

Cultural Consumption Mapping



Analysis of the Taking Part and Active People Surveys

Paul Widdop and David Cutts

Institute for Social Change, University of Manchester

Executive Summary

This report was commissioned by the Museums, Libraries and Archives Council to explore cultural consumption patterns in England. Within this broad research topic cultural lifestyle groups were established, and the members of these lifestyle groups were identified in terms of socio-demographic characteristics and geographical distribution. A closer examination of participation in museums and libraries identified the importance of individual socio-economic characteristics and the places they reside. The research involved using two datasets: the 'Taking Part Survey 2007-2008' and the 'Active People Survey 2007-2008'.

Key findings from the research

Lifestyle Segments

A Latent Class Analysis (LCA) on the 'Taking Part Survey 2007-2008' established that five relatively well-defined lifestyle groups could be segmented by their participation habits. The LCA showed that grouping respondents on the basis of their pattern of activity had a clear empirical basis in the data. These five lifestyle segments were:

- ***Omnivores*** – Members of this group had a broad range and depth to the cultural activities they consumed, from popular activities to the more specialised. They represented 34% of the survey population.
- ***Traditional***– Those who fall into this category, which 18% of the survey did, were inclined to take part in well-established forms of culture namely the arts and heritage sites.
- ***Moderate Participants*** – 11% of respondents formed membership of this segment. This segment did not have the depth and range of cultural habits of the 'omnivore' and 'traditional' lifestyle segments; they were moderately engaged in cultural activities but were likely to visit the library.

- **Visual Class** – This lifestyle segment was differentiated from the others through their engagement with the cinema and the arts. They represented 15% of the survey population.
- **Inactives or non-participants** – Members of this lifestyle segment were unlikely to be engaged in any cultural activity measured in this report. 23% of individuals made up this group.

Profile of Lifestyle Segments

A Multiple Indicators Multiple Causes model approach (MIMIC) was used to measure causal effects of various socio-demographic variables against the lifestyle segments, determining who is likely to be a member of which segment.

- **Omnivores** – Members of this segment are likely to be highly educated, and be from the higher occupational groups. Members are more likely to be female, young and younger middle-aged, in good health and to be married/cohabiting.
- **Traditional** – This segment is also populated with individuals with high educational attainment and occupational class. They are likely to be older and in a married/co-habiting relationship.
- **Moderate Participants** – Individuals in this lifestyle segment are modestly educated (to Level 2), and in a lower middle occupational class. They are more diverse in terms of ethnic origin; and more likely to be female, and young.
- **Visual Class** – This segment is characterised by an average educational level (Level 2). Members of this segment are likely to be female, young (16-24yrs), and in good health.
- **Inactives or non-participants** – Members of this segment have low educational levels and low occupational class. This segment is made up of the older age groups (55 – 74yrs), males, black and minority ethnic groups, and lone parents.

Lifestyle segments by Geography (Local Authority Districts in England)

- We found that there was a clear North/South divide in distribution of lifestyle segments by Local Authority District.
- The ‘omnivore’ and ‘traditional’ segments were over-represented in the South of England.
- An over-representation of ‘inactives or non-participants’ was observed in districts to the North of England.
- We found that restricted participation habits were clustered in the more deprived districts. In the more affluent areas, there was an over-representation of the most engaged (omnivore, traditional) groups.
- Evidence from the research implies that there are opportunity structures in deprived areas that inhibit cultural participation over and above individual level socio-demographic characteristics.

Profile of museum and library users

We used the Active People Survey 2007-2008 and conducted multilevel models on museum and library participation to identify the key drivers.

- We found occupational class was a key driver of museum use, but less so for library use. The higher the level of education the more likely an individual to participate in museums and libraries. Although, in terms of library participation, education more so than social position is the key driver. Here we provide strong evidence that museum participation patterns are still somewhat structured by social processes.
- Females were more likely to participate than males in both museums and libraries.
- The older age groups (55yrs plus) were also active which differs from the results found in the Taking Part Survey, which identifies that the older age groups were more likely to be inactives or non-participants. This has implications for policy concerns particularly in relation to the ‘Big society’.
- For museums we still found that being in a minority ethnic group reduced the likelihood of being engaged.

- After controlling for other socio-demographic factors, ethnic minorities were significantly more likely to visit libraries.
- For both museums and libraries, there were geographical variations in participation, albeit small. We can conclude that there are significant difference between districts in terms of participation in museums and libraries. That is irrespective of individual level characteristics the district in which an individual resides influences participation.
- Where users live inhibits or facilitates participation in museums and in libraries. Put simply, place is significant and it clearly matters, but it matters more for museums than for libraries.

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List of Abbreviations

MLA	– Museums, Libraries and Archives Council
TPS	– Taking Part Survey 2007-2008
APS	– Active People Survey 2007-2008
LCA	– Latent Class Analysis
MIMIC	– Multiple Indicators Multiple Cause Model
IMD	– Index of Multiple Deprivation
DEFRA	– Department for Environment, Food and Rural Affairs
LAD	– Local Authority District
PQL	– Penalised (predictive) Quasi-Likelihood
MQL	– Marginal Quasi-Likelihood
BIC	– Bayesian Information Criteria
VC	– Variance Components Model
ICC	– Intra-Class Correlation Coefficient
OLS	– Ordinary Least Squares

1. INTRODUCTION

The research project was commissioned by the Museums, Libraries and Archives Council (MLA) to explore how individuals construct their cultural lifestyles. Much scholarly work has attempted to uncover these cultural lifestyle segments in society. They also seek to examine the key drivers of cultural consumption and membership of these lifestyle groups. Prominent scholars in the field include Pierre Bourdieu, Richard Peterson, and more recently from a British perspective, Chan and Goldthorpe. In addition, geography and its influence not only on lifestyle segment formation, but on particular cultural activities (in this case museums and libraries) have largely been overlooked especially in the academic literature. Therefore, the MLA also wishes to explore the issue of geography as a key driver in cultural consumption. The following is a brief review of the academic literature in order to place this research into the academic context. This is followed by the aims and goals of the project

1.1. Literature Review

1.2. Theoretical Overview

A large number of scholarly studies in the UK, US and across Europe have shown clear and marked patterns of differentiation in cultural pursuits, with clusters of preferences for certain types of culture associated with social position (Gayo-Cal 2006). Cultural participation is correlated with stratification variables, namely educational attainment, income and social position. Cultural scholars have established that rates of participation are associated with social position, education, income, age, and urban residence (Bourdieu 1984; Peterson and Kern, 1992; Peterson and Simkus, 1992; DiMaggio and Ostrower, 1990; DiMaggio and Useem, 1978b; Tampubolon, 2007a, 2007b). Further key individual-level characteristics that have been found to be loosely correlated with cultural consumption include age, ethnicity and gender (Gayo-Cal, 2006; Prior, 2004). Moreover, scholars have put forward theories to explain who participates in culture and why. This relationship has been theorised most famously by Bourdieu (1984) and Peterson (1992). Bourdieu (1984) introduced the concept of a distinction of cultural tastes, which he coined the term ‘homology’, whereby social stratification maps straightforwardly onto cultural stratification. More recently, these established viewpoints have been contested, most prominently through the cultural

omnivore-univore theory (Peterson, 1992; 2005; Peterson and Simkus, 1992; Peterson and Kern, 1996).

Traditionally, empirical discussion of cultural participation has relied on descriptive statistics or individual level analysis from surveys of visitors and non-visitors, using a variety of socio-economic and socio-demographic variables, including social class, age, income, gender, ethnicity, educational attainment, and family composition. More recently, scholars such as Sintas and Alvarez (2002), Chan and Goldthorpe (2006, 2007a, 2007b) and Tampubolon (2007a, 2007b) have used a latent class approach to recognise that cultural consumption does not happen in isolation and that a penchant for certain cultural genres is likely to be linked to a penchant for other cultural forms.

Widdop (2010) and Widdop and Cutts (2011 forthcoming) have found that in addition to these key stratification variables, the place in which people reside is a significant determinant of individual cultural engagement. They found that one reason for this is that in certain areas often those that are deprived suffer opportunity structures that inhibit participation. To that end, there are several contributing factors that are associated with attending and participating in culture.

1.3. Research aims

This research had three main aims.

1. Through empirical analysis, to determine if cultural lifestyle typologies exist in England, and how they differ by individual characteristics and geography;
2. To examine whether socio-demographic factors impact upon museum and library participation; and
3. To examine the importance of place (where an individual resides) on museum and library participation.

1.4. Objectives

To deliver the three aims we set the following objectives.

1. To uncover cultural lifestyle types;
2. Using empirical analysis to determine the characteristics of cultural lifestyle types, measured by stratification and other socio-demographic variables;
3. To determine if cultural lifestyle types differ across different districts in England by mapping these groups, and by measuring them against district level variables;
4. To examine who visits museums and libraries and determine their individual socio-demographic characteristics; and
5. To determine if variation in cultural behaviour is still accounted for at the district level even when controlling for individual-level compositional effects and area-level characteristics;

2. RESEARCH DESIGN

2.1. Introduction

In this chapter we will introduce the data and methods used to achieve the research aims of the project. We are using two datasets to complete this project they include, the Taking Part Survey 2007-2008 (TPS), and the Active People Survey 2007-2008 (APS). Using a quantitative approach, we will use the TPS to establish if there are any lifestyle segments that exist in the data, and what their characteristics are in terms of socio-demographics and geography. While using the APS we will look more closely at participation in museums and libraries, especially in terms of the influence of place. The following chapter outlines the methodological approach used in this report.

2.2. Datasets Used in Research

2.2.1. Taking Part Survey

The 2007-2008 Taking Part Survey (TPS) is the first of a series of annual comprehensive cultural surveys carried out in England. The arrival of this dataset permits complex statistical approaches to be carried on cultural data. To that end, it allows great methodological strides to be taken as the data supports complex modelling allowing a comprehensive estimation of theoretical positions. The TPS has a robust methodology, critically engaging with the notion of participation and non-participation in cultural activities across the breath of the cultural space. Cultural data from 25,720 adults was collected via face-to-face interviews. The survey was delivered throughout 2007-2008. Households were drawn from the postcode address file and interviews were conducted with a randomly selected member of each household aged 16 or over, through face-to-face questionnaire.

2.2.2. Active People Survey

The Active People Survey (APS) is the largest ever survey of sport and active recreation to be undertaken in Europe. The APS has a robust methodology, critically engaging with the notion of participation and non-participation in sport and recreation, but has a small number of questions relating to consumption of cultural activities, namely museums and libraries, which form the basis of this analysis. The

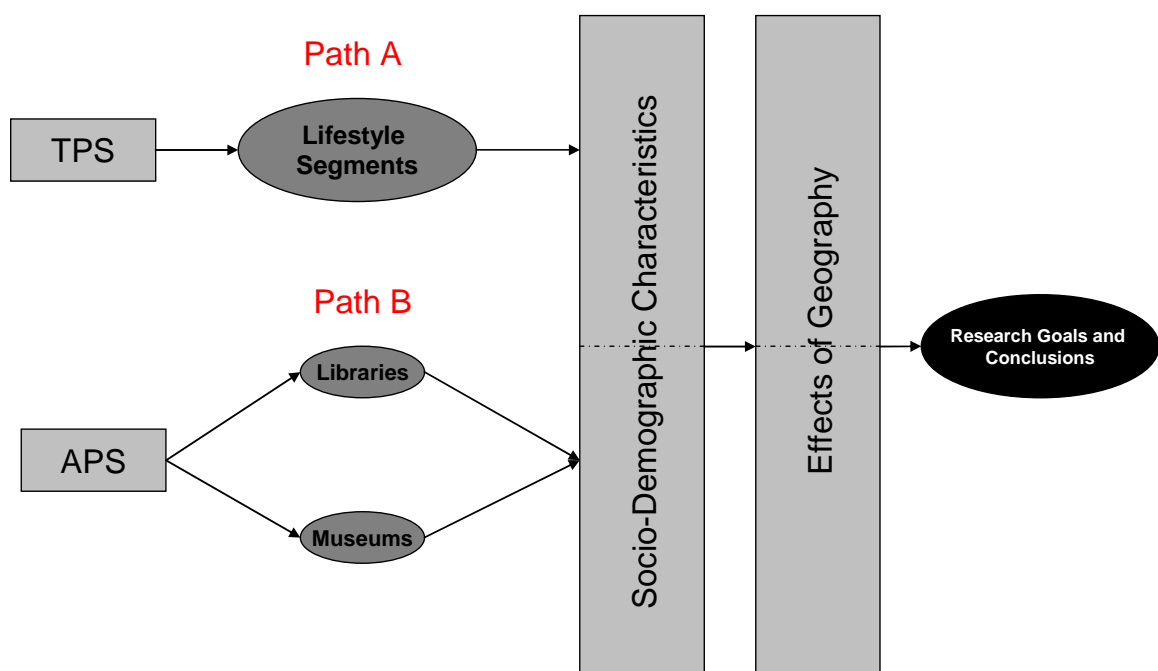
fundamental aim of the APS is to collect data on the sporting and cultural consumption behaviours of the population at a local level. The APS is a representative sample of adults aged over 16 who are resident in England. Because of the nature of the survey and the fact that individuals are nested in local authority districts, the APS lends support to using a multilevel modelling approach which accounts for the fact that there is clustering in the survey.

It is important to note here that we are using data from 2007-2008 and we are aware that more recent data has been collected. As a result the proportions of people participating in some of the activities may have changed. Therefore, this study is a snapshot (cross-sectional) of cultural consumption during this time period.

2.3. Method Overview

As presented in Figure 1, this research report has two pathways (Path A and Path B). Each pathway uses a different methodology and dataset to achieve the research aims. However, we do not seek to treat these pathways as stand alone. They both seek to explore the key drivers of activity. Path A explores the different cultural lifestyle segments, while Path B provides a more detailed look at examination of the cultural activities, namely museums and libraries.

FIGURE 1: Flow Diagram of Research



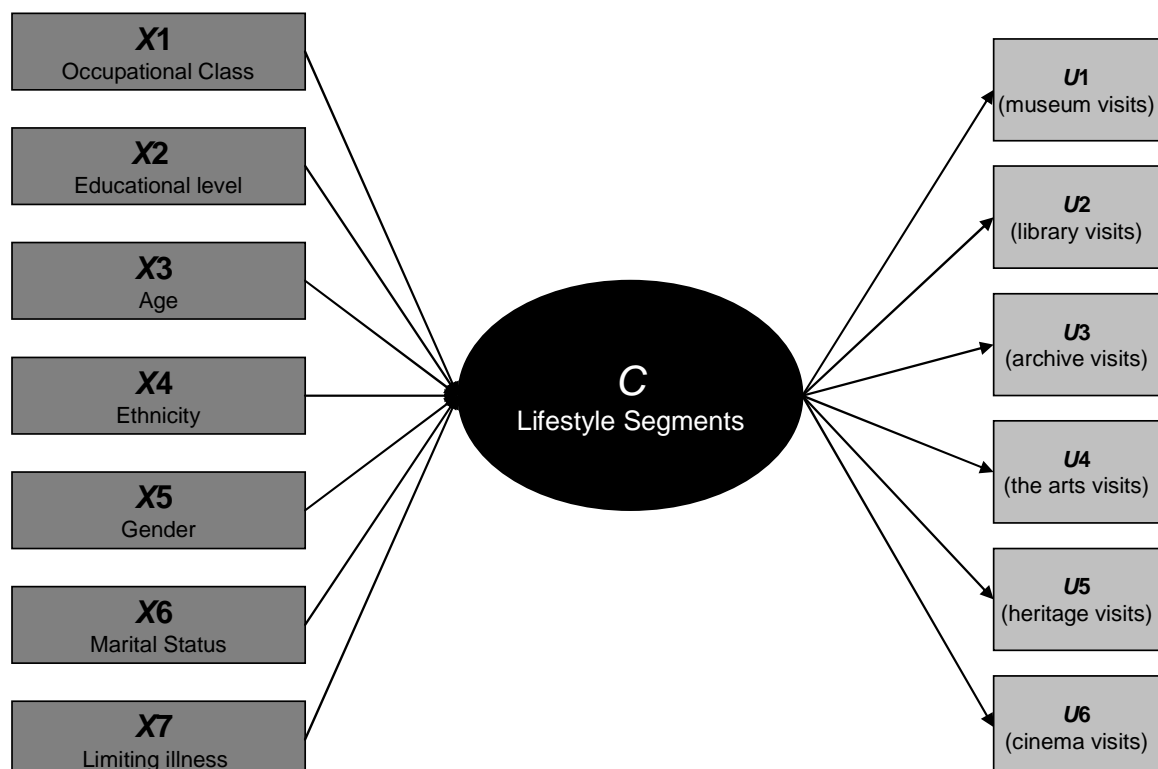
These two pathways can be brought together at the conclusion stage to answer the research goals set out in Section One. The following part of this section on research design will be to present an overview of the methods for these two pathways.

2.4. Research Methods

2.4.1. Path A Modelling Approach: A Latent class Analysis (LCA) and Multiple Indicators Multiple Causes model (MIMIC) using the Taking Part Survey

Key cultural theorists and applied researchers have been pre-occupied with the assumption that cultural activities are part of the wider cultural makeup of individuals and that individuals can be grouped on observed patterns of consumption. This report takes its lead from Peterson (1992), Chan and Goldthorpe (2007a), Sintas and Alvarez (2002), and Tampubolon (2007a; 2007b) in taking the position that there is a latent structure that accounts for variation in cultural activities. The modelling approach therefore simultaneously uses a latent class analysis (LCA) and a Multiple Indicator Multiple Cause MIMIC model.

FIGURE 2: Path diagram - latent class analysis and MIMIC model



A path diagram of the model is presented in Figure 2, where the subscript 'u' defines a categorical variable of interest (i.e. arts participation, museum etc), the circle encapsulating the 'C' is an underlying latent class measure or the cultural lifestyle segments (can include 1, 2, 3...n segments), whilst the 'x' variables are independent control variables (i.e. social class, education).

It is critical to understand this model as having two separate types of components: measurement components (latent class analysis), and a structural component (MIMIC).

The first component, a latent class model, is where lifestyle segments are established based on the respondent's participation behaviour of the cultural activities of interest. Different types of individuals will have different participation habits based on cultural patterning and can therefore be assigned to different levels of class. In other words different typologies of consumers can be formulated based on cultural consumption behaviour of individuals. Furthermore, as part of an LCA model, we can identify several measures/probabilities that allow us to better understand consumption. We can establish the relative size of these lifestyle groups, and given membership of these groups what is the probability of them participating in a given activity. (For more detailed discussion of the latent class model see Appendix A).

The second component, a MIMIC model, is a means of adding structure to the measurement model. It allows investigation into the relationship between the lifestyle segments generated and a set of explanatory variables. In its simplest form, a MIMIC model is a simultaneous method of latent class analysis and multinomial regression, or logistic regression when there are only two latent classes. This model has been known and applied in cultural consumption modelling for many years (Sobel, 1983), but has only been recently revived by other scholars (Sintas and Alvarez, 2002; and Tampubolon, 2007a, 2007b).

By incorporating stratification variables, age, gender, ethnicity and family composition to the MIMIC model, we can establish what the key drivers of lifestyle formation are. (For more details of a MIMIC model see Appendix B).

2.4.1.1. Cultural indicators for latent class analysis

As identified in Figure 2, a latent class analysis requires information on patterns of cultural activities. The cultural indicators are the ‘u’ variables in Figure 2 and are required to create the cultural lifestyle segments ‘c’. Table 1, presents the key cultural indicators used in the latent class model. They are based on whether the respondent had consumed a cultural indicator in the last 12 months. For a number of cultural indicators we have combined (collapsed) the results, for example, we have combined five activities associated with the arts to one variable, and nine heritage indicators to one variable. We have done this to ensure that we cast our net as wide as possible in terms of cultural items, as too many indicators in this type of modelling approach is not recommended (McCutcheon, 1987).

TABLE 1: Key cultural indicators

Constituent variables	Cultural Indicators in the LCA model
Library	Library
Archives	Archives
Museum or Art Gallery	Museums
Play/drama Other theatre performances (e.g. musical, pantomime) Opera/opera Classical music Ballet	The arts
Historic city or town Historic building (non-religious) Historic park, garden or landscape Place connected with industrial history A historic place of worship (as a visitor, not to worship) Monument e.g. castle, fort or ruin Site of archaeological interest e.g. standing stones Site connected with sports heritage (to visit, not watch sports) Other historical site	Historical site
Film at cinema or other venue	Cinema

The survey asked questions on numerous cultural indicators, whether the respondent had taken part in an activity in the last 12 months (1=Yes, 0= No). We have chosen six cultural indicators for this report and they are presented in Table 1. These activities were chosen as they represent a wide spectrum of the cultural field, across

the perceived cultural hierarchy. Some indicators are more attached to the popular culture whilst others are more readily associated with 'high culture'. This range of indicators, differing in alignment with different classes, will enable us to understand cultural behaviour in much more depth. For a breakdown of these cultural indicators please refer to the Taking Part Survey technical reports on the UK Data Archive¹.

2.4.1.2. Socio-demographics Variables

In addition to the cultural indicators this modelling approach requires explanatory variables, to help explain who constitutes membership of these lifestyle segments. That is, in Figure 2 we require adding 'x' variables to add structure to the model, as identified in the modelling approach (see Section 2.41). The variables we add here are stratification measures and socio-demographic measures.

To measure the effect of stratification on cultural consumption, we use social class and education. From the TPS as a measurement of social position, we will use the NS-SEC occupational class measurement. NS-SEC occupational class is a standard measure of occupational class used in the cultural consumption literature (Chan and Goldthorpe (2005, 2007a, 2007b), Tampubolon (2007a, and 2007b), Savage et al (2005), Wright (2006), Warde (2006), and Gayo-Cal (2006)). Education in the TPS is coded to the six official National Vocational Qualifications levels, ranging from degree level to no qualifications.

Other important socio-demographic information in the TPS which will be used here includes age, gender, ethnicity, limiting long term illness, and family composition. These will serve as control variables to remove the possibility of any hidden confounding effects with those of class and education. This study seeks to test whether these variables are actually salient measures of cultural lifestyle conditioning, and to that end, they are intended to establish whether there is now a multiple axis of stratification that includes these variables alongside more traditional processes.

¹ <http://www.data-archive.ac.uk/findingData/snDescription.asp?sn=6273>

2.4.2. Path B Modelling Approach: Hierarchical / multi-level modelling of museum and library participation

Using the Active People Survey (APS) we will explore variation in participation at different levels, the individual level and the Local Authority District level, using a hierarchical or multilevel modelling approach. Hierarchical or multilevel modelling is a methodology which provides a framework for exploring how relationships vary across hierarchical structures, whether natural, or introduced in the sample design. The approach is especially useful if it is helpful to understand the variability associated with each level of the hierarchy. In this research, our main interest is in the variation in museum and library participation that is accounted for by both individual level characteristics (i.e. education, social class, age etc) and by the districts in which they reside. This type of modelling approach allows us to measure these key drivers. Initially, the primary purpose of these models is not to identify the causes of consumption but rather to estimate the sources of variance. To achieve this goal the modelling strategy proceeds through two stages:

Model 1: models the variation in museum and library consumption within local authority districts

Model 2: models the variation in museum and library consumption among individuals after accounting for individual level and area level characteristics

The three core objectives of this pathway (Path B).

- to examine what the key drivers of museum and library participation are namely, socio-demographic characteristics.
- to examine if there is variation in museums and libraries consumption that is accounted for by the district. That is, are museum and library visitors the same everywhere or are they influenced by where they reside.
- if we identify variation at the district level whether we can attempt to understand what the contextual mechanisms (macro level forces) that are inhibiting or facilitating consumption are, namely, through deprivation and

urban rural classifications (or whether they are accounted for by factors that are unmeasured).

For more technical details on this modelling approach please refer to Appendix C.

2.5. *Dependent and Explanatory Variables for Path B: Hierarchical / multi-level modelling of museum and library participation*

The APS has a small number of cultural participation questions, for this pathway we are using the following variables as our dependent variables:

- ‘In the last 12 months have you visited a museum?’
- ‘In the last 12 months have you visited a library?’

These measures are binary response variables with two categories (yes=1, No=0). In the APS, 53% of those sampled stated that they had visited a museum in the last 12 months, whilst, 49% visited a library in the same time period.

For the explanatory analysis, we have tried to use the same variables as Path A where possible. We use NS-SEC occupational class, namely large employers/higher professionals; lower managerial/professionals; intermediate occupations; small employers and own accounts workers; lower supervisory and technical occupations; semi-routine occupations; routine occupations; never worked. Education is coded into the six official National Vocational Qualifications levels, ranging from degree level to no qualifications. Other important socio-demographic information from the APS includes age, gender, ethnicity, and health.

Given the multilevel dimension in the modelling framework, it is possible to account for contextual influences at the local authority district spatial scale. Although not recorded on the APS, we can attach district level variables to the dataset that can then be used in the models, allowing us to include explanatory variables at the local authority district level to act as a proxy for both compositional and contextual effects. These covariates include; Multiple Index of Deprivation 2007 (MID) and urban/rural

classification (DEFRA 2007 classifications). (See Appendix F for more detail on these variables).

3. Overview of Cultural Consumption

In this section, using the Taking Part Survey (TPS), we use a combination of summary statistics and cross-tabulations to gain an insight into those who attend and engage in cultural activities across England. This will act as a general overview of consumption in England. We review the level of participation in a number of cultural activities and briefly provide an overview of the relationship consumption has with education and social class and detail the emergence of a multiple axis of stratification through the growing influence of other factors such as age and gender. We will then end this section by mapping attendance in these cultural activities across all districts of England.

3.1. Consumption of Cultural Activities in England

We define cultural consumption as visiting a cultural event or activity on one or more occasions in the past 12 months. Six cultural activities are examined in this section: museums, libraries, archives, heritage sites, the arts, and cinema. Table 2 presents the levels of consumption and non-consumption for these activities.

TABLE 2: Cultural consumption in England

	Visitors	Non-visitors
Museums	42%	58%
Libraries	45%	55%
Archives	5%	95%
Heritage	69%	31%
Arts	57%	43%
Cinema	48%	52%

Source: Taking Part Survey 2007-2008

Of the six indicators identified here, the most popular attraction is historical sites, with 69% of people sampled reporting attending such venues (see Table 2). Arts events are also popular with just under 60% the population reporting that they attended. Visiting the cinema, museums, and libraries share similar rates of engagement. Over two fifths of the population attend these activities once or more per

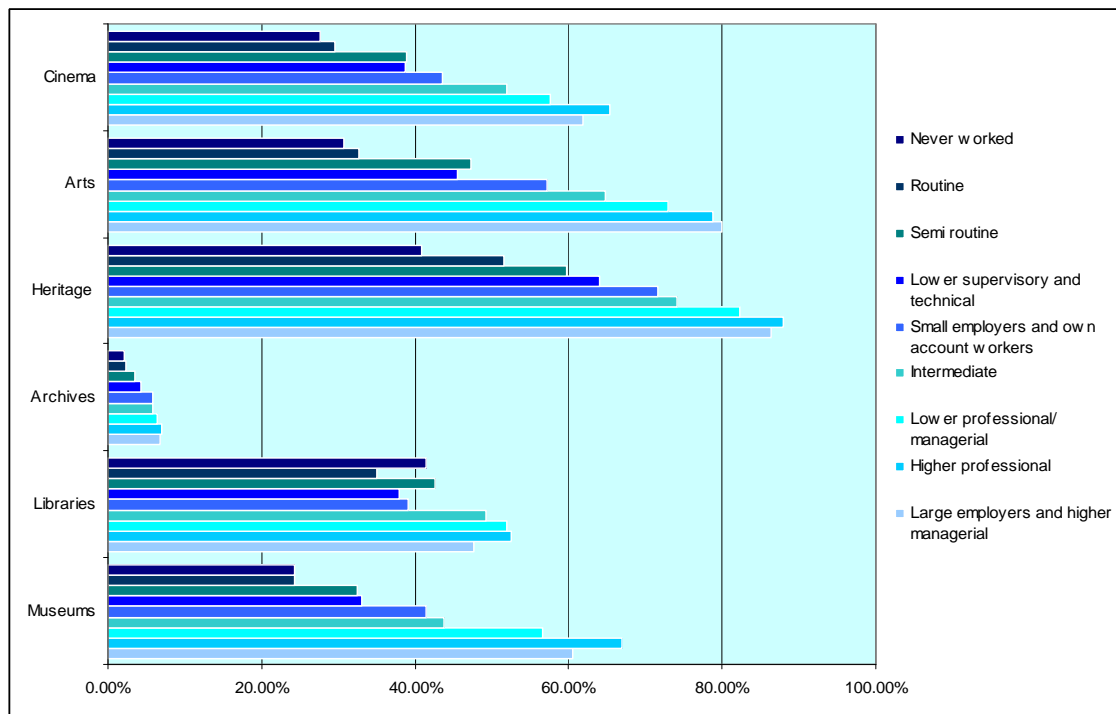
year. Archives have a participation rate of only 5%. Overall, only historic sites and the arts have more than half the English adult population participating.

The following sections provide a descriptive account of cultural participation by key stratification and other socio-demographic variables using cross tabulations and mapping. In this report, we use educational attainment and occupational class as the key stratification measures.

3.2. Occupational Class

Figure 3 presents the cultural consumption patterns of respondents in the six cultural activities by various categories of occupational class. There are eight occupational categories measured against these cultural indicators.

Figure 3: Cultural consumption by occupational class (%)



Source: Taking Part Survey 2007-2008

For each of the six cultural activities, there appears to be a near linear relationship between occupational class and activity. As you move up through the occupational classes scale, attendance increases. There is a clear linear relationship between

attendance and status. The higher an individual's occupational class, the more likely they are to participate in cultural activities.

DiMaggio and Useem (1978) claimed that professions which include teachers, doctors, lecturers, and intellectuals invest in cultural capital as a tool for social mobility. Such studies suggest an over representation of higher professionals in [highbrow] cultural activities. Indeed, with the exception of the arts, higher professionals have the greatest propensity to be actively participating in all activities. What is clearly evident from these cultural indicators is that consumption is greatest amongst the higher occupational classes. Figure 3 (participation by occupational class) implies a pattern that those in the higher occupational classes consume much more than those in lower occupational classes and that they are omnivorous to an extent as they form the largest proportions in each of the cultural activities.

- Visiting historical sites and visiting the arts are the activities most likely to be consumed by the highest occupational classes. Indeed, 86% of large employers and higher managerial and 88% of higher professionals report being visitors to heritage sites.
- Similarly, 80% of the higher managerial group and 79% of higher professionals report consuming the arts.
- In addition, more than sixty percent of those in higher professional occupations also visited a cinema and museums.
- Like other activities, visiting a library was highest among the top occupational classes.
- Of all the cultural activities, archives were the least visited. Yet despite the low proportion of the population visiting archives, like the other the cultural activities, there was a linear relationship between occupational class and attendance - the higher the occupational grouping, the more likely an individual visited.

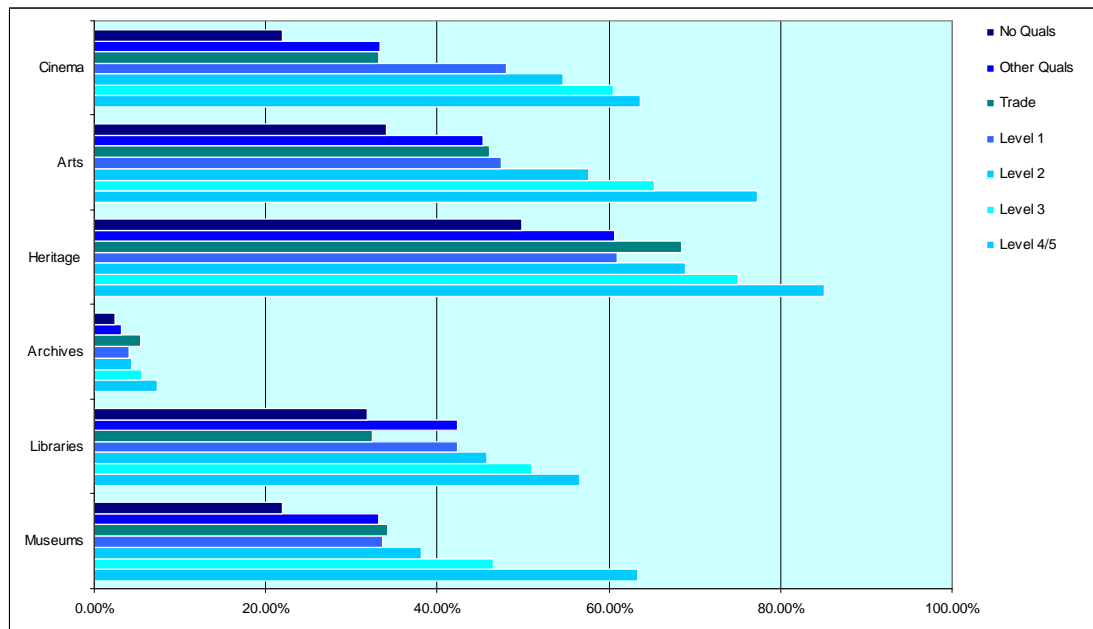
In general, there was a positive relationship between occupational class and participating in cultural activities, with the exception of visiting the library, which is an important observation, and has implications for services. An individual's cultural

behaviour at this stage shows signs of being stratified by economic capital, as we assume that those higher in the social classes will have more disposable income for leisure time. We will test this assumption in the subsequent pages of this report.

3.3. Education Attainment

Our expectation was that educational attainment would follow a similar pattern to occupational class with the highest educated having the greatest propensity to consume various forms of culture. The findings in Figure 4 confirm this. In all of the cultural activities, those with degrees or professional qualifications (level 4/5) had the highest levels of participation.

Figure 4: Cultural consumption by educational attainment (%)



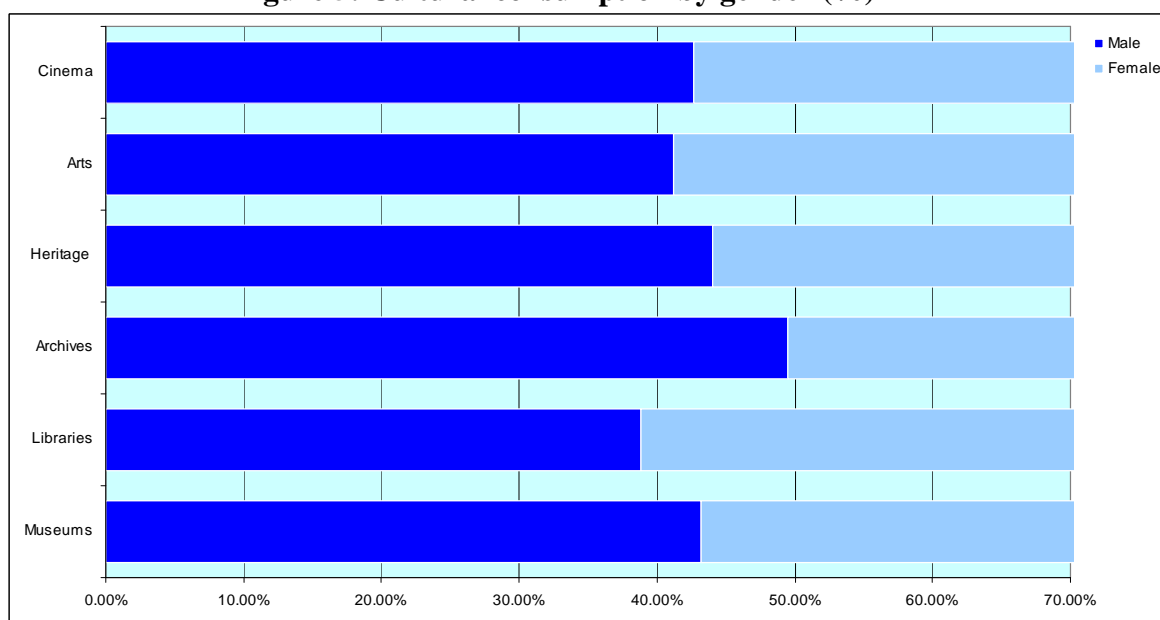
Source: Taking Part Survey 2007-2008

More than 75% of individuals with a degree or higher either visited historic sites or the arts, while more than 60% attended the cinema or visited a museum. As expected, those with no qualifications were the least likely to visit these cultural venues. Of those with no qualifications, only 22% went to museums compared to more than 60% of those with a level 4/5 qualification. Less than 35% of people with no qualifications went to the arts while the figure was more than twice as much for those with a level 4/5 qualification.

3.4. Gender

In all activities women outnumbered men. Figure 5 presents consumption of activities by gender and it was females that consumed cultural activities in far greater numbers than men. The difference was particularly stark for visiting libraries, the arts, heritage sites and museum. Indeed, more than two-thirds of those visiting a library were female, while just over a third of those who attended the arts were male. Gender differentiation was less noticeable for those visiting archives, although more females consumed archives than males. Gender is clearly a salient measure of participation; females are more inclined to consume culture than their male counterparts.

Figure 5: Cultural consumption by gender (%)



Source: Taking Part Survey 2007-2008

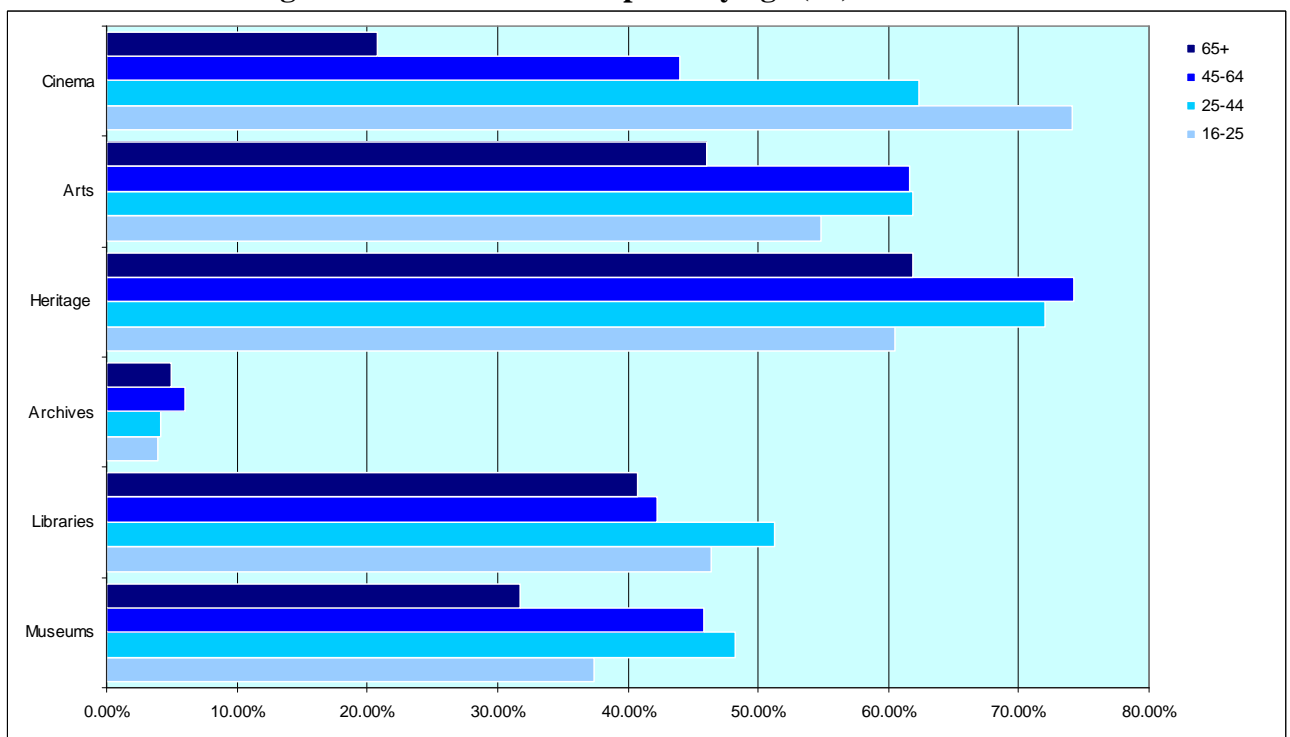
3.5. Age

Essentially age shares a relationship with cultural consumption, but the relationship varies according to the cultural activity consumed (see Figure 6). The key points of this relationship are:

- Visiting the cinema is popular with younger age groups, and as age increases participation decreases;

- Libraries popular with the younger age groups, with over 45% of those aged 16-24yrs being visitors, although the 25-44yr group are the most likely visitors (over 50%);
- Attending art events, visiting historic sites, and visiting museums tend to be most popular among those in the lower middle age bracket (25-44) and middle aged brackets (45-65);
- Older generations are more likely to be over-represented in archives, whilst this type of cultural activity is unpopular amongst the younger age groups.

Figure 6: Cultural consumption by age (%)



Source: Taking Part Survey 2007-2008

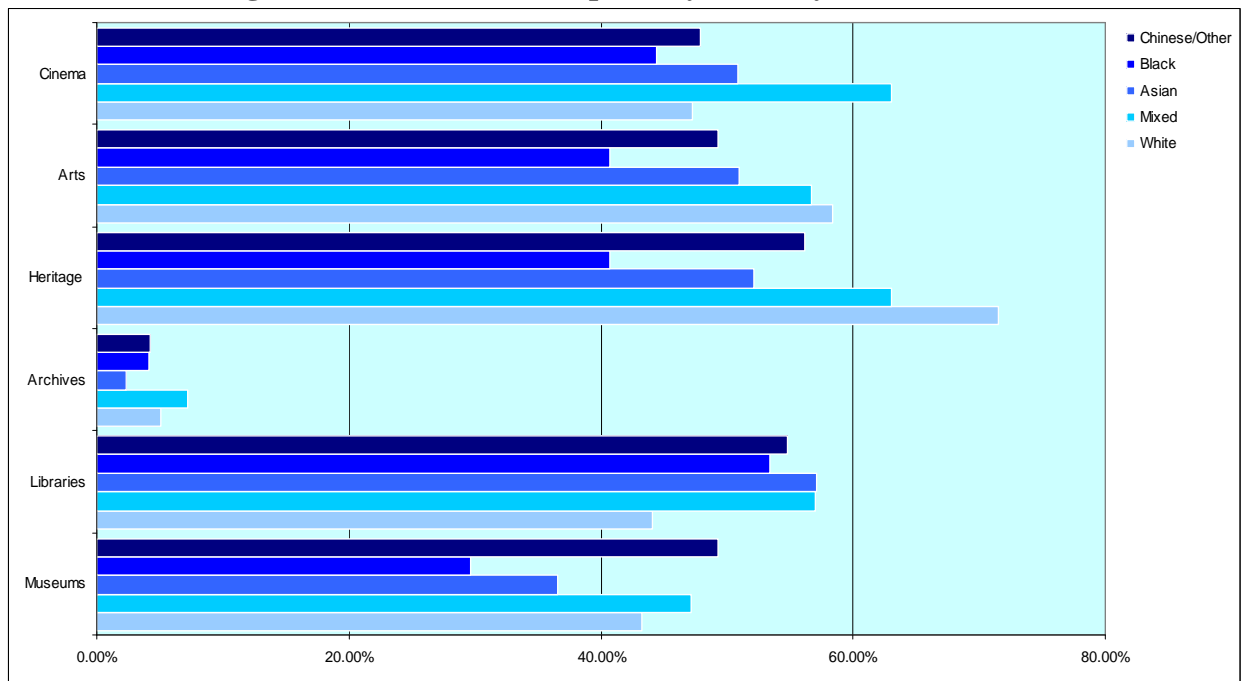
3.6. Ethnicity

In Figure 7, cultural consumption is mapped against ethnicity. Essentially, there is a relationship between consumption by ethnic group and this relationship is different across different cultural activities. For example:

- Those from Asian minority ethnic backgrounds have high participation levels in the cinema product and libraries. However, they are under-represented in museums, heritage, the arts and archives;

- Those from Black minority ethnic backgrounds are under-represented in all cultural activities in this report, with the exception of the library. Over 53% of this ethnic group report visiting a library in the last 12 months;
- The Chinese and other ethnic groups are under-represented in archives and heritage. However, in all other activities they consume above the average;
- The mixed ethnic group are highly engaged in all activities, although it is heritage sites and the cinema where they are engaged most;
- The white ethnic group follow similar patterns to that of the national average (see Table 2). However, more than 70% of the white ethnic group respondents reported visiting a heritage site in the last 12 months which was much higher than their ethnic counterparts and above the average white participation rate across all cultural activities.

Figure 7: Cultural consumption by ethnicity (%)

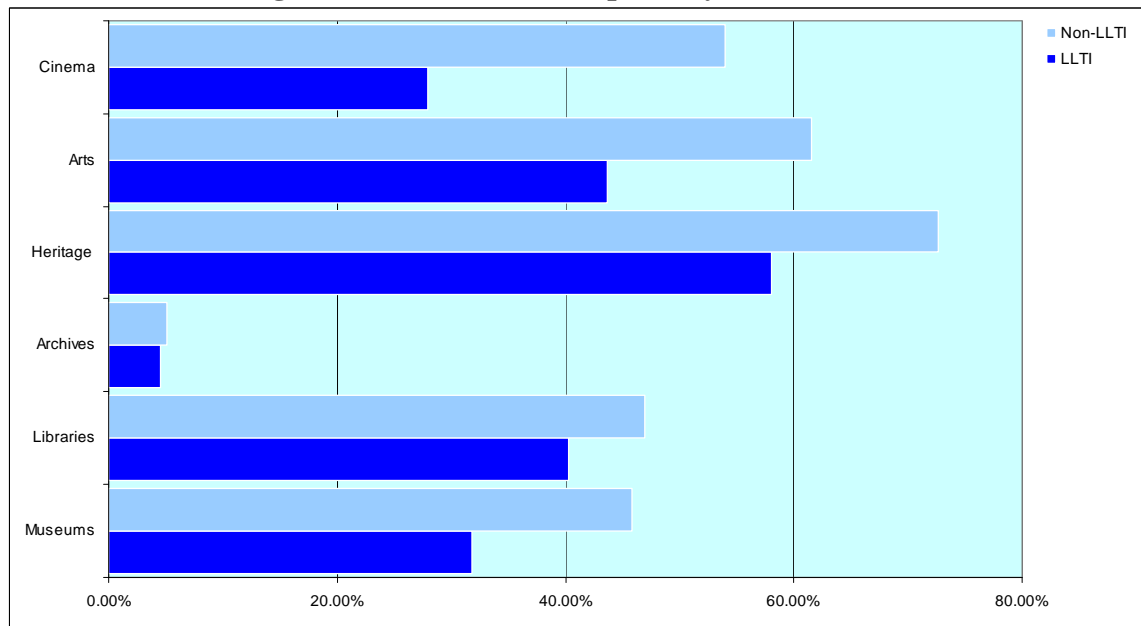


Source: Taking Part Survey 2007-2008

3.7. Limiting Long Term Illness (LLTI)

There is a clear positive correlation between health and participation in cultural activities. Those without a LLTI are significantly more likely to participate in all the different cultural activities than those with a LLTI.

Figure 8: Cultural consumption by LLTI (%)



Source: Taking Part Survey 2007-2008

3.8. Household Structure

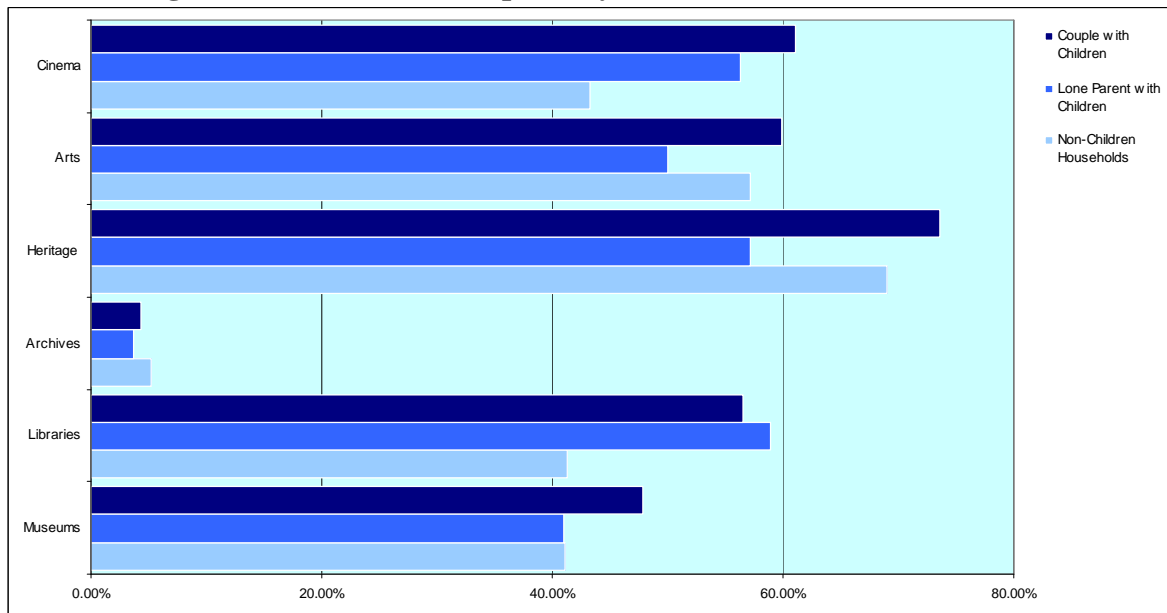
Figure 9 shows the participation of respondents in the six cultural activities by three categories of household structure. These include:

- Couple with children;
- Lone parent;
- Non-children households.

This variable is structured as such as to ease out the findings of how culture is affected by dependent children. The key findings here include:

- Couple with children in households are over-represented in each of the cultural activities identified, with the exception of archives. That is, they are very active consumers;
- Lone parents with dependent children are most likely to engage with libraries and the cinema. This group are under-represented in terms of participating in all other activities.
- Individuals residing in households without children are above the national average in three activities, namely, archives, heritage sites, and the arts. They are however, under-represented in museums, libraries, and the cinema.

Figure 9: Cultural consumption by Household Structure (%)



Source: Taking Part Survey 2007-2008

3.9. Mapping cultural consumption by district

To fully understand cultural behaviour, it is important consider the context in which people live and how this effects their participation habits. Any form of cultural engagement will undoubtedly be influenced by place, not only through interaction with people they reside with (Kearns and Parkinson 2001; Buck 2001), but also through location, as this interaction must take place somewhere (Agnew, 1987). Put simply, who we talk to is as important as who we are, and who we talk to is very much influenced by where we live (Thrift, 1984).

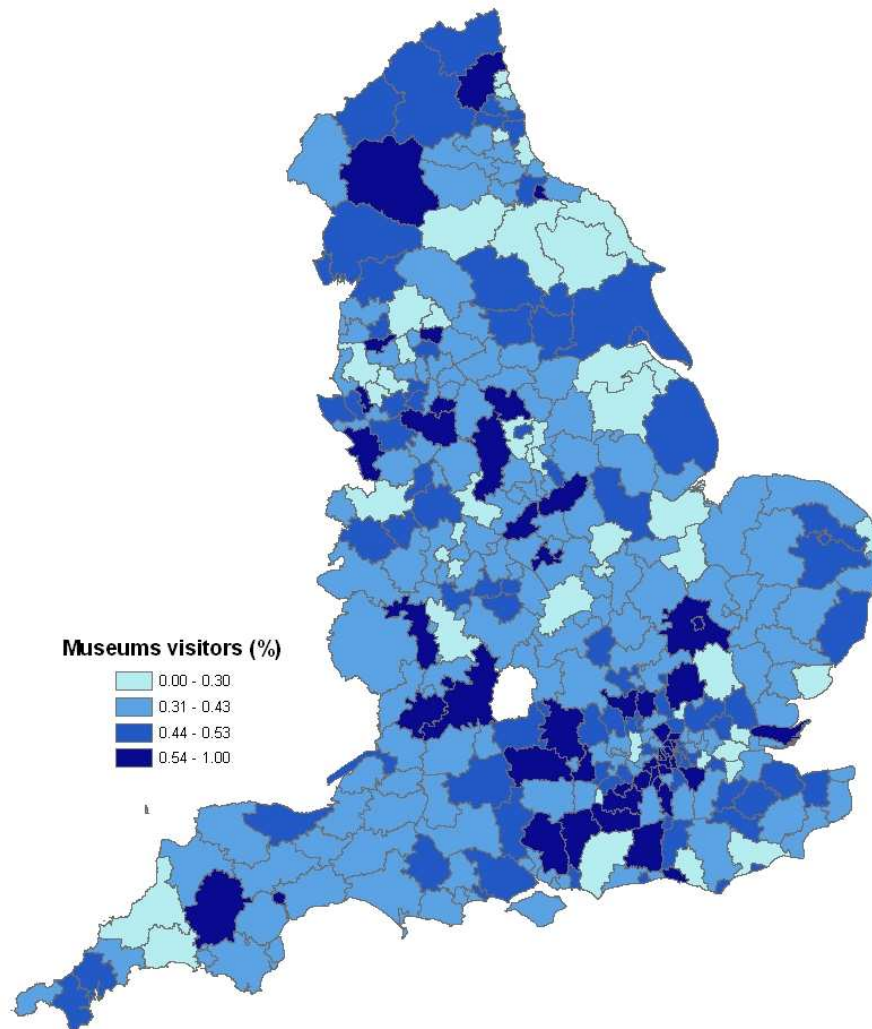
Therefore, place is an important factor in determining cultural participation. This section will explore the relationship between place (in our case local authority districts in England) and cultural engagement. Here we map cultural consumption by local authority providing useful insights into the patterns that exist.

3.9.1. *Museums*

Starting with the first map, museum attendance by district, high participation appears to be clustered. Although there are some pockets of high participation of museums in the north and central England, in general areas with high levels of participation are predominantly located in London and the south east. Of the 32 London Boroughs, just under half have high levels of participation compared to the national average.

These high participation boroughs are spatially clustered in central and west London. Those boroughs in the east of the city do not share these high levels of participation. Generally, the high participation areas include the Home Counties, Hampshire, Royal Berkshire and the areas surrounding Oxfordshire, and Cambridgeshire. To the north of the main urban conurbations only Sheffield can claim to have very high participation in museums. Interestingly, Middlesbrough which suffers with deprivation and high unemployment has a high level of engagement (59%). A possible explanation for this surprising finding could be the opening up of the new Museum of Modern Art, which has perhaps stimulated interest. Low engagement in museums is predominantly confined to West Midlands and Northern England (large parts of the North West, Yorkshire, and the North East).

FIGURE 10: Museum Participation by District



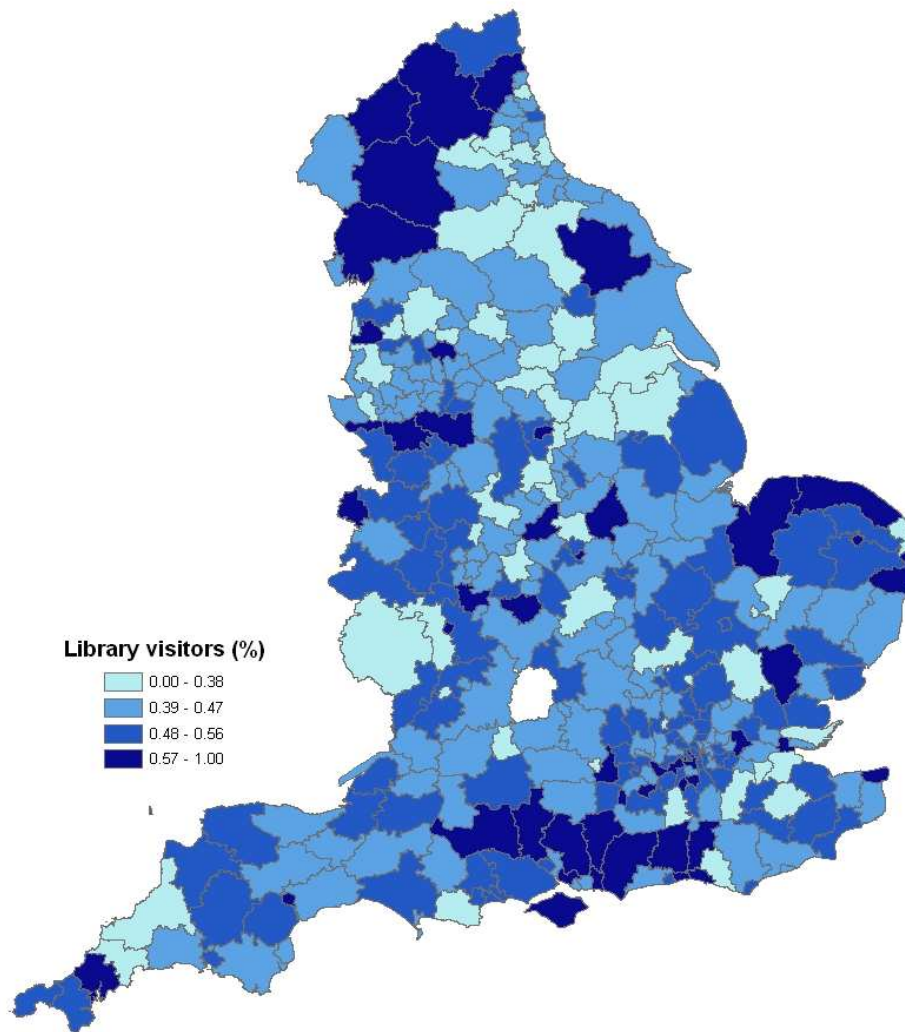
Source: Taking Part Survey 2007-2008

3.9.2. Libraries

Geographical patterns for library engagement show pockets of high attendance across the south-east coast, and into Hampshire and the Home Counties. Districts such as Brighton, East Hampshire, Mid Suffolk, and Salisbury have high library attendance rates. Central and west London have high levels of engagement, whilst eastern boroughs, namely Hackney, and Tower Hamlets have relatively modest rates of

participation. Low participation rates are more readily confined to the north of England. However, pockets of low library engagement can be found in rural districts in north, south west and the midlands.

FIGURE 11: Library Participation by District



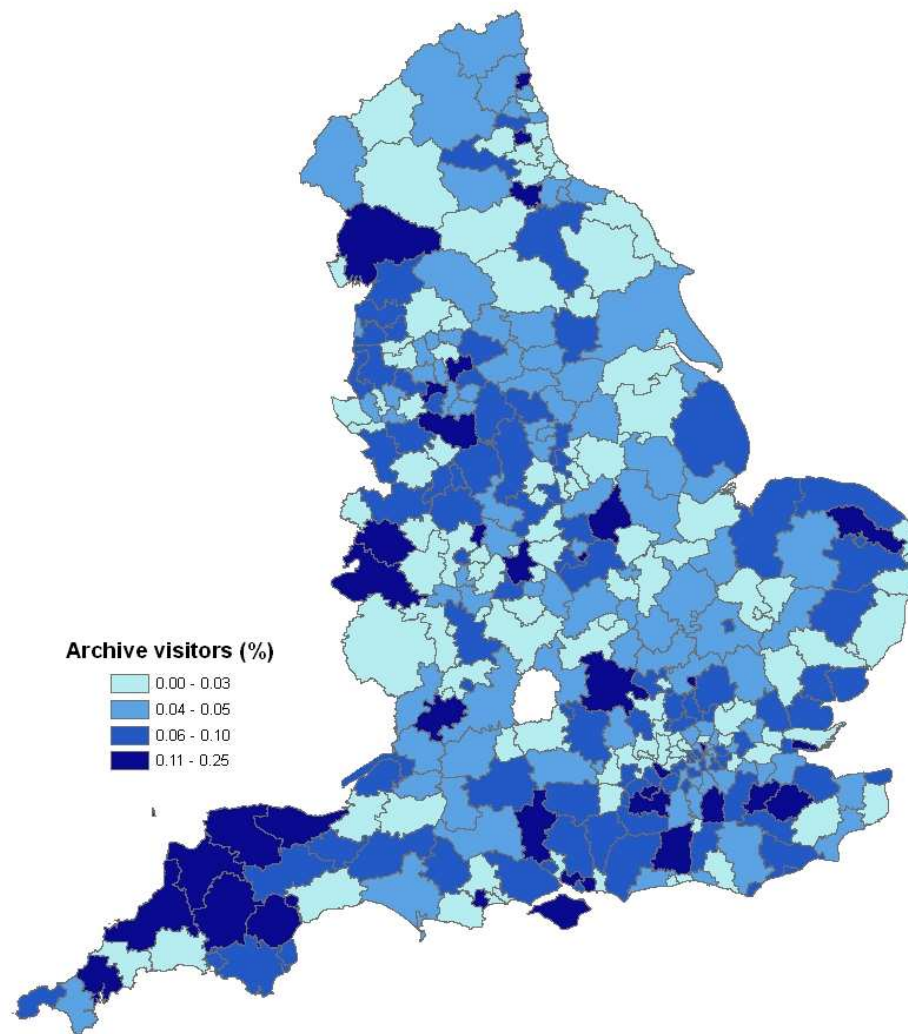
Source: Taking Part Survey 2007-2008

3.9.3. Archives

Archives have limited audience bases, with only 5% of the population reporting being users. Although in low numbers, the districts that have high participation rates are generally spread across the country. However, clustering of relatively high engagement in archives can be found in the south-east (Surrey, Berkshire,

Hampshire), the south-west (Somerset, Devon and Cornwall), and Shrewsbury and Derbyshire in the midlands. In the north, clustering occurs in north Lancashire and southern Cumbria and North Yorkshire. The major urban conurbations (Birmingham, Liverpool, Manchester, Leeds, Newcastle, and Sheffield) have limited participation rates in this cultural activity.

FIGURE 12: Archives' Participation by District

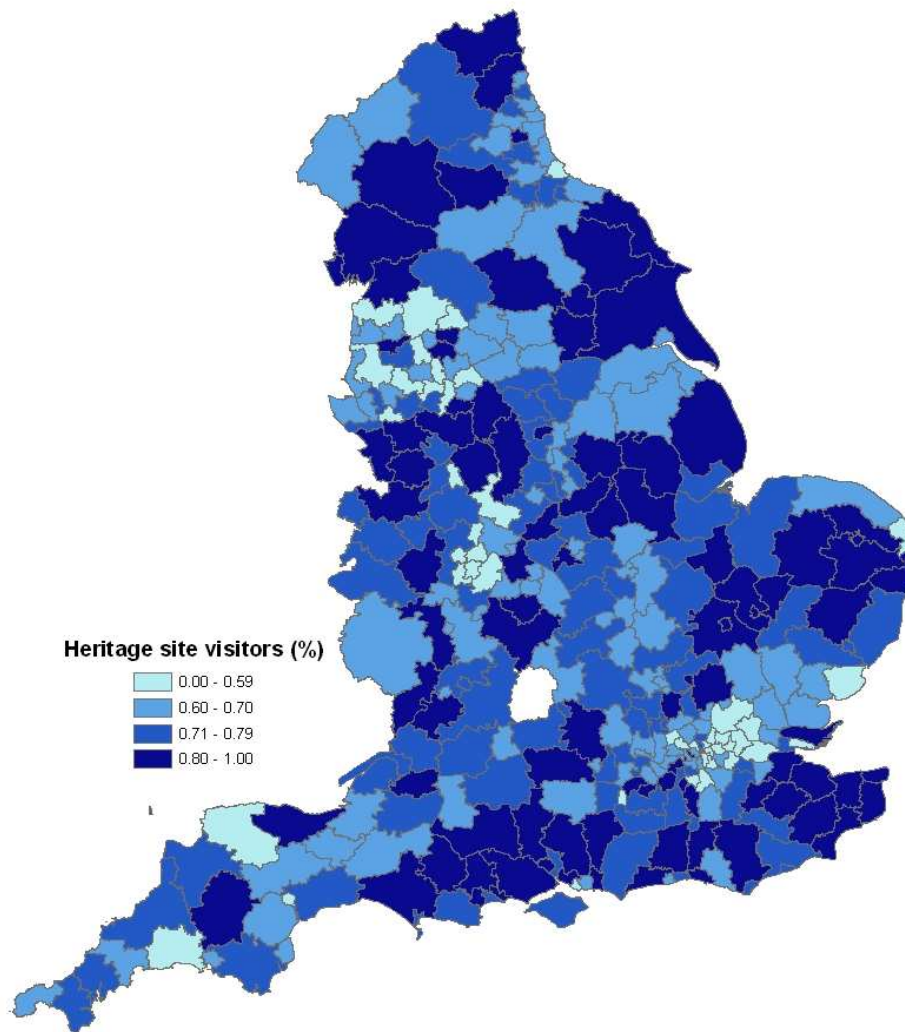


Source: Taking Part Survey 2007-2008

3.9.4. Heritage

More people visit heritage sites than any other cultural activity in this study. At first glance there does not seem to be any disparity between the distributions of participation across the country. However, by focusing where high participation areas and low participation areas are clustered, we find some interesting patterns. Low participation is clustered in the West Midlands, East London, and Greater Manchester. While high participation areas are clearly found in the semi-urban centres and rural districts, such as Norfolk, Cheshire, Kent, Hampshire, East Midlands, North and East Yorkshire and Cumbria.

FIGURE 13: Heritage Participation by District

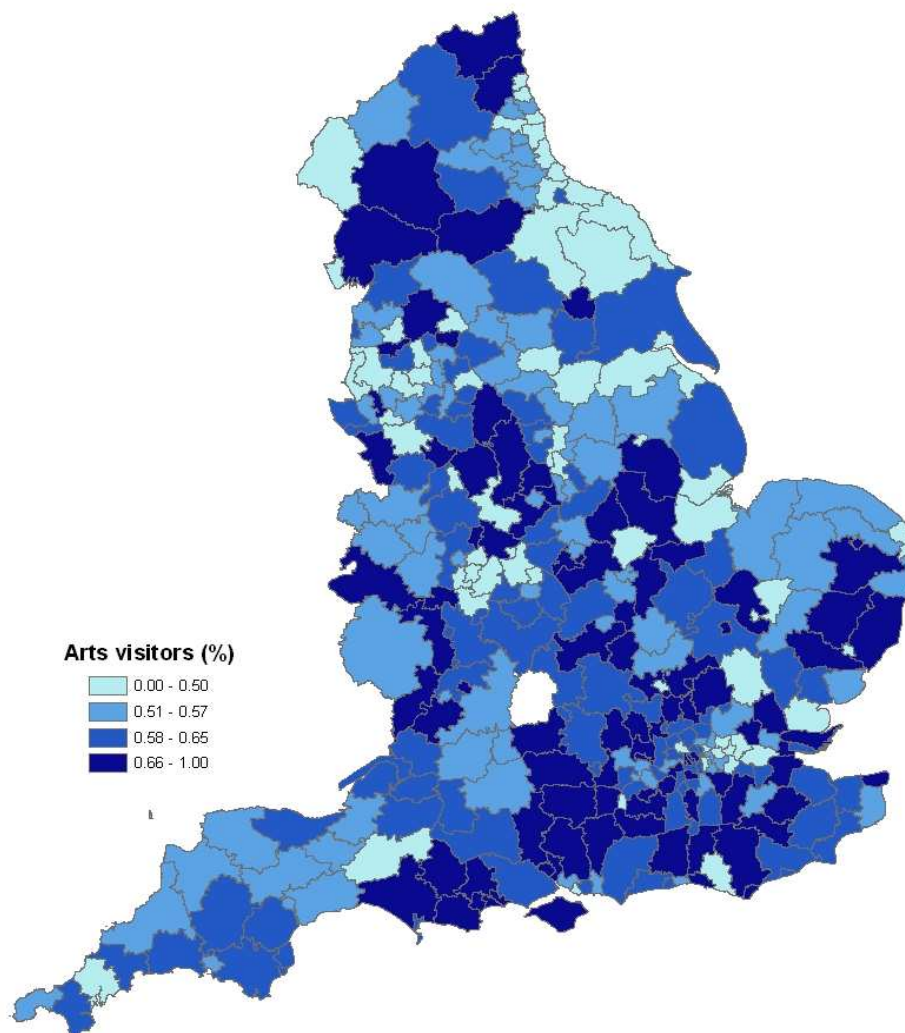


Source: Taking Part Survey 2007-2008

3.9.5. Arts

It is evident that arts participation is over-represented in the south-east. Large pockets of clustering of high participation are apparent in the Home Counties, and central and west London. These areas here are economically more prosperous than the areas with low representation (West Midlands, Greater Manchester, and large pockets of the north east). Put simply, there is a clear north-south divide in terms of participation in the arts.

FIGURE 14: Arts Participation by District

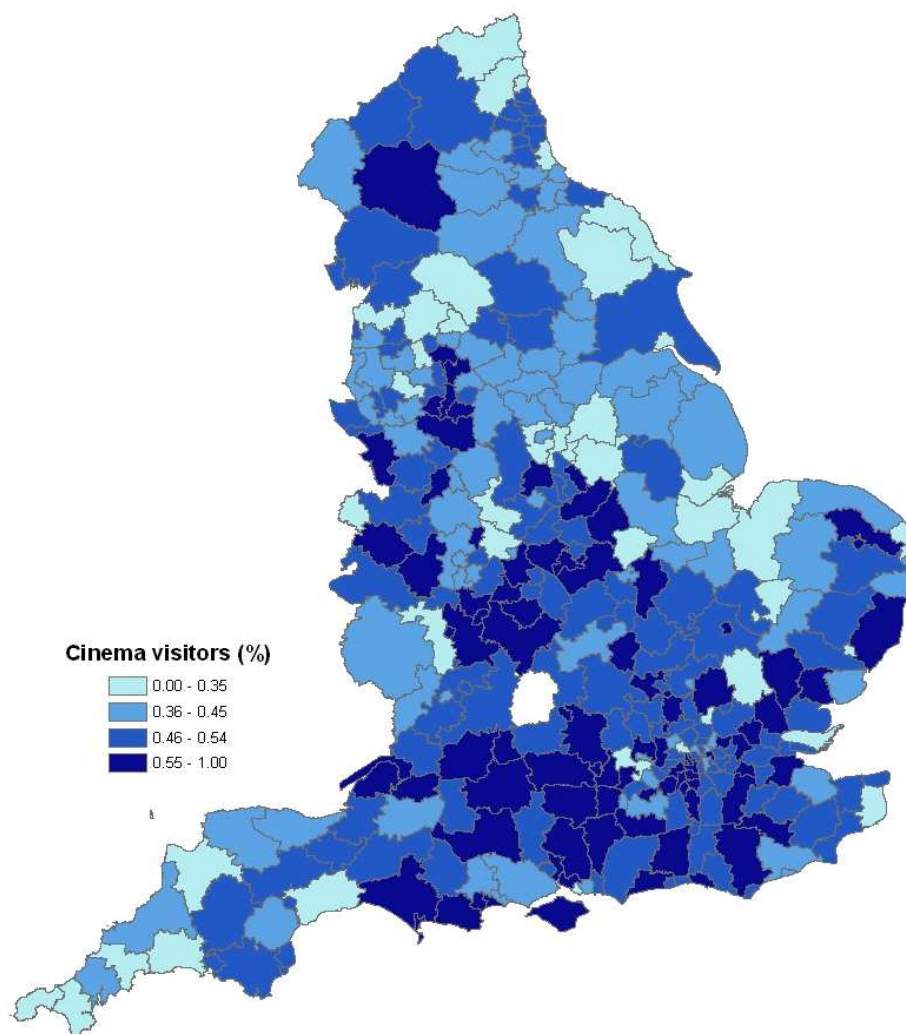


Source: Taking Part Survey 2007-2008

3.9.6. Cinema

Figure 15 details the LAD level participation of visitors to the cinema. Logic would suggest that cinema participation rates would be much higher in urban areas, because of access to these venues.

FIGURE 15: Cinema Participation by District



Source: Taking Part Survey 2007-2008

The major city conurbations appear to have average to high participation rates in cinema viewing. Furthermore, districts with low participation rates are the more rural locations. However, geographical patterns for cinema attendance shows evidence of a geographical north south divide similar to that of the other activities measured here.

3.10. Summary

To summarise this section, there appears to be a relationship between education and occupational position and cultural consumption. The higher an individual's educational attainment level and occupational standing the greater is their likelihood of engaging in different forms of culture. There is some merit therefore in exploring the link between these two stratification variables and culture as theorised extensively by numerous academics (most famously by Bourdieu, and Peterson). However, what we also uncovered here is that the link between stratification and consumption is too simplistic and other factors must be taken into account. We have shown that age, gender and ethnicity are important in our understanding of consumption. In addition, through mapping consumption across districts we have noted that there appears to be a relation with geography also. Therefore, to move this research forward we must now look to model these key drivers on cultural behaviour, using a more empirical approach. Section Four and Five will aim to do this using quantitative modelling techniques outlined in Section Two.

4. CONSTRUCTING CULTURAL CONSUMPTION LIFESTYLES SEGMENTS

4.1. Introduction

Rather than view cultural consumption as a set of isolated independent activities (visiting museums etc), it is often more useful to examine attendance and participation based on cultural lifestyles. Within the population there are relatively well defined types of cultural consumers who can be placed into lifestyle typologies or segments based on their consumption behaviour. Knowing these segments allows us to have a better understanding of the different types of consumers that exist, whilst simultaneously providing cultural organisations with more information on which to derive policy and implement key strategic decisions.

In this research, we used Latent Class Analysis (LCA) to examine which activities can be meaningfully grouped together on an empirical basis to form cultural lifestyle segments (based on attendance and participation). Cultural lifestyle segments are formed through consumption habits of various activities, which can be captured through a LCA. In essence, an LCA model reduces a large number of observations to a smaller number of categories or segments on the basis of responses to a vector of variables. The LCA allows us to:

- uncover the cultural lifestyle segments that exist;
- the size of these segments; and
- the probabilities of participating in a cultural activity given membership of a given lifestyle group.

To generate these lifestyle segments we used participation data from the Taking Part Survey 2007-2008. To recap these activities are as follows;

- Museums;
- Libraries;
- Archives;
- Heritage;

- Arts Attendance;
- Cinema.

4.2. Do lifestyle segments exist: A Latent Class Analysis

An important element to any LCA is to determine the appropriate number of lifestyle groups that exist. To do this, a series of LCA models were run using the software package Mplus, each containing a different number of lifestyle segments. By testing the model fit statistics we could determine which model fitted the data the best (how many groups best fitted the data). The model identified five different lifestyle segments as the best fit with the data. (For more details on selecting five lifestyle segments please refer to Appendix D).

In the analysis of cultural attendance below (Table 3) we labelled the latent classes, ‘inactives’, ‘omnivores’, ‘traditional’, ‘moderate participants’, and finally ‘visual class’. The following will examine each of the typologies created through the latent class model, and attempt to understand these types of individuals in relation to their participation habits, based on the results of Table 3.

TABLE 3: Lifestyle Segments

	Segment One	Segment Two	Segment Three	Segment Four	Segment Five	
	18%	34%	11%	14%	23%	
	Omnivores	Traditional	Moderate Participants	Visual Class	Inactives	National Average
Museums	82%	44%	37%	17%	4%	42%
Libraries	64%	43%	86%	16%	2%	45%
Archives	9%	6%	4%	1%	<1%	5%
Heritage	98%	91%	52%	60%	24%	69%
Arts	95%	60%	40%	52%	14%	57%
Cinema	79%	10%	55%	83%	3%	48%

Green = Above National Average – **Red** = Below National Average

Source: Taking Part Survey 2007-2008

The following key points can be taken from this modelling approach:

- Individuals forming membership of the ‘omnivores’ are likely to be engaged in all attendance measures in this report; they are engaged in activities that are traditionally associated with popular and contemporary cultural activities. They represent 18% of the survey population.
- Members of the ‘traditional’ group have less depth to their participation habits compared to ‘omnivores’, and are likely to be engaged in historical sites, museums, and the arts. They represent the largest segment in the data (34%). The reasoning for the label ‘traditional’ is that based on their participation habits individual members of this group consume heritage and other institutionalised forms of culture.
- ‘Moderate participants’ have extensive engagement in libraries, whilst other activities are moderately engaged. They represent our smallest segment of 11%.
- Members of the ‘visual class’ are differentiated from other groups through their high engagement in the cinema. Fourteen percent of the survey form membership of this group.
- The ‘inactives’ are unlikely to be engaged in any attendance activity. They have low probability of participating in any of the activities measured here. Twenty-three percent of the survey population are ‘inactives’ or ‘non-participants’.

4.3. Lifestyle Segment Characteristics

Having established the existence of lifestyle segments it is important to identify what constitutes membership of each grouping. In essence, our aim is to establish who populates these lifestyle segments. Referring back to Figure 2, we need to add structure to the latent class model by adding explanatory variables (‘x’ variables in Figure 2). We do this through a modelling approach called a MIMIC model, explained in 2.41 and Appendix B.

Table 4: Characteristics of Lifestyle Segments

	Omnivores	Traditional	Moderate Participants	Visual class
Occupational Class				
High	Red	Red	Red	Green
Medium	Green	Red	Red	Green
Low	Green	Green	Green	Red
Educational Level				
High	Red	Red	Green	Green
Medium	Green	Red	Red	Red
Low	Green	Green	Green	Green
Gender				
Male	Green	White	Green	Green
Female	Red	White	Red	Red
Ethnic Background				
White	Red	Red	Red	Green
Mixed race	White	White	Red	Red
Black	Green	Green	Green	Green
Asian	Green	Green	Green	Red
Chinese/other	White	Green	White	White
Age				
Young (16-24)	White	Green	Red	Red
Lower middle (26-44)	Red	Green	Red	Red
Middle (45-64)	Green	Red	Green	Green
Older (65+)	Green	Red	Green	Green
Health				
Good health	Red	Red	Red	Red
With LLTI	Green	Green	Green	Green
Household				
Couple with Children	Red	Green	White	Red
Lone Parent	Green	Green	Green	Red
No Children Household	Green	Red	White	Green

Red = more likely; **Green** = less likely; **White** = unknown

Source: Taking Part Survey 2007-2008

In brief (as explained in greater detail in Appendix B), the MIMIC modelling approach uses the latent class variables as the dependant variable measured against the explanatory variables identified (see Section 2.4.1.2 for list of explanatory variables). It allows determination of the likelihood, or the odds, of an individual with a certain characteristic being in one lifestyle category as opposed to another. Table 4 is a summary of the results derived from the model. Within the structure of the model we have to identify a reference group, from our lifestyle segments, to compare against.

We have chosen to compare our four lifestyle segments against the ‘inactives’. However, by knowing how the other four lifestyle segments compare, we will be able to identify the characteristics of this reference group as well. Appendix E has a full break down of the model output, whilst in this main body of the report we focus on the key outputs coming from the model results.

4.4. Key findings

To summarise the Table 4 results and draw out the key findings, the following will walk through each lifestyle segment and establish who is a likely member of each segment, starting with the omnivores.

4.4.1. Omnivores

Those who form membership of this lifestyle segment will have the following characteristics:

- Individuals in this segment are highly educated (degree level or above), and of a high occupational class (higher Professional/Higher Managerial);
- The higher the educational attainment level the more likely it is that an individual will be in the ‘omnivore’ lifestyle segment;
- Females are more likely to be in this segment as opposed to males. Females are more than twice as likely (see Appendix E for odds ratios) as males to be in this segment compared against the ‘inactive’ group.
- Ethnic minority groups are likely to be under-represented in this segment;
- ‘Omnivores’ are also likely to fall into the younger age groups, namely 16-24yrs and 25-44yrs. Perhaps as a consequence of this they are undoubtedly in good health.

4.4.2. Traditional

The ‘traditional’ group have the following key characteristics:

- This lifestyle segment share similar characteristics to the ‘omnivore’ grouping, in terms of education and occupational class.

- They have a good educational attainment level, and more likely to be in occupations at the upper end of the scale.
- As the ‘omnivores’ they are likely to be from a white ethnic background, and also be in good health.
- Where they differ from the previous group is in relation to age. This group are much more likely to be older when compared against the ‘inactives’. Furthermore, they are likely to reside in a household with no children.

4.4.3. Moderate Participants

The ‘moderate participants’ are characterised by the following attributes:

- Moderate to low educational attainment.
- They are likely to be in working class occupations, such as semi-routine or routine positions.
- Females are more likely to be in this segment as opposed to males.
- This group in terms of ethnicity are predominantly of a white background.
- Individuals in this lifestyle segment are young and in good health.

4.4.4. Visual Class

Those who form membership of this lifestyle segment will have the following characteristics:

- To be in lower middle or working class occupations.
- Have moderate to good educational levels.
- Predominantly female and young.
- Ethnicity offers an interesting insight to this group as this segment more so than others is likely to be ethnically diverse. If Black or Asian minority ethnic groups are active in culture they are likely to be members of this lifestyle segment.
- They are likely to have dependent children, either as a couple or as a single parent.

4.4.5. Inactives

As this segment acted as a reference category we can not readily identify what characterises this group. However, we can deduce from the results of the other segments measured against this on, the following:

- They populate low occupational positions, and have poor/low education attainment;
- They are more inclined to be male as opposed to female.
- They are from the older age cohorts and are much more likely to be from a Black and minority ethnic group. Furthermore, they are more likely than any other group to be in poor health.
- They are also more inclined to have dependent children, especially a lone parent.

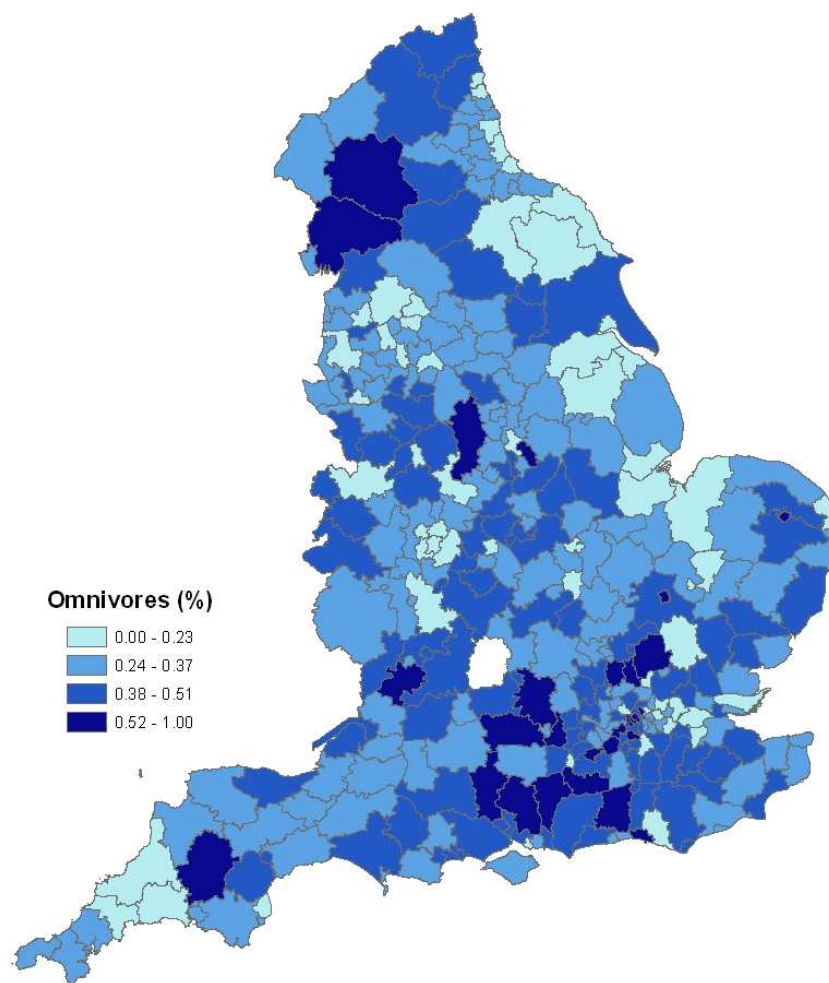
4.5. Geographical Mapping of Lifestyle Segments

Having identified five lifestyle segments and explored their characteristics, we now explore whether the relative proportions of these groups varied across LADs. Figures 16-20 establish where the lifestyle groups identified in the model are under and over represented. There are evident spatial patterns of the lifestyle groups across England. The following is a brief description of the key geographical effects.

4.5.1. Omnivores

- Large pockets of over-representation of this group across the country, although much more prevalent in the South East and West London;
- Over-representation in the affluent rural areas in the North;
- Under-representation of this group in the West Midlands, East London, Teesside, Sunderland and North Tyneside, and most districts of greater Manchester and Merseyside;
- More affluent areas have more omnivores.

Figure 16: Omnivores across Local Authority Districts of England

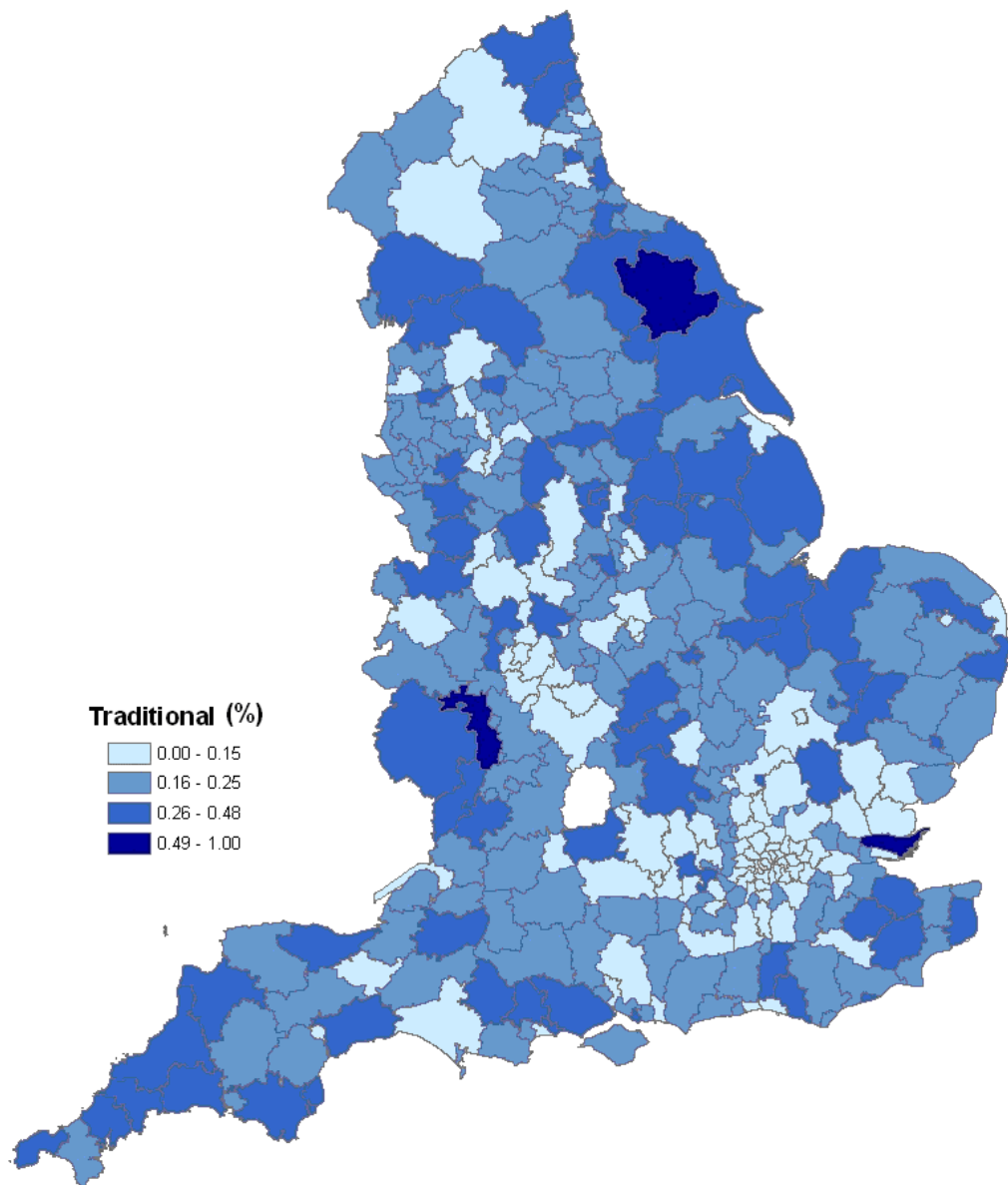


Source: Taking Part Survey 2007-2008

4.5.2. *Traditional*

- Evenly distributed across the country;
- Little evidence of spatial patterning as a results of macro level forces;
- Under-represented in all Inner and Outer London Boroughs;
- Concentrated in more rural areas;
- Under-representation in Manchester and the West Midlands.

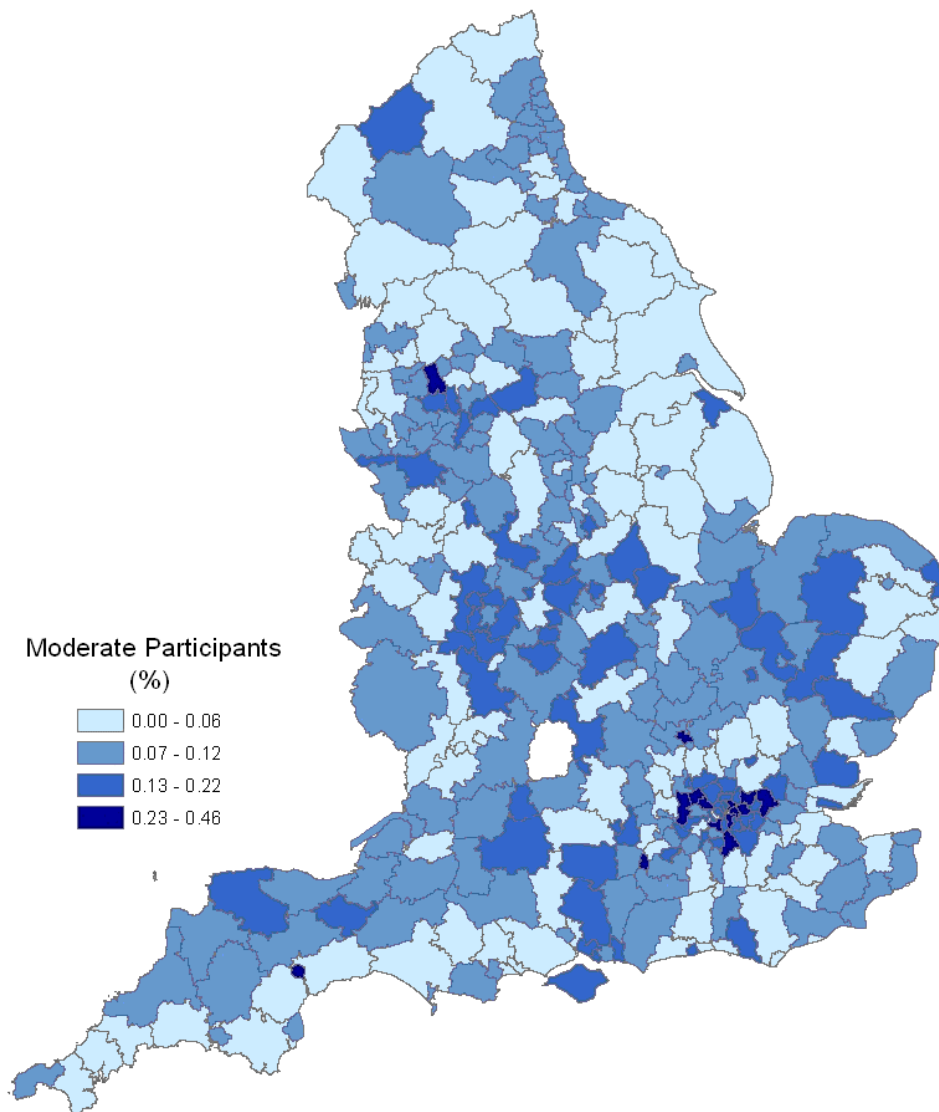
Figure 17: Traditional across Local Authority Districts of England



4.5.3. Moderate Participants

- Many districts are under-represented with this group;
- It was evident that this group was quite ethnically diverse, therefore, it is not surprising that London, West Midlands, and Manchester, have an over-representation of this latent group, as these areas are more culturally diverse;
- Unlikely to be found in the more affluent rural districts.

Figure 18: Moderate Participants across Local Authority Districts of England

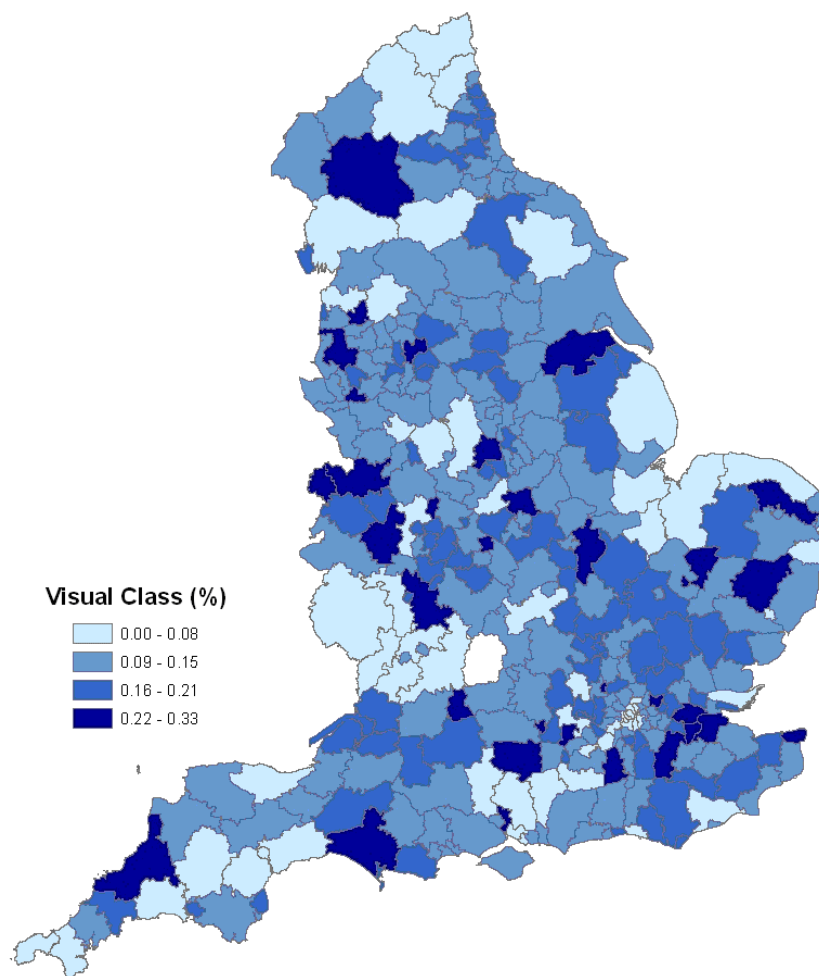


Source: Taking Part Survey 2007-2008

4.5.4. Visual Class

- There is a rural/urban element to the clustering of these groups;
- The more isolated parts of the country are unlikely to have a large proportion of this group.

Figure 19: Visual Class across Local Authority Districts of England

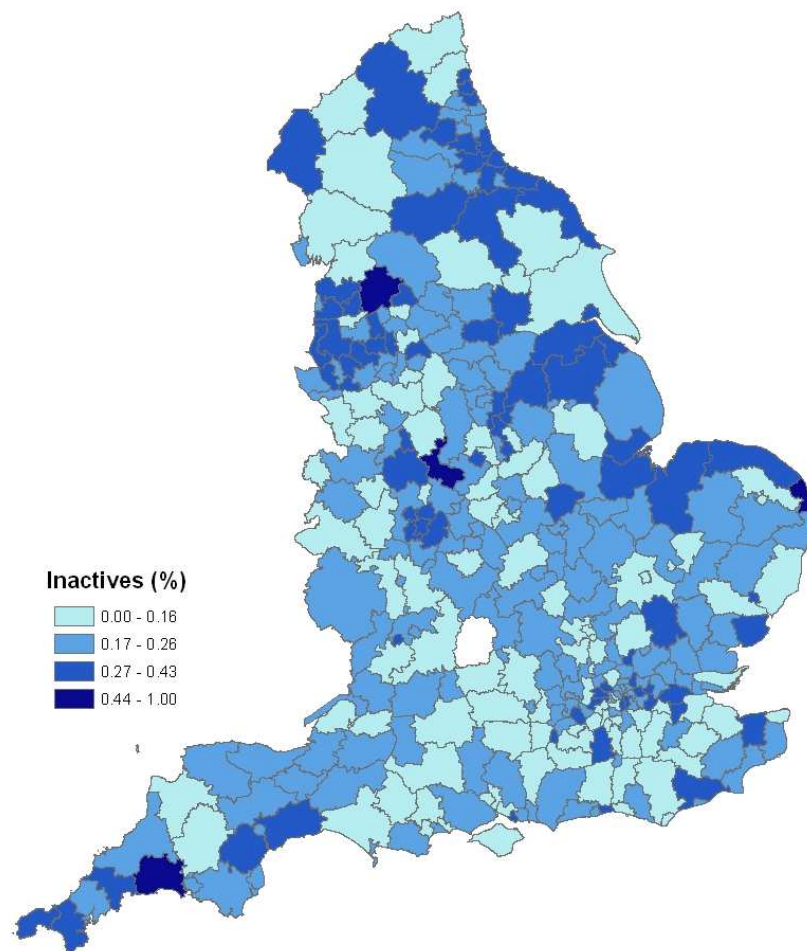


Source: Taking Part Survey 2007-2008

4.5.5. *Inactives*

- North South divide, spatial patterns of over-representation of this group to the North of England;
- Cluster of inactives in East London;
- Under-represented in the affluent home counties and South East England in general;
- Prevalent clusters along the Eastern (and North East) coastline;
- Area level deprivation is perhaps a key factor in the prevalence of this group in an area.

Figure 20: Inactives across Local Authority Districts of England



Source: Taking Part Survey 2007-2008

4.6. In Summary

Through a latent class analysis of cultural consumption of six indicators we have uncovered the following:

- Five lifestyle segments exist in the data, the ‘omnivores’; ‘traditional’; ‘moderate participants’; ‘visual class’ and ‘inactives’.
- These lifestyle groups have distinct cultural lifestyles that separate them from each other.
- The ‘omnivores’ have a broad range and depth to the cultural activities they consumed, from popular activities to the more specialised. They represented 34% of the survey population. They are highly educated and have a high occupational standing. They are more likely to reside in the more affluent areas of the country, especially the Home Counties and the South East.
- Those who fall into the ‘traditional’ group, which 18% of the survey did, were inclined to take-part in well established forms of culture namely the arts, and heritage sites. They too have high educational attainment and social standing. They are an older group. They are under-represented in London (inner and outer), Manchester and the West Midlands.
- The ‘moderate participants’ which forms 11% of the survey population. This segment did not have the depth and range of cultural habits compared against the ‘omnivore’ and ‘traditional’ lifestyle segments. They were moderately engaged in cultural activities but were likely to visit the library. This segment are characterised by with individuals with average educational levels, from a white ethnic background and female. They are likely to reside in the more urban areas of England.
- The ‘visual class’ lifestyle segment was differentiated from the others through their engagement with the cinema and the arts. They represented 15% of the survey population. This group have moderate educational levels and are ethnically diverse.
- Members of the ‘inactive’ lifestyle segment were unlikely to be engaged in any cultural activity measured in this report. 23% of individuals made up this group. They are made up of those with low levels of education and low

occupational positions. They are more likely to be males and from older age groups. They are also more likely to be found in the North of England.

5. EXPLAINING VARIATIONS IN PARTICIPATION

5.1. Introduction

Figure 1 presented the two different pathways of the research. Path B, which this section relates, rather than examine cultural lifestyles more generally as in Path A, seeks to explore participation in closer detail by examining engagement in museums and libraries. Whilst, we remain concerned with the key socio-demographic drivers of participation as explored in Section Three, we also explore if geography inhibits or facilitates participation in much greater depth.

Section Two of the report set out the methodological approach. Here we explore museum and library participation using a multilevel modelling approach with data from the Active People Survey (APS) (see Section 2.2 for an overview of this survey). To recap, the modelling approach here is a multilevel logistic regression model of attendance at museums and libraries using two separate models (see 2.42).

5.2. Evaluating the Model Findings: Museum Participation

When exploring a social phenomenon using this type of modelling approach it is common practice to examine an empty or null model, where only geographical variation is measured. This allows us to determine if there is any underlying variation accounted for by geography (in our case the local authority district). This is akin to Model 1 in presented in Section 2.4.2. For museum participation we found that variation at the district level is significant (see Appendix G – variance components model for museums). In addition using the interclass correlation calculation (See Appendix G - Interclass Correlation calculation) we can identify what percentage of variation in museums is accounted for by the district level. We calculated this calculation to be 2.4%. Although small, as most of the variance is at the individual level, it is significant and even a small effect at the area level has implications for the large numbers of individuals that reside within these districts.

Table 5 presents a graphical view of the results for Model 2 (see Section 2.4.2), where the model of museum participation includes individual and district level variables. A more extensive and technical review can be seen in Appendix G Table 12, here we are concerned with exploring the key themes coming out of the model.

TABLE 5: Multilevel model results for museum participation

Those participating in Museums	
Individual Level Drivers	
Occupational Class	
High	
Medium	
Low	
Educational Level	
High	
Medium	
Low	
Gender	
Male	
Female	
Ethnic Background	
White	
Mixed race	
Black	
Asian	
Chinese/other	
Age	
Young	
Lower middle	
Middle	
Older	
Health	
Good health	
With LLTI	
District Level Drivers	
Deprivation	
High Deprivation	
Low Deprivation	
Urban/Rural	
Urban areas	
Rural areas	
Percentage of variation in museums accounted for by district	2%

Red = more likely; **Green** = less likely.

Source: Active People Survey 2007-2008

To summarise the Table 5 results and draw out the key findings, the following will walk through each part of the model and establish the key findings, starting with an overview of the significance of geography.

5.2.1. Effects of geography on museum participation

- Adding the socio-demographic and area level variables to the model has reduced the variation associated with the district level.
- The intra class correlation is now 2%. That is 2% of the variation in museum participation is still accounted for by the district level.
- This is fairly small, but it is significant, and suggests that evidence of a district effect is not just a product of selection effects – that is of people with similar characteristics living in close proximity to each other.
- The key driver is individual socio-economic characteristics but geography also matters, albeit less. However, including smaller spatial scales may reveal much larger differences and show that context matters to a much greater extent than these results suggest.
- Deprivation has a significant negative relationship with museum participation. Areas that are more deprived will have a greater level of non-engagement in museums. There is clearly a contextual relationship. Museum participation is a function of the environment. The less deprived an area is the greater its level of engagement, although the estimate is quite reserved.
- There is a clear negative relationship between district classification and participation. As areas become more urban activity increases, whilst individuals living in more rural areas have a greater likelihood of being non-visitors as opposed to visitors.

5.2.2. Effects of Socio-demographic characteristics on museum participation

- Education is a key driver of engagement, which confirms the results in Section Three. There is a positive linear relationship between education and active engagement in museums. The more educated an individual is the more likely they are to visit museums. In other words, those that are disengaged

from the museum offering are significantly more likely to have low levels of educational attainment compared those who are engaged.

- Occupational Class follows similar patterns to that of education. The higher the occupational standing of an individual the greater their likelihood of participating in museums, even when educational attainment is controlled for.
- Stratification, measured here through education and occupational class are key drivers in determining who does and doesn't participate in the museum offering.
- Females are significantly more likely to be engaged in museums, than their male counterparts;
- Those in older age groups are much more likely to be museum visitors than the younger age cohorts;
- Those from ethnic backgrounds are significantly less likely to be participates than Whites. For instance, Asians are twice as likely to be non-visitors as opposed to visitors compared to those from a White ethnic background, while Blacks are almost three times as likely to be non-visitors.

To summarise it seems evident that those disengaged from museums are significantly more likely to be deprived. Not only are such individuals more likely to be less educated, they are also significantly less likely to be of a high, middle or lower-middle class, and 1.5 times more likely to suffer long term illness when compared against those who are engaged other lifestyle groups. Furthermore, they are more likely to reside in more deprived areas, which amplifies their disengagement with museums. This is a clear indication that those excluded from the museum offering are perhaps the culturally and socially excluded.

5.3. Evaluating the Model Findings: Library Participation

For Model 1 (see Section 2.4.2) with no explanatory variables, library participation was found to vary significantly by district (see Appendix H – variance components model for libraries). Using the interclass correlation measure (See Appendix G - Interclass Correlation calculation) we calculated that variation in library engagement accounted for by the district to be 1.2%. Although small as most of the variance is at the individual level, it is significant and even a small effect at the area level has massive implications to the high numbers of individuals that reside within these districts. There is unexplained district level variation in library participation.

Table 6 presents a graphical view of the results for Model 2 (see Section 2.4.2), where the model of library participation includes individual and district level variables. A more extensive and technical review can be seen in Appendix H Table 13, here we are concerned with exploring the key themes, starting with the effects of geography.

5.3.1. *Effects of geography on library participation*

- For library participation, the ICC in Table 9 is estimated to be 0.02, which suggests that 1.0% of the variation is at the district level.
- The urban rural classification reports insignificant findings, suggesting that the type of district in these terms bears little weight to library participation.
- Deprivation is significant although the estimate is small. Never the less, this finding suggests that there are opportunity structures in the more deprived areas that is inhibiting library participation, above and beyond the build up of type of individuals in an area.

TABLE 6: Multilevel model results for Library participation

Those participating in Libraries	
Individual Level Drivers	
Occupational Class	
High	
Medium	
Low	
Educational Level	
High	
Medium	
Low	
Gender	
Male	
Female	
Ethnic Background	
White	
Mixed race	
Black	
Asian	
Chinese/other	
Age	
Young	
Lower middle	
Middle	
Upper Middle	
Older	
Health	
Good health	
With LLTI	
District Level Drivers	
Deprivation	
High Deprivation	
Low Deprivation	
Urban/Rural	
Urban areas	
Rural areas	
Percentage of variation in museums accounted for by district	
	1%

Red = more likely; **Green** = less likely; White = unknown

Source: Active People Survey 2007-2008

5.3.2. Effects of Socio-demographic characteristics on library participation

- Once more education is the key driver of participation. As it was in the museum model, education has the most significant influence on activity in libraries. The higher the education level the more likely an individual is of

attending a library. In other words, the higher the educational attainment the more likely an individual is to be a library visitor.

- It appears here at least that library participation maps onto educational attainment in a linear fashion.
- Occupational status of library participants is less clear than it was for museums. It is more likely to include individuals from variety of social positions. What is evident is that the highest status grouping, are less likely to be library participants than the middle and working classes.
- Females are more likely than males to be library users.
- The older age groups are keen library users.
- Unlike museums, in terms of ethnicity, ethnic minorities are well-represented and tend to visit libraries in much larger numbers than the white population.

To summarise, individuals who visit libraries are more likely to have a good education attainment level, tend to be female, from older generations, and live in less deprived areas. However, they are also significantly likely to be of a middle or lower-middle class and from an ethnic minority background.

5.4. In Summary

For museums we found that variation in participation is accounted for by the district in which individuals reside. Whilst individual level characteristics such as education and social position are key drivers, geography also matters. In addition, districts that are more deprived will have a greater level of non-engagement in museums. There is clearly a contextual relationship, albeit fairly small. Museum participation is a function of the environment; the less deprived an area the greater its level of engagement. For library participation, district level variation was also significant. In addition deprivation is significant and opportunity structures in the more deprived areas inhibit participation even after controlling for individual socio-economic characteristics.

6. CONCLUSIONS

This section pulls together the key findings of the research. At this stage we return to the overall aims of the project, which were:

- to determine if cultural lifestyle typologies existed in England;
- what the key socio-demographic and geographic drivers were that determined these lifestyle groupings;
- what key socio-demographic drivers impact upon museum and library participation; and finally,
- to examine the importance of place (where an individual resides) on museum and library participation.

The following will summarise how the key research goal was achieved by examining each of the research objectives in turn.

6.1. To uncover if cultural lifestyle typologies exist

The aim of this research objective was to determine whether there were relatively well defined types of individuals who can be grouped together based on their attendance habits.

We found that five lifestyle groups were identifiable in the cultural field. The fact that we uncovered such lifestyle groupings demonstrates that cultural consumption behaviours are not independent, and that people can be grouped with other individuals who share cultural consumption practices. Furthermore, membership of these groupings results in different levels of engagement in cultural activity.

Exploring these lifestyle groupings offers an interesting insight into cultural consumption in England. The most active group were the ‘omnivores’. This group are heavily engaged in consuming a variety of culture, with great depth and range to their consumption habits. The ‘inactives’ consumption patterns mean that they are unlikely or are very low participants in any form of cultural activity. They are in affect

culturally excluded or disengaged. The ‘inactives’ and the ‘omnivores’ are in sharp contrast to each other. One is (omnivores) an extremely active cultural consumer group, happy to engage in popular and exclusive cultural activities, showing little or no distancing from any forms of culture. The other (inactives) do not engage in exclusive activities and are even very low consumers in the popularised forms of activity.

There were other groups uncovered that were positioned with in these two extreme positions. Whilst they did not have the range and diversity of consumption behaviours when compared to the ‘omnivores’ they were legitimate consumers in their own right with fairly distinguishable lifestyle behaviours, and with a greater depth and range than those who were ‘inactive’. Whilst these other groups are somewhat in a position whereby they represent a middle ground between the two extreme positions, they do have behaviours distinctive to themselves. The ‘traditional’ are segmented from other groups by a high engagement in activities that are quite traditional in the cultural field, namely, visiting historical sites, the arts, and museums, and limited engagement in such things as cinema. The ‘visual class’ were high consumers of the cinema product. Finally, the ‘moderate participants’ were more likely to be active in the more popular accessible working class genres of activity, namely cinema and libraries.

6.2. Determining the characteristics of cultural lifestyle segments

We found clear evidence that membership in these lifestyle segments were not a product of differentiation, rather they were homogenous groupings. In other words, individuals with similar cultural patterns tend to be alike in socio-demographic characteristics. Evidence points to consumption in England being socially stratified, with educational attainment and occupational class key drivers in conditioning lifestyles. The five lifestyle segments uncovered demonstrate cultural patterns that are entrenched in being structured by social processes. The higher an individual is educated and in the social class position the more likely they are to be active.

A systematic relationship exists between lifestyle groups and the stratification order (based on education). The highest educated and occupational classes are more likely to be ‘omnivores’ than all other groups, while more likely to be active in other groups

as opposed to the 'inactives'. A status order clearly exists. The culturally excluded, or what we now know to be 'inactives', are of a low educational attainment.

Turning now to theoretical positions as discussed in Section 3.2; the results here shares commonality with other studies constructed in England (Chan and Goldthorpe, 2006; Widdop, 2010), Spain (Sintas and Alvarez, 2002), and United States of America (Peterson, 1992; Bryson 1996), identifying that Peterson's omnivore framework has replaced a Bourdieu elite to mass homology model. That is the LCA and multinomial models show little evidence to support Bourdieu's claims of culturally social elite, who while consuming legitimate culture marginalise the popular forms. The pure homology argument is then rejected in favour of Peterson's framework, whereby the highly educated are distinguished from other groups by a depth and range of consumption habits, rather than adherence to cultural activities that promote their position in society.

Underlying the statistical results, several different processes are at work in shaping individuals patterns of cultural consumption. That is to say, while our results lend further support to the omnivore argument and give gravitas to the proposition that stratification is centrally involved in the differentiation of lifestyle types, other factors are acting as further cleavages facilitating and inhibiting cultural lifestyles. Indeed, there were positive gender effects, females being more active than males. Age was also significant, with the younger generations being more likely to be active, although the 'traditional' group were more likely to be older, whilst in general the older groups tended to be less active. Limiting long term illness was also a factor in predictable ways, with those free from illness being more active. Minority ethnic groups were more likely to be 'inactive' as opposed to active. If they did take part they would be likely members of the 'moderate participants' group.

It is too simplistic to view cultural consumption as only being bound up in level of education and occupational status. While they still remain the salient measures of consumption, other factors play a prominent role in inhibiting or facilitating cultural consumption.

6.3. Exploring differences in cultural lifestyle segments across Local Authority

Through mapping the lifestyle groups aggregated to the district level, we found clear spatial patterns of over and above representation of these different groups. Our results provided descriptive evidence of disparities in activity. The districts that had a greater level of those with active lifestyles were much more prominent in the South of England, while inactivity was clustered in the North. There is a North-South divide in cultural consumption. We cross-tabulated district level groupings by district level variables and found evidence to support the hypothesis that the more deprived an area was the more restricted participation had become. In summary, there are opportunity structures in these districts that impact upon cultural consumption.

6.4. To examine who visits museums and libraries and determine their individual socio-demographic characteristics.

While the TPS examined cultural lifestyles more generally, we used the APS dataset to explore individual participation in museums and libraries in greater depth. The aim here was two-fold, first, to determine if participation in these activities had the same key drivers as the lifestyle groupings, and second, to determine if place was important in whether people participated in museums and libraries. Our results of the APS followed similar patterns uncovered through the latent class analysis of the TPS. The results from the hierarchical logistic model show that the traditional social order (class and education) remains a significant stratification measure of museum and library participation. Although, in terms of library participation, education more so than social position is the key driver. Here we provide strong evidence that museum participation patterns are still somewhat entrenched in being structured by social processes. Yet other individual characteristics such as age, gender and ethnicity are also important significant contributors even when controlling for the stratification variables. Therefore, to view museum and library participation as only bound up in the stratification order, is too simplistic. Museum and library participation is clearly structured by a multiple axis of stratification and not purely by the traditional social order as in the past.

6.5. To determine if variation in cultural behaviour is still accounted for at the district level even when controlling for individual level compositional effects and area level characteristics;

While social stratification variables remain empirically central to our understanding of cultural behaviour, it is also clear that other factors are facilitating and inhibiting participation. Within the cultural participation literature, it is widely assumed that composition (individual level attributes) accounts for variations in cultural lifestyles. In sum, the importance of place as further cleavage influencing museum and library participation has been largely ignored.

The evidence from our models suggests that cultural behaviour cannot simply be reduced to stratification and other compositional processes. In short, there were variations in participation at the district spatial scales, but this variation was much more prominent for museums. Clearly, there is a contextual relationship; an individual's cultural behaviour is a function of the nature of the society in which they reside. The social environment in which people live their daily lives influences cultural behaviour. Put simply, place is significant and it clearly matters, but it matters more for museums than for libraries.

The multilevel multinomial model, which accounted for area contextual effects and individual level compositional effects, returned interesting conclusions. While the vast majority of variance in museum and library engagement in both fields was accounted for by the individual level factors, district level variation remained, even when contextual mechanisms were included (Multiple Index of Deprivation and Urban/rural classification). The remaining variance at the district level in each field can be attributed to contextual factors that are as of yet unmeasured, this might include, district level environmental forces, or more likely an aggregation effect of factors occurring at the smaller spatial scales, namely the neighbourhood and the household.

However, further analysis is needed at a much smaller scale where we can determine whether people who interact more with their neighbours are more likely to visit museums and libraries in the same way as their neighbours do, according to the characteristics of the neighbourhood that they share. Moreover, unexplained variation

at the local authority district level may be due to the inbuilt culture of the area or the value different local authority districts place on enhancing museum and library participation through funding, advertising or local programmes. Furthermore, perhaps the disparity between the place effects of museums and libraries is a consequence of increased marketing activity of museums compared to libraries.

6.6. Why people do or do not take part in culture?

It is evident from the results that engagement in culture is clearly a product of key individual level drivers and district of residence. Whilst it is difficult to elaborate qualitatively why people don't participate, the results bear evidence that non-participation or low activity is clearly a product of low educational levels and social status, which is compounded through living in different areas. In Section Four we identified the approach of a North/South divide in relation to the non-active group, with an over-representation to the North (including the West Midlands). Ethnicity, age, and gender are all salient measures of non-participation. The culturally disengaged face opportunity structures at both levels and are clearly socially excluded. While there are significant differences between local authorities, this only attributes a small but significant part in explaining low cultural attendance/participation. Individual level socio-economic drivers seem to be more important, although we must bear in mind that examining or incorporating the effects of smaller spatial levels such as the neighbourhood or the household could provide much different results.

Further research is needed into the reasons why these people don't participate or have low activity, whilst we identify significant associations between activity and socio-demographic factors, we cannot really attempt to place a causal pathway and interpret why this is the situation. However, these results offer significant overview of culture in England and are a great foundation for further work that is required to make culture open for all. They also provide important information for policy makers so that culture can be promoted and enjoyed by all whatever an individual's social background and wherever they live.

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GLOSSARY OF TERMS

Latent Class Analysis - In statistics, a latent class analysis (LCAM) relates a set of observed discrete multivariate variables to a set of latent variables. It is a type of latent variable model. It is called a latent class model because the latent variable is discrete. A class is characterized by a pattern of conditional probabilities that indicate the chance that variables takes on certain values.

Multiple Indicators Multiple Causes model (MIMIC) – In this analysis a MIMIC model is used to add structure to the Latent Class Analysis, attaching explanatory variables to model to examine their effects on the lifestyle segments.

Hierarchical or multilevel modelling - Multilevel models (also hierarchical linear models) are statistical models of parameters that vary at more than one level. These models can be seen as generalizations of linear models, although they can also extend to non-linear models.

Lifestyle Segment – Is a cultural lifestyle fashioned by the individual based on their cultural consumption habits.

Latent variable – Latent variables are variables that are not directly observed but are rather inferred from other variables that are observed (directly measured.) A variable that does not exist

Categorical Variable – A variable that has different categories i.e. male and female in a gender variable.

Multinomial Regression - Multinomial regression is used when the dependent variable in question is nominal (a set of categories which cannot be ordered in any meaningful way) and consists of more than two categories.

Logistic Regression - logistic regression is used for prediction of the probability of occurrence of an event by fitting data to a logit function logistic curve. It is a generalized linear model used for binomial regression. Like many forms of regression analysis, it makes use of several predictor variables that may be either numerical or categorical.

Cultural Indicators – These relate to the activities individuals take part in. For example visits to museums, and libraries are both examples of cultural indicators.

Contextual Mechanisms (macro level forces) – Forces that effect everyone in a given area, that is all individuals residing in an area is effected by these forces.

Linear Relationship – Relationship of two or more variables to a straight line. An increase in one variable would cause an incremental effect on the other.

Variance Components model – A model used in multilevel modelling top test if different levels of the analysis influence the dependent variable.

APPENDIX A

Latent Class Analysis

A latent class model is graphically illustrated (path diagram) in Figure 2. Where the square boxes ($u_1 \dots u_6$) represent an observed dichotomous variable (cultural indicators) and the circle represents a latent variable with T number of classes (cultural lifestyle typology). A latent class model splits the original sample into T classes such that the original association observed in the sample between cultural indicators, is removed from the classes. That is, the observed patterns of cultural activities are assumed to be independent given that latent class membership is taken into account (Sintas and Alvarez, 2002). Thus from a latent class approach, a type of consumer can be revealed whose cultural habits will be different to other types of consumers. In other words different typologies can be set based on cultural behaviour of individuals.

The basic principle of a Latent Class Analysis revolves around local independence (highlighted previously), and two essential parameters latent class probabilities and conditional probabilities. Through participation habits in the various cultural indicators, different types of individuals will have different participation habits based on cultural patterning. Individuals use these cultural products to position themselves in the space of lifestyles. Therefore, individuals form cultural patterns based on consumption of cultural indicators ' $u_1 \dots u_n$ ', and can thus be assigned to different levels of class ' C '. To that end, types of cultural consumer can be readily identified. McCutcheon (1987) claims that when a set of interrelated variables (cultural indicators) are found to be locally independent within categories of a latent variable we can say that this additional latent variable explains the observed relationship, and is the true variable of interest. Therefore, knowing this true variable of interest (latent variable ' C ') one can identify cultural lifestyle typologies.

The parameters, latent class probabilities and conditional probabilities, are important for interpretation of the Latent Class Model. Latent class probabilities are the probability of being in a particular level (lifestyle typology) of a latent variable (cultural lifestyle). In other words, the probability of being in latent class $t = 1, 2 \dots T$ of latent variable ' C ' (Magidson and Vermunt, 2003). As McCutcheon (1987) states,

this represents the number of latent types defined by the latent class model for the observed cross-tabulations of ‘u 1...u n’, and the relative size of each class. Conditional probabilities (akin to factor loading) represent the probabilities of an individual in class ‘t’ of the latent variable ‘C’ being at a particular level of the observed variable (i.e. response to cultural indicator). For each of the ‘T’ classes of the latent variable ‘C’ there is a set of conditional probabilities for each of the observed variables (‘u’) (McCutcheon, 1987). If a cultural domain had two ‘T’ classes on the latent variable ‘C’, then there will be conditional probabilities of them participating and not participating in the identified cultural indicators of that domain, for each of the two groups. Conditional probabilities provide the measurement structure that defines the latent classes (Magidson and Vermunt, 2003).

The binary responses (1=Yes, 0=No) for the cultural indicators can be thought of as forming a n-way contingency table with 2n cells, where n is the number of indicators analysed (Chan and Goldthorpe, 2005). Therefore, underlying this data are relatively well defined types of cultural consumer, who can be placed into lifestyle typologies based on their consumption behaviour (i.e. omnivore, visual class, inactives etc). We can seek to capture the relationship that exists among the cultural indicators, through a small number of discrete latent classes (Chan and Goldthorpe, 2005). To do this the following model will be applied:

$$\begin{aligned}
 P(\mathbf{Y}_i = \mathbf{s}) &= \sum_{t=1}^T P(C_i = t) P(\mathbf{Y}_i = \mathbf{s} | C_i = t) \\
 &= \sum_{t=1}^T P(C_i = t) \prod_{u=1}^U P(Y_{iu} = s_u | C_i = t)
 \end{aligned}$$

1

The term \mathbf{Y}_i identifies the response of individual i on cultural indicator u, and the number of indicators is defined as U. As the indicators one is using are binary (1=yes, 0=no), a level of the cultural indicator u is identified by s_u and its number of categories by S_u . The variable of interest, the latent class variable is identified by C_i . As the latent class variable can consist of several levels (different typologies, i.e. omnivore, univore, snob etc) the latent class level is represented by t, and the number

of latent classes by T. Notation Y_i is used to refer to the full vector of responses of case i , and s to refer to a possible answer pattern (Vermunt, 2003).

The probability of observing a particular response pattern $P(\mathbf{Y}_i = \mathbf{s})$, is the weighted average of class specific probabilities $P(\mathbf{Y}_i = \mathbf{s} | C_i = t)$. The weight $P(C_i = t)$ is the probability that individual i belong to latent class t . Local independence between cultural indicators given membership of a latent class Y_{iu} is identified on the second line. The term $P(Y_{iu} = s_u | C_i = t)$ is the probability of observing s_u on the cultural indicator u given that the person concerned belongs to latent class t (Vermunt, 2003). These conditional response probabilities are what are used to label the latent classes, namely omnivore, univore, snob, mass consumer etc.

APPENDIX B

Multiple Indicators Multiple Causes Model (MIMIC)

A MIMIC model is a means of adding structure to a measurement model. In other words, it allows investigation into the relationship between latent class groups and a set of explanatory variables. In its simplest form, a MIMIC model is a simultaneous method of latent class analysis and multinomial regression, or logistic regression when there are only two latent classes. This model has been known and applied in cultural consumption modelling for many years (Sobel, 1983), but has only been recently revived by other scholars (Sintas and Alvarez, 2006; and Tampubolon, 2007a, 2007b).

The MIMIC model is illustrated in a path diagram in Figure 2. The ‘X’ boxes add a structural element to the measurement modal (LCA). Figure 2 can be divided therefore into two sections. The right-hand side of model (‘u1’ or cultural indicators, including C – lifestyle segments) can be thought of as the measurement part of the MIMIC model, and the extended part of the model can be thought of as the structural section of the model. Therefore, within a MIMIC model there is a measurement and structural sections that run simultaneously. The measurement model in algebraic form is illustrated in Equation 2.

$$\begin{aligned} P(\mathbf{Y}_i = \mathbf{s}) &= \sum_{t=1}^T P(C_i = t) P(\mathbf{Y}_i = \mathbf{s} | C_i = t) \\ &= \sum_{t=1}^T P(C_i = t) \prod_{u=1}^U P(Y_{iu} = s_u | C_i = t) \end{aligned}$$

2

One can extend the model to add structure, thus creating a MIMIC model by including covariates, say occupational class (X1) and educational attainment (X2). In a MIMIC model, this extension is in the form of a regression of latent classes on covariates. In order to distinguish the two models (LCA from a MIMIC), the probabilities have to be written in the form of logit equations. Equations 3 and 4 illustrate this MIMIC model with added covariates (X1 and X2).

$$P(C_i = t | X_{1i}, X_{2i}) = \frac{\exp(\gamma_{0t} + \gamma_{1t}X_{1i} + \gamma_{2t}X_{2i})}{\sum_{r=1}^T \exp(\gamma_{0r} + \gamma_{1r}X_{1i} + \gamma_{2r}X_{2i})}$$

3

$$P(Y_{iu} = s_u | C_i = t) = \frac{\exp(\beta_{s_u t}^u)}{\sum_{r=1}^{s_u} \exp(\beta_{r t}^u)}$$

4

Here the individual level covariates (i.e. education, social class) are added to the LC model; in essence this model is now a multinomial logistic regression with the added nuance of an unobserved latent variable (C) with T classes.

APPENDIX C

Hierarchical/ multilevel modelling

It is possible to illustrate the basic hierarchical model structure by using Model 1 as a simple example. Here individuals at level 1 are nested within districts at level 2. This hierarchical binary logistic model, with no predictor variables can be expressed as follows (Goldstein, 2003):

$$E(Y_{ij}) = \Pi_{ij} = \exp(\beta_0 + \mu_{0j}) [(1 + \exp(\beta_0 + \mu_{0j}))^{-1}]$$

5

In simple terms, the expectation of the binary outcome Y_{ij} for individual i in district j is the propensity to go to a museum Π_{ij} , which is determined by the overall average term or fixed part of the model β_0 , and the random part or district term μ_{0j} , which is allowed to vary. The binary outcome at level 1 follows a Bernoulli distribution, while the postcode terms is from a Gaussian distribution, which is conventionally summarised by the between district variance term $\sigma^2\mu_0$ (Goldstein, 2003). The hierarchical logistic models are fitted using MLwiN 3.2 with the estimates for the model derived using a penalised (predictive) quasi-likelihood (PQL) estimation procedure (Browne et al, 2005). It is common to estimate hierarchical models using estimation methods based on marginal quasi-likelihood (MQL) procedures. However, when compared to the MQL method, the PQL estimation is less biased for the fixed effects (Goldstein and Rasbash, 1996). Therefore we decided to run random intercepts models whereby the only variation between districts is in their intercepts using this estimation procedure.

APPENDIX D

Interpretation of lifestyle Groups: Choosing the number of lifestyle segments

As the cultural consumption data is categorical, using a chi-squared test to measure for model appropriateness cannot be done here. Indeed, chi-squared tests can not be used to measure the goodness to fit because of the number of sparse data in cells (given that a 2n table can rapidly contain a large number of cells). Thus, the log-likelihood distribution cannot be used. Therefore, the Bayesian Information Criteria (BIC) is used to measure the goodness to fit in latent class models. The BIC works by calculating the log-likelihood with a penalising affect of increased parameters, therefore, to a certain degree the smaller the BIC the better fit of the model.

Table 7 presents the model fit for a series of LCA models ran on the TPS, with a different number of lifestyle segments. The independence of cultural behaviour can be rejected. Indeed, with the reduction in the BIC as more latent classes are modelled, identifies that there are different types of consumers based on their participation patterns. Within the analysis a five class solution was the preferred model.

TABLE 7: Number of Latent Classes

No of Classes	BIC
One Class	-
Two Classes	161114
Three Classes	158402
Four Classes	157024
Five Classes	156230
Six Classes	156240

Source: Taking Part Survey 2007-2008

The models have identified five types of cultural consumer based on their reported cultural consumption Patterns. Table 3 shows the estimated relative sizes and conditional probabilities of attending and participating in a general activity given membership of a certain class. Exploring the results from the LCA we can begin to

piece together each class's cultural consumption patterns, and thus attempt to label each class in the five class LCA model.

APPENDIX E

MIMIC MODEL RESULTS

Table 8 presents the relative risk ratios or odds (exp (b)), for the results of the MIMIC model, with those in bold being significant at the $p < 0.05$ level. Prior to reporting these results, an introduction to the layout of the table will be given to allow the reader to better understand the results. First, each of the explanatory variables appears down the right-hand side column with the reference category in bold. Then there are a series of columns that contain the relative risk ratios or odds (exp (b)). Each of these columns compares a latent class against a reference class, we have chosen the 'inactive' class as the reference category. It is evident glancing through the odds ratios of the various explanatory variables, against the latent class groups, that certain variables are more significant than others. In all but one case (the 'moderate participants' measured against 'inactives') occupational class and education are significant indicators. Gender, ethnicity, age, and limiting long term illness, appear to have significant effects, of being in one latent class, as opposed to another.

Analytical and Modelling Framework

To determine the relationship between cultural participation and a set of explanatory variables, it is preferable to treat the latent classes derived for each as a categorical dependent variable. Where you have a categorical dependent variable with more than two possible values, it is necessary to use an extension of the binary logistic regression model. These models are called multinomial to reflect the fact that each of the combination of values or covariate pattern is assumed to have a multinomial distribution. The counts at the different combinations are also assumed to be independent with a fixed total. The categories of the latent classes are not ordinal, so the following models are characterised as unordered multinomial regression models.

During the modelling process, we will include a number of explanatory variables to identify the key drivers of cultural attendance and participation. The inclusion of these individual level predictor variables reflects previous scholarly work in the field. Apart from key stratification variables such as educational attainment and

occupational class, other predictors such as age, gender, family composition and measures of deprivation (long term illness) will be added at the individual level.

TABLE 8: Results of regression (odds ratios from the coefficients model)

	Traditional	Omnivores	Moderate Participants	Visual
Higher Professional and Higher Managerial				
Lower Professional and Managerial	0.62	0.47	0.47	0.81
Intermediate	0.54	0.38	0.59	0.98
Small Employers and own account workers	0.43	0.25	0.35	0.52
Lower Sup. and Technical	0.39	0.13	0.32	0.68
Working Class	0.27	0.11	0.18	0.66
Never Worked	0.26	0.05	0.07	0.28
Student or Other	0.30	0.59	0.25	1.76
Ed Level 4 or 5				
Level 3	0.80	0.43	1.33	0.87
Level 2	0.50	0.10	0.95	0.54
Level 1	0.43	0.18	0.81	0.42
Trade	0.47	0.09	0.66	0.14
Other Quals.	0.35	0.08	0.42	0.37
No Quals.	0.18	0.02	0.38	0.18
Males				
Female	1.14	2.11	1.22	2.36
White				
Mixed Race	0.42	0.93	1.34	3.69
Asian	0.17	0.25	0.60	2.32
Black	0.07	0.08	0.33	1.49
Chinese or Other	0.00	0.47	0.58	2.15
Working Age				
Young	0.90	1.07	2.73	2.00
Middle aged	1.99	0.79	0.36	0.32
Latter Life	1.75	0.34	0.07	0.22
Good Health				
Limiting Long Term Illness	0.52	0.34	0.28	0.73
Couple with no Children				
Lone Parent	0.09	0.69	0.59	2.95
Couple with Children	0.52	1.11	0.90	3.64

Source: Taking Part Survey 2007-2008

Examining the Key Drivers of Attendance

The results in Table 8 suggest that education and occupational class are the key drivers of cultural attendance. Of all the indicator variables, they have the most significant influence on any class membership when compared with the reference

category 'inactive'. The relationship between education and class membership is largely linear – the higher the educational attainment the more likely an individual is to be in the 'omnivore', 'traditional', and 'moderate participants' or 'visual' class compared to 'inactives'. While those with level 1 and level 2 educational qualifications are still significantly more likely than those with no qualifications to be members of all three classes, having a 'Level 4 or 5' qualification is by far the most important driver of any class membership. Of the four classes, education drives membership of the 'omnivore' class most. This reflects previous scholarly work. Peterson (1992, 2005) claims that those with a solid grounding in education were most likely to be characterised by a breadth and depth to consumption habits. In effect, that education is a stimulant for heightened activity as the higher the educational attainment the greater the activity levels. While the results reveal that having a degree is less important for the visual class than the traditional group and the 'omnivore' lifestyle group, it still remains the most significant predictor of visual class membership, when compared against 'inactives'. Given these findings, it is also evident that 'inactives' are consistent in having low educational attainment when measured against all lifestyle groups.

As expected, occupational class also matters, and follows a linear pattern as does education, but clearly not for all classes. For the 'omnivore' group, those individuals with the highest occupational class are significantly more likely to be members of this lifestyle group when compared against 'inactives'. Indeed a similar pattern exists for membership of the 'visual class', and 'traditional' group, with consumption patterns related to higher levels of the class hierarchy. However, occupational status is not as marked between the 'moderate participants' and the 'inactives', where difference by class are not significant.

Sex has a significant positive relationship on class membership when compared against the reference category 'inactive'. Females are significantly more likely to be 'omnivores', 'moderate participants' or in the 'visual class' than males when compared against the reference category 'inactive'. The ratio of the probability of choosing one outcome category over the probability of choosing the reference category is often referred as relative risk (and it is also more commonly known as

odds). The relative risks or odds of being female rather than male in the 'omnivore' rather than the 'inactive' class is 2.11. In other words, females are more than twice as likely as males to be members of the 'omnivore' class than 'inactives'. The relative risks or odds for the 'moderate participants' and 'visual' class are 2.36 and 1.22 times respectively. To that end, females rather than males are more likely to members of these classes than the 'inactive' group. However, where this does differ in relation to the sex difference amongst classes is in the 'traditional' group, who are more likely to be male as opposed to females compared with the reference category 'inactives'.

Ethnicity offers an interesting insight into the make-up of these cultural groups. In all but one class (moderate participants), those from Asian or Black ethnic backgrounds are more likely to be 'inactive'. Indeed, Asians and Blacks are very unlikely to form membership of the 'omnivores'. An Asian is (1/0.25) 4 times more likely to be in the 'inactive' class as opposed to the 'omnivore' class, while Blacks are (1/0.08) over 12 times as likely. Clearly, these classes are segmented by ethnic differences. However, if ethnic groups are active they are most likely to form membership of the 'moderate participants' group.

Age is also an important indicator of cultural attendance. Here we use the base category age 25-44 or working age. The results suggest older people (later life) are significantly less likely to attend cultural events. They are significantly less likely to be 'omnivores' or in the 'moderate participants' or in the 'visual class' when compared against 'inactives'. Indeed, a similar pattern exists for the 45-64 age group or middle age group, although not for those in the 'traditional' class who have a high probability of visiting places of historic interest and museums, and this group is more likely to have an older consumer base. Unsurprisingly, those in the younger age groups 16-24 are significantly more likely to be members of the 'visual' (highly engaged in the cinema) than 'inactive' class. The relative risk or odds of being in the 'visual' class than 'inactive', for young people against the working age base category is, 2.73. In other words, young people are almost three times more likely than the middle age group to be members of the 'visual class' than 'inactives'. Furthermore, this young age group are more likely to be members of the 'moderate participants' than the 'inactives' compared to the base working age.

Turning now to marital status, the reference category for this predictor variable is married/co-habiting with no children. Examining the results of lone parents compared against this reference group identifies that they are more likely to be members of the non-participant groups. However, lone parents are more likely than those who are married/co-habiting with no-children to be members of the 'moderate participants' group as opposed to 'inactives'. Comparing those who are married/co-habiting with no children with those who have has indifferent results. Whilst insignificant results are reported for 'omnivores' and the 'visual class' measured against the base category 'inactives', the 'traditional' are more likely to have partners with no children as members. Those partners with dependent children are more likely to be members (nearly 4 times as likely) of the 'moderate participants' as opposed to 'inactive'.

The final predicator variable long term illness is a proxy for individual deprivation. Unsurprisingly, when compared with the 'inactive' reference group, membership of the other four lifestyle groups is significantly negatively associated. In other words, individuals with long term illness are less likely to be members of all four classes when compared against 'inactives'. That is, individuals with a limiting long term illness are predominantly non-participants.

APPENDIX F

District Level Variables for Path B (See Figure 1)

The MID is a district level variable that ranks local authority districts by the most deprived to least deprived. The actual measure is made up of number of indicators, chosen to cover a range of economic, social and housing issues, into a single deprivation score for each small area in England. If the MID measure is significant even when accounting for other compositional variables, it will be possible to assume that deprivation has a genuine independent effect and that it is not simply an artefact of population composition. Given the focus of this report, we would expect that an individual's cultural behaviour is a function of the nature of the society in which one resides, the less deprived an area is, the greater it's number of actively engaged citizens. Put simply, active consumption behaviours (or more extensive participation) are encouraged in districts that are more affluent, residing in districts with higher status people encourages activity. Furthermore, those who live in deprived areas are more likely to be inactive than their counterparts living in less deprived areas. If multiple deprivation is an inhibitor to consumption, then living in deprived areas will impact on cultural behaviour not simply because of the presence of more non-consumers but also due to living in unpleasant, undesirable, unsafe environments, in which there are fewer opportunities for making cultural lifestyles (Jones et al, 1992). Furthermore, there may be evidence of 'deprivation amplification', where the range of resources and facilities in an area, which might promote cultural engagement, may be less common in poorer areas (Macintyre, 1996). Therefore, whatever ones personal characteristics, the opportunity structures in the poorer areas are less conducive to consumption activities than more affluent areas.

The argument that proximity and access to a variety of cultural attractions could affect geographical variation in cultural lifestyle formation is clearly valid. The number and variety of cultural attractions are more likely to be located in areas that are urban. To account for this, it is possible to use the urban/rural classification as a proxy measure of urban areas, which are more likely to house cultural attractions. Given this, we would expect urban areas to facilitate cultural consumption.

APPENDIX G

Multilevel Modelling Results for museums

Variance Components Model

Model 1 (Section 2.4.2), contains no explanatory variables; however it does contain a constant which allows the extent of variation in museum participation at the district level to be measured. This model can estimate area level variance and can calculate the proportion of variance in museum participation attributable to area type. Table 9 present the findings of Model 1.

Table 9 Variance Components Analysis for the Multi-level Model of Museum Participation in England

Model 1	Level	Estimate	SE
VC	Local Authority District	0.08	(0.013)

Coefficients shown in bold are significant at the 0.05 level

Source: Active People Survey 2007-2008

The evidence here identifies that the variation at the district level is significant, as the standard error is much smaller than the estimate. Furthermore, using this estimate we can calculate the percentage of variation in museum participation that is attributable to the district, by using the intra class correlation (ICC) calculation.

Interclass Correlation calculation

The ICC defined as the proportion of the total variance accounted for by the level-2 units (in this case LAD), where the total variance equals the sum of the level-1 and level-2 variance, this is measured through the following equation (Vermunt, 2003):

$$r_{it} = \frac{\tau_i^2}{\tau_i^2 + \pi^2 / 3}$$

Vermunt (2003) states that the above formula makes use of the fact that the level-1 variance can be set equal to the variance of the logistic distribution, which equals $\pi^2/3 = 3.29$. By calculating the ICC, one can measure the variation accounted for by the geographical unit (district) on cultural consumption habits.

Results from full model for museums (Model 2)

Table 10 shows the results for Model 2 in which the intercept is allowed to vary among districts, with both individual and area level explanatory variables included in the model. The random intercept corrects for the dependency of the observations within local authority districts. Here, museum participation is the dependent variable.

The intercept or constant (β_0) and the individual level coefficients (education levels, occupational class, gender etc) and the district level variables (urban-rural and the multiple index of deprivation) are the fixed part of the model. This part is used in this model to estimate the strength of associations between active museum participation and possible explanatory variables. This strength is fixed over all the population. The district level variance determines the district level random part of the model. In other words, this is the between district variability that is not explained by the fixed effects. According to statistical theory, the district level random part invalidates the assumption of independence between individuals and reiterates that the dataset is hierarchical in nature (at least more than a single level). Put simply, in our model of museum attendance, the fixed effects represents what is known as the ‘average’ effects whereas the random part variance provides an estimate of what can be explained by each level (in our case district).

Evaluating Explanatory Variables: Museum Participation

Starting with education, as this was a key driver in the Latent Class Models of the previous section. As anticipated, education seems to be the key driver. There is a positive linear relationship between education and active engagement in museums. When compared against the reference category ‘Level 1 attainment’, the higher the educational attainment the more likely an individual has of being a museum participant. This is reinforced by the fact that those with no educational attainment are

less likely to be engaged than those with a Level 1 attainment level. In other words, those that are disengaged from the museum offering are significantly more likely to have low levels of educational attainment compared those who are engaged.

Occupational Class follows similar patterns to that of education. That is, the higher occupational standing of an individual the greater their likelihood of participating in museums, even when educational attainment is controlled for. There is a positive relationship between engagement and occupational standing. In all occupational groups (with the exception of the unemployed and never worked) compared against the base working class, participation in museums is significantly greater, and is stronger towards the top occupational class. Therefore, stratification, measured here through education and occupational class are key drivers in determining who does and doesn't participate in the museum offering.

Those who are engaged in the museum offering have other defining individual characteristics. They are significantly more likely to be female, from the older age groups, white, and be in good health. For instance, females are 1.2 times ($\exp(0.14)$) more likely to be museum visitors than their male counterparts. Furthermore, those aged 16-24yrs and 25-34yrs are 1.4 times and 1.3 times respectively, less likely to be museum visitors compared to the base reference category 45-54yrs. Those from ethnic backgrounds are significantly less likely to be participates than Whites. For instance, Asians are twice as likely to be non-visitors as opposed to visitors compared to those from a White ethnic background, while Blacks are almost three times as likely to be non-visitors.

It seems evident that those disengaged from museums are significantly more likely to be deprived. Not only are such individuals more likely to be less educated, they are also significantly less likely to be of a high, middle or lower-middle class, and 1.5 times more likely to suffer long term illness when compared against those who are engaged other lifestyle groups.

At the district level after controlling for other factors, the Multiple Index of Deprivation (MID) variable, where more deprived areas have high scores and vice

versa has a significant negative relationship with participation (-0.03). There appears to be a clear relationship between museum participation and district level deprivation, irrespective of individual characteristics. That is, the less deprived the area the greater the propensity there is to be active as opposed to inactive. Put simply, areas that are less deprived have greater likelihood of participating in museums. Those disengaged from museums are likely to reside in districts that are relatively deprived, as districts which are not culturally active are likely to be those districts with a high MID score. There is clearly a contextual relationship, museum participation is a function of the environment, the less deprived an area is the greater its level of engagement, although the estimate is quite reserved.

In addition to the MID, the other district level variable is the urban rural classification. There is a clear negative relationship between district classification and participation. That is, as areas become more urban activity increases, whilst more rural areas have a greater likelihood of being non-visitors as opposed to visitors. To that end, we can use this urban rural classification as a proxy for distance to venues or houses which stage activities in this domain, i.e. museums, libraries. Areas which are highly populated are more likely to have an increased number of museums, and therefore increased participation in these areas. Indeed, having controlled for deprivation (which is important as more deprived areas are likely to be the highly populated areas) district classification relationship indicates that the more urban the area the greater the propensity that areas have culturally active residents in museums. In other words, it is an active area.

TABLE 10: Multi-Level Logistic Model of Museum Consumption in England

Predictor Variables	Estimate(SE)
Constant	1.4 (0.01)
Level 1 Predictors	
Class (Base = High Occupational Status)	
Lower Managerial and Professional Occupations	-0.15(0.02)
Intermediate Occupations	-0.40(0.02)
Small Employers and Own Account Workers	-0.45(0.02)
Lower Supervisory and Technical Occupations	-0.54(0.02)
Working Class Occupations	-0.71(0.02)
Never Worked and Long Term Unemployed	-0.82(0.04)
Education (Base = Level 4 or 5)	
Level 3	-0.42(0.02)
Level 2	-0.73(0.02)
Level 1	-0.89(0.02)
Trade	-0.88(0.04)
Other Qualifications	-0.89(0.05)
No Qualifications	-1.40(0.02)
Gender (Base = Male)	
Female	0.13(0.01)
Age (Base = Middle Age: 45-54yrs)	
16-24yrs	-0.34(0.03)
25-34yrs	-0.28(0.02)
35-44yrs	-0.00(0.02)
55-64yrs	0.20(0.02)
65-74yrs	0.12(0.02)
75+	-0.34(0.02)
Ethnic Group (Base = White)	
Mixed Race	-0.06(0.05)
Black	-1.07(0.04)
Asian	-0.77(0.03)
Chinese or Other	-0.25(0.06)
Limiting Long Term Illness (Base = No)	
Yes LLTI	-0.39(0.02)
Level 2 Predictors	
Multiple Index of Deprivation (Continuous)	-0.03(0.01)
Urban Rural Classification (Base = Major Urban)	
Large Urban Area	-0.22(0.05)
Other Urban	-0.29(0.05)
Significantly Rural	-0.70(0.05)
Rural 50%	-0.20(0.05)
Rural 80%	-0.17(0.02)
Random parts	
Between- Local Authority District Variance	0.06 (0.01)

Source: Active People Survey 2007-2008

The intercept for district j (see Table 10) is $1.4 + u_{0j}$, where the variance of u_{0j} is estimated as 0.06 (SE = 0.01). Using the same intra-class district correlation

calculation as earlier, we can determine what variation is still exists at the area level having controlled for key individual and area level drivers. For museum participation, the ICC in Table 10 is estimated to be $0.06/(0.06+3.29)$, which suggests that 2.0% of the variation is at the district level. This is fairly small, but it is significant, and suggests that evidence of a district effect is not just a product of selection effects – that is of people with similar characteristics living in close proximity to each other. This compares to the variance components model (0.08 with a standard error of 0.01), which suggests, following the inclusion of a district level and individual level variables, that some of the variation in museum participation has been accounted for.

APPENDIX H

Multilevel Modelling Results for Libraries

The multilevel binomial model for library participation follows the same format as the museum model, with a different dependent variable. Here the dependent variable measures attendance at libraries in the last 12 months (1=yes; 0=No). Again non-engagement is placed as the reference category. Model 1 (see 2.4.2), the variance components model (Table 11) identifies that the variance in the dependent variable is significant, albeit much smaller than the value returned for museums. Indeed, the intra class correlation calculation identifies that 1.2% of variation in libraries is at the area level.

TABLE 11: Variance Components Analysis for the Multi-level Model of Library Participation in England

Model 1	Level	Estimate	SE
VC	Local Authority District	0.04	(0.00)

Coefficients shown in bold are significant at the 0.05 level

Source: Active People Survey 2007-2008

There is unexplained district level variation in library participation. That is, the estimated district-level variance is larger than its standard error.

Evaluating Explanatory Variables: Museum Participation

Once more education is the key driver of participation. As it was in the museum model, education has the most significant influence on activity in libraries. The higher the education level the more likely an individual is of attending a library. In other, words the higher the educational attainment the more likely an individual is to be a library visitor. It appears here at least that library participation maps onto educational attainment in a linear fashion.

The highest status grouping, are less likely to be library participants than the working and middle classes.

Table 12: Multi-Level Logistic Model of Library Participation in England

Predictor Variables	Estimate(SE)
Constant	-0.17(0.04)
Level 1 Predictors	
Class (Base = High Occupational Status)	
Lower Managerial and Professional Occupations	0.18(0.02)
Intermediate Occupations	0.20(0.02)
Small Employers and Own Account Workers	-0.02(0.02)
Lower Supervisory and Technical Occupations	0.05(0.02)
Working Class Occupations	0.08(0.02)
Never Worked and Long Term Unemployed	0.30(0.04)
Education (Base = Level 4 or 5)	
Level 3	-0.20(0.02)
Level 2	-0.38(0.02)
Level 1	-0.47(0.02)
Trade	-0.73(0.04)
Other Qualifications	-0.47(0.04)
No Qualifications	-1.02(0.02)
Gender (Base = Male)	
Female	0.44(0.01)
Age (Base = Middle Age: 45-54yrs)	
16-24yrs	0.07(0.02)
25-34yrs	0.05(0.02)
35-44yrs	0.21(0.02)
55-64yrs	0.13(0.02)
65-74yrs	0.32(0.02)
75+	0.39(0.02)
Ethnic Group (Base = White)	
Mixed Race	0.16(0.05)
Black	0.28(0.03)
Asian	0.48(0.03)
Chinese or Other	0.33(0.06)
Limiting Long Term Illness (Base = No)	
Yes LLTI	-0.04(0.01)
Level 2 Predictors	
Multiple Index of Deprivation (Continuous)	-0.01(0.00)
Urban Rural Classification (Base = Major Urban)	
Large Urban Area	0.05(0.03)
Other Urban	0.01(0.03)
Significantly Rural	0.01(0.04)
Rural 50%	0.00(0.03)
Rural 80%	-0.03(0.03)
Random parts	
Between- Local Authority District Variance	0.02(0.00)

Source: Active People Survey 2007-2008

Once education and social position are for, the other stratification measure remains significant. This suggests that to view library participation as only a product of stratification is too simplistic. That is there are other socio-demographic variables that are significant drivers to engagement. One such variable is gender. Once more, females are more likely than males to be library users. In addition, generally speaking the older age groups are keen library users, as are young adults. In terms of ethnicity, ethnic minorities across the board are well-represented in libraries. Indeed, Blacks are 1.3 times more likely to be engaged in the library offering, than their White counterparts, whilst Asians are 1.6 times more likely to be participants.

The urban rural classification reports insignificant findings, suggesting that the type of district in these terms bears little weight to library participation, possibly as a result of their widespread availability. However, the MID is significant although the estimate is small. Never the less, this finding suggests that there are opportunity structures in the more deprived areas that is inhibiting library participation, above and beyond the build up of type of individuals in an area.

Using the intra-class district correlation calculation, we can determine what variation is still exists at the area level having controlled for key individual and area level drivers. For library participation, the ICC in Table 13 is estimated to be 0.02, which suggests that 1.0% of the variation is at the district level. This is fairly small, but it is still significant, and suggests that evidence of a district effect is not just a product of selection effects – that is of people with similar characteristics living in close proximity to each other. With the inclusion of key drivers at the individual and area level we have explained some of the variation in library participation.