Visiting the past: An analysis of the drivers of visiting historic attractions

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Executive Summary

A better understanding of the drivers of participation can help the heritage sector meet the needs of those who visit and more effectively target those who don't. This report analyses the factors which affect people's likelihood of visiting three kinds of historic attraction:

- – Monuments, Castles or Ruins
- – Historic Parks and Gardens
- – Historic Places of Worship

The analysis uses the statistical technique of logistic regression, and is based on the 2007/08 Taking Part survey of 25,720 people in England aged 16 plus. It builds on previous work on the drivers of participation in the historic environment.[1][2]

Among the findings are that car and internet access are important drivers of visiting these historic sites. Some forms of cultural participation are more likely to be associated with increased probability of visiting historic sites (e.g. visiting museums and libraries, watching history related TV, being taken as a child), while others (e.g. watching a lot of TV in general) reduce the likelihood of visiting. Certain demographic factors (e.g. gender and socio-economic status) were not found to have a consistent effect on the probability of visiting.

The findings, which are summarised below, show the estimated effects of different factors on the probability of visiting these three kinds of historic site.

Factors associated with an increased probability of visiting

- **Having visited museums and galleries** was found to increase the probability of visiting by 19% for Places of Worship, and by 24%for Monuments, Castles or Ruins; and Parks and Gardens**.** This is the largest impact of all the factors examined.[3] Visiting libraries was also found to increase the probability of visiting.

- **Car access** was found to increase the likelihood of visiting by 10% for Parks and Gardens, and by around 5% for the other two kinds of site.

- **Watching heritage related television** was found to be associated with an increase in the probability of visiting of 8% for Parks and Gardens, 7% for Places of Worship, and 12% for Monuments, Castles or Ruins. Watching art related TV was also found to be associated with an increased probability of visiting.

- **Internet access** was found to increase the probability of visiting all three kinds of heritage by around 4%-5%. Visiting a heritage related website was found to increase the probability by around 10% for places of worship, and by 15% for the other two sites.

- **Living with a partner[4]** was found to increase the probability of visiting Parks and Gardens and Monuments, Castles or Ruins. The probability of visiting Places of Worship was not affected. As can be seen from the Figures 1-3 this was among a number of characteristics found to have a greater effect on the probability of visiting Parks and Gardens, and Monuments, Castles or Ruins; than on visiting Places of Worship. Engaging in other kinds of cultural participation, living with a partner, being taken as a child, intensive TV viewing and not being in social housing were all found to have this characteristic. This suggests that Places of Worship tend to attract visitors with different characteristics from those visiting the other two kinds of site.

- **Being taken to heritage as a child** The more often people's parents took them to see heritage sites as children, the higher the probability that they would visit all three kinds of heritage site as adults. Being encouraged to engage in performing arts was also found to increase the probability of participation (Monuments, Castles or Ruins excepted)

- **Practicing a religion** was not found to affect the probability of visiting a Monument, Castle, or Ruin, but was estimated to increase the probability of going to a Historic Place of Worship by 8% and that of visiting a Park or Garden by 5%.[5]

- **Age** Getting older was estimated to increase the probability of visiting per each additional year of a respondent's age by on average 0.2% for Parks and Gardens, 0.6% for Places of Worship, and 0.7% for Monuments, Castles or Ruins.

Figure 1 Factors found to increase the likelihood of visiting for at least two kinds of historic attractions
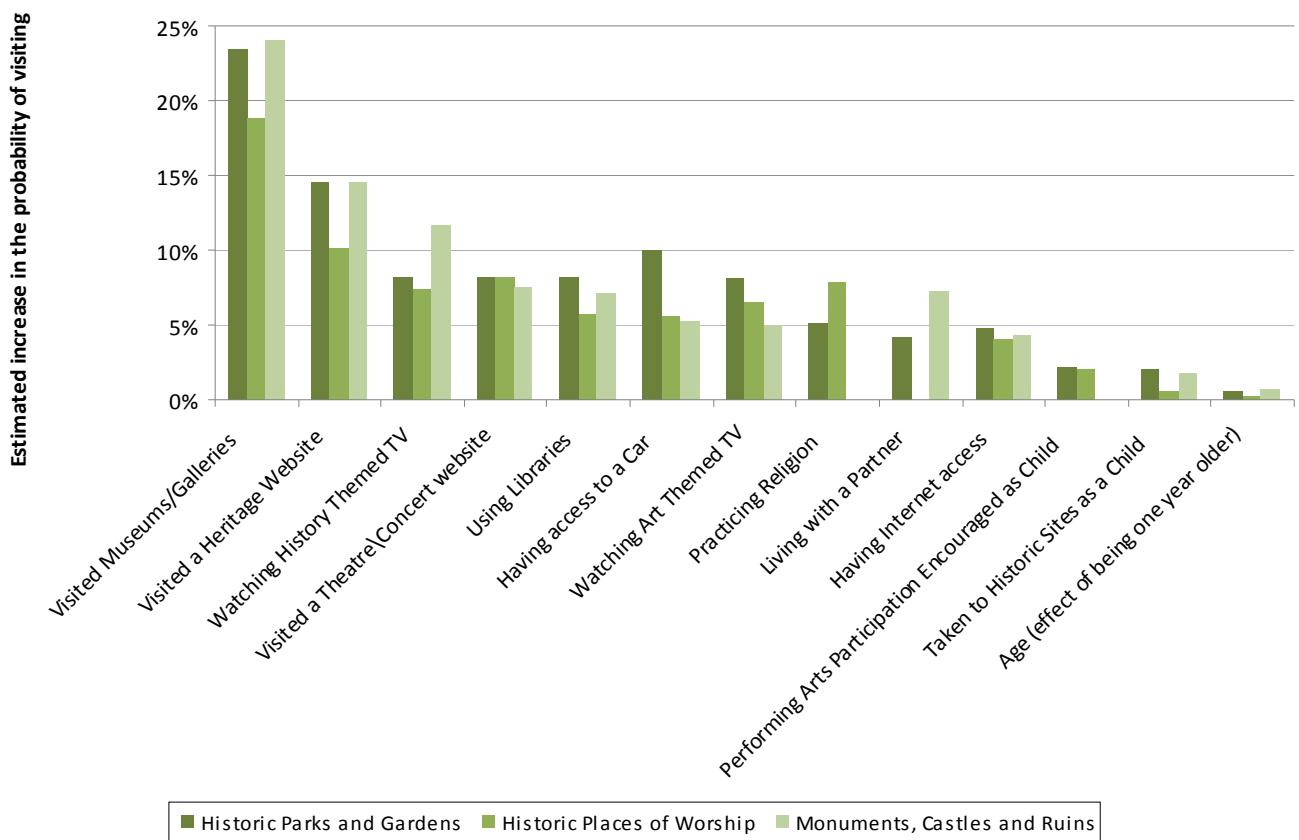
Note: Unless stated, for all charts where there is no bar this is because the factor was not statistically significant at the 95% confidence level. The bars represent from left to right, Historic Parks and Gardens, Historic Places of Worship, and Monuments, Castles or Ruins.

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[4] i.e. co-habiting, civil-partnerships, married households. The variable label for this is 'Coupled'.
[5] The question specified that such visits were not for worship.

Factors associated with a reduced probability of visiting

- **Living in social housing** was not found to affect the probability of visiting Places of Worship, although it reduces the probability of visiting Parks and Gardens, and Monuments, Castles or Ruins.

- **Intensive TV viewing (over five hours a day)** was found to reduce the probability of visiting by between 6% and 13%. With the smallest effect being on the probability of visiting Places of Worship.

- **Being a member of an ethnic minority** was found to decrease the probability of visiting Places of Worship, and Monuments, Castles or Ruins, but was not found to have a statistically significant effect on the probability of visiting Parks and Gardens. It was considered, however, that this finding might be picking up a locational effect due to the geographical distribution of ethnic minority populations around the country. London, for example, has traditionally had lower participation levels overall.

- **Lower levels of education** Having no higher educational qualifications, or other qualifications below degree level (not including A-levels) was found to decrease the probability of visiting for all three kinds of site.

- **Being in full time employment** does not affect the probability of visiting Monuments, Castles or Ruins, while it reduces the probability of visiting Places of Worship and Parks and Gardens.

- **Having a limiting illness or disability** reduces the likelihood of visiting a Park or Garden by 5%, but was not found to affect the probability of visiting the other kinds of attraction.

Figure 2 Factors found to decrease the likelihood of visiting at least two kinds of historic attraction
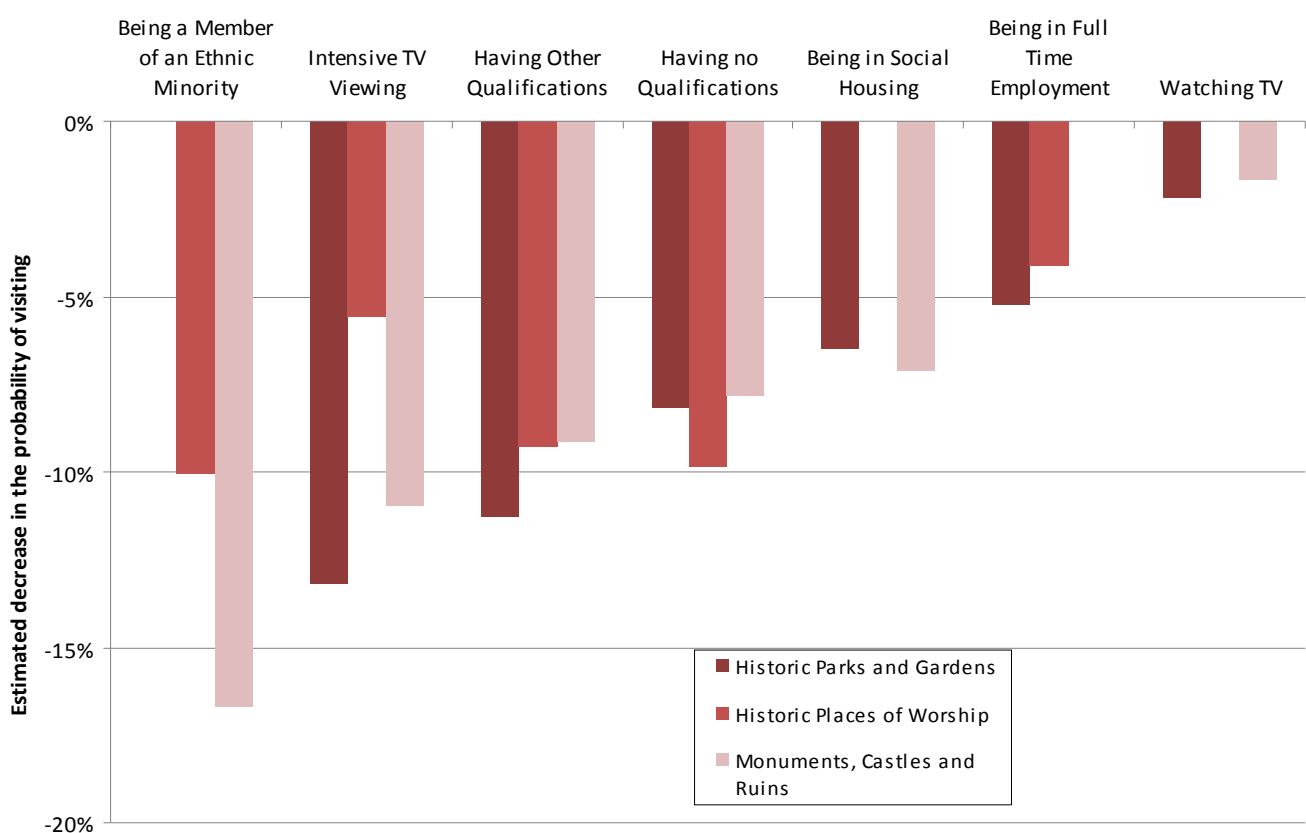
Factors not associated with a consistent effect on the probability of visiting

- **Gender** does not appear to affect the likelihood of visiting these historic sites. The estimated effect was small and statistically insignificant.

- I**ncreasing income** was found to have a statistically significant positive effect on the probability of visiting Places of Worship, where it increases the probability of attendance by 0.8% for every £5,000.[6] It was only statistically significant for the other types of visiting at the 90% level however.

  Note: The effects of income and gender are included in the chart below to illustrate the scale of the effect, although they are not significant at the 95% confidence level.

- **Having children in the house** This was found to increase the probability of visiting Parks and Gardens, but reduces the probability of visiting Places of Worship. There was not found to be an effect on the probability of visiting Monuments, Castles and Ruins.

- **Being encouraged to participate in sport as a child** was found to increase the probability of visiting Monuments, Castles or Ruins, but to reduce the probability of visiting Places of Worship. There did not appear to be an effect on the likelihood of visiting Parks and Gardens.

Figure 3. Factors that did not consistently increase or decrease the likelihood of visiting heritage

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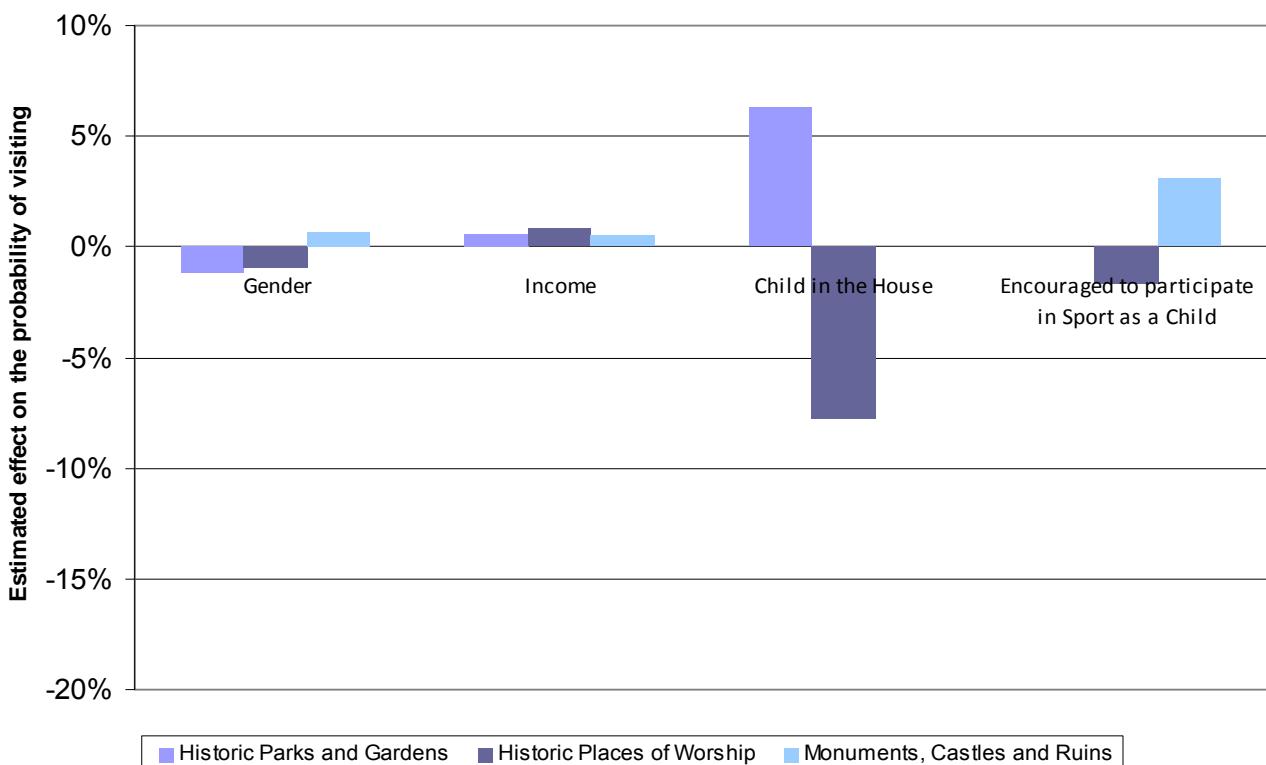
[6] See Appendix Section 3 for a full description of the income bands.

Interpreting the probabilities in the charts The probabilities shown attempt to control for effect of the other factors included in the analysis that might otherwise explain changes in the likelihood of visiting i.e. they are calculated assuming all other factors remain constant when the variable of interest changes. Caution should be exercised when trying to find the total impact of various characteristics to describe a particular individual. All of the impacts figures quoted are an approximate estimate relative to the average of the sample (a so called 'marginal effect'. See Appendix 1 for more detail) so the estimated impact of a characteristic may not apply to a specific individual. An implication of this is that the probabilities are not strictly linear (i.e. adding them up will not produce an exact estimate of the cumulative effect).

Those factors that had the biggest effect on increasing (or decreasing) the probability of visiting a given heritage site are grouped together for each type of historic visitor attractions.

1. Historic Parks and Gardens (HPG)

Factors found to increase the probability of visiting:

- Visiting a museum and/or gallery increases the probability of visiting by 23.5%, the largest effect of any variable.[7]
- Visiting historically oriented websites increases the probability of visiting by 14.6%.
- Access to a car increases the probability of visiting by 10%.
- Visiting a theatre or concert oriented website increases the probability of visiting by 8.3%.
- Visiting a library in the past 12 months increases the probability of visiting by 8.2%.
- Watching historically oriented television increases the probability of visiting by 8.2%.

Factors found to decrease the probability of visiting:

- Five or more hours of TV viewing a day decreases the probability of visiting by 13.2%.
- Having only educational qualifications that are below degree level decreases the probability of visiting by 11.3%.
- Having no qualifications whatsoever decreases the probability of visiting by 8.2% relative to someone with a degree.
- Living in social housing decreases the probability of visiting by 6.5%.
- Having an illness that the respondent considered limiting reduces the probability of visiting by 5.1%.

2. Historic Places of Worship (HPW)

Factors found to increase the probability of visiting:

- Visiting a museum or gallery increases the probability of visiting by 18.8%.
- Visiting heritage themed websites increases the probability of visiting by 10.1%.
- Viewing a theatre or concert oriented website increases the probability of visiting by 8.2%.
- Practicing religion increases the probability of visiting by 8%, while simply having a religion does not.

Factors found to decrease the probability of visiting:

- Being a member of an ethnic minority decreases the probability of visiting by 10%.
- Having no qualifications whatsoever vs. having at least a degree decreases the probability of visiting by 9.9%.

- Having only non-academic qualifications vs. having at least a degree decreases the probability of visiting by 9.3%.
- Having at least one child in the house decreases the probability of visiting by 7.7%.

3. Monuments, Castles or Ruins (MCR)

Factors found to increase the probability of visiting:

- Visiting a museum or gallery increases the probability of visiting by 24.0%.[8]
- Visiting a heritage oriented website increases the probability of visiting by 14.5%.
- Watching historic themed TV increases the likelihood of visiting by 11.6%.
- Visiting a theatre or concert oriented website increases the probability of visiting by 7.6%.

Factors found to decrease the probability of visiting:

- Being a member of an ethnic minority decreases probability of visiting by 16.7%.
- Having only non-academic qualifications decreases the probability by 9.1%.
- Having no qualifications at all reduces the probability by 7.8% compared to a graduate.
- Intensive TV viewing (watching 5 or more hours a day) decreases the probability of visiting by 11%.

REPORT STRUCTURE

1) Analytical Approach

1.1 Logistic Regression

Regression techniques allow one to try and disentangle the effects of the multiple factors that affect whether a person is likely to visit historic sites. For example, if the effect of income on visiting a historic site was examined in isolation a concern might be that this is picking up the effects of education, that is likely to increase people's appreciation of historic sites, but is also positively related to income. As regression analysis allows both to be controlled for simultaneously it can attempt to separate out their effects. The Taking Part survey is a very rich dataset, so a number of different factors can be controlled for. For example, it is possible to examine the effects of different levels of educational qualifications.

As having visited a historic site is a yes/no question, (i.e. people had either visited a historic site or they hadn't) a logistic regression model was used (specifically, a logit). Unlike standard linear regression, this takes into account that probabilities have to be between 1 and 0, and addresses the statistical issues that can consequently arise, such as biased standard errors. Appendix 1 contains a more detailed explanation of this technique.

Marginal Effects

The results of logistic regression analysis are often presented in terms of the odds ratio of the regression coefficients. Although this indicates the direction of the variables' effects it can sometimes be hard interpret.[9] To help ease the interpretation of the coefficients, marginal effects were also calculated. These estimate how each factor affects the probability of visiting for each respondent and averages them across the whole data set. In this way the margin (labelled dy/dx) can be interpreted as the change in probability when the variable's value changes by one unit. For a binary variable this is the probability change when the response changes from "no" to "yes" while for continuous variables, such as age, it is the change in probability as the age of the average respondent increases by a year.

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[9] To understand the odds ratio, one should think of the sample as being divided into two groups. One group are those which have a certain characteristic and the other group does not (for example, whether the respondent lived with a partner or not). The odds ratio is the estimated probability that the first group (those who live with a partner) participate divided by the estimated probability that they do not participate. This answer is then divided by the equivalent ratio for the second group that do not have the particular characteristic (those that do not live with a partner).

1.2 Explanatory Variables

Variable categories and types

The variables used in the analysis can be divided into a number of broad categories listed below.

- **Basic Demographics**: Gender, age, relationship status etc.
- **Social/Economic Status**: Income, ethnicity, social housing etc.
- **Employment**: Part or Full time.
- **Education**: Degree, A-levels, apprenticeship.
- **Access Issues**: Having access to the internet, a car, or having a limiting illness.
- **Cultural Participation**: Museum and library use.
- **News and Media**: Viewing art or history TV, museum or library websites etc.
- **Parent Led Attendance**: Whether respondents were taken to museums and libraries as children.
- **Parent Encouraged Activities**: Reading, performing arts, etc.
- **Religion**: Whether the respondent identifies themselves as religious.

Appendix 2 provides a full list of variable names and definitions. There are four different kinds of variables used in the analysis:

- **Continuous**: These can take any numerical value.
- **Binary**: These take on a value of "0" or "1" to indicate whether or not a given characteristic is true for the respondent.
- **Categorical**: These typically take on a value of "0.", representing for instance "none", and increase one numeral at a time to represent moving by degree to, for example, "a lot".
- **Interactions**: These give the value of one variable, given that another is also true. For example, age interacted with ethnicity gives the age of those who are ethnic minorities. This allows one to test whether age has a different effect on participation for different ethnic groups. Interaction variables can be continuous, binary, or categorical.

Additional Variables

To attempt to understand the determinants of participation better, additional variables and interactions were also created. These were:

- **Density of listed buildings in the local authority of those surveyed (Laratio)**: The ratio of the number of listed buildings in a local authority to that authority's geographic size. This was to control for some people having more historic properties near them. A limitation is that it is based on a political geographical unit, rather than travel costs.
- **Oldest Child's Age**: The age of the oldest child. This is a measure of family "age" to see if young families differ systematically from older families.
- **Ethnicity Income Interaction**: An interaction to see if income levels affect participation differently for ethnic minorities.
- **TV Intensive**: Watching more than five hours of television a day. This allows one to test whether watching TV more intensively has a different impact to be assessed.

1.3 Model Selection

The data analysed has 25,720 individual respondents reporting on their activities over a 12 month period. 10,005 people (38.9%) reported going to a historic park or garden, 6,819 people (26.5%) reported going to a historic place of worship, and 9,107 people (36.0%) reported going to a castle, monument or ruin.[10]

Using the question responses as dependent variables one can compare the differences in the drivers of participation for these three types of historic visitor attractions.[11] Once a model with a full set of explanatory variables was defined, significance tests of particular variables and joint significance tests of multiple variables were used to refine it. This process is set out below.

For each of the three activities, two stages of models were developed:

1) **The Full Models** These included an extensive list of explanatory variables covering many types of participation in culture, demographics, access issues, etc. coded from the Taking Part Survey. In addition, extra variables were created from other data sources or derived from Taking Part.[12] Full Model results are listed in Appendix 3.

2) **The Refined Models** These models were obtained after dropping variables from the Full models that were not found to have a statistically significant effect on heritage participation. There is a Refined Model for each type of participation examined.

Variables found to be statistically insignificant at the 5% level were removed from the model, except where they related to demographic variables of general importance e.g. gender and ethnicity, or where they were found to be jointly significant. The test for this is described below. The keep/remove decision tables for all three models can be found in Appendix 4.

Variables which were found to be insignificant, but could be grouped into broader categories, were subjected to an F-test to examine whether they were significant together. This tests if narrower definitions are hiding broader trends. For instance, the baseline in the model for highest educational qualification received is degree, with lower levels divided into individual variables to avoid problems caused by direct correlation issues with the important categorical variable of education. As a result of this, individual school and vocational qualifications may appear insignificant by themselves, but be jointly significant (i.e. having only qualifications below degree level may be significant). Tables containing the results of these tests can be found in Appendix 4.

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[10] This number was greatly reduced for the regressions by survey filters on the questions that are used for the variables, and many people reported going to more than one type of historic site.
[11] Comparability is not complete in that slightly different modelling procedures were used.
[12] These variables are interaction terms or sub-categorizations.

2) Findings

2.1 Visiting Historic Parks and Gardens

The Taking Part survey asks whether a respondent has been to a historic park or garden in the past 12 months. A logistic regression was run using this as the dependent variable following the model selection approach set out in Section 1.3. Variables found to be insignificant in the full model that could be grouped were tested for joint significance. The results of the associated joint-significance tests can be found in Table A4.2 (none of the groupings were found to be jointly significant, but education was retained to ensure there was a measure of this variable's effect). Once the variables were reduced to those that were statistically significant, important demographic characteristics, and/or those necessary to keep an important baseline measure clear, a final Refined Model for visiting historic parks and gardens was run. The results from this are in Table 2.1 at the end of this section.

Marginal Effects Results:

Factors found to increase the probability of visiting an Historic Park or Garden

Demographics, Socio-Economics
- Having at least one child in the house increases the probability of visiting by 6.3%.
- Living with a partner increases the probability of visiting by 4.2%.
- Age increases the probability of visiting by 0.6% per year.

Access, Media, Cultural Participation
- Viewing a historic website increases the probability of visiting by 14.6%.[13]
- Access issues are important. Car access increases the probability by 10%, internet access increases the probability of visiting by 4.8%, and having a limiting illness reduces the probability by 5.2%.
- Watching art related television raises the probability of visiting by 8.1%, and visiting theatre websites increases the probability by 8.3%.
- Practicing a religion increases the probability of visiting by 4.8%.
- Although the density of historic buildings in a specific area has an affect, the probability of visiting only increases by.001% for each unit increase.[14]

Parental Influence
- Having parents that encouraged the respondent in the performance arts increases the probability of visiting, but the probability is based on categorical rankings from "none" to "a lot," limiting interpretation.
- Heritage site visits as a child increase current participation by 2% as one moves from no attendance to less than once a year, to 1-2 yearly, to 3-4 yearly, to 12 yearly. These are approximates, so the probabilities are of limited value.[15]

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[13] Understanding the direction of causality for watching historic TV and heritage themed websites is difficult; for example, viewing historic websites may cause visits and/or visits may cause historic web browsing. These are left in the regression to present information about the relationship between the two variables.

[14] The ratio of historic sites is quite sensitive to the high value of sites in the City of London, when the regression is run without the City of London, the variable drops just under significance. However, it was kept in the model since the City of London does offer historic amenities, and the value was quite close without this local authority. However, this variable must be interpreted with caution.

[15] The probability of going to museums and heritage sites is a categorical variable that is based on an interval that is a number of times per year. This range was averaged, (except on the extremes where the min value is used) using a uniform distribution, to find a particular value for the category that the person indicated.0=never .5=less often than once a month 1.5=less than once a month but at least 3 to 4 times a year, and 12=at least once a month. In that these are approximates of actual numbers probabilities need to be cautiously interpreted.

Factors found to decrease the probability of visiting an Historic Park or Garden

   Demographics, Socio-Economics
   - Living in social housing decreases the probability of visiting by 6.5%*.*
   - The age of the oldest child decreases the probability of visiting by 1% for each additional year of age of the eldest child.

   Employment, Education
   - Fulltime employment decreases the probability of visiting by 5*.2%.*
   - Compared to a full degree, those whose highest education is 5 or more GCSEs have a 7.7% decrease in the probability of visiting. There is an 11.3% decrease for those with other qualifications, and an 8.2% decrease for those without any qualifications.

   Access, Media, Cultural Participation
   - Each additional hour up to four hours of daily TV viewing decreases the probability of visiting by 2.2%. Intensive viewing of five or more hours decreases the probability by a substantial 13.2%.
   - Having parents who took the respondent to museums decreases the probability of visiting by 0.7% per category.[16]

Factors found not to significantly affect the probability of visiting an Historic Park or Garden

   Demographics, Socio-Economics
   - Gender
   - Ethnicity
   - Income was not statistically significant at the 95% confidence level, but was significant at the 90% level where it was found to increase the probability of participation.
   - High socio-economic status was insignificant at the 95% confidence level, but was significant at the 90% level where it was found to increase the probability of participation.

It is interesting to see that important socio-economic and demographic variables only significant at lower values of conventional levels of confidence.

Fit of Model:

The model has a pseudo R^2 of 0.203, not high, but consistent with what one might expect for an analysis of this type.

Table 2.1: Regression results for visiting an Historic Park or Garden (the refined model)

Table labels: Binary Variable   *
Categorical Variable ' Interaction Term _
Negative numbers are denoted by parentheses

				Sample size (N)		10,180
Visiting a historic park or garden				Pseudo R^2		0.203
	Marginal effect (dy/dx)[17]	odds ratio	Coef.	Robust Std. Err.	Z	P>|z|
Demographics						
Sex*	(0.012)	0.952	(0.049)	0.063	(0.770)	0.439
Age	0.006	1.026	0.025	0.010	2.640	0.008
AgeSQ	(0.000)	1.000	(0.000)	0.000	(1.620)	0.104
Coupled*	0.042	1.189	0.173	0.065	2.660	0.008
Social/Economic Status						
Income	0.006	1.023	0.023	0.012	1.900	0.058
Ethnicity*	0.091	1.448	0.370	0.334	1.110	0.268
Highses*	0.030	1.132	0.124	0.065	1.900	0.058
Socialhousing*	(0.065)	0.762	(0.272)	0.091	(3.000)	0.003
Laratio	0.001	1.004	0.004	0.002	2.040	0.041
Idchil*	0.063	1.294	0.258	0.116	2.230	0.026
MaxAgeChild	(0.010)	0.961	(0.040)	0.010	(3.860)	0.000
Employment						
Parttime*	(0.036)	0.862	(0.149)	0.094	(1.580)	0.115
Fulltime*	(0.052)	0.806	(0.216)	0.087	(2.490)	0.013
Education (Degree is Baseline)						
Somehigher*	(0.000)	0.998	(0.002)	0.104	(0.020)	0.986
Alevel*	(0.033)	0.872	(0.137)	0.094	(1.460)	0.143
Tradeapren*	(0.043)	0.836	(0.179)	0.167	(1.070)	0.284
5GCSE*	(0.077)	0.724	(0.323)	0.099	(3.280)	0.001
GCSE*	(0.023)	0.910	(0.094)	0.133	(0.710)	0.477
Otherqual*	(0.113)	0.613	(0.490)	0.181	(2.710)	0.007
Noqual*	(0.082)	0.709	(0.344)	0.109	(3.150)	0.002
Access Issues						
Internet*	0.048	1.218	0.197	0.075	2.640	0.008
Caraccess*	0.100	1.527	0.423	0.084	5.020	0.000
Limits_ill*	(0.051)	0.809	(0.212)	0.074	(2.880)	0.004
Cultural Participation						
Library12mo*	0.082	1.401	0.337	0.058	5.800	0.000
Musegallery12*	0.235	2.660	0.978	0.059	16.510	0.000
Information/Media						
Radio	0.104	1.563	0.447	0.126	3.550	0.000
AproxTvhours^	(0.022)	0.915	(0.089)	0.028	(3.170)	0.002
TVIntensive*	(0.132)	0.565	(0.571)	0.114	(5.000)	0.000

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[17] The dy/dx denotes the marginal change in the outcome variable for a unit change in the dependent variable.

HistTV*	0.082	1.402	0.338	0.061	5.520	0.000
ArtTV*	0.081	1.389	0.329	0.088	3.710	0.000
Heritweb*	0.146	1.807	0.592	0.072	8.220	0.000
Theaconcweb*	0.083	1.403	0.339	0.067	5.040	0.000
Parent Led Attendance						
ParMus'	(0.007)	0.970	(0.030)	0.014	(2.200)	0.027
ParHist'	0.020	1.087	0.084	0.012	7.250	0.000
Parent Encouraged Activities						
PerformPar'	0.022	1.093	0.089	0.035	2.540	0.011
Religious or not						
Relig*	(0.015)	0.941	(0.060)	0.071	(0.850)	0.393
Interaction Terms						
Relig_prac*	0.048	1.216	0.195	0.070	2.780	0.005
Ethnicity_age	(0.005)	0.978	(0.022)	0.009	(2.550)	0.011
_cons			(2.861)	0.273	(10.480)	0.000

2.2 Visiting Historic Places of Worship

The Taking Part survey includes a question asking whether the respondent had been to a historic place of worship as a visitor (i.e. they are not going there to worship) in the past 12 months. As in the Parks and Gardens model, the additional created variables were also included and results for the Full Model are in Appendix 3.

Variables found to be insignificant in the full model that could be grouped were tested for joint significance. As in the other models, none of the groupings were found to be jointly significant, but education was retained to ensure there was a measure of this variable's effect.
Other insignificant variables were either kept for baseline/research interest considerations, or were removed. The decisions on this are recorded in Appendix 4. Once the insignificant variables were removed, the final Refined Model was run. The results are shown in Table 2.2 and are discussed below.

Marginal Effects Results:

Factors found to increase the probability of visiting a Historic Place of Worship

   Demographics, Socio-Economics
-   While age increased the probability of visiting, the effect of being one year older was a relatively small 0.2%.
-   Income had a statistically significant effect in the Refined Model, but has a very small impact for each increase of £5,000[18] of 0.8% increase in the probability of visiting.
-   The interaction of age with living with a partner is distinct and significant from the sum of the individual effects. The probability increases on average 0.2% with each year. This means that the effect of being older is different for people that are single compared to those that lived with a partner. The total impact of age for people that lived with a partner is 0.4% per year.

   Access, Media, Cultural Participation
-   Internet access increases the probability of visiting by 4%, while access to a vehicle increases the probability of visiting by 5.6%.

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[18]The two lowest income brackets are £2,500 increments, and the top income bracket censors at £50,000.

- Going to cultural institutions in the last 12 months, such as libraries, increases the probability of visiting by 5.7%, while going to a museum or gallery increases the probability by 18.8%, the largest effect of any factor.
- Types of media participation including history themed television, art oriented television, history themed websites, and theatre/concert themed websites increase the probability of visiting by 7.4%, 6.6%, 10.1%, and 8.2% respectively.
- Interestingly, indicating a religious belief was not significant, but being a practicing member of a religion was, with an 8% increase in the probability of visiting a Historic Place of Worship. This is one of the larger effects, and is larger than in the other models.[19]

Factors found to decrease the probability of visiting a Historic Place of Worship

Demographics, Socio-Economics
- Being a member of an ethnic minority was found to decrease the probability of visiting by 10%.
- Having at least one child in the house was found to decrease the probability of visiting by 8%.

Employment, Education
- Working fulltime decreases the probability of visiting by 4.1%.
- Having A-levels, trade/apprentice training, other unknown qualifications, and no qualifications all reduced the probability of visiting by 4.1%, 6.6%, 9.3%, and 9.9% respectively when compared to having a university degree.

Access, Media, Cultural Participation
- Intensive television viewing decreases the probability of visiting by 5.6%.

Parental Influence
- Having parents that encouraged sports participation decreases the probability of visiting.

Factors found not to significantly affect the probability of visiting a Historic Place of Worship

Demographics, Socio-Economics
- Gender
- Living with a partner was statistically insignificant at the 95% level, but at the slightly less rigorous 90% level was found to decrease the probability of participation.

Access, Media, Cultural Participation
- Having a religion

The model has a pseudo adjusted R^2 of 0.209, slightly higher than the historic park and gardens model.

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[19] Just over 81.2% of respondents who claimed a practicing religion were Christians so these impacts are largely for that group.

Table 2.2 Regression results for visiting a Historic Place of Worship (the refined model)

Table labels: Binary Variable   *
Categorical Variable ' , Interaction Term _
Negative numbers are denoted by parentheses

				Sample size (N)		10,194
Visiting historic places of worship				**Pseudo R^2**		**0.209**
	Marginal effect (dy/dx)	**odds ratio**	**Coef.**	**Robust Std. Err.**	**z**	**P>|z|**
Demographics						
Sex*	(0.009)	0.953	(0.048)	0.069	(0.690)	0.488
Age	0.002	1.012	0.012	0.003	4.440	0.000
Coupled*	(0.061)	0.720	(0.329)	0.183	(1.800)	0.072
Social/Economic Status						
Income	0.008	1.044	0.043	0.013	3.430	0.001
Ethnicity*	(0.100)	0.526	(0.643)	0.131	(4.910)	0.000
Highses*	0.030	1.181	0.166	0.070	2.360	0.018
Idchil*	(0.077)	0.640	(0.447)	0.078	(5.700)	0.000
Employment						
Parttime*	0.006	1.033	0.032	0.100	0.320	0.747
Fulltime*	(0.041)	0.795	(0.229)	0.092	(2.490)	0.013
Education (Degree is Baseline)						
Somehigher*	(0.033)	0.826	(0.191)	0.107	(1.790)	0.073
Alevel*	(0.041)	0.791	(0.234)	0.097	(2.410)	0.016
Tradeapren*	(0.066)	0.669	(0.402)	0.183	(2.200)	0.028
5GCSE*	(0.030)	0.841	(0.173)	0.104	(1.660)	0.097
GCSE*	(0.037)	0.805	(0.217)	0.146	(1.490)	0.137
Otherqual*	(0.093)	0.546	(0.606)	0.186	(3.250)	0.001
Noqual*	(0.099)	0.548	(0.602)	0.115	(5.240)	0.000
Access Issues						
Internet*	0.040	1.257	0.228	0.082	2.780	0.005
Caraccess*	0.056	1.390	0.330	0.089	3.700	0.000
Cultural Participation						
Library12mo*	0.057	1.370	0.315	0.063	5.000	0.000
Musegallery12*	0.188	2.777	1.021	0.065	15.770	0.000
Information/Media						
TVIntensive*	(0.056)	0.720	(0.329)	0.103	(3.190)	0.001
HistTV*	0.074	1.495	0.402	0.064	6.330	0.000
ArtTV*	0.066	1.408	0.342	0.087	3.950	0.000
Heritweb*	0.101	1.686	0.523	0.075	6.950	0.000
Theaconcweb*	0.082	1.551	0.439	0.072	6.080	0.000
Parent Led Attendance						
ParHist'	0.006	1.035	0.034	0.010	3.330	0.001
Parent Encouraged Activities						
SportPar'	(0.017)	0.912	(0.092)	0.038	(2.420)	0.016
PerformPar'	0.020	1.119	0.112	0.038	2.980	0.003

Religious or not						
Relig*	0.021	1.126	0.119	0.077	1.540	0.125
Interaction Terms						
Relig_prac*	0.080	1.523	0.420	0.073	5.740	0.000
Age_Coupled	0.002	1.009	0.009	0.003	2.610	0.009
_Cons			(3.232)	0.212	(15.260)	0.000

2.3 Visiting Monuments, Castles or Ruins

The Taking Part survey asks whether respondents had been to a historic monument, castle, or ruin in the past 12 months. As in the two previous heritage types, a model with a full set of variables was run, and was then reduced. Since the full model had many variables that were found to be insignificant, joint significance tests were run on those insignificant variables that could be grouped into categories. Results can be seen in Table A4.3.

In this case employment was not jointly significant, but was kept due to policy interest of being able to examine employment impacts. Once variables were removed, the final Refined Model was run; the full results can be seen in Table 2.3 and are discussed below.

Marginal Effects Results:

Factors found to increase the probability of visiting a Monument, Castle or Ruin

Access, Media and Cultural Participation
- Using heritage websites increased the likelihood of visiting by 14.5%, though there are causality issues with this variable. Library and Theatre/Concert websites increased attendance by 5% and 7.6% respectively.
- Watching history oriented television increased the probability of visiting by 11.6%, watching science oriented TV increased the probability by 3.2%.
- Going to a library increased the probability of visiting by 7.1%, while going to a museum or gallery increased the probability by 24%, the largest marginal impact.

Parental Influence
- Whether or not respondents were taken to a historic site as a child had a surprisingly low impact of only 1.8%.[20]
- Having parents that encouraged sport participation increased the probability for each category from "none" to "a lot" by 3.1%.

Demographics, Socio-Economics
- Living with a partner increased the probability of visiting by 7.3% vs. being single.
- Age increased the probability of visiting by 0.7% for each year on average. [21]

Factors found to decrease the probability of visiting a Monument, Castle or Ruin

Demographics, Socio-economics

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[20] As noted elsewhere, the categorical nature of this variable makes interpretation of impacts difficult. It moves from having not gone to heritage sites as a child to going once a month. Further difficulties arise due to fact of this question referencing events many years before, and different amounts for different people.
[21] Age squared is negatively significant indicating a falling off of the impact of age as it increases, but this has a very slight actual impact on likelihood.

- Being a member of an ethnic minority was found to reduce the probability of participation by 16.7%.
- Living in social housing was found to decrease the probability of visiting by 7.1%.
- Age has a different impact when there is a child present, lowering by 0.3% to 0.4% the increase for each additional year of age.

Employment, Education
- Working full time decreased the probability of visiting by 3.5% vs. being unemployed.
- The only significant education impacts were for qualifications other than academic and no qualifications, which decreased the probability of visiting by 9.1% and 7.8% respectively.

Access, Media, Cultural Participation
- Normal TV viewing was found to decrease the probability of visiting by 1.7% for each additional hour up to 4 hours. While intensive TV viewing decreased the probability of visiting by 11%, one of the largest impacts of any factor.

Factors found not to significantly affect the probability of visiting a Monument, Castle or Ruin

Demographics, Socio-Economics
- Gender
- High socio-economic status
- Income was not significant at the 95% level, but at the 90% level there is an increase of 0.5% for each additional £5,000.[22]

Employment, Education
- All college, secondary school, and apprenticeship qualifications did not have a significant effect on visiting relative to the respondent having at least a college degree.

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[22] Again, the 5,000 interval is for between 5,000 and 50,000. Below 5,000 there are two increments of 2,500, and above 50,000 is truncated.

Table 2.3 Regression results for visiting a Monument, Castle or Ruin (the refined model)

Table labels: Binary Variable   *
Categorical Variable   ' Interaction Term   _
Negative numbers are denoted by parentheses

				Sample size (N)		10,229
Visiting monuments, castles or ruins				Psuedo R^2		0.206
	Marginal effect (dy/dx)	**odds ratio**	**Coef.**	**Robust Std. Err.**	**z**	**P>|z|**
Demographics						
Sex*	0.007	1.030	0.030	0.064	0.470	0.641
Age	0.007	1.029	0.029	0.011	2.730	0.006
AgeSQ	(0.000)	1.000	(0.000)	0.000	(2.860)	0.004
Coupled*	0.073	1.371	0.315	0.066	4.790	0.000
Social/Economic Status						
Income	0.005	1.024	0.024	0.012	1.940	0.053
Ethnicity*	(0.167)	0.448	(0.803)	0.108	(7.460)	0.000
Highses*	0.010	1.043	0.042	0.066	0.640	0.525
Socialhousing*	(0.071)	0.729	(0.315)	0.091	(3.460)	0.001
Idchil*	0.091	1.472	0.386	0.240	1.610	0.108
Employment						
Parttime*	(0.000)	0.998	(0.002)	0.093	(0.020)	0.983
Fulltime*	(0.035)	0.859	(0.152)	0.089	(1.700)	0.089
Education (Degree is Baseline)						
Somehigher*	(0.011)	0.955	(0.046)	0.104	(0.450)	0.655
Alevel*	(0.018)	0.926	(0.077)	0.095	(0.810)	0.417
Tradeapren*	0.028	1.127	0.120	0.160	0.750	0.455
5GCSE*	(0.020)	0.916	(0.088)	0.099	(0.890)	0.375
GCSE*	(0.005)	0.978	(0.022)	0.136	(0.160)	0.870
Otherqual*	(0.091)	0.660	(0.415)	0.177	(2.350)	0.019
Noqual*	(0.078)	0.708	(0.345)	0.111	(3.120)	0.002
Access Issues						
Internet*	0.043	1.206	0.187	0.078	2.390	0.017
Caraccess*	0.052	1.257	0.229	0.088	2.590	0.010
Cultural Participation						
Library12mo*	0.071	1.356	0.304	0.060	5.040	0.000
Musegallery12*	0.240	2.825	1.038	0.060	17.370	0.000
Information/Media						
AproxTvhours	(0.017)	0.930	(0.072)	0.028	(2.540)	0.011
TVIntensive*	(0.110)	0.608	(0.498)	0.119	(4.200)	0.000
HistTV*	0.116	1.638	0.494	0.064	7.680	0.000
SciTV*	0.032	1.147	0.137	0.067	2.060	0.039
Libraryweb*	0.050	1.235	0.211	0.096	2.190	0.028
Heritweb*	0.145	1.827	0.602	0.074	8.190	0.000
Theaconcweb*	0.076	1.379	0.321	0.067	4.820	0.000
Parent Led Attendance						
ParHist'	0.018	1.081	0.078	0.010	7.530	0.000
Parent Encouraged Activities						

SportPar'	0.031	1.141	0.132	0.035	3.730	0.000
Interaction Terms						
Age_idchil'	(0.003)	0.988	(0.012)	0.006	(2.060)	0.039
_cons			(2.698)	0.279	(9.660)	0.000

Fit of the Model:

The model has a pseudo R^2 of .206, which is consistent with that found for the other activities and for models of this general type.

2.4 Comparison Table

Table 2.4 gives the results of all the variables that were included in at least one of the models. This table shows the marginal effects and the p-values of all of the explanatory variables. The spaces that are blank reflect the fact that a particular variable was not included in that model.

Table 2.4

	Historic Parks and Gardens		Historic Places of Worship		Castles, Monuments or Ruins	
	Marginal effects (dy/dx)	P>|z|	Marginal effects (dy/dx)	P>|z|	Marginal effects (dy/dx)	P>|z|
Demographics						
Sex	(0.012)	0.439	(0.009)	0.488	0.007	0.641
Age	0.006	0.008	0.002	0.000	0.007	0.006
AgeSQ	(0.000)	0.104			(0.000)	0.004
Coupled	0.042	0.008	(0.061)	0.072	0.073	0.000
Social/Economic Status						
Income	0.006	0.058	0.008	0.001	0.005	0.053
Ethnicity	0.091	0.268	(0.100)	0.000	(0.167)	0.000
Highses	0.030	0.058	0.030	0.018	0.010	0.525
Socialhousing	(0.065)	0.003			(0.071)	0.001
Laratio	0.001	0.041				
Idchil	0.063	0.026	(0.077)	0.000	0.091	0.108
MaxAgeChild	(0.010)	0.000				
Employment						
Parttime	(0.036)	0.115	0.006	0.747	(0.000)	0.983
Fulltime	(0.052)	0.013	(0.041)	0.013	(0.035)	0.089
Education (Degree is Baseline)						
Somehigher	(0.000)	0.986	(0.033)	0.073	(0.011)	0.655
Alevel	(0.033)	0.143	(0.041)	0.016	(0.018)	0.417
Tradeapren	(0.043)	0.284	(0.066)	0.028	0.028	0.455
5GCSE	(0.077)	0.001	(0.030)	0.097	(0.020)	0.375
GCSE	(0.023)	0.477	(0.037)	0.137	(0.005)	0.870
Otherqual	(0.113)	0.007	(0.093)	0.001	(0.091)	0.019
Noqual	(0.082)	0.002	(0.099)	0.000	(0.078)	0.002
Access Issues						

Internet	0.048	0.008	0.040	0.005	0.043	0.017
Caraccess	0.100	0.000	0.056	0.000	0.052	0.010
Limits_ill	(0.051)	0.004				
Cultural Participation						
Library12mo	0.082	0.000	0.057	0.000	0.071	0.000
Musegallery12	0.235	0.000	0.188	0.000	0.240	0.000
Information/Media						
Radio	0.104	0.000				
NormalTvhours	(0.022)	0.002			(0.017)	0.011
TVIntensive	(0.132)	0.000	(0.056)	0.001	(0.110)	0.000
HistTV	0.082	0.000	0.074	0.000	0.116	0.000
SciTV					0.032	0.039
ArtTV	0.081	0.000	0.066	0.000	0.050	0.028
Heritweb	0.146	0.000	0.101	0.000	0.145	0.000
Theaconcweb	0.083	0.000	0.082	0.000	0.076	0.000
Parent Led Attendance						
ParMus	(0.007)	0.027				
ParHist	0.020	0.000	0.006	0.001	0.018	0.000
Parent Encouraged Activities						
SportPar			(0.017)	0.016	0.031	0.000
PerformPar	0.022	0.011	0.020	0.003		
Religious or not						
Relig	(0.015)	0.393	0.021	0.125		
Interaction Terms						
Relig_prac	0.048	0.005	0.080	0.000		
Age_Coupled			0.002	0.009		
Ethnicity_age	(0.005)	0.011				
Age_idchil					(0.003)	0.039
_cons		0.000		0.000		0.000

3) APPENDICES

Appendix 1: Logistic regression background

Regression analysis allows the effects of different factors on a particular area of interest, such as visiting historic sites, to be examined controlling for their separate impacts. The object is to try and find how much a set of factors 'explanatory variables' affects the outcome, the "dependent" variable.

The basic linear regression model is represented by the following equation:

$$y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_i x_i + \varepsilon_i$$

Where:

y_i The dependent variable, which is the outcome we are trying to explain, in this case whether someone has visited a heritage site.
β_0 The constant term, which is the value of y_i when all the explanatory variables are 0.
$\beta_i x_i$ A set of explanatory variables (x_i) in this case personal characteristics and their effects on the outcomes (the β_i) which is what is estimated.
ε_i An error term.

In regression analysis the objective is, roughly speaking, to find the set of β_i that best explains the observed data i.e. the y_i and the x_i. In this particular case, the beta coefficients were estimated with the method of Maximum Likelihood Estimation. This approach estimates the β_i by calculating the values that maximise the likelihood the model generates the observed data.

The logit model used in the research is a form of regression. The dependent variables examined here are binary (i.e. they take a value of 1 for "yes, I have visited" and 0 for "no, I have not visited."). This creates a problem for simple linear regression. In linear regression the impact scales linearly with the explanatory variables, for example, the impact of having 2 children is simply 2 times the impact of having 1 child. This can lead to a linear regression model generating illogical probabilities e.g. if the impact of having a child was estimated to increase the probability of visiting by 75%, then in the model having two children would increase the estimated probability of visiting by 150%; this is of course impossible.

To deal with this (and other statistical issues such as biased standard errors that arise) a logistic regression approach is adopted. To address the issue that probabilities are bounded between 0 and 1 we specify a function of the explanatory variables which has this property. This function (labelled G) will include all the drivers, but will have a particular form that is non-linear and bounded between 0 and 1.

i.e. $0 < G(z) < 1$ where z can be all the real numbers, and for our purposes $z = \beta_0 + X\beta$

Where X represents the full set of explanatory variables and β their associated coefficients. The particular function used is called a logit function which has the following form, and is plotted in the chart below. Estimating a regression of this type ensures that we obtain realistic probabilities.

$$G(Z) = \frac{e^z}{1 + e^z}$$

G(z)
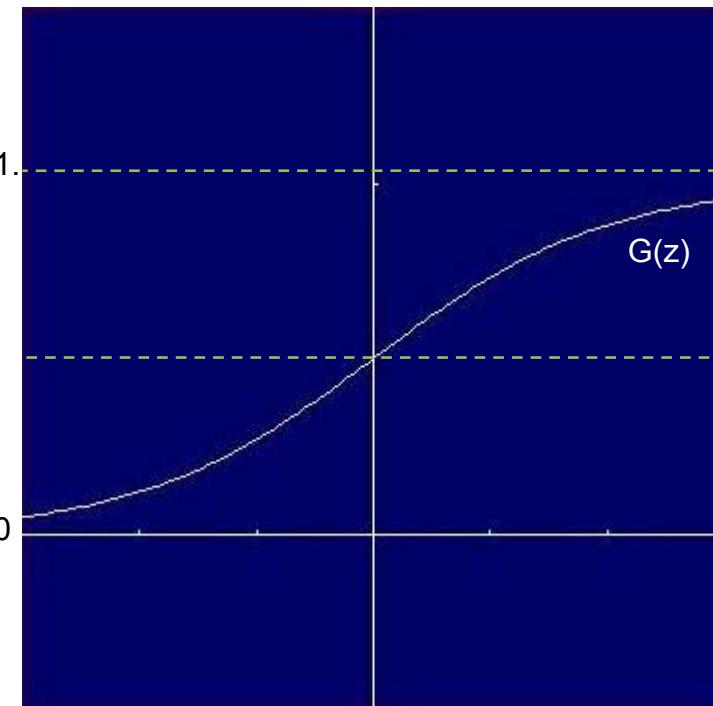
Marginal effects

The probability (p) of visiting a particular type of heritage site (y=1) given the drivers of heritage participation $(x_1, x_2, \ldots x_k)$ can be written as:

$P(y=1 | x_1, x_2, \ldots x_k)$ The probability of visiting given the different explanatory factors

When statistical packages run these kinds of logistic regression model they typically return the estimated odds ratio which is the probability that the activity is done (y=1) over the probability that the activity isn't done (y=1). Mathematically, this is

$$\frac{P(y=1|x)}{P(y=0|x)} = \frac{G(z)}{1-G(z)} = \frac{\dfrac{e^z}{1+e^z}}{\dfrac{1}{1+e^z}} = e^z$$

Where z= β_0+Xβ i.e. a linear function of the explanatory variables.

It is difficult to provide an intuitive interpretation of this formula. It is, however, possible to calculate an estimate of the average effect of changing the explanatory variables, by taking the partial-derivatives of the function G with respect to the appropriate explanatory variables. G(z) is a cumulative distribution function (CDF), so taking the partial derivative of this function gives a marginal probability density function.

$$\frac{\partial P(y=1|x)}{\partial x_j} = \frac{\partial G(z)}{\partial x_j} = G^{'}(\beta_0 + X\beta)(\beta_0 + X\beta)' = g(\beta_0 + X\beta)\beta_j$$

g(z) depends on the values of the explanatory variables, so the marginal impact has to be calculated based on a particular value of x_i (typically the sample average values). The marginal effect is then computed based on multiplying this quantity by a discrete change in x_i i.e. Δx_i.

$$\Delta P(y = 1 \mid X) \approx [g(\beta_0 + X\beta)\beta_j]\Delta x_i$$

This gives the estimated change in the probability of participation when an explanatory variable is changed.

Choice and logistic regression

As the research is aiming to understand how people make decisions, it is helpful to relate the regression analysis to the decision making process. This is achieved through the economic concept of "utility" or wellbeing. If someone is made better off by a choice they will, all else being equal, make that choice. How much someone is "made better off" is unobservable, but we can observe their choices, in this case to visit an historic site, presumably because it makes them feel better off.

The actual utility of whether or not to go is based on a so called 'latent variable', as utility is unobservable. If there are two options, going to a heritage site, and not going to a heritage site, the utilities U_1 and U_0 one receives from this are determined respectively by an individual's utility function under either scenario:

$$U_1 = h_1(X, \varepsilon) = \beta_{c1} + X\beta_1 + \varepsilon_1$$
The utility one receives from all the drivers and their impacts ($X\beta_1$) as well as the effects of any unobserved variables (ε_1) if one visits.

$$U_0 = h_0(X, \varepsilon) = \beta_{c0} + X\beta_0 + \varepsilon_0$$
The utility one receives from all the drivers and their impacts ($X\beta_0$) as well as the effects of any unobserved variables (ε_0) if one does not visit.

The benefit of going, y*, is the utility a person receives from going minus the utility they receive from not going.

$$U_1 - U_0 = y^* = \beta_c + X\beta + \varepsilon$$
(Where the betas are the difference in the coefficients)

We are unable to observe the actual utilities. However, this does not matter, because someone will go if they receive a positive utility, and not go if they receive a negative utility. Therefore the observed variable, y, takes on two different values depending on whether U_1 or U_0 is bigger.

y =1 iff U_1-U_0 ≥ 0
y =0 iff U_1-U_0 < 0

This can be alternatively noted with an *indicator function*, 1[·], which takes on the value of 1 or 0 according to:

$$y^* = \beta_0 + X\beta + \varepsilon = 1[[y^* \geq 0]] \quad \text{thus y=1 when y* ≥ 0 and y=0 when y*<0}$$

Thus we can see how using the G, or logistic function, allows the model to be properly specified mathematically as it takes on the feature of being between 0 and 1.

Appendix 2: Full variable list

Table A2.1: Variable List and Names:

Basic Demographics	
Sex*	Male or female, female baseline
Age	Age in years.
AgeSQ	A constructed term, the square of Age
Coupled*	Whether or not the respondent lives with a partner, baseline is living singly
Social/Economic Status	
Income'[23]	Income bands in £5,000 increments (except, below 5k, 2,500 increments. No increments above 50k)
IncomeSQ'	A constructed term, the square of Income'
Ethnicity*	Baseline is white, binary=1 for all non-white
Highses*	Baseline is in bottom 4 NC-SEC categories, binary=1 for those in one of top 4 NC-SEC categories.
Socialhousing*	Baseline is any type of housing, binary=1 for those in State housing
Idchil*	Baseline is no under 16's in household, binary=1 if there are any children in household
Employment	
Parttime*	Baseline is unemployed, binary =1 if respondent is working part time
Fulltime*	Baseline is unemployed, binary =1 if respondent is working fulltime
Education (Degree is Baseline)	
Somehigher*	Baseline is degree, binary=1 for higher education short of degree
Alevel*	Baseline is degree, binary=1 for those who take A levels
Tradeapren*	Baseline is degree, binary=1 for those who are trade apprentices
5GCSE*	Baseline is degree, binary=1 for those who take 5 or more GCSE's
GCSE*	Baseline is degree, binary=1 for those who take less than 5 GCSE's
Otherqual*	Baseline is degree, binary=1 for those who have some other qualification
Noqual*	Baseline is degree, binary=1 for those who have some no qualifications
Access Issues	
Internet*	Baseline is no access to internet, binary=1 for those who do have access
Caraccess*	Baseline is no access to a car, binary=1 for those who do have access
Limits_ill*	Baseline is no limiting illness, binary=1 for those who do have a limiting illness
Cultural Participation	
Library12mo*	Baseline is not having visited a Library in the past 12 months, binary=1 for those who have
Musegallery12*	Baseline is not having visited a Museum or Gallery in the past 12 months, binary=1 for those who have
Information/Media	
News3xwk*	Baseline is not reading a newspaper at least three times a week, binary=1 if respondent does read paper at least that often.
Radio	number of radios in household 1-99
AproxTvhours	number of hours of TV per day, 0 to "5 or more"[24]
HistTV*	Baseline is not watching history themed TV. Binary=1 if respondent does watch such programming "nowadays"[25]

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[23] Categorical variable starting at 0 in 2,500 increments to 5,000 and then in 5,000 increments to 50,000. Spontaneous "none" responses were kept at 0. A linear indicator was used for each income band. In this way probability changes must be interpreted with caution, however responses are more accurate when bands are used, so if this were a continuous variable the interpretation would also be problematic.
[24] This variable is 0-4 in the final Refined Models, and a binary variable takes on the "5 or more" hours.

SciTV*	Baseline is not watching science themed TV. Binary=1 if respondent does watch such programming "nowadays"
ArtTV*	Baseline is not watching art themed TV. Binary=1 if respondent does watch such programming "nowadays"
LivesportTV*	Baseline is not watching live sport on TV. Binary=1 if respondent does watch such programming "nowadays"
SportTV*	Baseline is not watching sport themed TV. Binary=1 if respondent does watch such programming "nowadays"
Museumweb*	Baseline is not visiting a museum or gallery website in the past 12 months, binary=1 if they have visited such a site.
Libraryweb*	Baseline is not visiting a library website in the past 12 months, binary=1 if they have visited such a site.
Heritweb*	Baseline is not visiting a heritage website in the past 12 months, binary=1 if they have visited such a site.
Theaconcweb*	Baseline is not visiting a theatre or concert website in the past 12 months, binary=1 if they have visited such a site.
Sportweb*	Baseline is not visiting a sport themed website in the past 12 months, binary=1 if they have visited such a site.
Cycling as Transport	
Cyclespastmonth*	Baseline is 0 for those who have not cycled as transportation in the past month, binary=1 if respondent has cycled to go somewhere
Parent Led Attendance	
ParMus'	Baseline is 0 for those who at 11-15 had parents who did not take them to museums. Categorical variable increases in 5 stages from none to at least once a month
ParArtPerf'	Baseline is 0 for those who at 11-15 had parents who did not take them to art performances. Categorical variable increases in 5 stages from none to at least once a month
ParHist'	Baseline is 0 for those who at 11-15 had parents who did not take them to heritage sites. Categorical variable increases in 5 stages from none to once a month[26]
ParLibrary'	Baseline is 0 for those who at 11-15 had parents who did not take them to libraries. Categorical variable increases in 5 stages from none to at least once a month
Parent Encouraged Activities	
ReadPar'	Baseline is 0 for those who at 11-15 had parents who did not encourage them to read. Categorical variable increases in 3 steps from none to a lot.
CreatartPar'	Baseline is 0 for those who at 11-15 had parents who did not encourage them to create art. Categorical variable increases in 3 steps from none to a lot.
SportPar'	Baseline is 0 for those who at 11-15 had parents who did not encourage them to participate in sport. Categorical variable increases in 3 steps from none to a lot.
PerformPar'	Baseline is 0 for those who at 11-15 had parents who did not encourage them to Read to participate in the performing arts. Categorical variable increases in 3 steps from none to a lot.
Religious or Not	
Relig*	Baseline is 0 for not religious, or no religion, binary=1 if respondent claims membership in any religion.

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[25] Both historic TV and historic web have causality issues, but are left in the regression to present information about the relationship between the two variables. Certainly interpreting causality relating to coefficients is difficult.
[26] The probability of going to heritage sites as children is a categorical variable that is based on an interval that is a number of times per year. This range was averaged, (except on the extremes where the min value is used) using a uniform distribution, to find a particular value for the category that the person indicated.0=never .5=less often than once a month 1.5=less than once a month but at least 3 to 4 times a year, and 12=at least once a month. In that these are approximates of actual numbers probabilities need to be cautiously interpreted.

Interaction Terms	
Relig_prac*	Baseline is 0 for those who aren't religious and/or don't practice, binary=1 if both conditions are met.
Child_Coupled*	Baseline is 0 for those who don't live with a partner and/or don't have a child in the household, binary=1 if both conditions are met.
Rwork_Idchil*	Baseline is 0 for those who don't work/or don't have a child in the household, binary=1 if both conditions are met.
Rwork_Coupled*	Baseline is 0 for those who don't work/or don't live with a partner, binary=1 if both conditions are met.
Highses_socialhouse*	Baseline is 0 for those who aren't in high SES/or aren't in social housing, binary=1 if both conditions are met.
Age_Coupled	Baseline is 0 for those who don't live with a partner and equals their age if they are.
Age_idchil	Baseline is 0 for those who don't have a child in the household, and equals their age if they do.
Ethnicity_age	Baseline is 0 for those who are white, and equals their age if they are not white.
Unless otherwise noted, "Don't Know" responses are recorded as missing.	

Additional Variables:

Laratio	The ratio of buildings in a local authority to that authority's size. This is meant to give some measure of supply in the area in which a person lives. The minimum value is .538 in castle point, and the maximum value is 193.478 in the City of London.
MaxAgeChild	The age of the oldest child in a household, if no child, this variable is set to zero. Therefore this variable picks up young families whose oldest is at least one year old. This examines the possibility that younger families may have different patterns of heritage visiting.
Ethnicity_Income	An interaction variable between ethnicity and income. It is meant to see if there is a differential impact of income for different groups.
TVIntensive*	A binary variable meant to quantify the impact of watching more than five hours of television a day.

Appendix 3: Full model results

Table A3.1 Visiting a Historic Park or Garden						
Full Model Results						
					Sample size (N)	**10,031**
					Psuedo R^2	**0.205**
	Marginal effects (dy/dx)	**Odds Ratio**	**Coef.**	**Robust Std. Err.**	**z**	**P>|z|**
Additional Variables						
Laratio	0.001	1.005	0.005	0.002	2.070	0.039
MaxAgeChild	(0.010)	0.961	(0.039)	0.011	(3.450)	0.001
Ethnicity_Income	(0.003)	0.986	(0.014)	0.031	(0.440)	0.660
TVIntensive*	(0.131)	0.569	(0.565)	0.117	(4.840)	0.000
Original Variables (regressed with Additional Variables)						
Basic Demographics						
Sex*	(0.027)	0.895	(0.111)	0.071	(1.570)	0.116
Age	0.007	1.031	0.031	0.011	2.690	0.007
AgeSQ	(0.000)	1.000	(0.000)	0.000	(2.010)	0.044
Coupled*	(0.045)	0.830	(0.186)	0.262	(0.710)	0.477
Social/Economic Status						
Income	0.012	1.049	0.048	0.034	1.400	0.162
IncomeSQ	(0.000)	0.998	(0.002)	0.003	(0.770)	0.440
Ethnicity*	0.104	1.525	0.422	0.338	1.250	0.212
Highses*	0.033	1.145	0.135	0.070	1.920	0.055
Socialhousing*	(0.055)	0.796	(0.228)	0.112	(2.030)	0.043
Idchil*	0.108	1.554	0.441	0.266	1.660	0.097
Employment						
Parttime*	(0.034)	0.867	(0.143)	0.136	(1.050)	0.295
Fulltime*	(0.053)	0.804	(0.218)	0.127	(1.720)	0.085
Education (Degree is Baseline)						
Somehigher*	0.008	1.034	0.033	0.106	0.320	0.753
Alevel*	(0.030)	0.883	(0.124)	0.095	(1.310)	0.192
Tradeapren*	(0.042)	0.840	(0.175)	0.168	(1.040)	0.299
5GCSE*	(0.074)	0.732	(0.312)	0.101	(3.090)	0.002
GCSE*	(0.017)	0.933	(0.069)	0.136	(0.510)	0.610
Otherqual*	(0.135)	0.550	(0.597)	0.177	(3.380)	0.001
Noqual*	(0.079)	0.719	(0.330)	0.111	(2.980)	0.003
Access Issues						
Internet*	0.042	1.189	0.173	0.076	2.270	0.023
Caraccess*	0.096	1.503	0.407	0.086	4.720	0.000
Limits_ill*	(0.051)	0.808	(0.213)	0.074	(2.870)	0.004
Cultural Participation						
Library12mo*	0.082	1.402	0.338	0.060	5.640	0.000
Musegallery12*	0.231	2.612	0.960	0.061	15.630	0.000

Information/Media						
News3xwk*	0.002	1.007	0.007	0.058	0.130	0.899
Radio	0.101	1.547	0.437	0.128	3.420	0.001
NormalTvhours^	(0.022)	0.914	(0.090)	0.029	(3.130)	0.002
HistTV*	0.075	1.360	0.308	0.065	4.740	0.000
SciTV*	0.008	1.033	0.032	0.069	0.470	0.641
ArtTV*	0.080	1.382	0.324	0.091	3.540	0.000
LivesportTV*	(0.009)	0.965	(0.036)	0.073	(0.490)	0.625
SportTV*	0.023	1.100	0.095	0.074	1.280	0.199
Museumweb*	0.035	1.153	0.143	0.087	1.650	0.099
Libraryweb*	(0.004)	0.982	(0.018)	0.099	(0.190)	0.852
Heritweb*	0.138	1.753	0.561	0.077	7.250	0.000
Theaconcweb*	0.076	1.367	0.313	0.069	4.520	0.000
Sportweb*	0.025	1.108	0.102	0.076	1.340	0.181
Cycling as Transport						
Cyclespastmonth*	(0.004)	0.983	(0.017)	0.135	(0.130)	0.898
Parent Led Attendance						
ParMus'	(0.009)	0.965	(0.036)	0.015	(2.440)	0.015
ParArtPerf'	0.002	1.009	0.009	0.015	0.580	0.561
ParHist'	0.021	1.090	0.086	0.012	7.400	0.000
ParLibrary'	(0.002)	0.991	(0.009)	0.006	(1.570)	0.116
Parent Encouraged Activities						
ReadPar'	0.015	1.065	0.063	0.042	1.500	0.133
CreatartPar'	(0.011)	0.954	(0.047)	0.040	(1.170)	0.242
SportPar'	0.006	1.025	0.025	0.038	0.650	0.513
PerformPar'	0.022	1.096	0.092	0.037	2.490	0.013
Religious or Not						
Relig*	(0.017)	0.933	(0.069)	0.072	(0.970)	0.334
Interaction Terms						
Relig_prac*	0.051	1.230	0.207	0.071	2.930	0.003
Child_Coupled*	0.036	1.158	0.147	0.168	0.880	0.380
Rwork_Idchil*	(0.003)	0.989	(0.011)	0.148	(0.080)	0.938
Rwork_Coupled*	0.006	1.024	0.024	0.134	0.180	0.861
Highses_socialhouse*	(0.012)	0.950	(0.051)	0.175	(0.290)	0.770
Age_Coupled	0.002	1.007	0.007	0.004	1.730	0.083
Age_idchil	(0.002)	0.993	(0.007)	0.008	(0.920)	0.356
Ethnicity_age	(0.005)	0.978	(0.022)	0.009	(2.420)	0.015
_cons						

^NormalTvhours does not include "5 or more" as AproxTvhours does. The Original variables table reports on AproxTvhours.

Table A3.2 Visiting a Historic Place of Worship
Full Model Results

					Sample size (N)	10,031
					Psuedo R^2	0.212

	Marginal effects (dy/dx)	Odds Ratio	Coef.	Robust Std. Err.	z	P>|z|
Additional Variables						
Laratio	0.001	1.004	0.004	0.002	1.810	0.071
MaxAgeChild	(0.000)	0.999	(0.001)	0.013	(0.090)	0.931
Ethnicity_Income	0.007	1.040	0.039	0.034	1.130	0.258
TVIntensive*	(0.071)	0.654	(0.425)	0.134	(3.170)	0.002
Original Variables (regressed with Additional Variables)						
Basic Demographics						
Sex*	(0.012)	0.938	(0.064)	0.076	(0.840)	0.401
Age	0.005	1.026	0.026	0.011	2.280	0.023
AgeSQ	(0.000)	1.000	(0.000)	0.000	(1.320)	0.188
Coupled*	(0.090)	0.616	(0.485)	0.293	(1.650)	0.098
Social/Economic Status						
Income	(0.001)	0.996	(0.004)	0.036	(0.110)	0.909
IncomeSQ	0.000	1.003	0.003	0.003	0.990	0.323
Ethnicity*	(0.107)	0.498	(0.697)	0.401	(1.740)	0.083
Highses*	0.037	1.229	0.206	0.077	2.680	0.007
Socialhousing*	(0.016)	0.914	(0.090)	0.131	(0.690)	0.490
Idchil*	(0.055)	0.731	(0.313)	0.314	(0.990)	0.320
Employment						
Parttime*	(0.031)	0.838	(0.177)	0.148	(1.200)	0.232
Fulltime*	(0.067)	0.689	(0.373)	0.139	(2.690)	0.007
Education (Degree is Baseline)						
Somehigher*	(0.027)	0.855	(0.156)	0.109	(1.430)	0.153
Alevel*	(0.034)	0.824	(0.193)	0.100	(1.930)	0.054
Tradeapren*	(0.061)	0.692	(0.368)	0.185	(1.990)	0.047
5GCSE*	(0.022)	0.881	(0.126)	0.108	(1.170)	0.240
GCSE*	(0.025)	0.869	(0.141)	0.152	(0.930)	0.353
Otherqual*	(0.084)	0.584	(0.537)	0.190	(2.820)	0.005
Noqual*	(0.091)	0.575	(0.554)	0.118	(4.690)	0.000
Access Issues						
Internet*	0.034	1.214	0.194	0.085	2.270	0.023
Caraccess*	0.055	1.377	0.320	0.095	3.390	0.001
Limits_ill*	(0.002)	0.990	(0.010)	0.081	(0.120)	0.903
Cultural Participation						
Library12mo*	0.053	1.341	0.293	0.065	4.480	0.000
Musegallery12*	0.184	2.718	1.000	0.068	14.640	0.000
Information/Media						
News3xwk*	0.002	1.013	0.013	0.063	0.200	0.841
Radio	0.040	1.263	0.234	0.153	1.530	0.127
NormalTvhours^	(0.006)	0.966	(0.035)	0.031	(1.130)	0.257

HistTV*	0.071	1.466	0.383	0.069	5.570	0.000
SciTV*	0.004	1.020	0.020	0.072	0.280	0.781
ArtTV*	0.068	1.423	0.353	0.089	3.960	0.000
LivesportTV*	0.007	1.041	0.040	0.074	0.540	0.591
SportTV*	0.008	1.043	0.042	0.077	0.550	0.580
Museumweb*	0.007	1.039	0.039	0.091	0.420	0.672
Libraryweb*	0.025	1.146	0.136	0.104	1.320	0.188
Heritweb*	0.093	1.619	0.482	0.081	5.920	0.000
Theaconcweb*	0.076	1.503	0.408	0.075	5.460	0.000
Sportweb*	0.005	1.026	0.025	0.081	0.310	0.754
Cycling as Transport						
Cyclespastmonth*	0.015	1.083	0.080	0.149	0.540	0.593
Parent Led Attendance						
ParMus'	(0.001)	0.996	(0.004)	0.014	(0.280)	0.778
ParArtPerf'	0.002	1.009	0.009	0.015	0.580	0.559
ParHist'	0.006	1.034	0.033	0.012	2.840	0.005
ParLibrary'	0.001	1.003	0.003	0.006	0.500	0.615
Parent Encouraged Activities						
ReadPar'	0.010	1.058	0.056	0.047	1.210	0.228
CreatartPar'	(0.008)	0.957	(0.044)	0.044	(1.020)	0.309
SportPar'	(0.019)	0.899	(0.106)	0.042	(2.550)	0.011
PerformPar'	0.020	1.115	0.109	0.040	2.750	0.006
Religious or Not						
Relig*	0.023	1.140	0.131	0.078	1.670	0.095
Interaction Terms						
Relig_prac*	0.078	1.514	0.415	0.075	5.550	0.000
Child_Coupled*	(0.039)	0.802	(0.220)	0.183	(1.200)	0.229
Rwork_Idchil*	0.028	1.162	0.150	0.169	0.890	0.374
Rwork_Coupled*	0.040	1.245	0.220	0.150	1.460	0.145
Highses_socialhouse*	(0.060)	0.697	(0.361)	0.190	(1.900)	0.058
Age_Coupled	0.002	1.010	0.010	0.004	2.270	0.023
Age_idchil	(0.000)	0.998	(0.002)	0.008	(0.300)	0.762
Ethnicity_age	(0.001)	0.996	(0.004)	0.009	(0.510)	0.607
_cons			(3.488)	0.346	(10.070)	0.000

^NormalTvhours does not include "5 or more" as AproxTvhours does. The Original variables table reports on AproxTvhours.

Table A3.3 Visiting a Castle, Monument or Ruin

Full Model Results

					Sample size (N)	10,031
					Psuedo R^2	0.207

	Marginal effects (dy/dx)	Odds Ratio	Coef.	Std. Err.	z	P>|z|
Additional Variables						
Laratio	(0.000)	1.000	(0.000)	0.002	(0.050)	0.956
MaxAgeChild	0.000	1.000	0.000	0.012	0.040	0.966
Ethnicity_Income	0.007	1.028	0.028	0.030	0.940	0.349
TVIntensive*	(0.120)	0.580	(0.546)	0.123	(4.440)	0.000
Original Variables (regressed with Additional Variables)						
Basic Demographics						
Sex*	0.004	1.019	0.019	0.074	0.260	0.795
Age	0.007	1.031	0.031	0.011	2.780	0.005
AgeSQ	(0.000)	1.000	(0.000)	0.000	(2.980)	0.003
Coupled*	0.034	1.159	0.148	0.278	0.530	0.596
Social/Economic Status						
Income	0.012	1.052	0.051	0.035	1.450	0.147
IncomeSQ	(0.001)	0.997	(0.003)	0.003	(0.980)	0.328
Ethnicity*	(0.077)	0.708	(0.345)	0.345	(1.000)	0.317
Highses*	0.002	1.008	0.008	0.071	0.110	0.910
Socialhousing*	(0.076)	0.713	(0.339)	0.110	(3.070)	0.002
Idchil*	0.095	1.494	0.402	0.262	1.530	0.125
Employment						
Parttime*	(0.017)	0.929	(0.074)	0.138	(0.530)	0.594
Fulltime*	(0.049)	0.809	(0.211)	0.130	(1.620)	0.105
Education (Degree is Baseline)						
Somehigher*	(0.014)	0.943	(0.059)	0.106	(0.550)	0.580
Alevel*	(0.021)	0.914	(0.090)	0.097	(0.920)	0.356
Tradeapren*	0.016	1.072	0.069	0.163	0.420	0.671
5GCSE*	(0.026)	0.894	(0.112)	0.101	(1.110)	0.267
GCSE*	(0.010)	0.958	(0.043)	0.140	(0.310)	0.758
Otherqual*	(0.085)	0.679	(0.387)	0.177	(2.180)	0.029
Noqual*	(0.075)	0.717	(0.333)	0.115	(2.900)	0.004
Access Issues						
Internet*	0.042	1.200	0.182	0.080	2.270	0.023
Caraccess*	0.043	1.205	0.187	0.091	2.060	0.039
Limits_ill*	(0.023)	0.906	(0.098)	0.076	(1.300)	0.194
Cultural Participation						
Library12mo*	0.068	1.336	0.290	0.062	4.700	0.000
Musegallery12*	0.245	2.875	1.056	0.062	16.940	0.000
Information/Media						
News3xwk*	(0.015)	0.938	(0.064)	0.060	(1.080)	0.282

Radio	0.047	1.230	0.207	0.132	1.570	0.117
NormalTvhours^	(0.020)	0.919	(0.084)	0.029	(2.890)	0.004
HistTV*	0.113	1.615	0.479	0.066	7.310	0.000
SciTV*	0.032	1.146	0.136	0.068	1.990	0.046
ArtTV*	0.001	1.005	0.005	0.093	0.060	0.954
LivesportTV*	0.019	1.084	0.081	0.072	1.130	0.259
SportTV*	0.012	1.051	0.050	0.074	0.680	0.498
Museumweb*	(0.004)	0.984	(0.016)	0.087	(0.180)	0.855
Libraryweb*	0.052	1.243	0.217	0.098	2.210	0.027
Heritweb*	0.141	1.799	0.587	0.077	7.590	0.000
Theaconcweb*	0.076	1.379	0.321	0.069	4.660	0.000
Sportweb*	0.010	1.041	0.041	0.077	0.530	0.596
Cycling as Transport						
Cyclespastmonth*	(0.005)	0.977	(0.024)	0.137	(0.170)	0.863
Parent Led Attendance						
ParMus'	(0.006)	0.975	(0.025)	0.014	(1.810)	0.070
ParArtPerf'	(0.003)	0.989	(0.011)	0.015	(0.750)	0.451
ParHist'	0.021	1.092	0.088	0.012	7.540	0.000
ParLibrary'	0.001	1.004	0.004	0.006	0.700	0.484
Parent Encouraged Activities						
ReadPar'	0.003	1.014	0.014	0.044	0.310	0.757
CreatartPar'	0.003	1.011	0.011	0.042	0.260	0.798
SportPar'	0.024	1.108	0.103	0.039	2.630	0.009
PerformPar'	0.013	1.056	0.054	0.037	1.450	0.146
Religious or Not						
Relig*	0.014	1.061	0.059	0.072	0.830	0.409
Interaction Terms						
Relig_prac*	0.001	1.003	0.003	0.073	0.040	0.969
Child_Coupled*	0.021	1.095	0.090	0.166	0.550	0.585
Rwork_Idchil*	(0.014)	0.941	(0.061)	0.147	(0.420)	0.678
Rwork_Coupled*	0.018	1.079	0.076	0.138	0.550	0.580
Highses_socialhouse*	0.034	1.152	0.141	0.189	0.750	0.454
Age_Coupled	0.001	1.002	0.002	0.004	0.580	0.559
Age_idchil	(0.003)	0.987	(0.014)	0.007	(1.980)	0.048
Ethnicity_age	(0.004)	0.984	(0.017)	0.009	(1.860)	0.062
Cons			(2.901)	0.336	(8.630)	0.000
^NormalTvhours does not include "5 or more" as AproxTvhours does. The Original variables table reports on AproxTvhours.						

Appendix 4: Variable selection tables

Table A4.1 The keep/remove matrix

KEEP/REMOVE MATRIX									
Variables	**Historic Parks and Gardens**			**Monuments, Castles or Ruins**			**Historic Places of Worship**		
Variables	**P>|z|**	**Action**	**Reason**	**P>|z|**	**Action**	**Reason**	**P>|z|**	**Action**	**Reason**
Basic Demographics									
Sex*	0.116	Keep	Demographic	0.401	Keep	Demographic	0.795	Keep	Demographic
Age	0.007	Keep	Significant	0.023	Keep	Significant	0.005	Keep	Significant
AgeSQ	0.044	Keep	Significant	0.188	Remove	Insignificant	0.003	Keep	Significant
Coupled*	0.477	Keep	Demographic	0.098	Keep	Demographic	0.596	Keep	Demographic
Social/Economic Status									
Income	0.162	Keep	Demographic	0.909	Keep	Demographic	0.147	Keep	Demographic
IncomeSQ	0.440	Remove	Insignificant	0.323	Remove	Insignificant	0.328	Remove	Insignificant
Ethnicity*	0.212	Keep	Demographic	0.083	Keep	Demographic	0.317	Keep	Demographic
Highses*	0.055	Keep	Demographic	0.007	Keep	Significant	0.910	Keep	Demographic
Socialhousing*	0.043	Keep	Significant	0.490	Remove	Insignificant	0.002	Keep	Significant
Laratio	0.039	Keep	Significant	0.071	Remove	Insignificant	0.956	Remove	Insignificant
Idchil*	0.097	Keep	Demographic	0.320	Keep	Demographic	0.125	Keep	Demographic
MaxAgeChild	0.001	Keep	Significant	0.931	Remove	Insignificant	0.966	Remove	Insignificant
Employment									
Parttime*	0.295	Keep	Demographic	0.232	Keep	Baseline	0.594	Keep	Baseline
Fulltime*	0.085	Keep	Demographic	0.007	Keep	Significant	0.105	Keep	Demographic
Education (Degree is Baseline)									
Somehigher*	0.753	Keep	Baseline	0.153	Keep	Baseline	0.580	Keep	Baseline
Alevel*	0.192	Keep	Baseline	0.054	Keep	Baseline	0.356	Keep	Baseline
Tradeapren*	0.299	Keep	Baseline	0.047	Keep	Significant	0.671	Keep	Baseline
5GCSE*	0.002	Keep	Significant	0.240	Keep	Baseline	0.267	Keep	Baseline
GCSE*	0.610	Keep	Baseline	0.353	Keep	Baseline	0.758	Keep	Baseline
Otherqual*	0.001	Keep	Significant	0.005	Keep	Significant	0.029	Keep	Significant
Noqual*	0.003	Keep	Significant	0.000	Keep	Significant	0.004	Keep	Significant
Access Issues									
Internet*	0.023	Keep	Significant	0.005	Keep	Significant	0.023	Keep	Significant
Caraccess*	0.000	Keep	Significant	0.000	Keep	Significant	0.039	Keep	Significant
Limits_ill*	0.004	Keep	Significant	0.903	Remove	Insignificant	0.194	Remove	Insignificant
Cultural Participation									
Library12mo*	0.000	Keep	Significant	0.000	Keep	Significant	0.000	Keep	Significant
Musegallery12*	0.000	Keep	Significant	0.000	Keep	Significant	0.000	Keep	Significant
Information/Media									
News3xwk*	0.899	Remove	Insignificant	0.841	Remove	Insignificant	0.282	Remove	Insignificant
Radio	0.001	Keep	Significant	0.127	Remove	Insignificant	0.117	Remove	Insignificant
AproxTvhours	0.002	Keep	Significant	0.257	Remove	Insignificant	0.004	Keep	Significant
TVIntensive*	0.000	Keep	Significant	0.002	Keep	Significant	0.000	Keep	Significant
HistTV*	0.000	Keep	Significant	0.000	Keep	Significant	0.000	Keep	Significant
SciTV*	0.641	Remove	Insignificant	0.781	Remove	Insignificant	0.046	Keep	Significant
ArtTV*	0.000	Keep	Significant	0.000	Keep	Significant	0.954	Remove	Insignificant
LivesportTV*	0.625	Remove	Insignificant	0.591	Remove	Insignificant	0.259	Remove	Insignificant
SportTV*	0.199	Remove	Insignificant	0.580	Remove	Insignificant	0.498	Remove	Insignificant

Museumweb*	0.099	Remove	Insignificant	0.672	Remove	Insignificant	0.855	Remove	Insignificant
Libraryweb*	0.852	Remove	Insignificant	0.188	Remove	Insignificant	0.027	Keep	Significant
Heritweb*	0.000	Keep	Significant	0.000	Keep	Significant	0.000	Keep	Significant
Theaconcweb*	0.000	Keep	Significant	0.000	Keep	Significant	0.000	Keep	Significant
Sportweb*	0.181	Remove	Insignificant	0.754	Remove	Insignificant	0.596	Remove	Insignificant
Cycling as Transport									
Cyclespastmonth*	0.898	Remove	Insignificant	0.593	Remove	Insignificant	0.863	Remove	Insignificant
Parent Led Attendance									
ParMus'	0.015	Keep	Significant	0.778	Remove	Insignificant	0.070	Remove	Insignificant
ParArtPerf'	0.561	Remove	Insignificant	0.559	Remove	Insignificant	0.451	Remove	Insignificant
ParHist'	0.000	Keep	Significant	0.005	Keep	Significant	0.000	Keep	Significant
ParLibrary'	0.116	Remove	Insignificant	0.615	Remove	Insignificant	0.484	Remove	Significant
Parent Encouraged Activies									
ReadPar'	0.133	Remove	Insignificant	0.228	Remove	Insignificant	0.757	Remove	Insignificant
CreatartPar'	0.242	Remove	Insignificant	0.309	Remove	Insignificant	0.798	Remove	Insignificant
SportPar'	0.513	Remove	Insignificant	0.011	Keep	Significant	0.009	Keep	Significant
PerformPar'	0.013	Keep	Significant	0.006	Keep	Significant	0.146	Remove	Insignificant
Religious or Not									
Relig*	0.334	Keep	Baseline	0.095	Keep	Baseline	0.409	Remove	Insignificant
Interaction Terms									
Relig_prac*	0.003	Keep	Significant	0.000	Keep	Significant	0.969	Remove	Insignificant
Child_Coupled*	0.380	Remove	Insignificant	0.229	Remove	Insignificant	0.585	Remove	Insignificant
Rwork_Idchil*	0.938	Remove	Insignificant	0.374	Remove	Insignificant	0.678	Remove	Insignificant
Rwork_Coupled*	0.861	Remove	Insignificant	0.145	Remove	Insignificant	0.580	Remove	Insignificant
Highses_socialhouse*	0.770	Remove	Insignificant	0.058	Remove	Insignificant	0.454	Remove	Insignificant
Age_Coupled	0.083	Remove	Insignificant	0.023	Keep	Significant	0.559	Remove	Insignificant
Age_idchil	0.356	Remove	Insignificant	0.762	Remove	Insignificant	0.048	Keep	Significant
Ethnicity_age	0.015	Keep	Significant	0.607	Remove	Insignificant	0.062	Remove	Insignificant
Ethnicity_Income	0.66	Remove	Insignificant	0.258	Remove	Insignificant	0.349	Remove	Insignificant
_cons	0.000			0.000			0.000		

Results of tests of joint significance for each of the three models

Table A4.2

Historic Parks and Gardens – Tests of Joint Significance								
	Results				**Variables**			
Theme	**Decision**	**Evidence**	**Probability**	**Crit. Value**	**1**	**2**	**3**	**4**
Education	keep for baseline	no joint sig	0.4327	3.78	Somehigher	Alevel	Tradeapren	GCSE
Sport TV	remove	no joint sig	0.4718	1.5	SportTV	LivesportTV		
TV	remove	no joint sig	0.6364	1.7	SciTV	SportTV	LivesportTV	
Websites	remove	no joint sig	0.2042	4.59	Museumweb	Libraryweb	Sportweb	
Parent encouraged attendance	remove	no joint sig	0.2464	2.8	ParArtPerf	ParLibrary		
Parent encouraged activities	remove	no joint sig	0.3018	3.65	ReadPar	CreatartPar	SportPar	

Table A4.3

Monuments, Castles or Ruins – Tests of Joint Significance									
	Results				Variables				
Theme	Decision	evidence	Probability	Crit. Value	1	2	3	4	5
Employment	remove	no joint sig	0.1555	3.72	Parttime	Fulltime			
Education	keep for baseline	no joint sig	0.8232	2.18	Somehigher	Alevel	Tradeapren	5GCSE	GCSE
Sport TV	remove	no joint sig	0.2366	2.88	LivesportTV	SportTV			
TV	remove	no joint sig	0.4094	2.89	LivesportTV	SportTV	ArtTV		
Websites	remove	no joint sig	0.8517	0.32	Museumweb	Sportweb			
Parent encouraged attendance	remove	no joint sig	0.1208	5.82	ParMus	ParArterf	ParLibrary		
Parent encouraged activities	remove	no joint sig	0.4296	2.76	ReadPar	CreatartPar	Performpar		

Table A4.4

Historic Places of Worship – Tests of Joint Significance							
	Results				Variables		
Theme	Decision	evidence	Probability	Crit. Value	1	2	3
Education	keep for baseline	no joint sig	0.3868	3.03	Somehigher	5GCSE	GCSE
Sport TV	remove	no joint sig	0.6191	0.96	LivesportTV	SportTV	
TV	remove	no joint sig	0.7794	1.09	LivesportTV	SportTV	SciTV
Websites	remove	no joint sig	0.5504	2.11	Museumweb	Libraryweb	Sportweb
Parent encouraged attendance	remove	no joint sig	0.8945	0.61	ParMus	ParArtPerf	ParLibrary
Parent encouraged activities	remove	no joint sig	0.3901	1.88	ReadPar	CreatartPar	

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