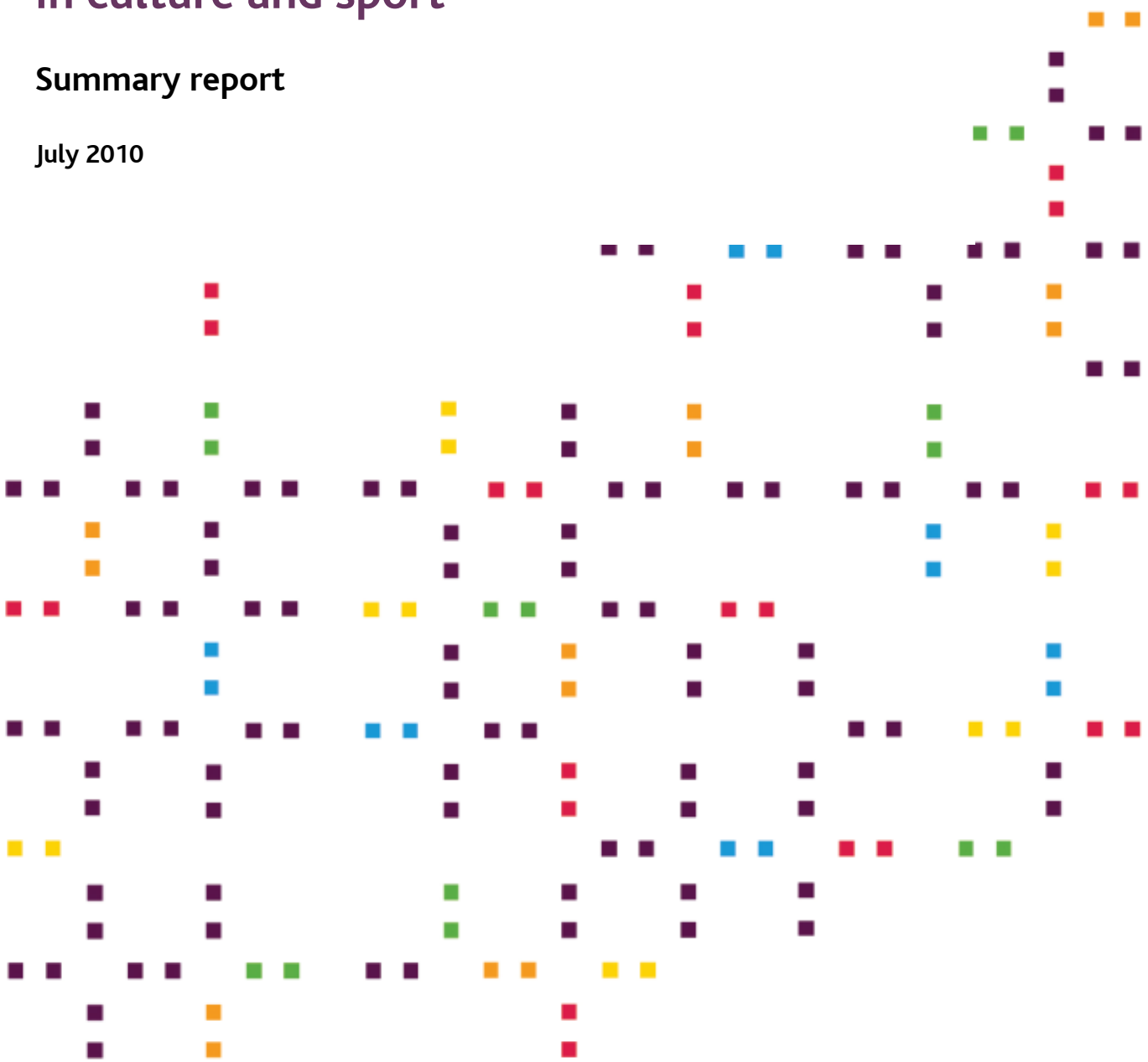


# Understanding the drivers of engagement in culture and sport

## Summary report

July 2010



The CASE programme The Culture and Sport Evidence (CASE) programme is a three-year joint programme of research led by the Department for Culture, Media and Sport (DCMS) in collaboration with the Arts Council England (ACE), English Heritage (EH), the Museums, Libraries and Archives Council (MLA) and Sport England (SE).

The work on this project was carried out by a consortium led by the EPPI centre with Matrix Knowledge Group

The work in this report was carried out by Matrix Knowledge Group:

Dr Kevin Marsh  
Sam MacKay  
David Morton  
Will Parry  
Evelina Bertranou  
Dr Rashmi Sarmah



This report can be downloaded from the DCMS website:

[http://www.culture.gov.uk/what\\_we\\_do/research\\_and\\_statistics/5698.aspx](http://www.culture.gov.uk/what_we_do/research_and_statistics/5698.aspx)

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## About this report

This report represents an important step in the development of evidence to inform policy making in the field of culture and sport. It is a summary of a larger Technical Report also available on the CASE website. It addresses the question:

### What drives engagement in culture and sport?

The existing literature suffers from a number of conceptual and empirical shortcomings, limiting the ability of decision makers to draw conclusions about the relative effectiveness of alternative policies.

The research reported here presents two sets of innovative analyses aimed at addressing these issues. Each analysis employs cutting-edge analytical techniques and draws on all available evidence to identify the factors that influence engagement in culture and sport.

The analysis presented here allows for a firmer understanding of what drives engagement in two ways:

- a. Understanding how **background factors** predict engagement. This is useful to, for instance, understand the threats and opportunities presented by external factors, such as the aging population or changes in the wider economy.
- b. Understand how **policy interventions** can change patterns of engagement. This is useful in comprehending the possible impacts of policies – making better business cases for interventions.

The results enable specific discussions about possible interventions to improve the engagement in culture and sport of certain groups, and what the likely impact of that intervention will be. This can range from understanding that those living in social housing are less likely to attend the arts, to designing good interventions for this group, and what the potential effect of that intervention might be.

Despite the contribution to the evidence base made by this report, there is still need for further research efforts to ensure that policy makers intervene most efficiently to increase engagement in culture and sport. The report suggests areas where these research efforts can be best focused.

This report is one of three sets of reports produced by the CASE programme's 'Understanding the drivers, impact and value of engagement in culture and sport' project. The other reports answer the following questions:

- What is the **impact** of engagement?
- How can we **value** engagement?

This report and all the others are available on the CASE website: [www.culture.gov.uk/case](http://www.culture.gov.uk/case)

## Executive summary

**Aim:** To understand the drivers of engagement in culture and sport, including:

- Understanding the impact of **background factors**, such as age and income, on the likelihood that people engage in culture and sport.
- Understanding the impact of **policy interventions**, such as promoting engagement through advertising or reducing cost, on the likelihood that people engage in culture and sport.

**Approach:** Previous work has addressed this question by undertaking statistical analysis, generally of a single dataset and focused on a single sector. In order to improve understanding of the factors that drive engagement, this report applied a consistent method across a range of engagement types: attending art events; visiting heritage sites; visiting libraries; visiting museums; and doing sport. Furthermore, the analysis is made as comprehensive as possible by reviewing and drawing on the range of available datasets.

Despite the insights that this approach develops for policy makers, limitations with the existing data means that statistical techniques are unable to answer all policy makers' questions. In order to overcome these limitations, a simulation model was built. The simulation acts as both a model to generate sensible predictions about the effects of policy on engagement, and as a tool for policy makers and analysts to interact with when developing future policy.

The simulation models the stages individuals probably go through when deciding whether to engage in culture and sport, from being unaware of engagement opportunities to being an 'engager'. For government there are a number of 'levers' that can be pulled to drive people through the different stages in becoming an engager, these are:

- Promoting engagement via communications campaigns.
- Education in culture and sport activities.
- Reducing the cost of engagement.
- Improving the quality of the engagement experience.
- Increasing the supply of opportunities.

The simulation model is designed to run for 1,254 different combinations of culture and sports activities and population groups.

The research presented here combines two things:

- Actual findings from new analysis undertaken with new combinations of data and the latest analytical techniques that provide greater insights into who does and does not engage and what the reasons might be.
- A new tool for understanding what might work best to address particular groups' needs when looking to increase engagement in culture and sport.

**Results – background factors:** A number of socio-economic factors emerge from the analysis as being important drivers of engagement, including:

- Older people are more likely to engage in culture, but less likely to engage in sport.
- Childhood experience of engaging in all types of culture is positively associated with engaging in culture as an adult.
- Those with higher levels of education are more likely to engage in culture.
- Those of higher social economic status are more likely to attend arts events, visit a heritage site, and visit a museum.
- Media consumption is positively associated with engagement in culture and sport.
- Men are much more likely to participate in sport, but less likely to attend arts events, visit a museum, or visit a library.
- The probability of ethnic minorities engaging in culture varies with age. For young people, ethnic status has no effect for attending a heritage site, an arts event, or a museum, while among older people those from a BME group are less likely to engage in culture.
- Having a sense of influence on the provision of cultural and sporting opportunities strongly predicts engagement.

The simulation models suggest that socio-economic trends in future years, especially changes in the age of the population, will increase the number of people engaging in culture and sport.

**Results - policy interventions:** A number of policy scenarios are presented to show the usefulness of the simulation model and to demonstrate the impact of different policies.

First, the analysis suggests that a number of policies will be successful in increasing engagement in culture and sport, including:

- Increasing interest in engagement through, for instance, promotional activities or improving access to media.
- Removing barriers to engagement faced by those who, for instance, have limiting illnesses.

The relative effectiveness of these policies will, however, vary between sectors.

Second, the analysis suggests that certain policies will only have a limited impact on the probability that people engage in culture and sport, including:

- Increasing the supply and/or capacity of facilities/assets.
- Improving the affordability of engagement.

Again, the relative effectiveness of these policies varies between sectors. For instance, there is evidence that living in a heritage-rich area influences the probability of visiting a heritage site.

**Conclusion:** This project represents an important step in the development of an evidence base to inform policy making in culture and sport.

The analysis of background factors shows the benefit of having distinct data on culture and sport, allowing for a relatively detailed understanding of engagement. These findings help

determine where inequities exist in the population (e.g. social housing tenants being less likely to attend arts or heritage, or BME groups being less likely to do sport) through to possible interventions that might promote engagement (such as media promotions). In addition, the simulation model is an important step in making evidence available to inform policy making.

There are limitations to the current work imposed by the availability of resources for this project, as well as the complexity and ambition of the research problem. These include:

- the work here did not cover arts participation<sup>1</sup>;
- more data is required on the cost of engaging;
- the background factors work could look at understanding engagement in specific activities rather than across sectors;
- the simulation model needs to both take account of multiple years of *Taking Part* data, and include links between the different sectors.
- Understanding how engagement in one sector affects engagement in another is a next major step in understanding the drivers of engagement<sup>2</sup>.

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<sup>1</sup> The analysis was restricted to the priority areas of engagement for the CASE partner organisations. While this does include participation in the arts, attendance was of a higher priority. It was not possible within the resources of the project to include both attendance and participation.

<sup>2</sup> Note that this work only covers public attendance and participation in culture and sport – other forms of engagement, such as volunteering, philanthropy being a profession etc are not covered by this work

## Introduction

### The research objective

The Culture and Sport Evidence (CASE) programme was set up by the Department for Culture, Media and Sport (DCMS) in 2008, in collaboration with the sector-leading non-departmental public bodies (NDPBs), Arts Council England (ACE), English Heritage (EH), the Museums, Libraries and Archives Council (MLA) and Sport England (SE). The programme aims to generate strategic evidence for maximising engagement in culture and sport, and maximising the value and impacts people get from engaging in culture and sport. This strategic evidence will be used to inform the deployment of public funds to maximise engagement in sport and culture, and the value citizens in England receive from that engagement.

As part of the CASE programme, DCMS commissioned the EPPI-Centre (Institute of Education, University of London) and the Matrix Knowledge Group to undertake a research project on 'understanding the drivers, impacts and value of engagement with culture and sport'. The project used advanced systematic review methods and modelling techniques to begin the process of summarising existing research evidence and data on sporting and cultural engagement. This evidence will provide the basis for understanding what makes people engage in cultural and sporting activities, the wider impacts of engagement and ways of understanding the value they derive from engagement. An overview of the project and the findings and tools developed through it can be found in '*Understanding the drivers, impacts and value of engagement in culture and sport: an over-arching summary of the research*' report published alongside this report on the CASE website.

This report is a summary of one of four work streams undertaken as part of this project. A detailed technical summary of this work stream can be found in '*Understanding the drivers of engagement in culture and sport: technical report*' published alongside this report on the CASE website.

The objective of this part of the project is to answer the question:

### **What drives engagement in culture and sport?**

Addressing this question has important policy implications as doing so promotes best practice for increasing engagement and delivering the wider benefits associated with it. This is a key aim of the DCMS and associated bodies.

Engagement in culture and sport can take many forms. Thus, before considering the drivers of engagement in culture and sport, a more precise definition of engagement is required. This project is concerned with engagement as attendance at culture events / sites and participating in sport. More precisely still, the following definitions are adopted:

- Heritage: attending a heritage site.



- Art: attending an arts event.
- Sport: participating in sport.
- Museums, libraries and archives: attending a museum, library or archive.

Engagement in culture and sport was defined as **attendance** at culture events / sites and **participation** in sport. These engagement types are in large part the focus of public investment in culture and sport. Throughout the remainder of this report, the above engagement types are generically referred to as “engagement in culture and sport”.

The early stages of this project involved a stakeholder engagement exercise to define engagement, and the outcomes of engagement. It is important to note that a number of forms of engagement in culture and sport identified during that exercise are excluded from this report: ‘supporting’ (includes volunteering, donating, purchasing), and producing (being a professional in culture or sport). Also excluded from the analysis at this stage is attendance at sporting events.

### **Our current understanding**

What is currently known about the factors that drive engagement in culture and sport?  
The current literature can be divided into economic and sociological approaches.

### **Economic Approach**

The economic approach is characterised by the use of economic theory, particularly the general theory of consumer choice, to understand the relationship between key factors and levels of engagement, with a particular focus on the impact of price and income.

Economic theory states that if the **price** of culture or sport engagement increases relative to the price of alternative leisure activities, individuals will engage in less culture or sport. Conversely, as income rises engagement should rise – the **income** effect. The income effect might, however, be offset by the ‘substitution effect’. The substitution effect is the idea that as wages increase, the cost of leisure time increases (because the individual is not earning). This results in a greater inclination towards work rather than leisure. The combined impact of the income and substitution effects will depend on an individual’s preference for engaging in culture/sport, alternative leisure activities, and his income level.

Research in economics tends to focus on estimating the size of these theoretical relationships. In culture and sport, much of this research has looked at attendance at the performing arts (e.g. Lévy-Garboua and Montmarquette, 2003), though there are examples for other sectors, such as museums (see Johnson, 2003) and sport (see Coalter, 2002). Engagement in culture and sport is often considered a luxury – meaning engagement is sensitive to **price**. However, the economic research in the arts fails to confirm this.

The story is similar for **income** and engagement. In their reviews both Lévy-Garboua and Montmarquette (2003) and Seaman (2005) observe little association between changes in

income and changes in attendance arts performances. This argues against the idea that attendance at the arts is related to income.

There have been different explanations for this finding. Seaman (2005) emphasises the amount of time required to engage, reflecting that ticket price is one small element of the expense. As income increases, the cost of leisure time increases causing demand to reduce with income.

### **Sociological Approach**

The sociological research provides evidence of the impact of available time on engagement. Survey responses suggest that an actual or perceived lack of time can result in lowered demand (see, for instance, Rowe et al., 2004). Furthermore, an analysis of *Taking Part* 2006/7 data supports the idea that there is a positive association between income levels and time being perceived to be a barrier to engaging in culture and sport.

Sociological research – in contrast to economic research – tends to focus on factors other than price and income. For instance, a key factor in the sociological literature is ‘**taste**’ (e.g. Bourdieu, 1984). While economists tend to treat tastes as being outside of their models, sociological studies tend to focus on how individuals’ tastes are developed, and how they relate to their wider social status and outcomes.

Some argue that taste is cumulative, particularly in the area of arts. That is, taste is a function of knowledge, experience and education relative to art, and people who are more knowledgeable about the arts are more likely to attend (McCarthy et al., 2001; Throsby, 2001; Lévy-Garboua and Montmarquette, 2003). There is much evidence in the sociological research to support the idea that factors such as **education** and **social status** influence attendance (see for instance, Bunting et al., 2008; Gayo-Cal et al., 2006; Sullivan and Katz-Gerro, 2007; and Chan and Goldthorpe, 2005, 2007a, 2007b; Rowe et al., 2004; CEBR, 2007; and MLA, 2008). The educational effect is supported by studies identifying engagement as a child being a key predictor in later life engagement (see for instance, Oskala et al., 2009; David, 2004; and Kay, 2004).

Many of the previous studies of social survey data that have looked at the background factors predicting engagement in culture and sport in the UK have used the same standard method, but in slightly different ways (CEBR, 2007 etc). This tends to make comparisons across sectors difficult. In addition, the studies all tend to use the same single dataset, *Taking Part*. *Taking Part* is an extremely robust and relatively comprehensive survey, but even it cannot cover the wide range of factors identified as potentially important in driving engagement. A more comprehensive analysis would take into account people’s experience with local facilities as well as their supply.

The other major issue that besets all of these studies is the problem of direction of causality. For all of these effects of taste, education or social status etc, the question remains whether the engagement creates the educational effect, and then the social status, or if educational effects generate engagement, or both. Currently there is no way to disaggregate this as key data – **longitudinal** data, where individuals are regularly surveyed through their lives – are not currently available. CASE is addressing this by investing in the Economic and Social

Research Council's [Understanding Society](#), a large-scale longitudinal study. This investment will allow much greater understanding of these factors in the future.

## Overview of the report

The research summarised in this report attempts to address some of the challenges facing the analysis of demand outlined in the previous section. Two separate pieces of analysis were undertaken, each corresponding to a different diagnosis of the challenges facing this issue. First, in response to the argument that existing analysis suffers from limited data and the need for more sophisticated analytical techniques, regression analysis techniques were employed to analyse existing UK-based survey and administrative data.

Second, in response to the argument that existing regression-based analysis is fundamentally unable to provide policy-relevant data the second method involved the use of system dynamics models to create a 'computer simulation model'. McCarthy et al. (2001) suggest that the conceptual approaches that inform current analytical work need improvement. That is, current conceptual approaches tend to oversimplify the nature of the decision-making process. Instead of one decision, engagement in culture and sport requires a number of sequential decisions, each influenced by a different set of factors. A system dynamics computer modelling approach was adopted in order to structure the analysis in a manner that mirrors the decision making process, as well as to draw on a wider range of data sources than are available to regression modelling techniques.

### Summary of the existing literature

The economic literature focuses on the relationship between price and income and engagement. No clear picture of the effect of price and income on engagement emerges from this literature. Two reasons are identified for this:

- A lack of attention to socio-demographic factors, such as previous experience of engagement. The non-economic literature provides much evidence about the effects of, for instance, education and childhood experience on engagement levels.
- Methodological challenges, including limitations of the available data and the analytical techniques employed.

The research reported in this paper is designed to overcome these challenges.

# The factors that predict engagement: a statistical analysis

## Introduction

Section 3 identified a number of challenges faced by current attempts to answer this question. For instance, existing datasets are rarely comprehensive enough to measure all the variables likely to impact on engagement in culture and sport. This section summarises an attempt to combine existing UK-based survey datasets to overcome this problem.

The analysis summarised in this section defines engagement in culture and sport as follows<sup>3</sup>:

1. Heritage – whether a person has attended a heritage site in the past 12 months<sup>4</sup>
2. Art – whether a person has attended an arts event in the past 12 months (participating in arts what not included in the analysis).
3. Library – whether a person has attended a library in the past 12 months.
4. Museum or Gallery – whether a person has attended a museum or gallery in the past 12 months.
5. Sport – whether a person has participated in three episodes of at least 30 minutes of moderate-intensity sporting activity in the past four weeks (as defined in the Sport England “1 million” indicator).

Taken together, 1-4 are referred to as ‘culture’.

Section 4.2 describes the data sources and methodological framework employed in the analysis. Section 4.3 presents the results of the analysis. Section 4.4 summarises the implications for policy, and identifies a research agenda for overcoming the limitations of the current evidence.

## Method

A range of data sources were reviewed to identify those that would best provide an understanding of the drivers of engagement. *Taking Part 2007/8* was selected as the principle source due its robustness and coverage. This was supplemented with:

- **Asset data:** museums and libraries from a commercial dataset and heritage sites from English heritage, sports assets from Active Places run by Sport England; and arts funding data from the Arts Council England;
- **National indicator data**<sup>5</sup> on accessibility of services and satisfaction with local facilities.

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<sup>3</sup> The analysis did not cover attending an archive as only a small proportion of the population engaged in this activity, reducing the likelihood that any analysis would be able to explain variation in engagement.

<sup>4</sup> Based on the Public Service Agreement target for heritage visits by priority groups set up under the Labour administration.

<sup>5</sup> See <http://www.audit-commission.gov.uk/localgov/audit/nis/Pages/Default.aspx> for more details on this.

A statistical analysis was undertaken to understand how the range of background factors in each of these datasets (demographic and related data in Taking Part, presence of assets locally, and perceptions of local service quality) related to patterns of engagement in culture and sport. The approach used enables understanding of the effect on engagement of one particular factor, while controlling for the effect of others. For instance, we can understand what effect living in social housing has on engagement, controlling for other background factors commonly associated with living in social housing such as low income.

The analysis was run separately for each of the 5 sectors listed above. Although the technique used for each was identical (making the findings comparable), they differed in some important ways. The differences lie in which factors were included for each analysis. Factors are only included in an analysis if they are considered theoretically relevant to explaining engagement. For that reason, 'watching art TV' was only included in the arts sector analysis but not in the others, and so on. In Table 1, where a factor was excluded from the analysis this is represented by cross-hatching. This is distinct from the variable not having a statistically significant relationship with engagement, which is represented by grey shading in the table.

Further detail on the method used can be found in the associated Technical Report published on the CASE website.

### **An overview of the findings**

Table 1 summarises the results of the five analyses of the factors that predict engagement in culture and sport. Green bars indicate a **positive** relationship between the background factor and engagement, and red bars indicate a **negative** relationship between the background factor and engagement. The size of the bars represents the magnitude of the relationship. Not all the factors were found to have a statistically significant relationship with engagement. Cross hatch shading indicates where variables were not included in the final analysis because no association was identified (i.e. there is no significant relationship). Flat grey shading indicates the factor was not included in the analysis for a lack of a hypothetical link, as explained above (i.e. the relationship was not tested).

A number of trends emerge across the models of different engagement types, including:

- Increasing age predicts increasing cultural engagement but diminishing engagement in sport.
- Self-reported childhood experience of engaging in all types of culture is positively associated with engaging in culture as an adult.
- Those with higher levels of education are more likely to engage in culture.
- Those of higher social economic status are more likely to attend arts events, visit a heritage site, or visit a museum.
- Higher levels of media consumption in general is positively associated with more engagement in culture and sport – though watching more than 3 hours of TV is associated with lower engagement.

- Men are much more likely than women to participate in sport, but less likely to attend arts events, visit a museum, or visit a library.
- Families are more likely than those without children to visit heritage and libraries.

There is a positive association between whether people watch culture- and sport-related TV programmes and whether they engage in culture and sport. Thus, while TV watching may generally be considered a substitute for engagement, specific forms of TV watching are complements to engagement. It is, however, possible that this association is explained by an underlying interest in culture and sport, rather than TV watching having a causal effect on actual attendance at cultural events / sites or participation in sport.

An interesting relationship was observed between ethnic background, age, and engagement. In the cases of visiting a heritage site, attending an arts event, or visiting a museum, young people from BME and non-BME groups have a similar probability of engaging in culture, while among older people those from a BME group are less likely to engage in culture. The reverse of this trend is observed for visits to libraries. The greater likelihood of younger generations of BME groups engaging in culture may have important implications for ensuring social cohesion.

**Table 1: Results of regression analysis**

	Art	Heritage*	Sport	Library*	Museum*
<b>Socio-economic characteristics</b>					
Age					
Member of a BME group vs. not					
Member of a BME group interacted with age					
Alcohol drunk 1 day/week vs. none					
Alcohol drunk 2 days/week vs. none					
Alcohol drunk 3 days/week vs. none					
Alcohol drunk 4 days/week vs. none					
Children living in household vs. not					
Living as a couple vs. not					
Living in a couple and with children vs. not					
Education: other higher level vs. degree					
Education: A-level vs. degree					
Education: trade apprentice level vs. degree					
Education: 5+ GCSEs A*-C level vs. degree					
Education: <5 GCSEs A*-C level vs. degree					
Education: other qualifications vs. degree					
Education: no quals vs. degree					
High social-economic status vs. not					
Income					
Illness or disability vs. not					
Religion: non-practicing vs. not religious					
Religion: practicing vs. not religious					
Sex: male vs. female					
Males in a couple vs. not					
Social housing tenant vs. not					

Factors that predict engagement: statistical analysis

	Art		Heritage*		Sport		Library*		Museum*	
Work status: part time vs. not working										
Work status: full time vs. not working										
<b>Accessibility of engagement</b>										
Index of service accessibility										
Supply of local historic buildings										
Cycles vs. not										
Has access to a motor vehicle vs. not										
<b>Media access</b>										
Watches art on TV vs. not										
Watches history on TV vs. not										
Has access to internet vs. not										
Watches sport on TV vs. not										
Radio available in house vs. not										
Watches science on TV vs. not										
Visited sport website in last 12m vs. not										
Hours of TV watched per day										
<b>Childhood experience</b>										
Encouraged to paint or draw as child: a lot vs. not										
Encouraged to perform as a child: some vs. not										
Encouraged to perform as a child: lot vs. not										
Encouraged to read as child: some vs. not										
Encouraged to read as child: a lot vs. not										
Encouraged to do sport as child: some vs. not										
Encouraged to do sport as child: a lot vs. not										
Average no. of times taken to a gallery p.a. as a child										
Average no. of times taken to the theatre p.a. as a child										
Average no. of times taken to a heritage site p.a. as a child										
Average no. of times taken to a library p.a. as a child										



Factors that predict engagement: statistical analysis

	Art		Heritage*		Sport		Library*		Museum*	
Average no. of times taken to a museum p.a. as a child										█
<b>Influence over provision</b>										
Influence over cultural facilities: some vs. none		█						█		█
Influence over cultural facilities: lot vs. none		█						█		█
Influence over sport facilities: some vs. none						█				
Influence over sport facilities: lot vs. none						█				
<b>Enjoyment of engagement</b>										
% of local population satisfied with libraries								█		

\*Single level models run

The analysis also identifies a positive relationship between whether people perceive themselves to have greater influence over decision-making and the probability of visiting a library or a museum, attending an art event, and doing sport. It is difficult, however, to draw firm policy conclusions from this observation. It is possible, for instance, that the line of causation runs from engagement to influence. That is, those people who engage more are perhaps also more likely to get involved in the running of their local club or cultural asset.

A number of interesting sector-specific trends also emerge from the analysis, including:

- Those living in areas with more heritage sites are also more likely to visit a heritage site.
- Those people with a limiting illness are less likely to participate in sport.
- Members of black and minority ethnic groups are more likely to visit a library.
- Overall income does not predict likelihood of attending art events.

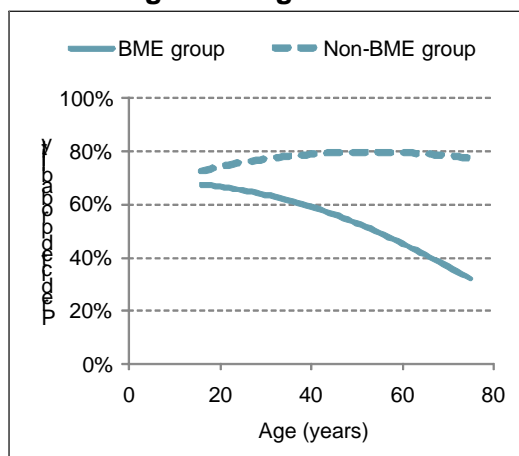
### *Predicting engagement in culture and sport*

The statistical analysis can generate predictions based on the relationships found in Table 1. An illustrative range of predicted probability of engaging for different combinations of factors is given below.

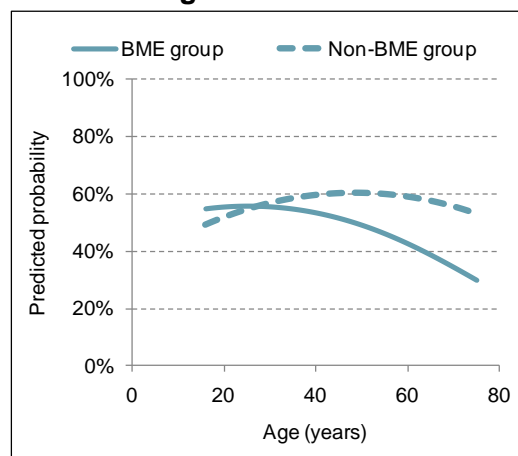
Figure 1 shows a comparison of the predicted probability of engaging in culture by age for individuals in BME and non-BME groups. In the cases of visiting a heritage site, attending an arts event, and visiting a museum, young people from BME and non-BME groups have a similar probability of engaging in culture, while among older people those from a BME group are less likely to engage in culture. The reverse of this trend is observed for visits to libraries. The greater likelihood of younger generations of BME groups engaging in culture may have important implications for ensuring social cohesion.

**Figure 1: Probability of engagement in culture and sport by ethnic background**

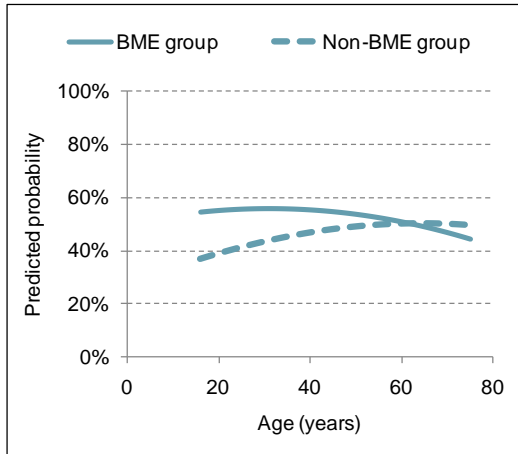
**1a. Visiting a heritage site**



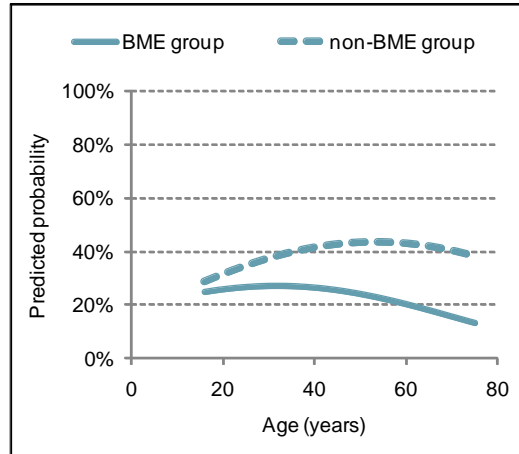
**1b. Attending an arts event**



**1c. Visiting a library**

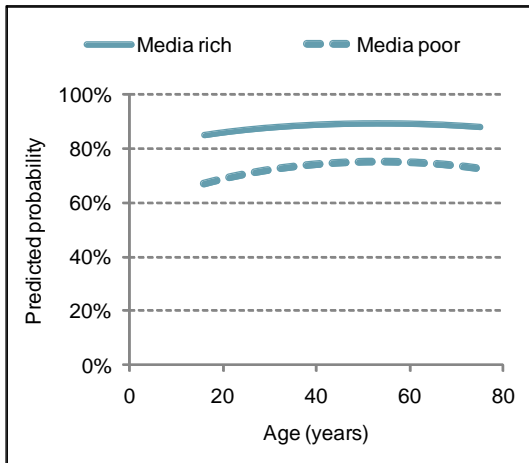


**1d. Visiting a museum**

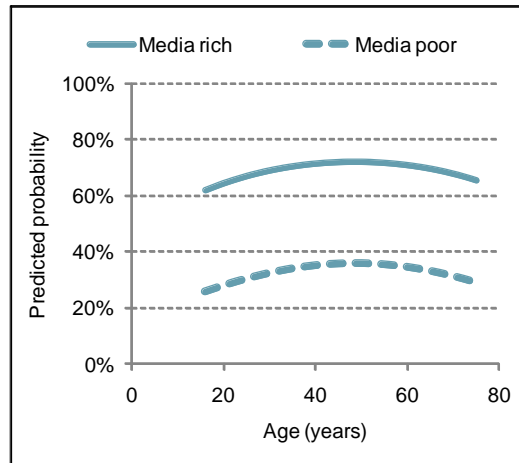


**Figure 2: Probability of engagement in culture and sport by level of media consumption**

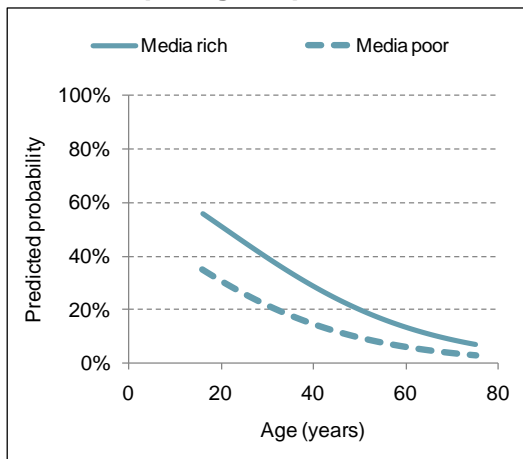
**2a. Visiting a heritage site**



**2b. Attending an art event**



**2c. Participating in sport**



**2d. Visiting a museum**

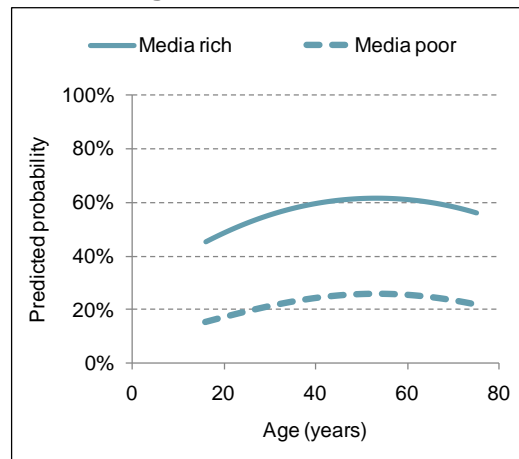


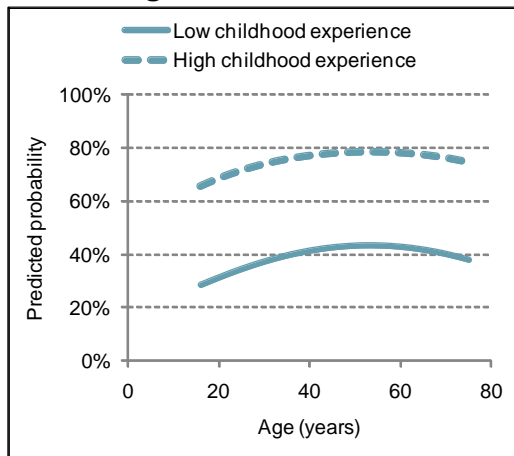
Figure 2 shows a comparison of the predicted probability of engaging in sport and culture by age for individuals who are media rich with those who are media poor. Those who are media rich have access to the internet, watch relevant TV programmes, watch 2 hours of television

per day and have a radio. It demonstrates that those who are media rich have high probability of visiting a heritage site, attending an art event, or visiting a museum at all ages. Media rich individuals are also more likely to participate in sport, but the difference between media rich and media poor individuals diminishes with age.

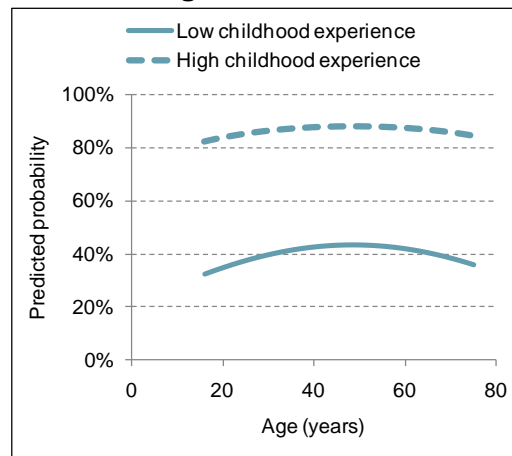
Figure 3 shows the predicted probability of engaging in culture by the extent to which individuals engaged in culture as a child. It demonstrates that those individuals who visited museums and attended art events as children are more likely to do so as adults and that this effect is maintained throughout their lifetime.

**Figure 3: Probability of engaging in culture by childhood experience**

**3a. Visiting a museum**



**3b. Attending an art event**



**What does this mean for policy making?**

The results outlined above have a number of important implications for policy makers. First, the analysis helps **identify those people who are less likely to engage** in culture and sport, helping policy makers target their efforts. For instance:

- Older BME groups are less likely than older non-BME groups to attend heritage sites, art events or museums.
- Single males are less likely than others to attend arts events, museums or libraries.
- Females, older people, and BME groups are less likely than others to do sport.
- People with lower educational attainment are less likely than others to attend culture or do sport.
- Social housing tenants are less likely than others to attend arts events or heritage sites.
- Families are less likely than non-families to attend arts events or do sport.
- The employed are less likely than the unemployed to attend cultural events or do sport.

Second, the analysis helps **identify interventions that may increase engagement** in culture and sport. For instance:

- Increasing the accessibility of heritage sites.

- Improving satisfaction with libraries.
- Improving the accessibility of cultural and sport events/sites to those with limiting illnesses, such as improving disabled access.
- Interventions to improve awareness of cultural and sporting opportunities.

Finally, the analysis points to a number of gaps in the current evidence that could be usefully filled. For instance, further research is required on the supply of cultural and sporting facilities. The available data provided only a poor measure of the accessibility of such facilities. Furthermore, this research only focused on whether people engaged in culture or sport, and treated different types of culture and sport separately. Further research is required on the frequency of engagement, and how decisions to engage in one type of culture and sport influence engagement in other types.

# The policy interventions that impact engagement: a simulation model

## Introduction

This section reports the results of a simulation model built to analyse the policies that drive engagement. This approach has a number of benefits compared with previous statistical analysis of survey data – an example of which is reported in the section 4. First, it is able to draw on a wider range of evidence – not just survey data, but also findings from, for instance, research studies. Second, this approach is better able to reflect the stages individuals go through from being a non-engager to an engager.

The simulation model created here to explore the impact of policy interventions will be available for policy-makers to assess the likely effects of policies and socio-economic trends on engagement in culture and sport. This report briefly describes the process by which the model was built and reports the outcome of a number of scenarios generated to test it. Guidance on how to use and update the model will be made available separately. The simulation model is a significant first step towards greater capability to generate sound evidence-based policies.

## Development of the simulation model

A detailed description of how the simulation model was developed is available in the technical report that accompanies this report.

A conceptual model of the factors that drive engagement in culture and sport was developed by drawing on the available literature. The conceptual model was tested and refined at a workshop with representatives from each sector. The resulting model was converted into a simulation model using the ‘system dynamics’ approach and built with the software package *ithink*.

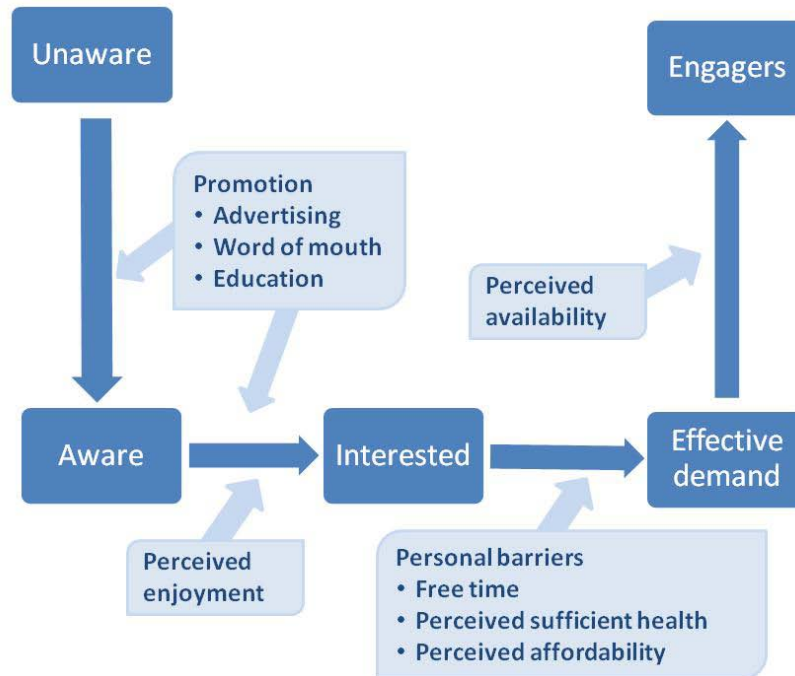
The simulation models predicts how people move between the states involved in the decision to engage in culture and sport, from total disengagement (comprising being unaware, uninterested and unable to engage) to engagement. Figure 4 summarises how the model simulates the effect of policy.

At a given time people sit in one of the following five independent stages:

- Unaware: People who are not aware of the opportunity to engage in the activity.
- Aware: People who are aware that they could participate in a given activity but do not have an interest in participating in the activity.
- Interested: People who would like to participate but are prevented from doing so because they can't afford the activity, they don't have the time, or they suffer from an illness that stops them from doing so.

- Effective demand: People who would like to participate but are prevented from doing so because of a lack of supply or capacity of opportunities.
- Engager: People who have actively engaged in the given activity.

**Figure 4: Policy levels in the simulation model**



*Taking Part* allows us to estimate the number of people in these states. People can move through these states either of their own accord or due to policy interventions. Five different classes of policy interventions are included in the model:

- Promotion, such as advertising campaigns
- Education
- Improving the quality of the experience of engagers
- Improving the accessibility of resource by, for instance, making engagement more affordable or reducing the barriers facing disabled people.
- Increasing the supply of engagement opportunities.

Within the model people are able to move between the states in both directions. For instance, promotional campaigns may increase people's awareness and interest in an activity type. However, people may also lose interest in an activity and move back down the model to 'aware'.

The simulation model allows scenarios to be run for each sector with the following definition of what it means to engage:

- Heritage – visiting a heritage site in the past 12 months<sup>6</sup>
- Art – attending an arts event in the past 12 months.
- Sport – whether a person has done three episodes of at least 30 minutes of moderate-intensity sporting activity in the past four weeks (as defined in the Sport England “1 million” indicator).
- Museum, library, and archives – whether a person has visited a museum, a library or an archive in the past 12 months.

Within each of the above sectors, separate models were specified for a range of activity types. Table 2 summarises the activity types for which models were specified. These were chosen as they were the highest-volume activities based on the 2007/2008 *Taking Part* survey. The simulation model can be run for each activity, or for each sector as a whole – a total of 38 different activity types.

For each activity type, the model was constructed for a number of different groups. The complexity of the modelling meant that the number of different groups were limited to the following combinations:

- Gender: male and female.
- Age: 11-15 years old, 16-29 years old, 30-49 years old, 50-64 years old, and over 65 years old.
- Income of the highest earner in the household: low (£0 - £14,999), average (£15,000 - £39,999), high (£40,000+).

As each of these groups can be run in combination with each other (e.g. young males), the total number of different subgroups for which the simulation model can be run is 33. These groupings were chosen as they represented the groups at which policies are often aimed.

The combination of groups that policies can be aimed at and activities that can be simulated means there are 1,254 combinations of groups and activities for which the model can be run, giving the model the flexibility to deal with a range of scenarios.

Note that since the simulation model draws heavily on *Taking Part* data, it is restricted to national level analysis in England.

### **The timing of policy effects**

The simulation model runs over intervals of one week for a period of 1000 weeks. That is, estimates of the number of people in each state (unaware, aware, interested, effective demand, and engaging) are recalculated each week. This allows the timing of the effects of policies to be estimated.

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<sup>6</sup> Based on the Public Service Agreement target for heritage visits by priority groups set up under the Labour administration. These include people with a physical or mental disability, from black or minority ethnic groups.



Almost all of the data used to estimate model parameters was derived from the *Taking Part* survey. This emphasises the importance of the survey to policy development in the fields of culture and sport. However, it also indicates the lack of a broader evidence-base available in these fields, as well as meaning that the model is strongly exposed to any limitations in the *Taking Part* survey.

### **Limitations of the simulation model**

Any estimates generated by a simulation model as complex as that reported in this section are subject to uncertainty. Such uncertainty can lead to a lack of confidence in the results if they appear to disagree with experience. To manage this we undertook a range of standard procedures that helped determine how good the model is, including calibration against existing studies, and sense checking with experts

#### **Using the model**

The model is designed to appraise the impact of a range of policy options, including: promotions, such as communicating information via the internet or advertising campaigns; improving the accessibility of facilities and sites, such as providing disabled access; changing the affordability of engagement, such as the cost of accessing a site; and changes in the supply and quality of facilities.

Appraisal of the likely impact of policy using the model requires information on how the policy impacts on key model parameters. For instance, appraisal of a policy to change the cost of museum entry requires information on how this policy impacts on the perceived affordability of accessing museums.

The simulation model should be seen as a tool to aid development of policy, allowing evidence from previous experience via evaluation findings usefully to inform the creation of effective policy options. It is advised that the model is used in collaboration combination with analytic experts. For further information on using the model, see the Users' Manual that accompanies this report.

**Table 2: List of activity types modelled**

<b>Attending arts events</b>	<b>Heritage</b>	<b>MLA</b>	<b>Sport</b>
1. Music	1. A city or town with historic character	1. Museums or galleries	1. Swimming
2. Theatre (adults only)	2. A historic park, garden or landscape open to the public	2. Libraries	2. Health, fitness, gym, conditioning & weightlifting
3. Opera or musical theatre (adults only)	3. A monument such as a castle, fort or ruin	3. Archives	3. Football
4. Opera or musical theatre and theatre (children only)	4. A historic building open to the public (non-religious)	4. All MLA	4. Badminton
5. Visual art	5. A historic place of worship attended as a visitor		5. Golf
6. Street art	6. A place connected with history or historic transport system		6. Athletics (includes track and field athletics, and jogging)
7. Carnival (adults only)	7. A site of archaeological interest		7. Tennis
8. Culturally specific festival (adults only)	8. A site connected with sports heritage		8. Squash
9. Carnival and culturally specific festival (children only)	9. All heritage listed above		9. Cricket
10. Dance			10. Recreational walking
11. Video or digital art			11. Cycling
12. Crafts			12. All sports listed above
13. Books or writing			
14. All arts listed above			

## Using the simulation model: illustrations

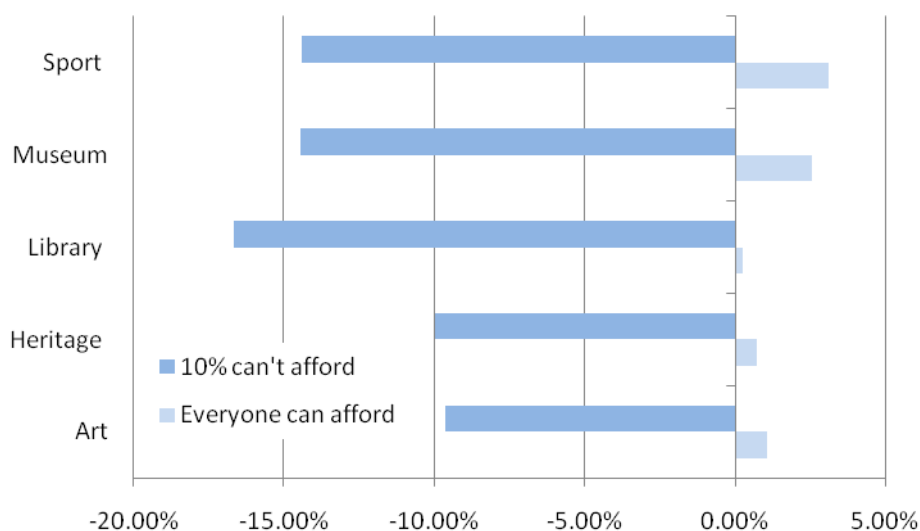
This section summarises some insights for the policy drivers of engagement in culture and sport generated using the model. Figures 5 to 8 show changes in engagement level predicted by the model for different scenarios. Further illustrations of different policy interventions are explored in the technical report accompanying this report. Note that the simulation model is designed to be used during policy development to explore options and scenarios.

### Understanding the effect of policy interventions

#### Scenario 1: The impact of changes in affordability on engagement

Figure 5 shows the estimated effect of policies targeted at the affordability of engagement. It shows the effect of two scenarios: a policy that makes engagement affordable to all; and a policy that results in 10% of the population still unable to afford the activity. It is estimated that ensuring that everyone can afford to engage would have a small positive effect on engagement levels across the sectors. The greatest effects would be observed on the numbers of people doing sport and visiting museums. A policy that resulted in 10% of the population not being able to afford to engage in culture and/or sport is estimated to reduce engagement levels.

**Figure 5: The impact of affordability on engagement levels (percentage change relative to baseline)**

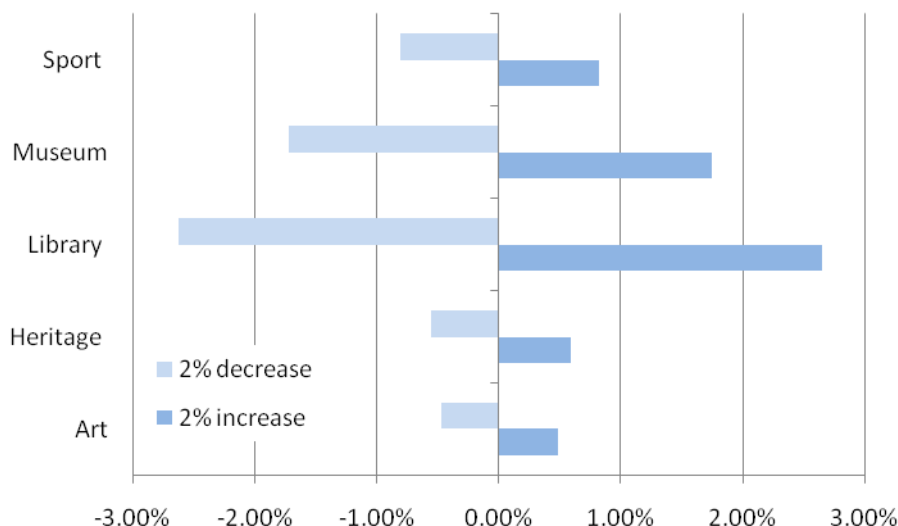


Changes to the perceived affordability impacts on the number of people that move between the 'interested' and 'effective demand' states. In the case of everyone being able to afford to engage, as people move into 'effective demand' a proportion of these people will also move to become engagers, whilst for others perceptions of availability of opportunity will prevent them moving further and they remain in 'effective demand'.

**Scenario 2: The impact on engagement of the quality of the experience**

Figure 6 shows the change in engagement levels with changes in people’s level of enjoyment in engaging. More precisely, it estimates how engagement will vary if the assessment of the quality of the experience of engaging increases or decreases by 2%. Such changes could be associated, for example, with policies that invest in the refurbishment of sports facilities or the information provided at heritage sites, museums or galleries. Within the model, this effect is produced by changing the likelihood that engagers recommend the activity to their networks.

**Figure 6: The impact of changes in quality of experience on engagement levels (percentage change relative to baseline)<sup>7</sup>**



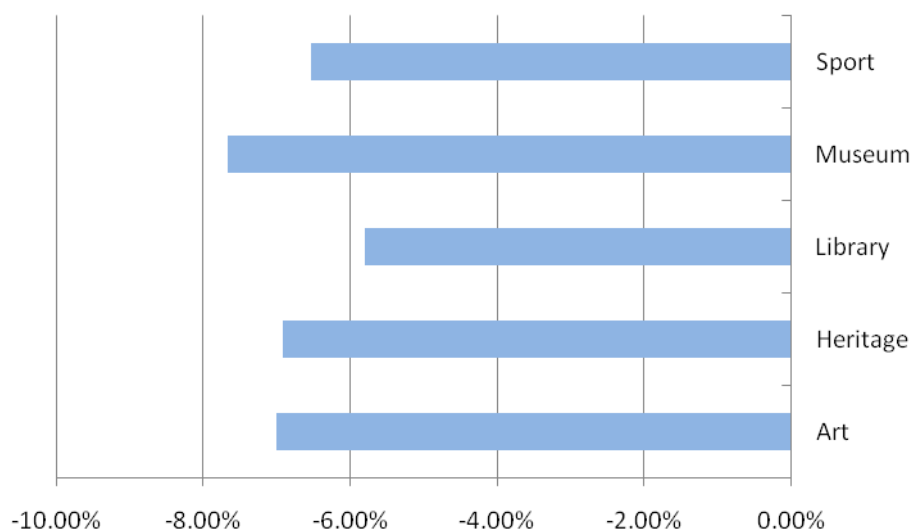
The direction of the changes in Figure 6 is as expected –it is estimated that improvements in the quality of experience of engaging results in a higher level of engagement, and vice versa. It also estimates the relative sensitivity of engagement to quality of experience across the different sectors. Specifically, visits to libraries and museums are more sensitive to the quality of the experience than engagement in the other culture and sports sectors. This finding is consistent with the results of the statistical analysis reported in section 4. That analysis found that only engagement in libraries was associated with the perceived quality of facilities. Furthermore, the sensitivity of engagement to perceived quality is associated with the proportion of the population aware but interested in engagement. For libraries, this group make up about 40% of the population. It is reasonable to speculate that improving the quality of experience of engagement will increase the chance that engagers recommend the activity to their networks, increasing the probability that this group moves from being just aware to being interested.

<sup>7</sup> In the model, improved quality of experience operates through the effect on word of mouth – increasing the likelihood that engagers will recommend an activity to their friends, increasing the chance that these people will become aware and/or interested.

### Scenario 3: The impact of reducing supply of culture and sport

Figure 7 shows the estimated effect of a reduction in the supply/capacity of assets/facilities on engagement levels. Specifically, it shows the estimated effect of a 10% increase in the proportion of the population who think there is insufficient capacity to allow them to participate in the activity (a reduction in supply). It is estimated that a similar effect on engagement would be observed across the sectors, with engagement levels dropping approximately 6%.

**Figure 7: The impact of reduced capacity/supply on engagement levels (percentage change relative to baseline)**

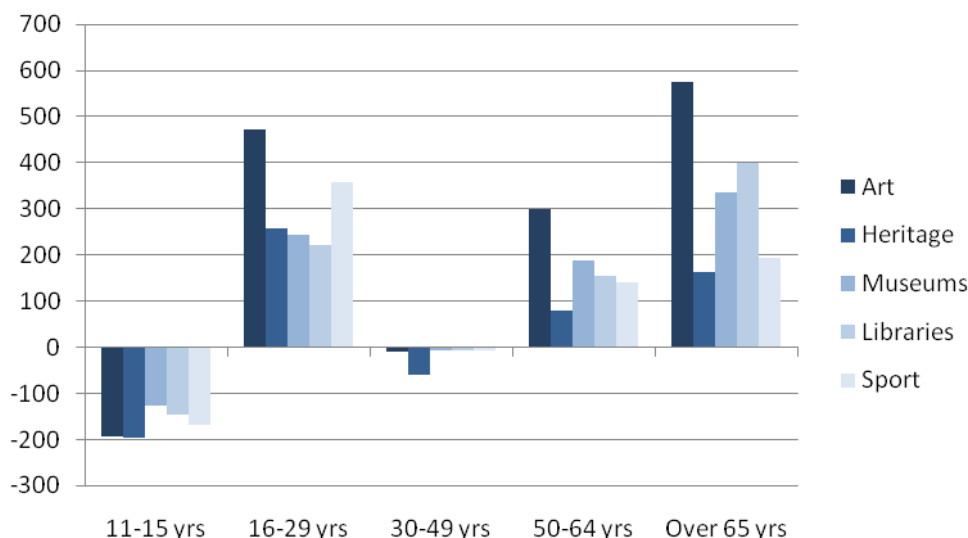


### Impacts of wider changes in society

#### Scenario 4: The aging population

The model was also used to assess the effect on engagement levels of the change in the age of the population in 2012 as predicted by the Office of National Statistics. Figure 8 summarises the results of this analysis. It is estimated that the effect of changes in the age of the population by 2012 will increase the numbers of people attending arts events, visiting museums and visiting libraries by about 3%, increase the numbers of people doing sport by 2.3%, and increase the number of people visiting heritage sites by 0.7%.

**Figure 8: Change in the number of people engaging in culture and sport as a result of demographic changes by 2012 (thousands)**



It is estimated that the effect of changes in income levels by 2012 will increase the numbers of people engaging in culture and sport, but only by small amounts – between 0.05% (heritage and libraries) and 0.15% (museums).

#### **What do we learn from the simulation model?**

The scenarios run in the section above help in understanding what might happen to engagement with the culture and sport sectors with demographic changes, and how different types of policy might effectively influence engagement levels. These insights allow the deployment of more persuasive arguments for investment in policy based on sound analysis, incorporating the best available knowledge and information.

What does this analysis tell us about what drives engagement in culture and sport?

The model can be used to estimate the effect of a number of policy outcomes on engagement in culture and sport, including:

- Policies to impact people's **satisfaction** with the experience of engaging are predicted to have a greater effect on the numbers engaging in museums and libraries than in other sectors.
- Policies to increase the perceived **affordability** of engagement are predicted only to have small effects on the numbers engaging.
- Promotional campaigns to increase **awareness** and interest are predicted to have a greater effect on the numbers engaging in libraries and museums than in other sectors.

These should be interpreted as **tentative** findings mainly drawn on the basis of responses given in the *Taking Part* survey and reflected in the way the model operates. To understand fully the real effect of interventions, it is important to make proper use of evaluation studies. One of the key benefits of the simulation model is that it allows greater co-ordination and focus in how evaluations are set up. Evaluations can test specific predictions of the model,

and what is learned from the evaluations can be incorporated into future iterations of the model.

It is important to note that the analysis presented in this section represents only an illustration of the outputs that can be generated by the models. The models are available for the ongoing assessment of policy.

The factors that impact on decisions to engage in culture and sport are numerous and complex. The attempt to build a model to predict the effects of the range of available policies on the engagement levels of multiple cohorts merely serves to emphasise this point. The challenges created by this complexity are faced by policy makers on a daily basis. Constructing a model for such complex policy problems provides the opportunity to break up the problem into its theoretically coherent parts, make these parts explicit and open to discussion, assess the evidence available for each part, and provide guidance on the best solutions to the problem.

As complex and flexible as the current computer simulation model is, significant further work is recommended. This includes research to develop better estimates in the areas covered by the model. Furthermore, a number of improvements to the model itself would improve the quality and confidence of the estimates it produces, including:

- Extending the groups that can be distinguished in the model to include, for instance, families and BME groups.
- Allowing interactions between different engagement types. Presently simulating a sector or activity can only be done in isolation: for example arts and sports don't interact. The next stage could be to build in that interaction to improve the understanding of how the sectors relate to each other.
- Extending the model to a local authority level.

## Conclusions

The objective of this research was to answer the question: What drives engagement in culture and sport? There is no straightforward answer this question. The work done here has identified the power and importance of two types of factors:

- Background factors in people's lives, such as their educational attainment, their access to media, whether they live in families, or their housing status.
- Policy factors, such as the role of promotion, investment to increase availability, quality or accessibility.

Within each of these two domains, the analysis has generated an array of findings, and the simulation model has the potential to generate further insights. This summary report has tried to capture a flavour of some of these findings, but does not list each finding.

The statistical analysis of existing survey data identified the important background factors that predict engagement. These include age, childhood experience, education, socio-

economic status, media consumption, gender, and marital / family status. New and interesting findings are:

- People living in areas that are more densely populated with heritage sites are more likely to attend a heritage site.
- People who watch culture and sport related TV are more likely to attend cultural events / sites and do sport. Thus, while TV watching may generally be considered a substitute for engagement, specific forms of TV watching are complements to engagement.
- Young people from BME and non-BME groups have a similar probability of visiting a heritage site, attending an arts event, and visiting a museum, while among older people those from a BME group are less likely to engage in these activities.

It is important to note that associations should not be confused with causation. Nevertheless, these findings can help policy makers identify groups that are less likely to engage in culture and sport and target policy accordingly.

The significant outputs from this project are the models themselves as well as the insights they generate. That is, the report presents a way of using the analysis to develop policy and represents a departure from a standard, static research report. The simulation model developed as part of this model is available to inform the development of new evidence-based policy in culture and sport.

The simulation model predicts the effect of policies on a range of engagement types and for a range of groups. The following five types of intervention are included in the models:

- Promotion, such as advertising campaigns.
- Education.
- Improving the quality of the experience of engagers.
- Improving the accessibility of resource by, for instance, making engagement more affordable or reducing the barriers facing disabled people.
- Increasing the supply of engagement opportunities.

The simulation model also predicts the effect of variations in the socio-demographic context of interventions. For instance, the previous section reports how an aging population is likely to impact on levels of engagement in culture and sport.

Thus, the simulation model can be used to generate context, population, and activity-specific predictions of the impacts of policies on levels of engagement in culture and sport.

### **Key next steps for building on this research**

The research reported in this paper represents an important step in improving the evidence base by which culture and sport policy are informed. The questions posed by this work are, however, ambitious. There are inevitably a number of future enquiries that would improve the ability of the models constructed in this paper to inform policy making, including:

- Theoretical and empirical work into the mechanisms by which decisions are made to engage in culture and sport, and the role of drivers in influencing these decisions.



- The collection of more data on the proximity, quality and cost of cultural and sporting opportunities.
- The collection of larger and longitudinal surveys to provide robust data on engagement rates in local areas and for important sub-groups of the population.
- Studies of the effect of policy interventions on key steps in the sequence of decisions required to engage, such as becoming interested in engagement, or overcoming barriers to engagement.

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