Valuing Historic Attractions Using Travel Cost Methods and Mobile Data

Executive Summary

This report evaluates the use of mobile analytical data in the Travel Cost Method (TCM) to estimate the economic value of heritage attractions in England. By comparing visitor data from English Heritage (EH) with mobile analytical data from the Huq platform, our study demonstrates that incorporating non-market values can significantly increase the perceived value of historic attraction sites. This report also introduces a low-cost tool to value sites that currently lack an explicit market price. This research is funded by the Culture and Heritage Capital Programme.

Our analysis employs the Zonal Travel Cost Method (ZTCM), an economic approach that estimates a site's value based on visitors' travel expenditures, including both out-of-pocket costs and the value of their time. By assessing how visitation rates change in response to variations in travel costs, ZTCM helps capture non-market benefits and provides a more complete understanding of the overall recreational value of historic sites. Importantly, as this method aligns with HM Treasury's Green Book guidelines, it has the potential to inform future funding and investment decisions for heritage sites.

A novel aspect of our study is the use of mobile analytical data as a primary sample. We validated this approach by comparing it with counterfactual visitor booking records from the English Heritage Trust. To the best of our knowledge, this study is among the first to apply mobile analytical data in travel cost methods. While a handful of studies have used mobile data for travel cost methods, most relied on signal-based tracking. Even within that limited research, the use of app-based data that can offer greater granularity remains virtually unexplored.

Mobile analytical data offers several advantages. It enables the valuation of heritage sites without accurate visitor records, such as free-entry locations. By capturing data year-round, it reduces seasonality biases common in traditional travel cost methods conducted by surveys. Additionally, larger sample sizes improve accuracy, and access to historical data dating back to 2019 allows retrospective analysis of investment impacts and the value visitors derive from these sites. Mobile data is also significantly more cost-effective than in-person surveys, further improving its utility for heritage valuation.

Our main comparison focuses on consumer surplus, the difference between what visitors are willing to pay and what they actually pay. We find that, on a per capita basis, the value visitors place on the experience exceeds the ticket price by 23–72%, depending on the site. This indicates that the benefits, including cultural, educational, and recreational aspects, extend beyond the monetary cost of entry. Importantly, these findings suggest that current pricing may not fully capture the broader societal value of historic attractions. Future applications of this approach will also assess sites without an explicit market value, providing a more comprehensive picture of cultural heritage benefits across England.

Key Findings

- Visitors were consistently willing to pay more than their actual costs to visit heritage sites, resulting in a positive consumer surplus per capita for each site.
- An average consumer surplus per capita of £4.83 was found for the mobile analytical data, compared to £5.75 for the English Heritage Trust counterfactual data.

- This surplus shows the broader economic and cultural value these sites offer to visitors, which goes beyond the direct ticket prices of the sites.
- Across 10 sites, the average consumer surplus value as a percentage of the ticket price was 57% for English Heritage Trust data, and 46% for the Mobile analytical data
- A strong correlation was found between the consumer surplus values from mobile analytical data and English Heritage records, supporting the use of mobile data as a reliable tool.
- This makes it a useful tool, especially sites that may be free to enter, but lack the resources to track visitors in traditional survey methods. These cultural heritage sites, from a national account perspective, could previously be implicitly valued at £0.
- However, we observed some uncertainties for certain sites on the overall footfall, which could lead to significant divergence in the aggregate consumer surplus for the site.
- The inclusion of consumer surplus in social cost benefit analysis allows for more comprehensive ways of evaluating heritage site investments. Non-market values, such as consumer surplus, can justify continued investment in cultural heritage sites.
- The study has warranted further investigation into the use and suitability of mobile analytical data for travel cost methods; thus, Historic England plans to investigate over 100 historic attraction sites from a range of organisations.

Despite its advantages, mobile analytical data presents challenges, including potential biases in visitor detection, difficulties in defining travel zones, and the need for further validation against traditional datasets. Addressing these issues will be key to its wider adoption in heritage valuation.

This study contributes to the growing body of research on cultural heritage valuation, providing a foundation for integrating non-market values into economic evaluations and policy decisions.