two stated their main reason was to keep the site maintained for future generations. Due to the reasons stated for not being WTP, these respondents can be considered protesters.

Non English Heritage Members

The WTP model is highly significant and the coefficients present the expected sign. The model shows that respondents used the same answered protocol for the first and second question. Most respondents stated that they are willing to pay in support of the maintenance of local/national heritage.

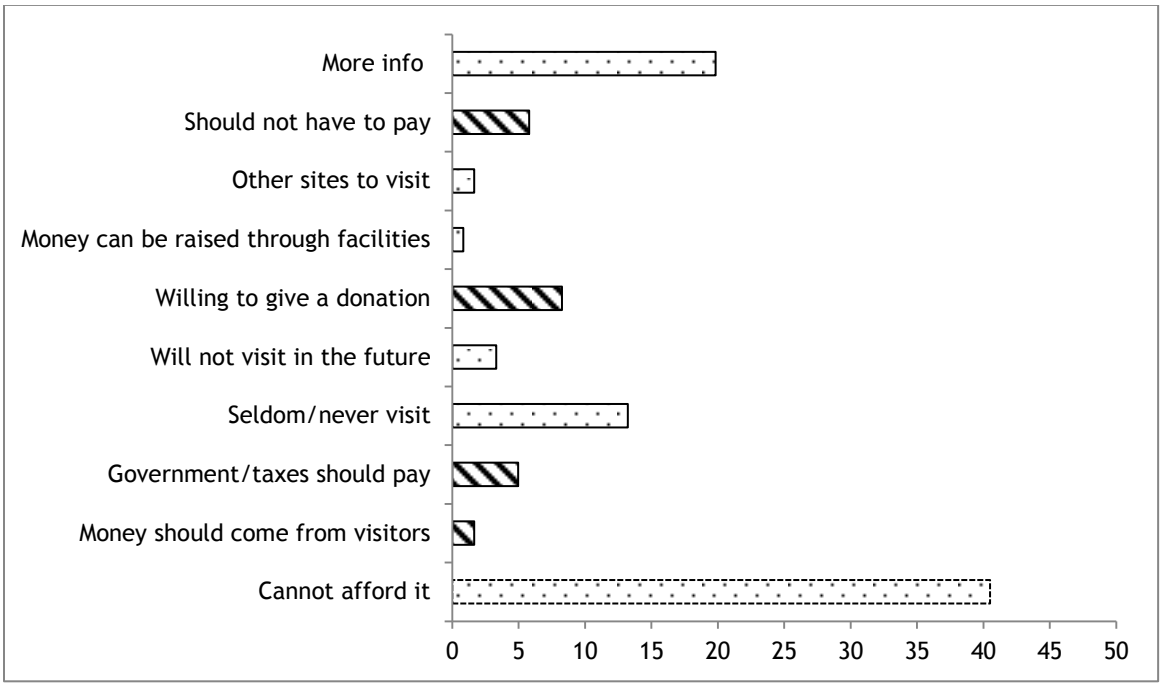
Figure 3.12: Reason for being willing to pay higher taxes (percentage) – Castle Acre Priory Non-users non-EH members



Diagonal lines altruistic reasons; Dots support to EH; dashed lines personal reasons

Figure 3.13 outlines the reasons respondents stated that they are not WTP. Most respondents who stated a zero WTP value have done so for reasons of affordability.

Figure 3.13: Reasons for not being willing to pay higher membership fees (percentages) – Castle Acre Non-users Non-EH Members



Protest responses are diagonal lines. Valid responses are dots.

4. Analysis and Results – Walmer Castle and Gardens

This section of the report presents the main results from the Walmer Castle and Gardens visitor and non-user survey. It covers the sample representativeness and respondent profile, and the analysis of the contingent valuation components of the stated preference survey. Travel cost results can be found in Annex 6.

4.1 Sample representativeness

A total of 320 users, and 325 non-users were interviewed for the survey. Full summary statistics for the sample representativeness and sample profile for Walmer Castle and Gardens respondents can be found in tables in Annex 5.

In the visitor sample, males are slightly over sampled and females under sampled, with the reverse result for the non-user sample.

Table 4.1: Respondent gender (percentage) – Walmer Castle and Gardens

	Visitors (n=320)	Non-users (n=325)	Target quota (for non-users)
Male	51	46	49
Female	49	54	51
Total	100	100	100

There is slight over sampling of the 18-24, 55-64, and 65+ old age groups. This is compensated by slight under sampling in the remaining groups.

Table 4.2: Respondent age (percentage) - Walmer Castle and Gardens

Age	Visitors (n=320)	Non-users (n=325)	Target quota (for non-users)
18-24	13	15	12
25-34	16	16	17
35-44	18	14	17
45-54	19	15	18
55-64	15	16	15
65+	19	23	21
Not stated	0	0	0
Total	100	100	100

Turning to SEG, non-users prove to have a similar sampling structure to that of the quotas set.

Table 4.3: Respondent socio-economic group (SEG) (percentage) – Walmer Castle and Gardens

	Visitors (n=320)	Non-users (n=325)	Target quota (non-users)
AB	47	23	23
C1	29	30	31
C2	17	23	21
DE	7	23	26
Total	100	100	100

4.2 User sample

4.2.1 Sample profile – demographics and household income

Household size: The average household size is approximately three people (average of 2.8), with single-person households the second most popular household type.

Employment: Most respondents have full-time employment (44%), with the second most common category being respondents who are retired (26%).

Education: Attainment of a first degree is most common (20%), similar to the Castle Acre Priory user sample. A difference between the Walmer Castle and Gardens and Castle Acre Priory samples are observed in the second most common level of education, with O levels / CSEs / GCSEs (any grades)(18%) falling into this category for the Walmer Castle and Gardens sample.

Income: Only 2% of respondents stated that they would prefer not to state their total household income. Most respondents have a total household income of £40,000 - £59,999 (25%) and £25,000 - £39,999 (23%), which is higher than the average household income for the Castle Acre Priory sample. Though there are fewer respondents who refused to report their income in this sample, in order to analyse WTP using similar variables, SEG will be used as a proxy for income in the WTP analysis.

Membership: 68% of respondents are English Heritage members, which is higher than the Castle Acre Priory visitor sample (55%). 31% are members of the National Trust.

4.2.2 Perceptions and experience

Many of the respondents (40%) have visited heritage sites 3 to 4 times in the last year, with 47% of respondents having visited Walmer Castle and Gardens previously.

Figure 4.1: Frequency of visits to heritage sites in the last 12 months (percentage) - Walmer Castle and Gardens Visitors

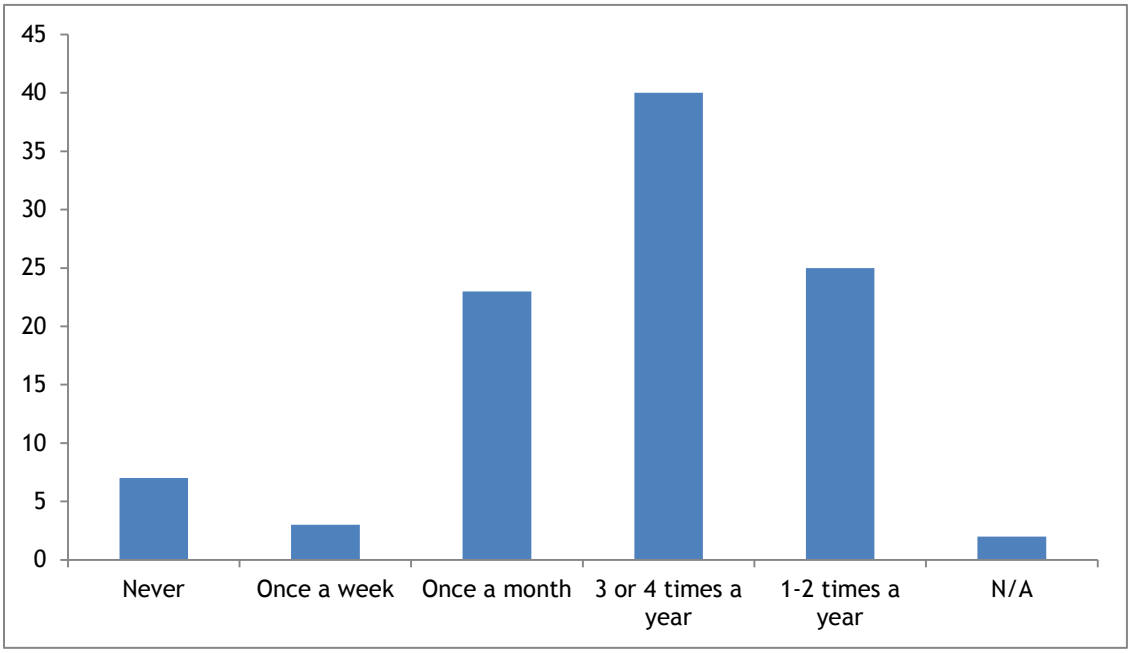
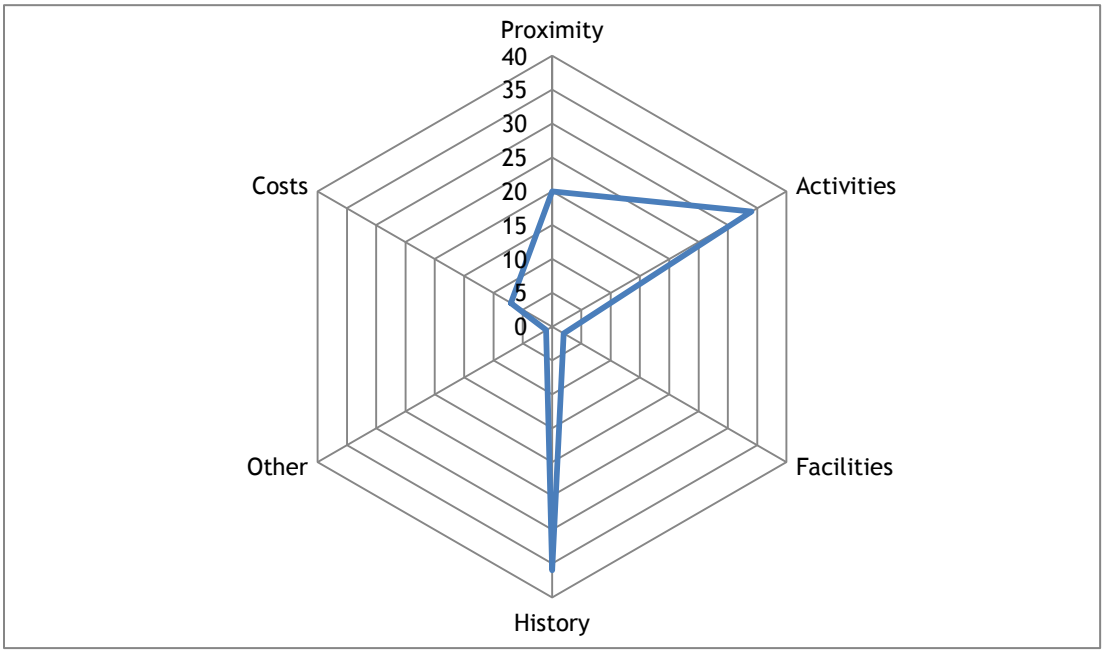


Figure 4.2 shows which factors visitors considered when deciding which heritage site to visit, including proximity, activities, facilities, history, costs and other (including disabled access, proximity to other activities, and recommendations from family/friends). For this sample, it is observed that *activities* and *proximity* are a more important consideration compared to the Castle Acre Priory sample.

Figure 4.2: Factors considered when choosing which heritage site to visit (percentage) - Walmer Castle and Gardens Visitors

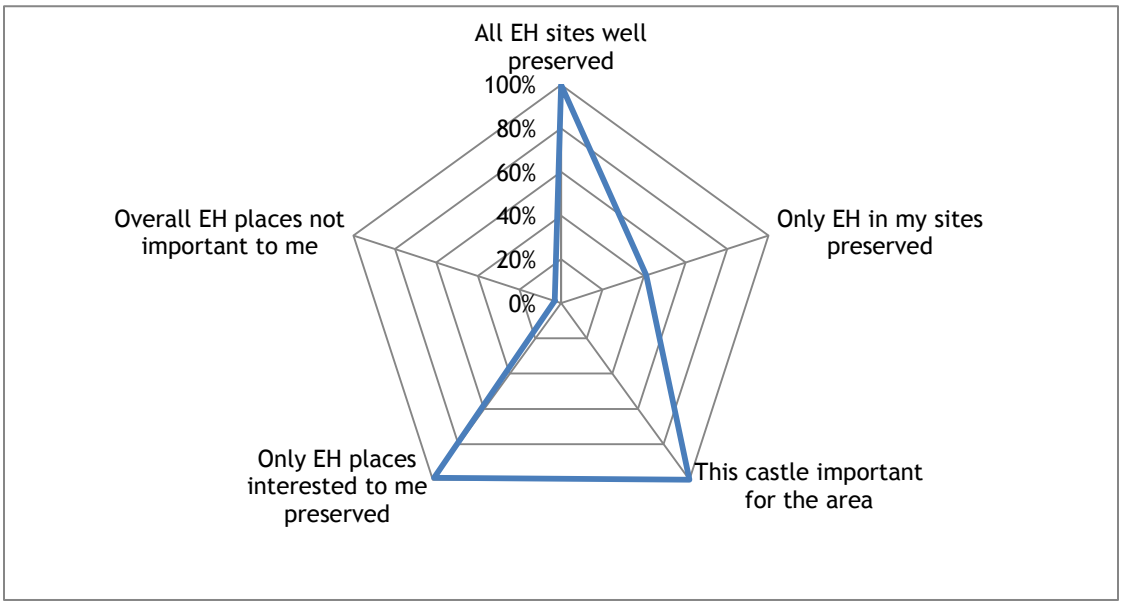


Respondents agreed that preserving heritage buildings and places is important, with an interest in the preservation of all sites, sites which interest them particularly, and Walmer Castle and Gardens in particular.

Figure 4.3 shows the results, merging the "strongly agree" and "agree" options into one category:

- 100% of respondents agreed that all heritage sites need to be preserved;
- 100% of respondents agreed that Walmer Castle and Gardens is important for the local area, and
- 99% of respondents agreed that heritage sites interesting to people need to be preserved.

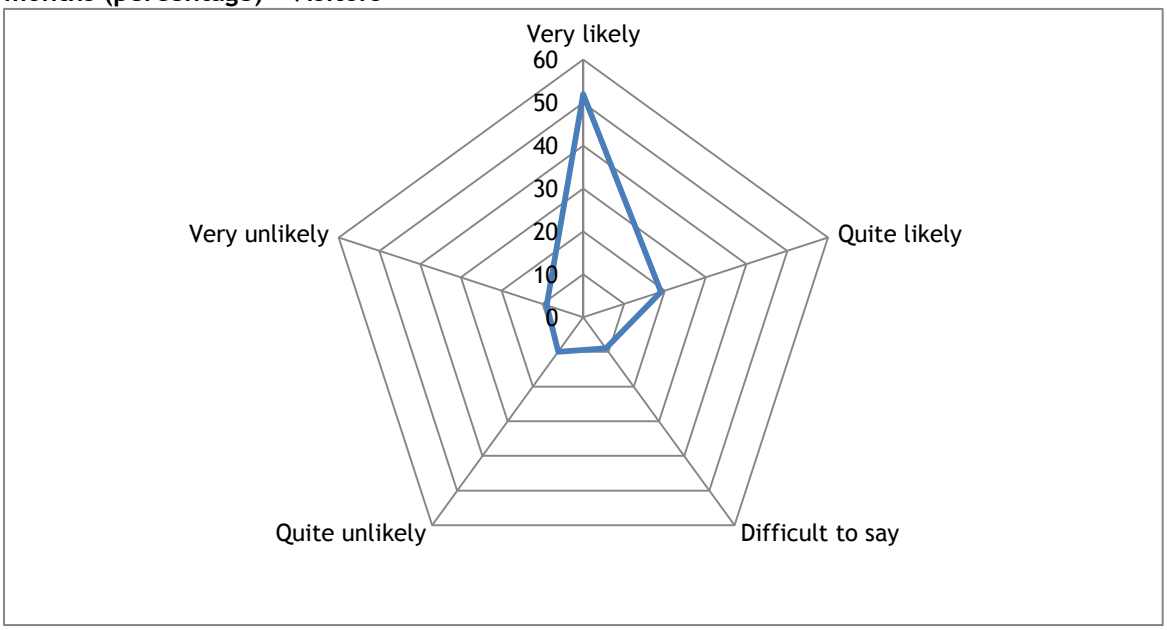
Figure 4.3: Agreement with preserving heritage sites (percentage) – Walmer Castle and Gardens Visitors



Visiting Walmer Castle and Gardens was the main purpose of most respondents' journeys (80%). The majority of respondents (52%) undertook about four activities during their visit. Visiting the garden and tearoom were the most popular activities. The average time spent at the site (approximately 2 hours, 20 minutes) is higher than that for Castle Acre Priory. Walmer Castle and Gardens is a larger site than Castle Acre Priory, and is one of English Heritage's top 20 sites; therefore, this finding is not surprising. Similar to Castle Acre Priory, most respondents rate Walmer Castle and Gardens as very good or good, and would recommend visiting the site to a friend or relative.

In considering the possibility to make another visit to the castle in the next 12 months the majority of respondents stated that it is very likely (Figure 4.4).

Figure 4.4: Respondent likelihood of visiting Walmer Castle and Gardens in the next 12 months (percentage) - Visitors



68% of respondents are English Heritage members, with 31% of respondents belonging to the National Trust.

4.2.3 WTP results

This section presents the results of the contingent valuation study. Travel cost model results are presented in Annex 6. Details of the econometric model are presented in Annex 7.

Table 4.4 below illustrates the averages of the open-ended maximum WTP questions for the different visitor types. English Heritage members on average have a higher maximum WTP than non-member single-ticket visitors.

Table 4.4: Average WTP estimates for open-ended questions - Walmer Castle and Gardens Visitors

User type	WTP per person excluding protesters (confidence interval)	Number of protesters
EH member – additional membership fee (£ per person per year)	3.99 (1-10)	16
Non-EH member single ticket – additional entry fee (£ per person per visit)	2.73 (0-7)	3
Non-EH member family ticket – additional entry fee (£ per person per visit)	1.66 (0-5)	2

Considering average spending on site, similar to the results for the Castle Acre user sample, family ticket holders on average spent less on site. Once again, size of the group may be a factor in determining WTP values (see Table 4.5).

Table 4.5: Average spend (£) per visit per visitor type – Walmer Castle and Gardens

User type	Average spend on site (£)	Standard Deviation (£)
EH member	73.4	97.2
Single Ticket	71.30	82.20
Family Ticket	48.90	56.53

English Heritage members – WTP model

Below are the results from the econometric analysis for the dichotomous choice questions. Before choosing the best-fit model, other variables were tested before they were determined to be statistically insignificant (see Annex 7 for a list of tested variables and WTP models[10]). The WTP model excludes protesters (5% of the sample); overall, 80% of respondents stated that they were WTP.

Only the best fit model excluding protesters is reported. Protesters are respondents who stated a zero value not for their disinterest in Walmer Castle and Gardens, but for dislike of the payment vehicle (i.e., entry fees or a raise in English Heritage member fees), or other reasons (e.g. English Heritage or the government should pay for maintenance). There are only 16 respondents that fall into this category.

Most of the findings of the model agree with intuition:

- Respondents are more likely to accept lower membership fee increases;
- Lower SEG groups are less likely to be willing to pay;
- Respondents who do not believe that all EH sites should be maintained are less likely to be willing to pay for the maintenance of EH sites;
- Respondents who believe that only EH sites in their area should be looked after are more likely to be willing to pay, and
- Respondents who visited an exhibition at the site are less likely to be willing to pay. This could be because visitors do not wish to see the same exhibition more than once.

Non-English Heritage members (single-adult/concession ticket) – WTP model

Once again, a series of variables were tested before choosing the best-fit model without protesters (see variables tested and model in Annex 7[11]). The model without protesters (1 observation, approximately 1% of the sub-sample) proves to be significant; 95% of respondents stated that they were willing to pay. Only the rise in the entrance fee price proved to be statistically significant, which could be due to the relatively small sample size of this group.

[10] The following variables were tested and found insignificant: length of journey to the site; whether the respondent had visited the site previously; frequency of visits to the site; agreement statements related to heritage sites; possible activities to undertake (those that are significant are included in the model); total time spent at the site; education; gender; number of household members

[11] The following variables were tested and found insignificant: age group; education; gender; number of household members

The WTP model shows that the higher the entrance fee rise, the lower the probability of being WTP, which agrees with intuition.

The WTP models used the first and second of the closed-ended questions to determine WTP. The analysis showed that there is only a moderate relationship between the choices the respondents made between the first and the second questions (i.e., respondents tended to decide their answer to the second question independent as to how they answered the first question). Because of this independence, the results from the first question should be focused on for analysis.

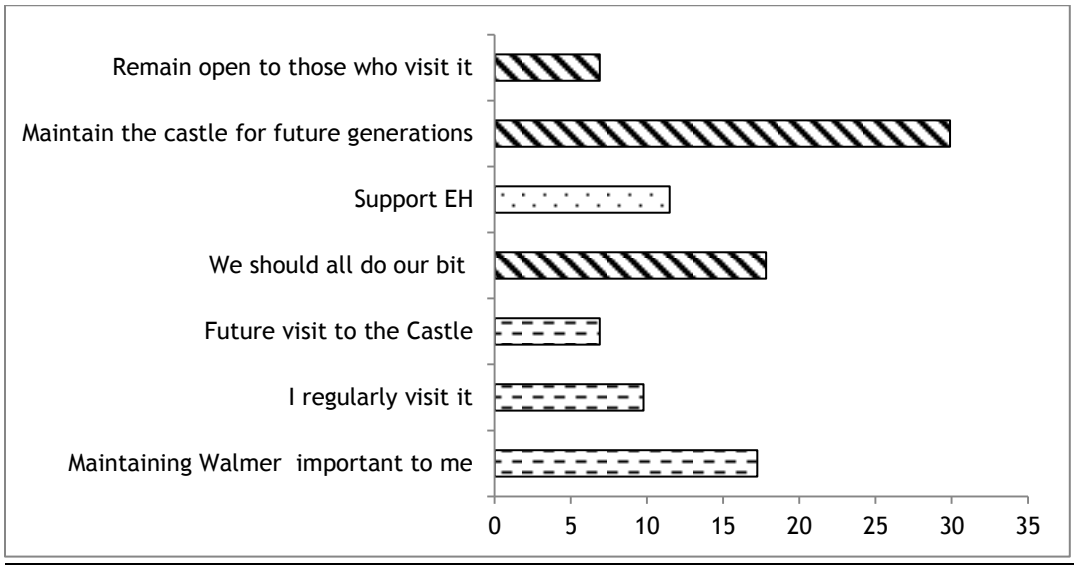
Non Members Family ticket – WTP model

Due to the low number of observations, an econometric model cannot be estimated. Therefore, the results for the single adult ticket purchasers are assumed to apply to all non-English Heritage member visitors to Walmer Castle and Gardens.

4.2.4 Validity testing

English Heritage members
The econometric model estimated is overall significant. The SEG variable, used as a proxy for income, is significant and has the expected sign, confirming the construct validity of results. The main reasons respondents' were willing to pay to maintain Walmer Castle and Gardens are non-use motivations.

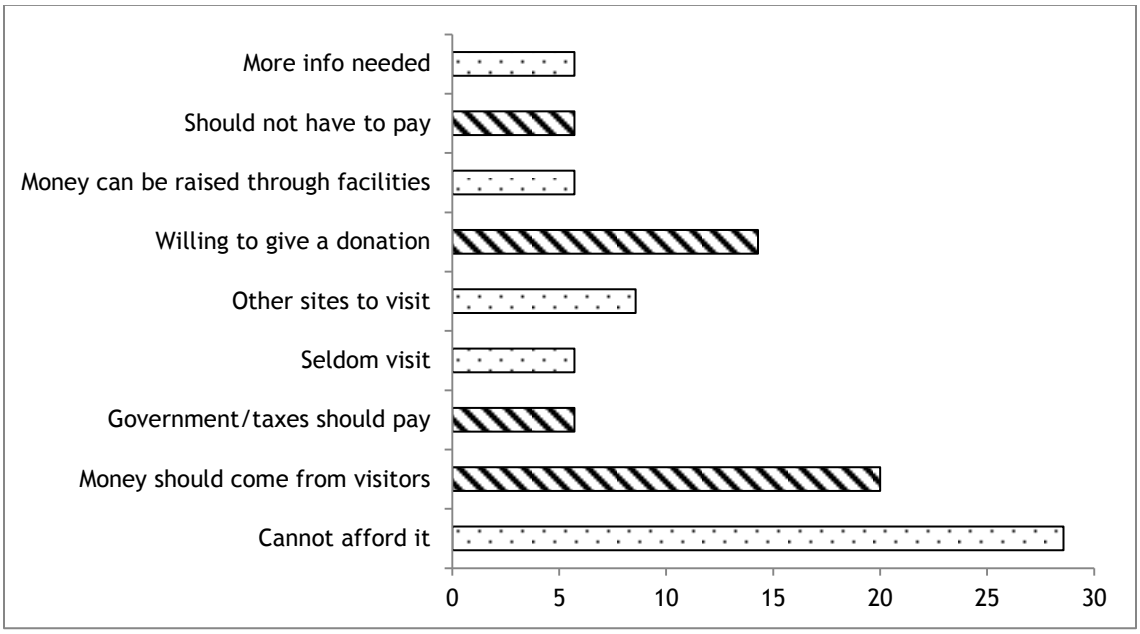
Figure 4.5: Reason for being willing to pay higher membership fees (percentage) – Walmer Castle and Gardens Visitors EH members



Diagonal lines altruistic reasons; Dots support to EH; dashed lines personal reasons

The majority of respondents found the survey to be interesting, with few stating that it is unrealistic/not credible (see Annex 4 for statistical summary tables), reinforcing the content validity of the results. Similar to the Castle Acre sample, most respondents who reported that they were not willing to pay were for budgetary reasons.

Figure 4.6: Reasons for not being WTP higher membership fees (percentages) – Walmer Castle and Gardens Users EH Members

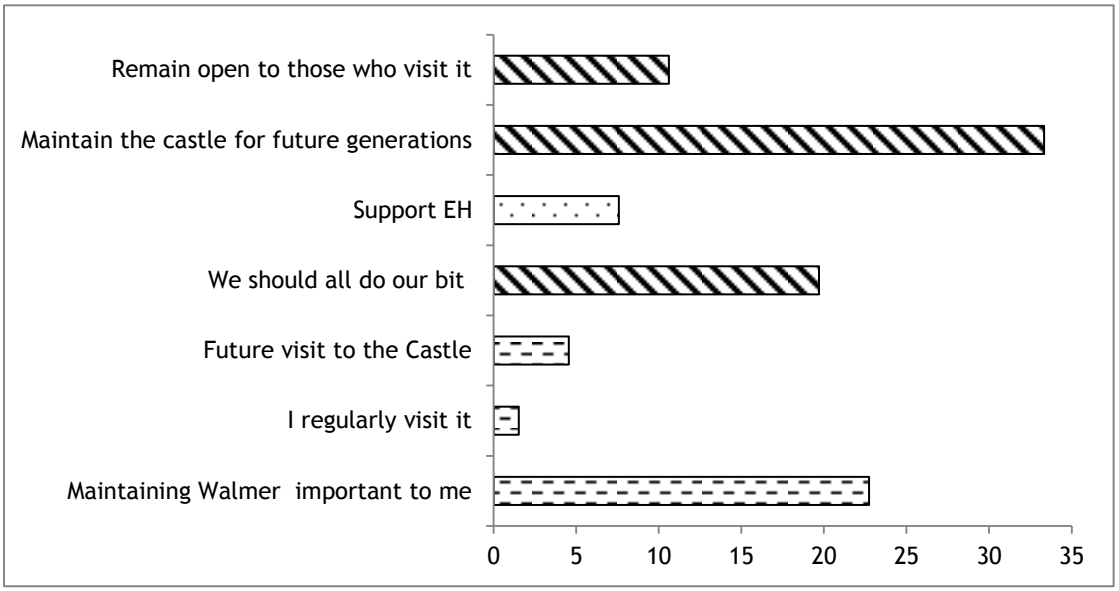


Protest responses are diagonal lines. Valid responses are dots.

Non English Heritage Members – Single adult ticket/concession ticket

The econometric model is moderately significant, due to the small sample size. Similar to the English Heritage member sample, altruistic reasons are respondents' main motivation for being WTP.

Figure 4.7: Reason for being willing to pay higher entry fees (percentage) – Walmer Castle and Gardens Visitors non-EH members



Diagonal lines altruistic reasons; Dots support to EH; dashed lines personal reasons

Once again, respondents in this sub-sample who stated that they were not WTP were for budgetary reasons.

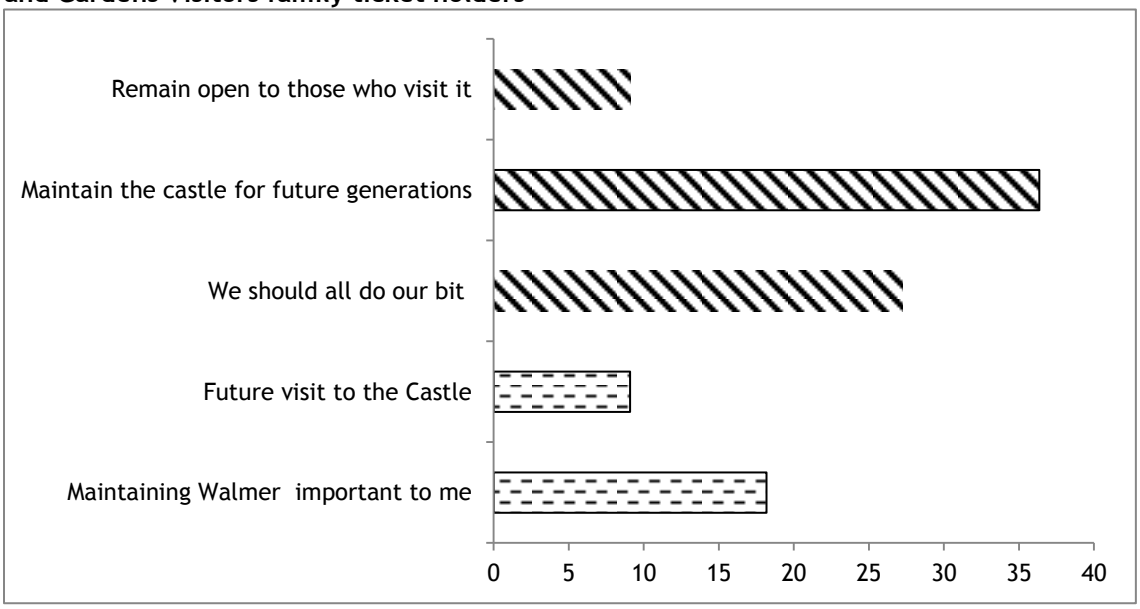
Figure 4.8: Reasons for not being WTP higher membership fees (percentages) – Walmer Castle and Gardens Users non-EH members

Protest responses are diagonal lines. Valid responses are dots.

Non English Heritage Members – Family ticket

Similar to the two aforementioned samples, most respondents state non-use motivations for being WTP.

Figure 4.9: Reason for being willing to pay higher entry fees (percentage) – Walmer Castle and Gardens Visitors family ticket holders



Diagonal lines altruistic reasons; Dots support to EH; dashed lines personal reasons

Of the four members of this sub-sample who stated that they are not WTP, 50% stated that this was due to budgetary constraints, and the remaining 50% were protest responses.

4.3 Non-user sample

4.3.1 Sample profile – demographics and household income

Household size: The average household size is approximately three people (average of 2.9), which is slightly larger than the Castle Acre Priory samples.

Employment: Most respondents have full time employment (33%). This is followed by respondents who are retired (24%) and part-time employed (17%).

Education: Varying from the user sample, most respondents in the non-user sample's highest educational attainment is O levels / CSEs / GCSEs (any grades). The second highest percentage is that of no qualifications, differing from all of the other presented sub-samples.

Income: The spread of average respondent earnings is more similar to the user profile. The majority of respondents earn between £40,000 - £59,999 (18%) and £25,000 - £39,999 (18%).

Membership: 10% of respondents are English Heritage members, which is higher than the Castle Acre non-user group, with only 6% of respondents being members of the National Trust. Overall, 94% of respondents stated that they are not a part of any of the listed organisations.

4.3.2 Perceptions and experience

In the non-user sample, 45% of respondents have visited a heritage site in the last 12 months, with 26% of respondents having visited a heritage site once or twice in the last 12 months.

Figure 4.10: Frequency of visits to heritage sites in the last 12 months (percentage) - Walmer Castle and Gardens Non-users

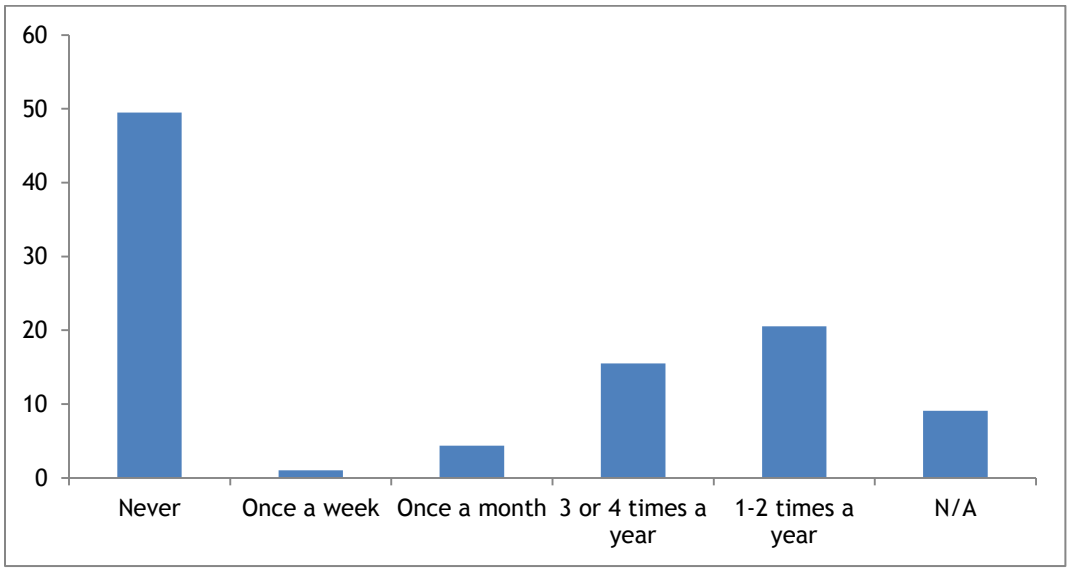
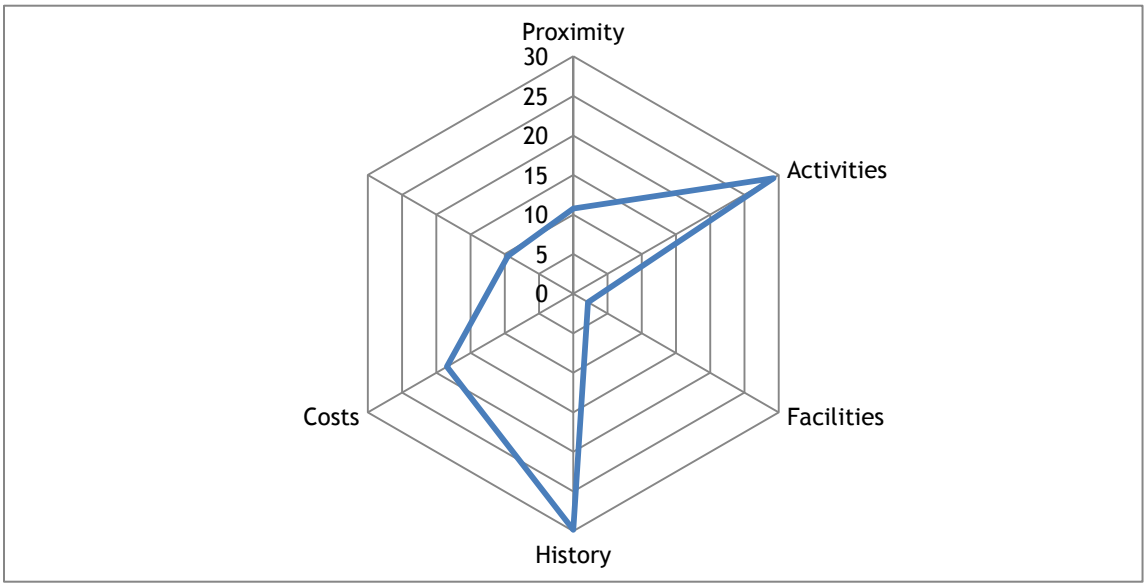


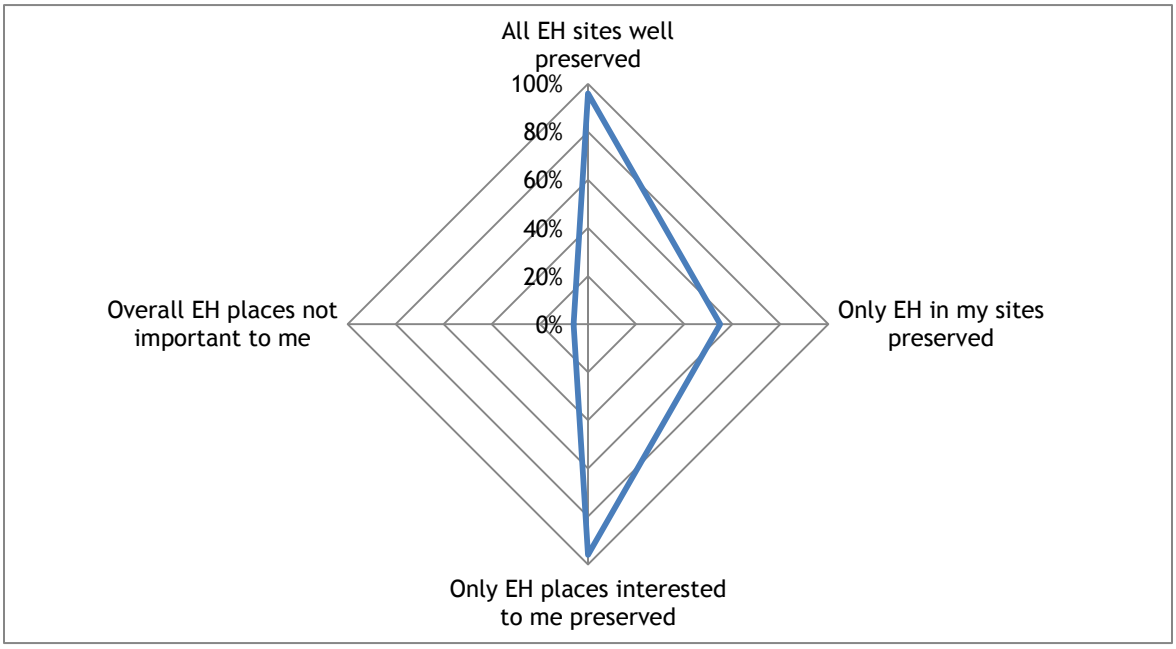
Figure 4.11 below indicates that the main factors respondents consider when deciding which heritage sites to visit are the history of the site, and activities available. The cost of the heritage site is also indicated as a deciding factor for 18% of the sample.

Figure 4.11: Factors considered when choosing what heritage site to visit (percentage) – Walmer Castle and Gardens Non-users



Similar to the other sub-samples, the majority of respondents are sensitive to the maintenance of historical sites. Results are displayed graphically in Figure 4.12. Overall, 86% of respondents agree or strongly agree that heritage buildings and places should be well looked after.

Figure 4.12: Agreement with preserving heritage sites (percentage) – Walmer Castle and Gardens Non-users



Exploring activities that people stated they would take part in if they were to visit Walmer Castle and Gardens, visiting the gardens and the museum proved to be the most popular. Most of the non-user sample has visited Walmer Castle and Gardens (66%) (before the last 12 months), and have overall positive responses from their visit; 91% of respondents rated the site as very good or good, with the same amount of respondents stating that they would recommend visiting the site to a friend or relative.

4.3.3 WTP results

This section presents the results of the contingent valuation study. Econometric models were used to determine Non-user's WTP values for Castle Acre Priory. In order to derive an accurate estimation, respondents were reminded that they have constraints, such as their budget, to consider when stating their WTP. Parametric estimation can be found in Annex 7.

Table 4.6 below illustrates the averages of the open-ended maximum WTP questions for the different non-user types.

Table 4.6: Average WTP estimates for open-ended questions – Walmer Castle and Gardens Non-users

User type	WTP excluding protesters (confidence interval)	Aggregate WTP excluding protesters (confidence interval)	Number of protesters
EH member – additional membership fee (£ per person per year)	3.64 (1-10)	107,300 (29,479-294,780)	1
Non-EH member – additional general taxes (£ per person per year)	1.77 (0-6)	52,176 (0-176,868)	25

Similar to the Castle Acre Priory results, aggregate estimates are included in Table 4.6, using the population of Deal (29,478 from ONS mid-2010 estimates).

English Heritage members – WTP model

Due to the low number of English Heritage members, econometric analysis could not be undertaken for this group. Of the English Heritage member sample, 94% of respondents stated that they were WTP.

Non-English Heritage members – WTP model

Before choosing the best-fit WTP model, other variables were tested before they were determined to be statistically insignificant (see Annex 7 for a list of tested variables and models[12]). Only the best fit model without protesters is reported in Annex 7 (4% of respondents classified as protesters). Overall, the model presents the following:

- Respondents are more likely to accept lower increases in general tax;

[12] The following variables were tested and found insignificant: possible activities to undertake (those that are significant are included in the model); agreement of statements related to heritage sites; frequency of visits to heritage sites; number of household members; age group; gender; SEG

- Those respondents who believe that preserving all EH sites is important are less likely to be willing to pay. Although these respondents believe that preserving EH sites are important, they may not believe that the onus of helping to preserve the sites may be on them;
- Those respondents who stated that they are likely to take an audio tour are more likely to be willing to pay, and
- Those who visited the site previously are less likely to be willing to pay, which could be due to the fact that they already experienced visiting Walmer Castle and Gardens.

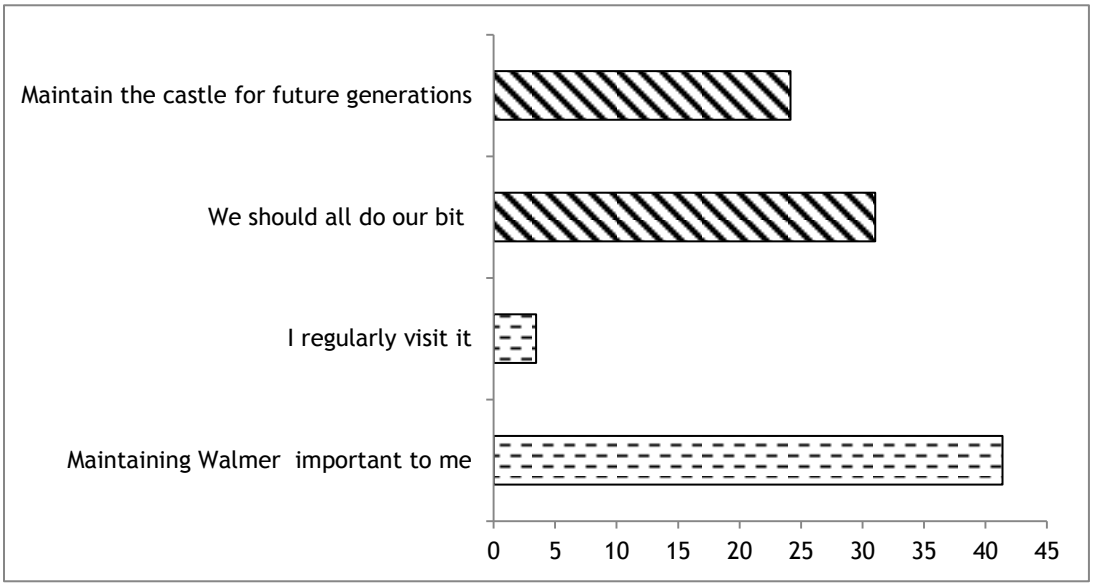
None of the socio-economic variables have been found significant in explaining WTP for this group; this could be due to the small sample size.

4.3.4 Validity testing

English Heritage members

Both non-use and potential use motivations have been stated as reasons for having a positive WTP.

Figure 4.13: Reasons for being willing to pay higher membership fee (percentage) – Walmer Castle and Gardens Non-users EH members



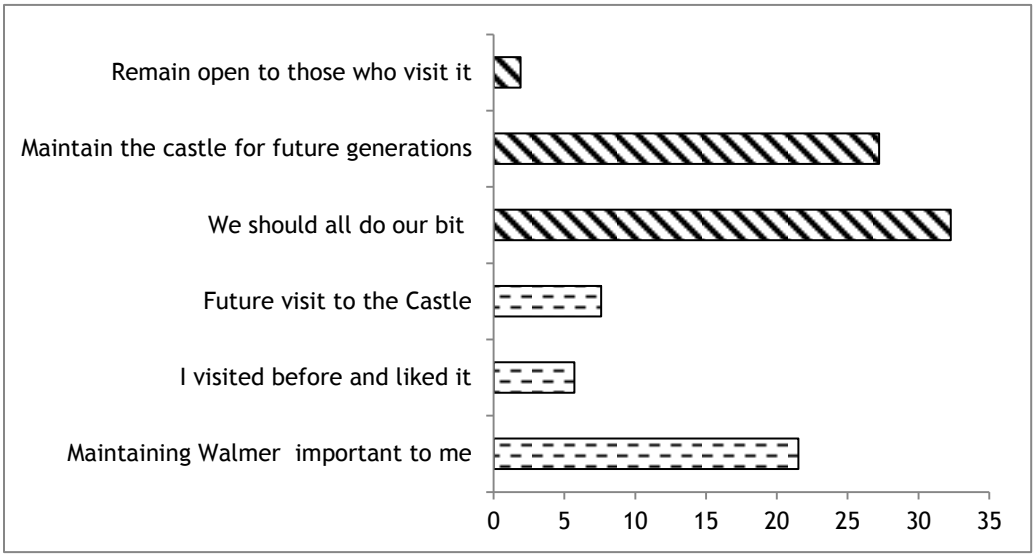
Diagonal lines altruistic reasons; dashed lines personal reasons

Only two members of this sub-sample stated that they were not willing to pay anything. One stated that the government should pay, while the other believed that the additional funding should come from new facilities.

Non-English Heritage members

Similar to other samples, non-use motivations explain why the majority of respondents stated that they were WTP.

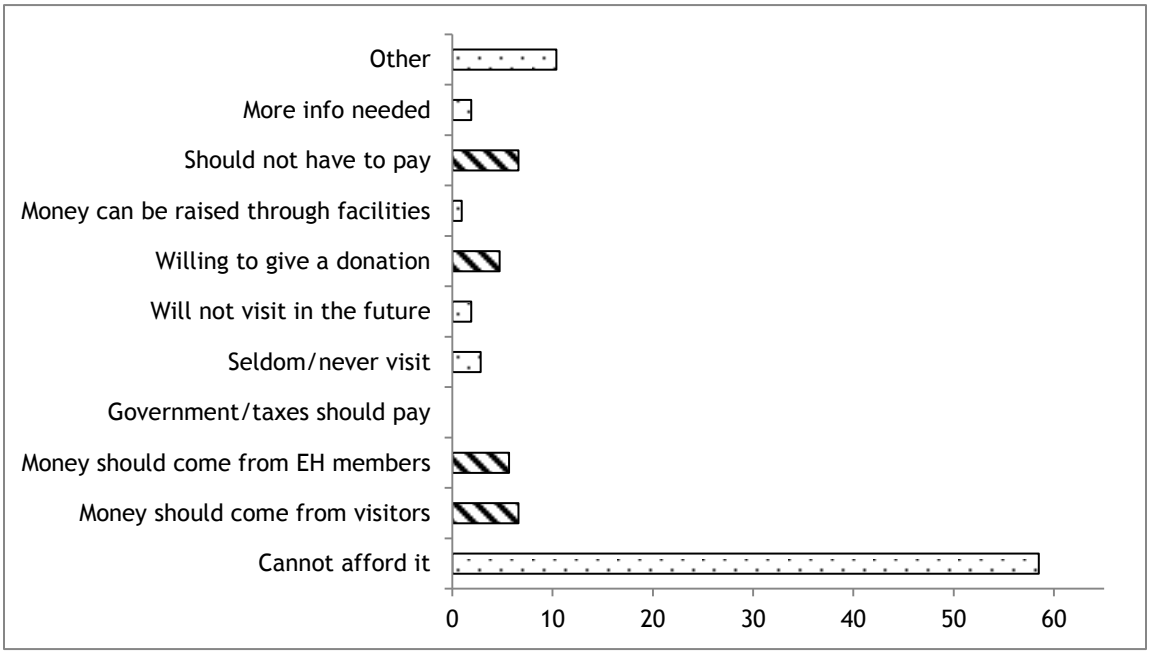
Figure 4.14: Reasons for being willing to pay higher taxes (percentage) – Walmer Castle and Gardens Non-users non-EH members



Diagonal lines altruistic reasons; dashed lines personal reasons

The significance of the econometric model, as well as respondents' perceptions of the questionnaire (most found the questionnaire interesting, with low percentages of respondents stating that it was unrealistic/not credible) show that the survey had high construct and content validity. Once again, similar to most of the other sub-samples, most non-user non-EH members who stated they were not willing to pay cited financial reasons.

Figure 4.15: Reasons for not being willing to pay higher general taxes (percentages) – Walmer Castle and Gardens Non-users non-EH Members



Protest responses are diagonal lines. Valid responses are dots.

5. Value Transfer Function

This section starts with an overview of value transfer and presents the value transfer work undertaken for this study based on the WTP findings in Sections 3 and 4.

5.1 Overview of Value Transfer

Value transfer, also known as benefit transfer, is a process of using existing economic evidence in new contexts to avoid undertaking primary valuation research, in this case, for every EH site. The values taken from the literature are referred to as 'study site' values. The new context is referred to as 'policy site'.

There are three types of value transfer:

1. Unit transfer - The most generic application of value transfer is to use the mean value from the study site exactly as is for the policy site
2. Adjusted unit transfer – the mean value is adjusted for a number of factors. The most common of such factors is time. Values from past studies should be updated to the year that applies to the policy site. This updating is based on real price changes and can be done by using a consumer prices index (or gross domestic product deflator), not the rate of annual inflation. Other factors such as income differences between the study and policy site could also be used – provided that there is data on such factors at the policy site. Adjustments would be based on "weighting", which allows the WTP value to be adjusted. The following equation gives an example of creating a weight for income:

   Adjusting the value estimates for income = WTP x $[Y_p/Y_s]$

   Where Y_p = the income of the policy site, and Y_s= the income of the study site.

   Adjusted unit value transfer is useful for modifying value estimates based on the population, or other characteristics being considered.

3. Value function transfer – the function of explanatory variables that explain the value (WTP) results of the study site is applied to the data from the policy site. Data from the policy site is inputted in to the value function estimated for the study site. Further information on this is in Annex 8.

In this study, we report mean (unit) WTP estimates for the two study sites which can be used for similar EH sites for similar changes, i.e. to value any action that will maintain the current state of the site and keep it open to public.

Adjusted unit transfer is not performed in this study- time adjustment is clearly not relevant but should be made from next year onwards. Ad hoc adjustments for differences in site characteristics (e.g. the size or age of the site) are not advisable as a relationship between such characteristics and WTP could not be found. Instead we have included a 'site' variable in the value function as a capture-all term for similarities of policy sites to study sites. Adjustments for socio-economic characteristics of visitors are best to be made through value functions.

Value transfer functions are also reported including explanatory variables that have statistically significant effects on the WTP responses and for which finding data at the policy sites would be relatively easy (through a quick visitor survey or exploring the census data for example even if such data is not readily available). Variables are also selected as those that have relationships with WTP as predicted by the economic theory or at least not against the common intuition. A key assumption of value function transfer that needs to be kept in mind is that the relationship between coefficients found in the study site applies to the policy site (e.g., if income is included in the function, it would be assumed that changes in income have exactly the same effect on WTP at policy and study sites).

As to whether unit value, adjusted unit value or value function approach is used mainly depend on two considerations (Pearce, 1994, eftec, 2010 and Bateman et al, 2011):

- If the policy and study sites are sufficiently similar in terms of their characteristics and the change valued, then unit values may be just as reliable as value function transfers, and
- If there is no data or it's not cost efficient to collect any data at the policy site to populate the value function, unit or adjusted unit values should be used.

Therefore, "similarity" between the study and the policy contexts needs to be established. This is essentially based on expert judgment which can benefit from the following considerations (based on eftec, 2010):

i) How similar is the policy site to Castle Acre Priory or Walmer Castle and Gardens
ii) How similar is the change considered at the policy site to the change valued in the two study sites, i.e. maintain the current status?
iii) How similar are the visitors and non-users to policy site to study sites? To answer this question, visitor and non-user populations need to be defined for the policy site.

In general, the following also need to be considered:

iv) How valid and robust are the available estimates of WTP? The validity of the results of the two case study sites is shown in the analysis in Sections 3 and 4 and the Annexes.
v) How do the presence of substitutes in the study and policy sites affect the value? In the study sites we were not able to consider substitutes explicitly. It could also be argued that each heritage site is unique given its history and local context. In fact, the finding that those who visited the sites to benefit from the gardens – which are more substitutable, not having as much historic context – had lower WTP for the site supports this argument.

5.2 Value Transfer Function Estimated for this Study

Tests

The mean (unit) value estimates for the study sites are presented in Sections 3 (for Castle Acre Priory) and 4 (Walmer Castle and Gardens). Here the value function is presented.

Open-ended maximum WTP responses (excluding protests) are used for both methods of value transfer. A linear regression model is used to estimate the value transfer function which is as follows:

WTP= f (age, income, site)

These are all the statistically significant variables that are tested excluding those that were not statistically significant (see Annex 8). The 'site' variable refers to whether the site is Castle Acre Priory or Walmer Castle and Gardens. This variable can be used to determine whether WTP varies for top-20 EH sites, vs. other sites.

$WTP_p=\alpha+\beta_a X_a+\beta_y X_y+\beta_s X_s + \epsilon_i$

Where WTP_p = the predicted WTP of the policy site;
ß represents parameters for the variables; and X are the variables considered.
X_a represents age; X_y is income; and X_s is site type.
ϵ_i represents an error term

Pooled functions are tested to create the value transfer functions for visitors and non-users.

For visitors, the function is based on pooled data of EH members from both case study sites. The testing shows the results can be used for non-EH members too.

For non-users, the function is based on pooled data of all non-users from both case study sites.

For both functions, the WTP data is the response to the open-ended maximum WTP question which is better for value transfer purposes. Both pooled (visitors from both sites, and non-users from both sites) and individual value functions for visitors were tested, with the best results of the pooled models reported in Annex 8.

In order to examine the reliability of value function transfer, the function above is used to predict the values in each site. These predicted values are then compared to the mean WTP estimated from the sample at that site. The difference between the predicted and estimated values is termed the transfer error which is expressed as a percentage difference. There is no benchmark for what the error should be but the lower the percentage the more preferred the value function transfer and vice versa. Results of these tests are also presented in Annex 8.

Value Transfer Function for Visitors

Site and *Income* were found statistically significant, and are included in the model

$$WTP_p=2.44+.00001X_y-1.08X_s$$

In the pooled visitor value function transfer model, *Income* and a site dummy variable (which is equal to 1 if the site is Castle Acre Priory, and 0 otherwise) are statistically significant variables. This is the recommended function for value transfer. The function is based on data

from EH member responses to the open-ended maximum WTP question, but tested and found applicable to non-EH members, all types of visitors and ticket purchases.

The coefficient for 'site' can be used to distinguish the type of site that is being valued, taking into account differences between the two sites (e.g., a dummy to separate top-20 EH sites, and other EH sites). Walmer Castle and Gardens is a much larger site than Castle Acre Priory, and is one of English Heritage's top 20 sites, which further explains why respondents may be willing to pay more for Walmer Castle and Gardens, a proxy for all EH top-20 sites.

Value Transfer Function for Non-Users

Age group and *Income* were found statistically significant:

$$WTP_p=0.34+0.15X_a+0.00003X_y$$

In the non-user individual site models, *Income* is once again positive and statistically significant in the pooled model reported above. *Age* also proves to be statistically significant in the Walmer Castle and Gardens model, and slightly insignificant in the reported pooled model. Since it is near significance, it is included in the suggested pooled model. Older non-users are willing to pay more than younger non-users. This may be explained through free time; it can be argued that older respondents may have more free time, compared to younger respondents. Older age groups may also have more knowledge of Walmer Castle and Gardens or more interest in historic sites in general. Similar results are found for the individual site visitor models. Gender and education proved not to be statistically significant in any of the estimated models.

From this analysis, the mean (unit) value transfer proves to be more successful for some of the user samples than non-users. That being said, this does not indicate that value function transfer cannot be undertaken, but indicates that there may be a higher degree of error (function transfer could not be tested for some of the visitor samples due to low sample size; see Annex 8 for value transfer analysis).

5.3 How to use the Value Transfer

Choosing between Unit Value or Value Transfer Function

Based on the data analysis and value transfer testing in Annex 8, we recommend that:

- For visitors, the mean unit value may be better
- For non-users, the value function could be better (less transfer error).

It can be argued that visitors have more similarities between them, as they all chose to visit a specific EH site, while it is more likely that non-users have a higher degree of differentiation between them. Therefore, the finding that unit value transfer could be better for visitors, while function transfer could be better for non-users agrees with intuition, considering the similarities within the two groups. This does not mean both unit value and value transfer cannot be tested as sensitivity analyses for both groups.

Using the unit value estimate

The mean WTP estimates reported in Sections 3 and 4 should be used for this – depending on which of the study sites is more like the policy site, of course.

Using the value transfer function

As a linear function is used, each coefficient presented can be multiplied against an inputted variable. The sum of these products is then used to predict a WTP value. The significant variables can be used as follows:

Site: This is a dummy variable (i.e., takes a value of 0 or 1) based on whether the policy site is a top-20 EH site. In the analysis it was set to 1 for Castle Acre Priory data and 0 for Walmer Castle and Gardens. If the policy site is a top-20 EH site, it should take a value of 0; if it is not, it should take a value of 1.

Income: This represents the average income of the visitors to the policy site or the non-users in the local area of the policy site. The local area definition is left up to the future users of value function. In this study, local area was defined to include the population in major towns / cities sufficiently close to the site so that residents would know of the site but far away enough that they do not visit it (at least not in the last 12 months). It is also good idea to limit the non-user population to those within the same County as the site. Alternative definitions can be tested. Information on average earnings can be found from the Office of National Statistics (ONS)[13] for non-users and from the results of EH's *Taking Part Survey* for the visitors.

Age: The age groups presented in the questionnaire were 18-24; 25-34; 35-44; 45-54; 55-64; and 65+. Each group was coded as 1 through 6, respectively. The average age from the policy site can be obtained from ONS data[14] (non-user), or data from EH's *Taking Part Survey* (user), and coded based on the coding detailed above. The same local area that is used for the income variable should be used here.

Estimating aggregate value

Aggregating can be across different groups and across time. Here the former aggregation is presented (and included in the spreadsheet attached to Annex 8).

For visitors, total number of visitors to the policy site should be used. This should be the sum of EH members and non-members and include all ticket types. The resulting value estimate will be in terms of £ per person per visit. To aggregate this unit estimate, it should be multiplied with the total number of visitors and visit per person. For simplicity, and in particular if visit number per visitor is not known, it can be set to 1. The result would be a one-off value in terms of £.

For non-users, total population (18+) in the local area of the policy site should be used. Local area definition as presented above for the income variable applies here too. The result would be £ per year.

[13] http://www.ons.gov.uk/ons/datasets-and-tables/index.html

[14] http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-uk--england-and-wales--scotland-and-northern-ireland/mid-2011-and-mid-2012/sty---uk-population-estimates.html

6. Conclusions

In drawing together the outcomes from the study, this concluding section focuses on the main features of the study approach, the key findings, and the policy implications of the results.

6.1 Stated Preference questionnaire

The purpose of this study was to determine visitors' and non-users' valuation of EH sites. The study applies contingent valuation design. The analysis is based on representative samples of the visitor and non-user English population. Econometric modelling demonstrates that the results are sound.

The questionnaires presented in Annexes 2 and 3 (alongside the debriefing in Annex 1) can be adapted to other English Heritage sites.

6.2 WTP results

The WTP results overall prove to be statistically sound, passing validity checks. Positive valuations are found for both sites, for both users and non-users, giving an indication of total economic value. The non-user sample is representative of the UK population, while the user sample is representative of the English Heritage visitor profile. Overall, visitors have higher individual WTP values than non-users (as expected).

6.3 Value transfer

The analysis demonstrates that both unit value transfer or value transfer function can be used. The value function is advisable for non-users and unit value transfer is advisable for visitors. The mean WTP estimates that can be used for unit value transfer are displayed in the Technical Summary (Sections TS.2 and TS.3), as well as in Sections 3 and 4. The value transfer functions (statistically significant variables are site type, age, and income) can be found in Section 5, with further description in Annex 8.

6.4 Policy implications

The completion of this study has allowed for the evaluation of the public's attitudes towards heritage and visiting heritage sites that are expressed qualitatively and quantitatively. The results of the research further demonstrate both visitors' and non-users' overall positive reaction to heritage sites, with positive WTP values for both groups.

The hypothetical change presented in the valuation scenario was a decrease in the maintenance of two English Heritage sites. The site specific WTP values obtained in this research can be used in unit value transfer to other sites. Along with this, the value transfer functions created can be used to predict WTP values at other EH sites. The unit and function transfer values are applicable in economic analysis of investments that aim to maintain an EH site and keep it open to public. The values cannot be used in scenarios where, for example, EH is estimating marginal values of improvement or deterioration of a site, since this was not the

scenario presented. Additionally, the results can be used to facilitate policy related to entry pricing in order to maximise revenue (as is detailed in Annex 9).

In addition, the completion of this study has allowed for the evaluation of both visitors' and non-users' attitudes towards heritage and visiting heritage sites, expressed qualitatively. While the quantitative information sheds light on values for heritage sites, qualitative evidence gathered addresses the public's general feelings towards heritage. Qualitative elements include responses to the following statements:

- Over 90% of respondents agreed or strongly agreed with the statement that it is important to them that heritage buildings and places are well looked after;
- 58% of respondents either disagreed or strongly disagreed with the statement that it is important to them that the heritage of only their local area is well looked after. They showed interest in heritage sites in general, rather than only the ones they have the closest access to;
- 88% of respondents either agreed or strongly agreed with the statement that it is important that heritage buildings and places that are interesting to them are well looked after; and
- 87% of respondents disagreed or strongly disagreed with the statement that overall, the maintenance of heritage buildings and places is not important to them.

The statistical summaries of the qualitative statements are included in Annexes 4 and 5. An important result from this study is that people value the preservation of heritage buildings and places even when receiving no direct benefit (use value) from it. That is, heritage sites, and heritage, provide benefits above and beyond those provided to direct users / visitors.

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