Dadansoddi ar gyfer Polisi

YMCHWIL GYMDEITHASOL
Y LLYWODRAETH

GSR

GOVERNMENT SOCIAL RESEARCH

Analysis for Policy

Llywodraeth Cymru
Welsh Government

www.cymru.gov.uk

Ymchwil gymdeithasol
Social research

Number: 33/2014

National Survey for Wales, 2012-13
Overall satisfaction with public services in Wales

National Survey for Wales, 2012-13: Overall satisfaction with public services in Wales

Liz Clery, Zsolt Kiss, Carl Cullinane, Alison Park

NatCen Social Research

For further information please contact:
Lisa Walters
Knowledge and Analytical Services
Welsh Government
Cathays Park
Cardiff
CF10 3NQ
Tel: 029 2082 6685
Email: lisa.walters@wales.gsi.gov.uk

Welsh Government Social Research, 23 May 2014
ISBN 978-1-4734-1388-7

Table of contents

Acknowledgements

This report was commissioned by the Knowledge and Analytical Services division within the Welsh Government. The report has benefitted greatly from the support and guidance provided by Lisa Walters, Siobhan Evans and Chris McGowan. The authors are also grateful for comments provided by Ceri Greenall and others at the Welsh Government.

At NatCen Social Research, Jenny Chanfreau recoded the raw data, David Hussey and Kevin Pickering provided further statistical advice. Sam Clemens commented on the final report and Sean Willmott designed the graphics.

Executive summary

Introduction

This project explores how satisfaction with public services varies across the population and the characteristics, attitudes and experiences that explain this variation. It aims to help identify where efforts can best be focused to improve future satisfaction levels with public services in Wales.

A range of analyses were undertaken using data from the 2012-13 National Survey for Wales on satisfaction with Local Authority services, health services, education, transport systems and the Welsh Government.

In each part of the analysis, we controlled for different variables including respondents' characteristics, experiences and opinions, and the attributes of their local areas. This technique allowed us to look at the separate effect of each variable on satisfaction with public services.

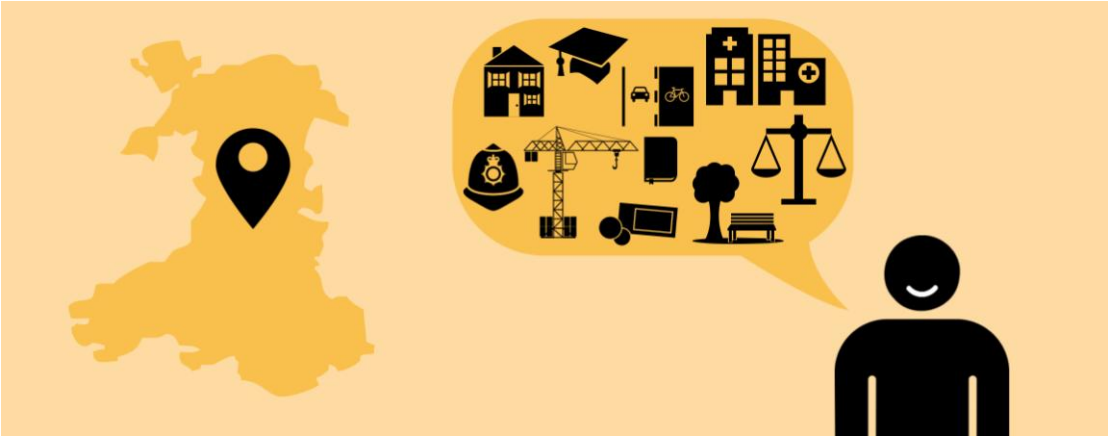
Analysis of the 2012 European Social Survey was also undertaken to place the findings on satisfaction with the national government, education and health services for Wales in an international context.

Key findings

Satisfaction with the education system in Wales is substantially affected by parents' perceptions of **the performance of their children's own schools** – suggesting that improving perceptions of performance at this level could have a marked impact on satisfaction with education overall.

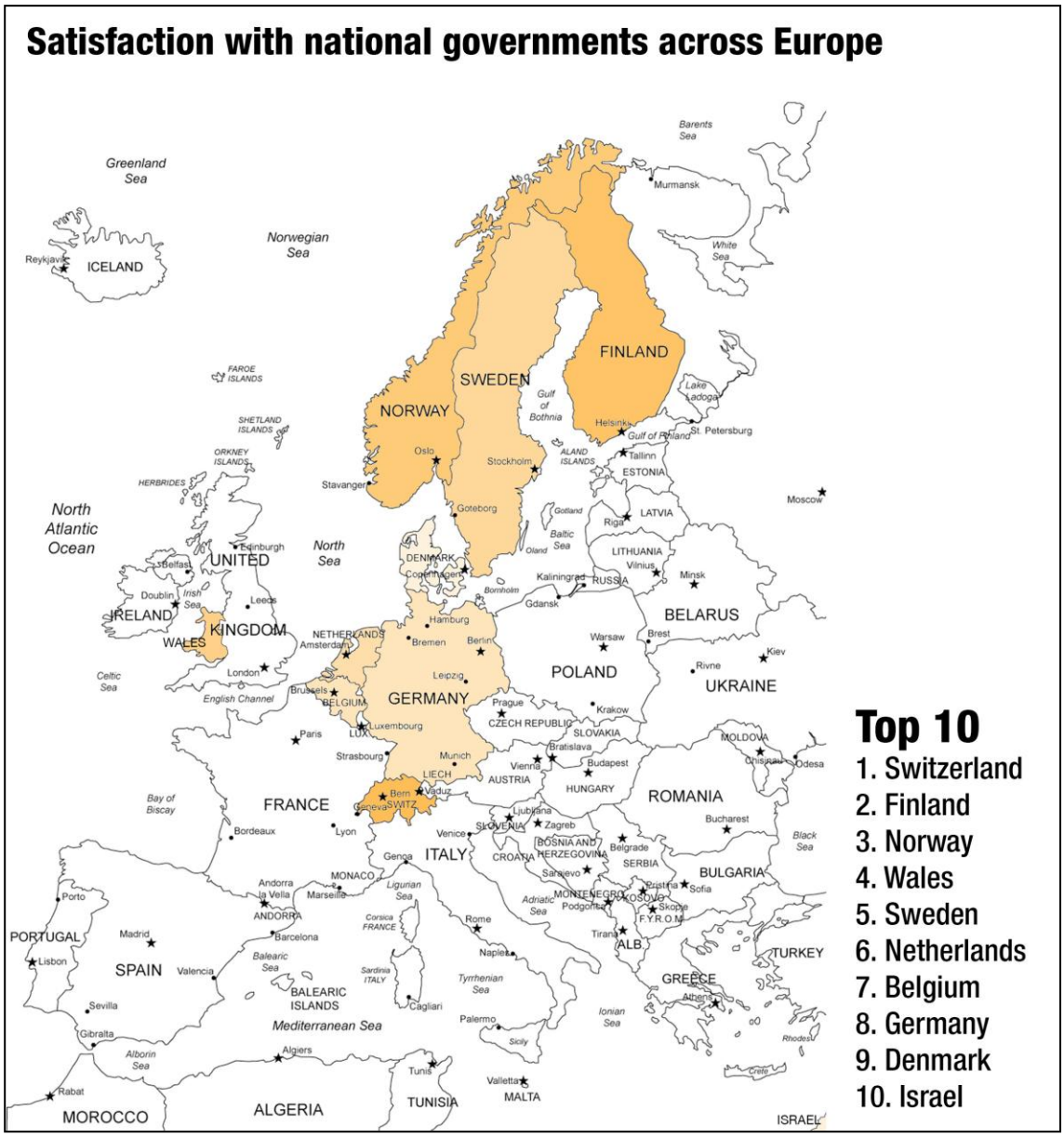
Controlling for other factors, we found that **satisfaction with local authority services** can be explained by views on the maintenance of the local area – but also by views about local authorities' (LAs) dissemination of information on their performance.

While **levels of satisfaction vary considerably by local authority,** particularly in relation to education, these differences substantially reduce once the different attitudes and characteristics of their populations are controlled for. Just 1.7% of the variation in levels of satisfaction with local authority services (LAs) can be explained by objectively-measured characteristics of LAs; the vast majority of the variation can be attributed to the different populations resident in particular LAs, in terms of their varying characteristics and attitudes. This suggests that the key role LAs can play in improving satisfaction levels relates to improving perceptions of area maintenance and information provision, rather than objective measures of performance.



Demographic characteristics and attitudes and experiences not specific to the service being asked about also have a role to play in predicting levels of satisfaction; in relation to transport, this role is even greater than that of transport-related attitudes and experiences (such as feeling unsafe on public transport or experiencing congestion). Across the board, feelings of worthwhileness and happiness are consistently associated with higher satisfaction levels. Being more educated is generally associated with lower levels of satisfaction with service provision, while characteristics such as being unemployed or from a non-white ethnic group, tend to predict higher levels of satisfaction.

In a European context, satisfaction with public services in Wales is comparatively high – with average satisfaction with the national government being the 4th highest in Europe and levels of satisfaction with education and health services standing at 7th and 8th respectively. Satisfaction levels also tend to be higher than those reported in the United Kingdom as a whole.



Data source: European Social Survey (ESS) 2012 (data from France, Albania, Italy, Lithuania, Ukraine and Hungary were not available at time of writing)

1 Introduction

Understanding how people feel about their public services is important; this provides both a valuable measure of the quality of provision and a check that current policies affecting service delivery are, or are likely to be, well received. This is particularly important in a time of economic hardship when budgets for public services are cut or under scrutiny. In addition, there is value in comparing levels of satisfaction with public services in Wales with those reported in other European to enable an assessment of how well Welsh public services are performing in an international context, and to pinpoint countries with similar characteristics and compare results.

One of the Welsh Government's sources of information on this topic is the National Survey for Wales.

1.1 About the National Survey for Wales

The Welsh Government is committed to making sure its decisions and actions take into account the views of people in Wales. The National Survey for Wales is a key source of robust information on people's views about a wide range of issues. The survey covers topics such as local area and safety, public services (e.g. health, education, and transport), and wellbeing.

The survey involves annual face-to-face interviews with a randomly-selected, unclustered sample of 14,500 people aged 16 and over across Wales (around 600 in each of the 22 local authorities). It has run continuously from January 2012, and the first full dataset (based on interviews carried out between April 2012 and March 2013) was published in May 2013.

The aims of the survey are to help the Welsh Government to:

- monitor trends in the concerns and needs of people in Wales;
- assess views and experiences of public services;
- provide important elements for an overall wellbeing indicator framework for Wales;
- understand distributional and inequality issues around the survey topics; and
- target resources to meet needs.

1.2 Aims of this report

This report will aim to enhance understanding of satisfaction with public services in Wales. It will seek to identify, and indicate the extent to which, individual and area-based characteristics influence levels of satisfaction in relation to different public services – and so will pinpoint where efforts could be made in order to improve satisfaction levels in the future.

The report contains information that should prove useful to a number of stakeholders, including:

- The Welsh Government – in looking to take forward the recommendations from the Commission on Public Service Governance and Delivery (which ran from April to December 2013 and reported on its findings on 20th January 2014).
- Local Authorities: the report will highlight how and if satisfaction levels with different public services vary at local authority level and how far these differences can be explained by the different populations resident in different local authorities, or how far they can be attributed to the performance of the local authorities themselves. In addition, analysis will show which types or groups of people are particularly dissatisfied and therefore could be targeted in order to improve satisfaction levels with particular services (and how consistent the identity of these groups is across Wales).

1.3 Measuring satisfaction

The National Survey measures satisfaction with local authority services, health services, education, transport and the Welsh Government. While local authority services are necessarily defined at a local level, respondents are asked to consider health services, education and transport, along with the Welsh Government, at the national level, focussing on service provision "in Wales", rather than in their own local area.

Population-level results published in May 2013 indicated that:

- 57% of the public thought that their local authority provided high quality services.
- The average satisfaction rating given was 6.4 for health, 6.4 for education and 6.0 for transport. These answers were on a scale of 0 to 10 where nought was "extremely bad" and ten was "extremely good".
- The average satisfaction level in relation to how well the Welsh Government is doing its job was 5.8. These answers were on a scale of 0 to 10 where nought was "extremely dissatisfied" and 10 was "extremely satisfied".

The survey also collected data on a range of socio-demographic characteristics, generic attitudes and specific attitudes, relating to the five areas of service provision detailed above. Using these data, this report will seek to identify and explain the variation behind these top-line findings.

2 Satisfaction with local authority

The National Survey asked people about the services provided by their local authority, using the question shown below:

"*I'm now going to ask you a few questions about the services provided by (name of local authority). (Name of local authority) runs services including street lighting, road maintenance, parks and leisure facilities, housing refuse collection, and recycling.*

To what extent do you agree or disagree with the following statement: my council provides high quality services."
Strongly agree
Tend to agree
Neither agree nor disagree
Tend to disagree
Strongly disagree

This section explores the views of those who said that they "neither agree nor disagree", "tend to disagree" or "strongly disagree" – termed "not satisfied" in the analysis below.

As noted previously, population-level data indicates that 57% of those living in Wales said that they were satisfied with local authority services. Interestingly, the equivalent figure for Scotland in 2012, collected through the Scottish Household Survey, was 44%[1] - although it should be noted the two surveys employed different methodologies and the ordering of questions was not consistent. Further detailed information about levels of satisfaction with local authorities can be found in the accompanying report on 'Satisfaction with local authority services'.

2.1 Geographical distribution

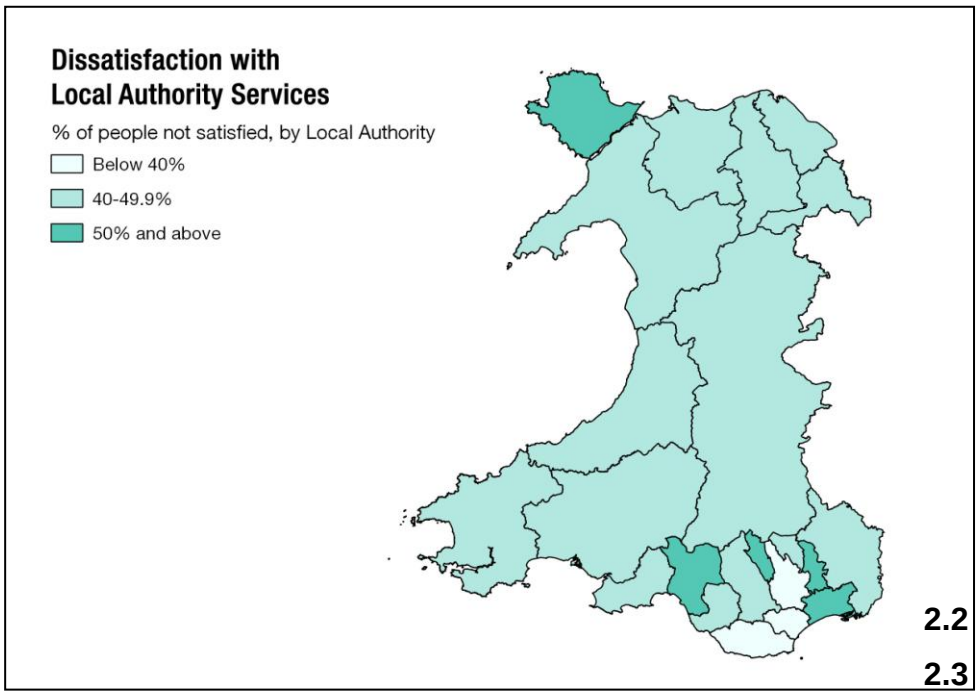
Dissatisfaction with local authority services varies according to the local authorities that people live in. As depicted in the map below, levels of dissatisfaction are highest, standing at 50% or above in:

- Torfaen (58% are dissatisfied)
- Merthyr Tydfil (53% are dissatisfied)
- Neath Port Talbot (53% are dissatisfied)
- Isle of Anglesey (52% are dissatisfied)

On the other hand levels of dissatisfaction are lowest, falling below 40%, in:

- Cardiff (34%)
- Caerphilly (36%)
- Vale of Glamorgan (39%)

[1] For more information on Scottish Household Survey data, please see: http://www.scotland.gov.uk/Publications/ 2013/08/6973/11



2.2

2.3

2.2 The drivers of satisfaction with local authority services

Levels of dissatisfaction with local authority services could potentially be influenced by other attitudes, views and experiences about the local authority or local area. In addition a range of socio-demographic characteristics might affect an individual's level of dissatisfaction.

Analysis was undertaken to identify the factors that predict or explain the variation in people being dissatisfied with their local authority services, once their relationship with each other have been controlled for. Given that the aim is to discover the factors which are most important in explaining levels of dissatisfaction, only the predictors which have a significant relationship with levels of dissatisfaction were retained. This allows the identification of predictors that are related to the outcome when considered simultaneously in conjunction with the other predictors.

The findings show that there are a large number of predictors of individual dissatisfaction with local authority services. As noted above, these relationships hold even after taking other potentially confounding predictors into account. Predictors that suggest an individual is likely to be dissatisfied with local authority services primarily relate to other attitudes and views about the local authority and the local area, namely:

- Strongly disagreeing that the local authority is well maintained, compared to strongly agreeing
- Strongly disagreeing that the local authority is good at informing people about its performance
- Being very dissatisfied with the Welsh government, compared to very satisfied
- Strongly disagreeing that they can influence local authority decisions, compared to strongly agreeing

- Strongly agreeing that there is graffiti in the area, compared to strongly disagreeing
- Feeling very unsafe in a nearby town, compared to feeling very safe

In addition, a smaller number of attitudes and views regarding the local authority were significantly associated with higher levels of satisfaction with local authority services, namely:

- Not wanting more information about a local authority's performance, compared to wanting more information
- Not wanting to be involved in decisions affecting the local area, compared to wanting to be involved

The fact that not wanting additional information or involvement is associated with higher levels of satisfaction suggests that a desire for a greater level of involvement with the local authority may itself be driven by, or be a cause of, dissatisfaction with its services. Overall, these relationships suggest that by improving perceptions of specific aspects of the local area, such as how well it is maintained, local authorities might ultimately influence satisfaction levels with their service provision.

A further range of socio-demographic characteristics were associated with higher levels of satisfaction with local authority services:

- Living in a terraced house compared to a detached house
- Living in a flat, compared to a detached house
- Keeping up with bills, compared to having financial difficulties
- Being non-white, compared to being white

Again, some of these differences might be explained by a tendency for those living with more disadvantaged socio-economic circumstances having lower expectations for local authority services – which would consequently be easier for the local authorities to meet.

There are four measures of involvement with local authorities: feeling well informed about performance; wanting more information about performance; having influence over decisions; and wanting to be more involved in decisions. The findings suggest that people who do not feel involved or informed, and those who want more information or want to be involved in decision making, are more likely to be dissatisfied with services. A lack of involvement with the local authority may itself be driven by, or be a cause of, dissatisfaction with its services.

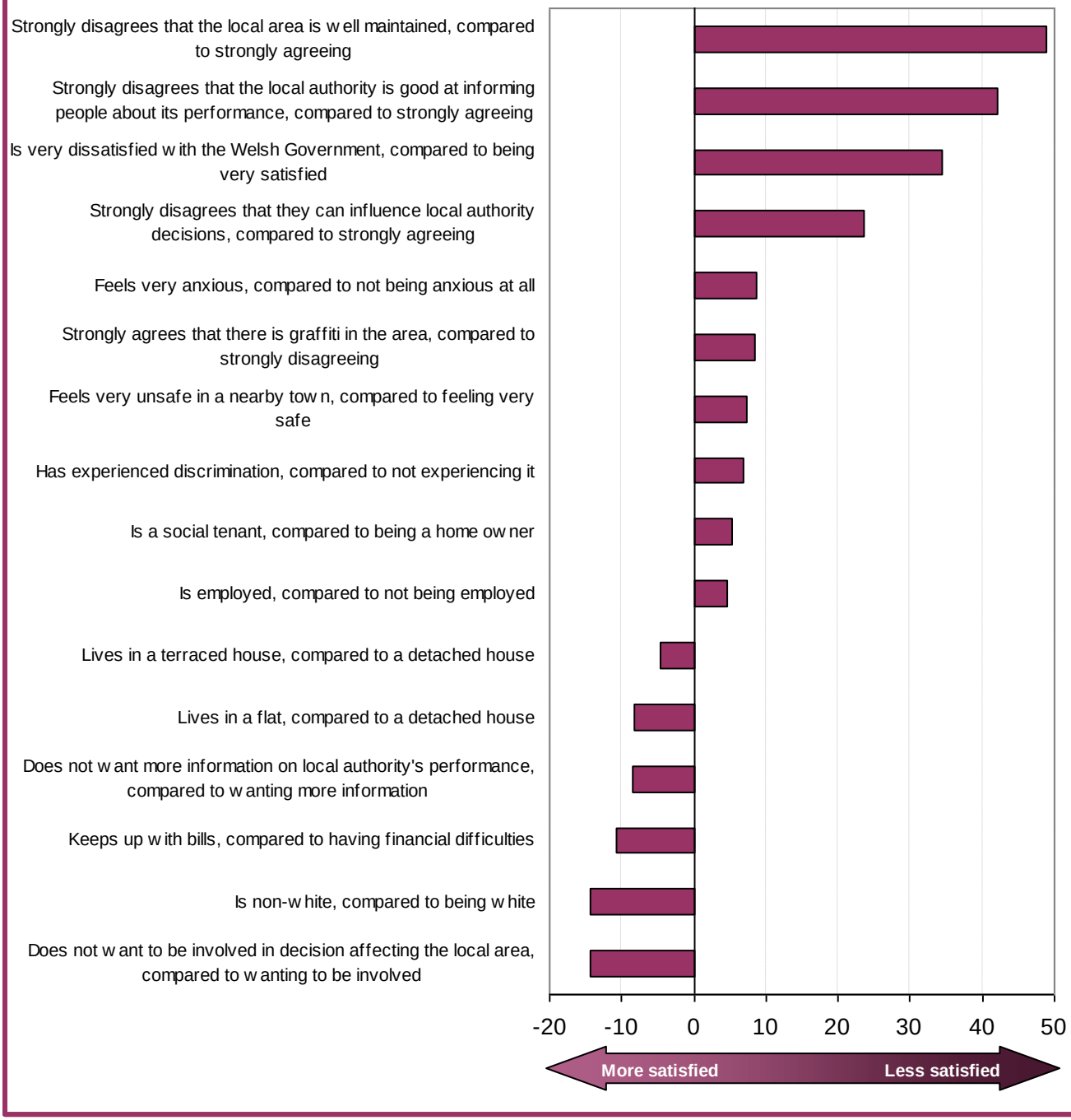
In addition, a range of socio-demographic characteristics and more general attitudes and experiences, not necessarily related to the local authority or local area, were associated with higher levels of dissatisfaction, namely:

- Feeling very anxious
- Having experienced discrimination
- Being a social tenant
- Being employed

Whilst we cannot be sure of the reasons for the latter association, it may be that those who are employed have higher expectations for local authority services, meaning these may be more difficult to be achieved. We can also theorise about the reasoning behind the tenancy finding: being a social tenant might necessitate more involvement with the local authority, generating more opportunities to increase dissatisfaction with individual services.

Figure 2.1: Drivers of being d*issatisfied with local authority services*

Percentage point change in the probability of being dissatsified with local authority services if a person:



regarding the performance of the local authority – namely disagreement with the view that the local authority is well maintained and disagreement with the view that the local authority is good at informing people about its performance. This is not surprising given that these attitudes and perceptions, in themselves, could be regarded as a reflection of perceptions of specific local authority services. Previous research by MORI (2008) has found that the two most important factors influencing satisfaction with council performance are how well informed people feel about what their council does, and, whether the council offers good value for money. [2]

However, it is interesting to note that the third strongest predictor is levels of dissatisfaction with the Welsh Government – suggesting that, to some degree, this may be being viewed by some respondents as synonymous with local authority service performance. On the other hand, socio-demographic characteristics and more general attitudes and experiences, not necessarily related to the local authority and local area, have a far lesser impact on levels of dissatisfaction with local authority services.

It is possible to predict how likely it is for an individual with a particular set of characteristics to feel dissatisfied with local authority services. This is calculated using the predictors of feeling dissatisfied that were identified in the above analysis. Overall, the probability of a person who is 'average' on all of the characteristics feeling dissatisfied with local authority services is 37%[3].

The probability of a typical person being dissatisfied with local authority services	**37%**

In the table below we use demographic variables which were shown to be significant in the regression model to illustrate what the probabilities of being dissatisfied are for people with different socio-demographic characteristics. The table uses three key predictors – ability to keep up with bills (to proxy for income), tenure and experience of discrimination[4]. These three characteristics were found to be the greatest predictors, among all socio-demographic characteristics, in the multivariate analysis reported above. The analysis holds all other predictors constant, which allows for these combined probabilities to be compared.
These predicted probabilities reinforce the findings revealed in Figure 2.1. Individuals who had fallen behind with many bills tended to be more likely to

[2] MORI (2008) *The reputation of local government: Literature review to support the my council campaign,* London: Local Government Association
[3] The probability is computed based on holding all explanatory variables at their *median.* This means that the probability is associated with the most common type of person in Wales (e.g. Welsh national, urban, male, white, aged between 45 and 64, educated to NQF level 2, keeping up well with financial obligations).
[4] For further information on the choice of variables please consult section A1.2 – *Effect sizes and presentation* in Appendix 1.

be dissatisfied than those who were keeping up with their bills with no difficulty, when all other characteristics were kept to a constant 'average'. The same is true of social tenants, compared to private tenants or home owners and those who had experienced discrimination compared to those who had not. So, for instance, an individual who possesses the characteristics in relation to these three variables associated with dissatisfaction with local authority services has a predicted probability of being dissatisfied with local authority services of 61%, while an individual with an inverted set of characteristics (all associated with lower levels of dissatisfaction) has a predicted probability of being dissatisfied of 38%. This is despite the fact, as noted above, that socio-demographic characteristics have far less explanatory power than do attitudes and experiences relating to the local authority or local area in explaining levels of dissatisfaction with local authority services.

Table 2.1 The probability of being dissatisfied with local authority services for distinct groups of people

Societal characteristics			Probability of being dissatisfied
Ability to keep up with bills	**Tenure type**	**Discrimination**	
Fallen behind with many bills	Social tenant	Experienced discrimination	61%
Fallen behind with many bills	Social tenant	Did not experience discrimination	54%
Fallen behind with many bills	Private tenant or home owner	Experienced discrimination	56%
Fallen behind with many bills	Private tenant or home owner	Did not experience discrimination	49%
Fallen behind with some bills	Social tenant	Experienced discrimination	58%
Fallen behind with some bills	Social tenant	Did not experience discrimination	52%
Fallen behind with some bills	Private tenant or home owner	Experienced discrimination	53%
Fallen behind with some bills	Private tenant or home owner	Did not experience discrimination	46%
Keeping up but constantly struggling	Social tenant	Experienced discrimination	56%
Keeping up but constantly struggling	Social tenant	Did not experience discrimination	49%
Keeping up but constantly struggling	Private tenant or home owner	Experienced discrimination	50%
Keeping up but constantly struggling	Private tenant or home owner	Did not experience discrimination	44%
Keeping up but sometimes struggling	Social tenant	Experienced discrimination	53%
Keeping up but sometimes struggling	Social tenant	Did not experience discrimination	46%
Keeping up but sometimes struggling	Private tenant or home owner	Experienced discrimination	48%
Keeping up but sometimes struggling	Private tenant or home owner	Did not experience discrimination	41%

Keeping up with bills with no difficulty	Social tenant	Experienced discrimination	51%
Keeping up with bills with no difficulty	Social tenant	Did not experience discrimination	43%
Keeping up with bills with no difficulty	Private tenant or home owner	Experienced discrimination	45%
Keeping up with bills with no difficulty	Private tenant or home owner	Did not experience discrimination	38%

2.3 Differences in satisfaction between local authorities

We have seen that both individual level attitudes and views and socio-demographic characteristics have a part to play in predicting individual levels of dissatisfaction with local authority services. However, it was also noted, at the outset, that levels of dissatisfaction vary substantially depending upon the local authority of residence. To disentangle further the ways in which individual level and area level characteristics are associated with, and can explain, levels of dissatisfaction, multi-level modelling was undertaken. We included, at the first level, the range of individual level characteristics discussed above. Level two included the specific local authorities in which respondents were living.

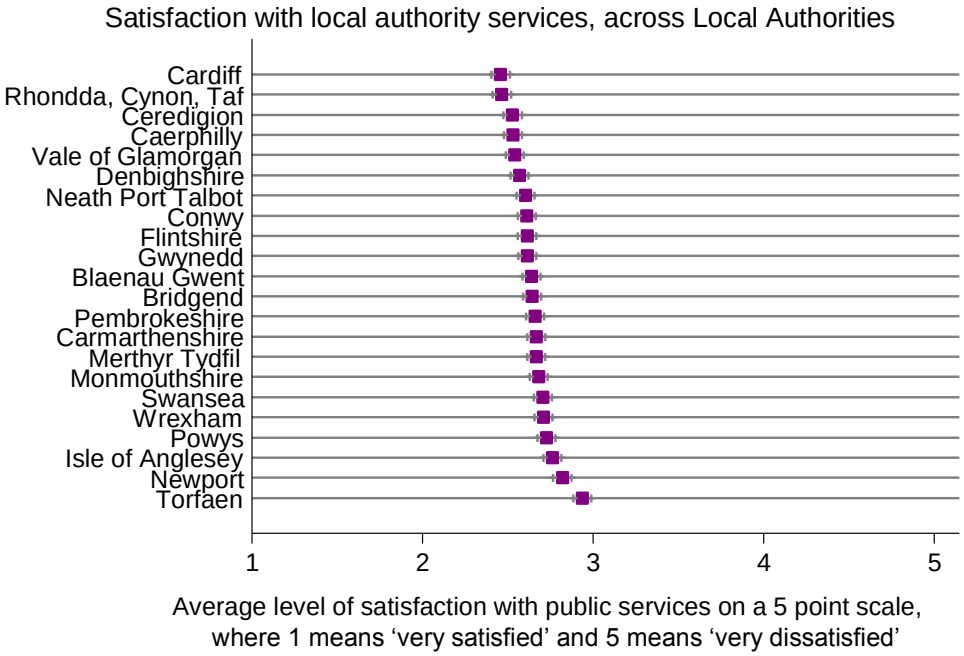
As shown in Figure 2.2, multi-level modelling found that differences between local authorities accounted for 1.7% of the variation in the levels of satisfaction with local authority services. Given the range of variation in dissatisfaction levels reviewed above in relation to individuals with certain characteristics, attitudes and experiences, the proportion of variance explained is comparatively low. It indicates that, once the variation between populations in different local authorities are accounted for, the characteristics of the local authorities themselves explain less than 2% of the variance in levels of satisfaction. Clearly then, the majority of the variance presented in section 2.1 is a consequence of variations in the characteristics and attitudes of people in general (irrespective of which local authority they live in).

1.7%...

… of the variation of 'Satisfaction with local authority services' is due to differences between local authorities

This point is further illustrated in Figure 2.2. The chart depicts satisfaction with local authority services across local authorities, once all individual-level characteristics have been controlled for. It clearly demonstrates that minimal variation in satisfaction levels results from the specific local authority in which respondents lived, once all other relevant characteristics have been controlled for. This suggests that altering objective measures of local authority performance would potentially have little impact on satisfaction levels with service provision.

Figure 2.2:



Nevertheless, it is worth exploring what it is about residence in a particular local authority that might be associated with different levels of satisfaction with local authority services. By entering further area-level characteristics into the multi-level model detailed above, it emerged that 29% of the difference between average satisfaction levels can be accounted for by two variables at the local authority level – expenditure on planning and economic development and expenditure on "other" areas[5]. In other words, these two variables account for just under a third of the variation of 1.7% explained by differences between local authorities alone.

What explains the different levels of satisfaction between local authorities?

Expenditure on planning and economic development

Expenditure on 'other'

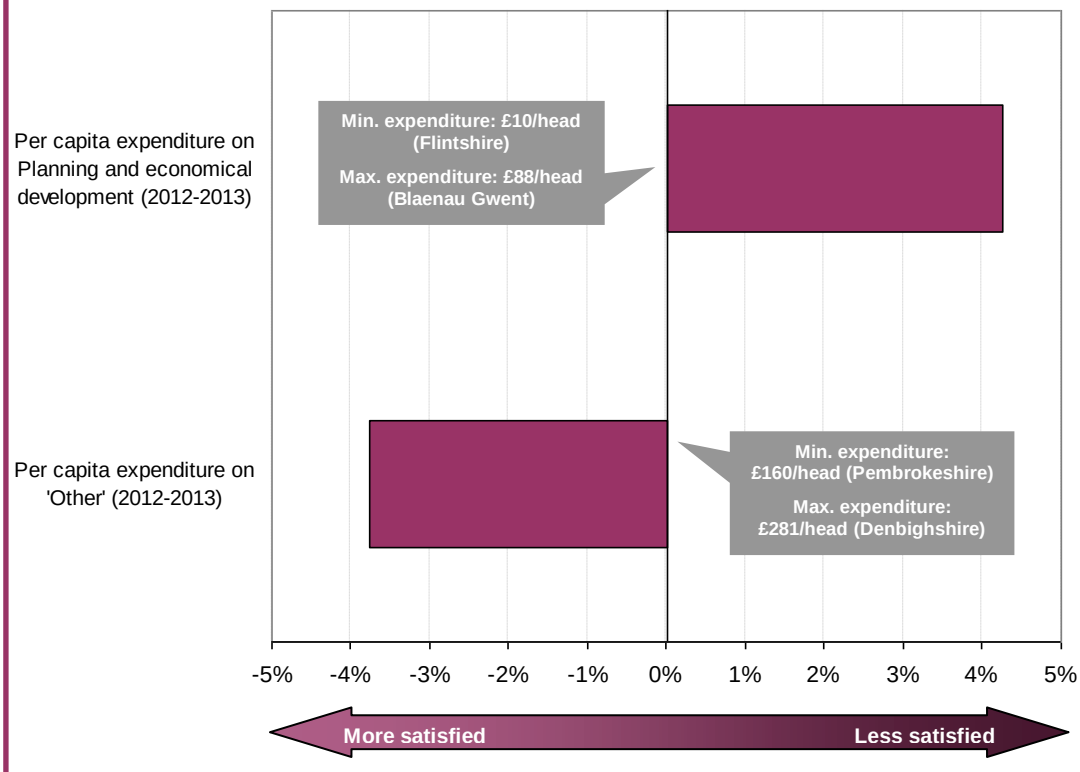
Together they explain 29% of the difference between the average level of satisfaction between local authorities*

***It is 29% out of the 1.7% discussed earlier**

[5] To try and understand what drives the variation between LAs we included measures of expenditure each LA made in the following areas: education; social services; Council funded housing and housing benefit; local environmental services; roads and transport; libraries, culture, heritage, sport and recreation; planning and economical development; Council tax benefit and administration; other gross revenue expenditure. We did not use performance indicators.

Figure 2.3 illuminates further the nature and direction of these relationships. We can see that a change from a minimum to maximum expenditure on planning and economic development increases the likelihood of being dissatisfied with local authority services by a maximum of four percentage points. On the other hand, a change from a minimum to a maximum expenditure on 'other' areas has the effect of decreasing the likelihood of being dissatisfied with local authority services by slightly less than four percentage points. In other words, the effect of these two areas of spending are operating in opposite directions, explaining the smaller level of variation which they contribute to explaining in individual levels of satisfaction associated with particular local authorities, as shown in Figure 2.2.

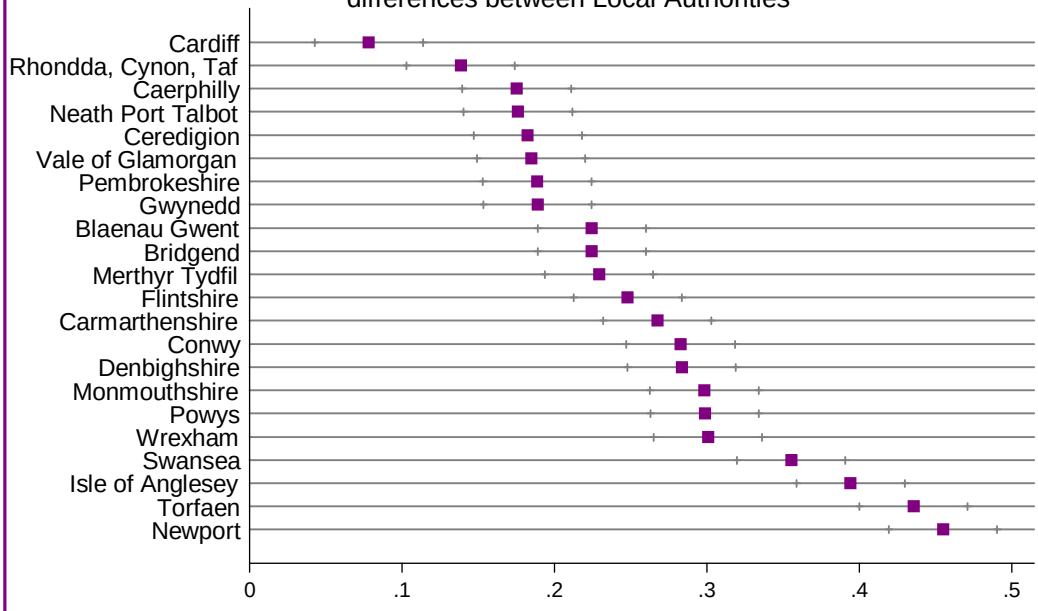
Figure 2.3: The influence Local Authority characteristics have on the level of *dissatisfaction with public authority services*



We saw previously that an individual's view as to whether the local area is well maintained is the strongest predictor of levels of dissatisfaction with local authority services. Using the results of the multi-level model described above, Figure 2.4 below depicts the extent to which views regarding the maintenance of the local area influence levels of satisfaction with local authority services, once all other relevant predictors have been controlled for. This level of influence clearly varies to a significant degree – being most pronounced in Newport and Torfaen and much less pronounced in Cardiff. In the former two local authorities, an increase of one unit in satisfaction with the maintenance of the local area is associated with an increase of almost 0.5 of a unit in

satisfaction with local authority services. However, in Cardiff, the equivalent increase is 0.1 – about one quarter of the magnitude. This suggests that the impact of perceptions of area maintenance on public satisfaction with local authority services is not consistent across Wales, but varies substantially in different local authorities. This suggests that modifying how people perceive area maintenance will have a higher impact on satisfaction with local authority services in some areas (for example Newport) than in others (for example Cardiff).

Figure 2.4: Area maintenance and satisfaction with local authority services, differences between Local Authorities



The extent to which local area maintenance influences satisfaction with public authority services, where 0 means no influence at all and .5 means higher influence

2.4 Conclusion

Satisfaction levels with local authority services vary considerably by local authority. However, further investigation reveals that individuals' attitudes to related and more specific aspects of local authorities and local areas are key in predicting levels of satisfaction. Socio-demographic characteristics have a smaller role to play.

Once the attitudes and characteristics of their populations have been controlled for, objectively-measured characteristics of local authorities and their performance appear to have minimal impact on levels of satisfaction with local authority services (accounting for just 1.7% of the variation in satisfaction levels). Nevertheless, it should not be assumed that subjective perceptions of or attitudes to local authorities or local services have the same level of impact within particular local authorities; specifically we saw that attitudes to local area maintenance have a range of effects on satisfaction with local authority services, across Welsh local authorities. These findings imply that, to improve perceptions of local authority performance, service providers should focus on

improving residents' subjective assessments of aspects such as area maintenance, rather than necessarily concentrating on objective measures of performance.

3 Satisfaction with health services

The National Survey asked people how satisfied they felt with health services in Wales, using the following question.

> "The Welsh Government is interested in your views about health services in Wales. When answering these questions please think about all aspects of NHS services, from GPs to pharmacies, NHS dentists and opticians, community health services, and hospitals. For this question I'd like you to give an answer on a scale of nought to ten, where nought is 'extremely good'.
>
> Please say what you think overall about the state of health services in Wales today?"

This question is comparable to that asked of respondents to the European Social Survey (ESS), although that survey asks about health services in the country "nowadays" rather than "today". Further information on comparable ESS data is presented in Chapter 7 of this report.

The subsequent analysis focuses on those who were dissatisfied with health services in Wales, interpreted as selecting a number of six or less on the available 11-point scale.

3.1 Geographical distribution

Levels of dissatisfaction with health services were found to vary by local authority, as shown on the map below.

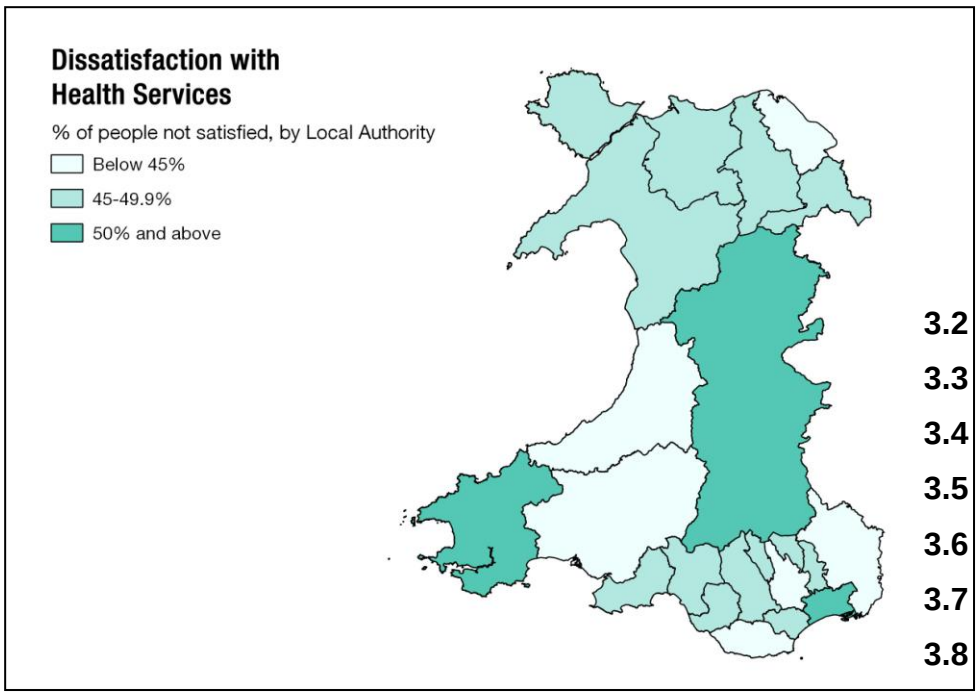
Those local authorities where lower levels of dissatisfaction were reported, with less than 45% selecting a score indicating a low level of satisfaction, were:

- Carmarthenshire (40%)
- Flintshire (40%)
- Ceredigion (41%)
- Vale of Glamorgan (42%)
- Monmouthshire (43%)
- Caerphilly (44%)

On the other hand, three local authorities experienced high levels of dissatisfaction, with 50% or more selecting a score indicating a low level of satisfaction:

- Powys (50%)
- Newport (51%)
- Pembrokeshire (54%)

Overall, the local authorities with the lowest rate of dissatisfaction (Carmarthenshire and Flintshire) reported a level of dissatisfaction 14 percentage points lower than the local authority reporting the highest rate of dissatisfaction (Pembrokeshire). However, when looked at in context, this is a relatively narrow range.



3.2 The drivers of being dissatisfied with health services

A range of characteristics could potentially influence an individual's level of dissatisfaction with health services in Wales. The chart below presents those characteristics which analysis found significantly predicted levels of dissatisfaction, even once their relationships with each other had been controlled for.

Unsurprisingly, a number of the strongest predictors of dissatisfaction with health services were related to one or more specific aspects of health service provision, and so theoretically would be likely to inform more general levels of dissatisfaction. The two biggest predictors of dissatisfaction of this type were the view that hospitals did not know all relevant information and dissatisfaction with GP care. The maximum percentage point change in the probability of being dissatisfied for someone who thought that hospitals did not know all relevant information, compared to a person who thought hospitals did know

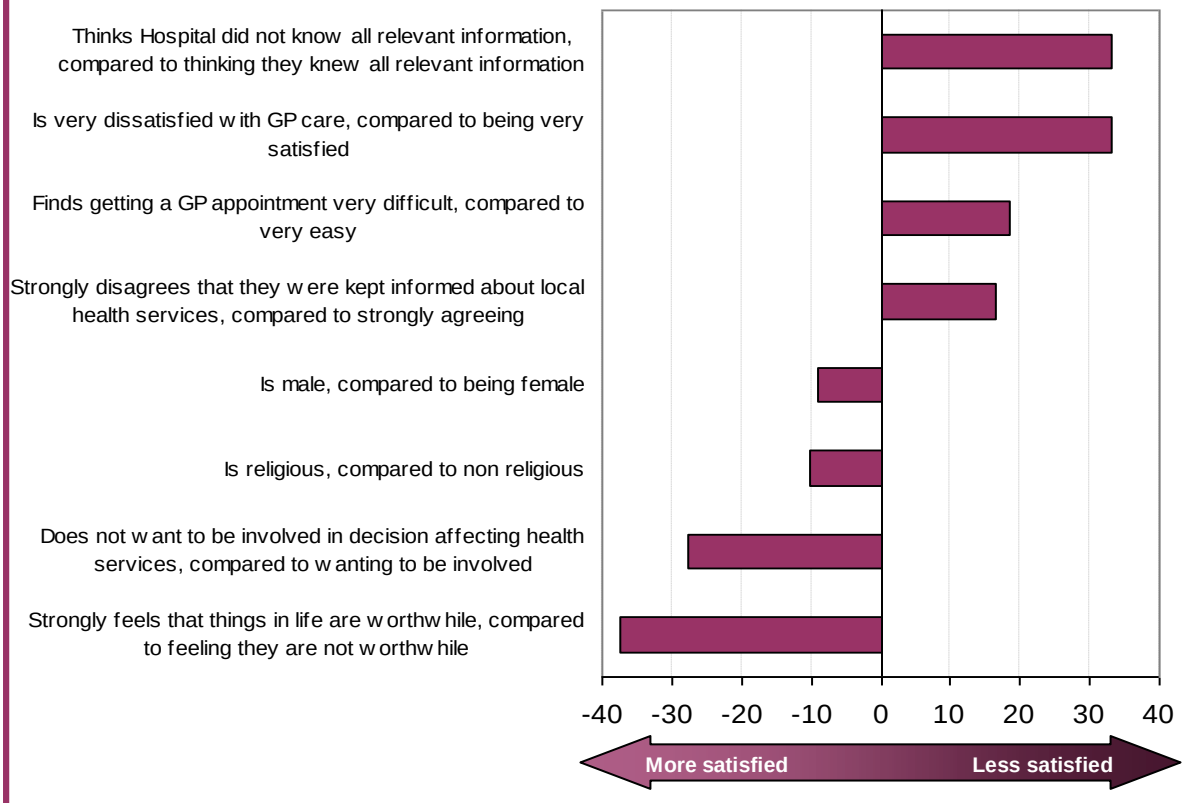
this, was more than 30 percentage points – equivalent to the maximum change associated with being very dissatisfied, as compared to being very satisfied, with GP care.

However, the biggest predictor of all is the view that things in life are worthwhile; the change in the probability of being dissatisfied between someone holding this view, and someone holding the opposite view, was almost 40 percentage points.

Two socio-demographic characteristics were also found to be predictors of levels of dissatisfaction, though to a lesser degree – gender (with being male associated with higher levels of satisfaction) and religious belief (with being religious being associated with higher levels of satisfaction).

Figure 3.1: Drivers of being d*issatisfied with health services*

Percentage point change in the probability of being dissatsified with health services if a person:



It is possible to predict how likely it is for a person with a particular set of characteristics to feel dissatisfied with health services in Wales. This probability has been calculated using the predictors of dissatisfaction levels identified in the above analysis. Overall, the probability of a person who is 'average' on all of the characteristics considered feeling dissatisfied with health services in Wales is 33%.

The probability of a typical person being dissatisfied with local authority services	33%

Table 3.1 presents the probabilities of individuals with various combinations of social characteristics being dissatisfied with health services in Wales. The table uses two key predictors – religious belief and gender. These were the two socio-demographic characteristics which were found to have the greatest impact on dissatisfaction levels in the above analysis. The analysis holds all other predictors constant, which allows for these combined probabilities to be compared[6].

These predicted probabilities reinforce the findings set out in the section above – that being female or non-religious is associated with higher levels of dissatisfaction with health services than is being male or religious. So, we see that the predicted probability of a religious male being dissatisfied with health services in Wales, when they are 'average' on all other characteristics included in the above model, is 37% while the equivalent predicted probability for a non-religious female is 56% - almost 20 percentage points higher. It is interesting to note that the level of impact of these socio-demographic characteristics, although markedly less than that of attitudes to specific aspects of the health service noted in the chart above, produce a range of levels of dissatisfaction slightly greater than those observed in different Welsh local authorities at the start of the section.

Table 3.1 The probability of being dissatisfied with health services for distinct groups of people

Societal characteristics		Probability of feeling dissatisfied
Religion	**Gender**	
Religious	Male	37%
Religious	Female	46%
Not religious	Male	47%
Not religious	Female	56%

3.4 Conclusions

While there is considerable evidence that levels of dissatisfaction with health services in Wales vary, the proportions of most groups selecting a score interpreted as representing dissatisfaction stand between four in ten and six in ten. Predictors of dissatisfaction are not only attitudes and perceptions that are related to or constitute more specific aspects of the health service – but socio-demographic characteristics and attitudes – notably gender, religious

[6] For further information on the choice of variables please consult section A1.2 – *Effect sizes and presentation* in Appendix 1.

belief and most markedly, feelings of being worthwhile. While levels of dissatisfaction do vary by local authority, the extent of this variation is less marked; clearly, attitudes to specific aspects of the health service, and generally feelings of being worthwhile, are the major factors in play here. This suggests that improving public perceptions of the performance of health services would assist in reducing levels of dissatisfaction, but that so too would policies that successfully improved feelings of happiness and worthwhileness in general, rather than in relation to health in particular.

4 Satisfaction with education

The National Survey asked everyone (including those who did not have children in education) how satisfied they felt with education in Wales, using the following question.

> "The Welsh Government is interested in your views about education in Wales. When answering these questions please consider all aspects of the education system, from nursery schools through to universities as well as adult education courses. For this question I'd like you to give an answer on a scale of nought to ten, where nought is 'extremely bad' and ten is 'extremely good.
>
> Please say what you think overall about the state of education in Wales today."

The subsequent analysis focuses on those who were dissatisfied with education in Wales, defined as those who selected a score of between 0 and 6 on an 11-point scale.

A comparable question was asked of respondents to the 2012 European Social Survey (ESS), although this asked about views on the state of education in the relevant country "nowadays" rather than today. Further analysis of the comparable ESS question data can be found in Chapter 7 of this report.

4.1 Geographical distribution

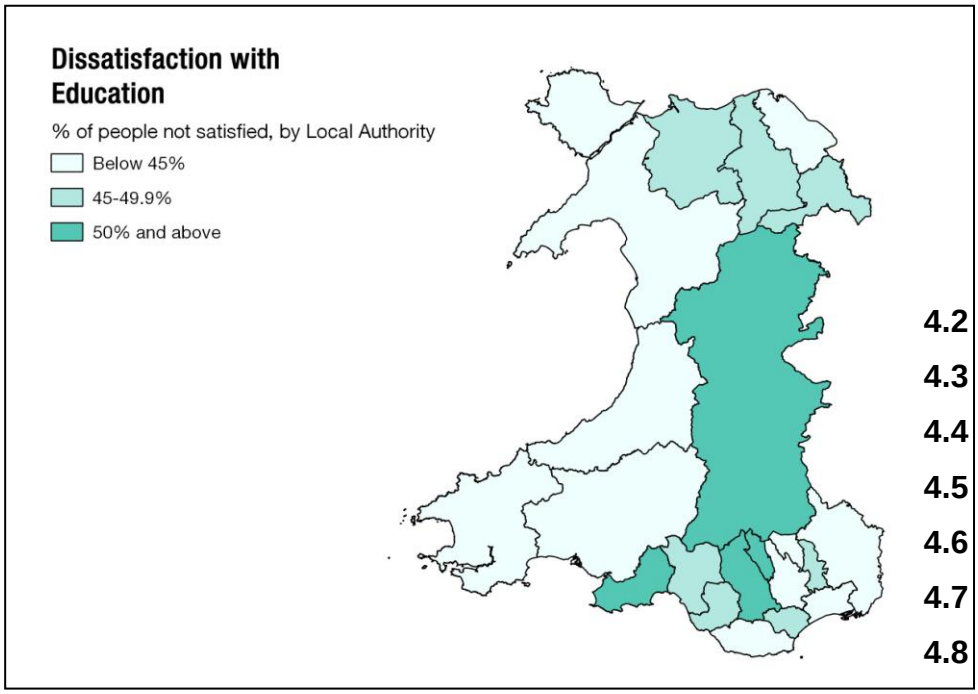
Levels of dissatisfaction with education in Wales vary substantially by local authority.

Those local authorities with reported levels of dissatisfaction below 50%, were Caerphilly, Pembrokeshire, Gwynedd, Ceredigion, Carmarthenshire, Isle of Anglesey, Monmouthshire, Newport, Blaenau Gwent, Flintshire and the Vale of Glamorgan. It should be noted that there was still considerable diversity in the levels of dissatisfaction reported in these local authorities – from 32% in Caerphilly to 45% in the Vale of Glamorgan.

On the other hand, just four local authorities reported levels of dissatisfaction with education which exceeded 50%: these were:

- Powys (51%)
- Merthyr Tydfil (52%)
- Swansea (53%)
- Rhondda Cynon Taf (54%)

Thus, almost 25 percentage points separate the levels of dissatisfaction with education in the local authority where this was highest (Rhondda Cynon Taf) and where it was lowest (Caerphilly). This is almost twice the magnitude of difference to that seen in relation to health services in Wales, indicating that satisfaction levels in relation to education are much more diverse across Welsh local authorities, compared to satisfaction levels with health services.



4.2 The drivers of not being satisfied with education in Wales

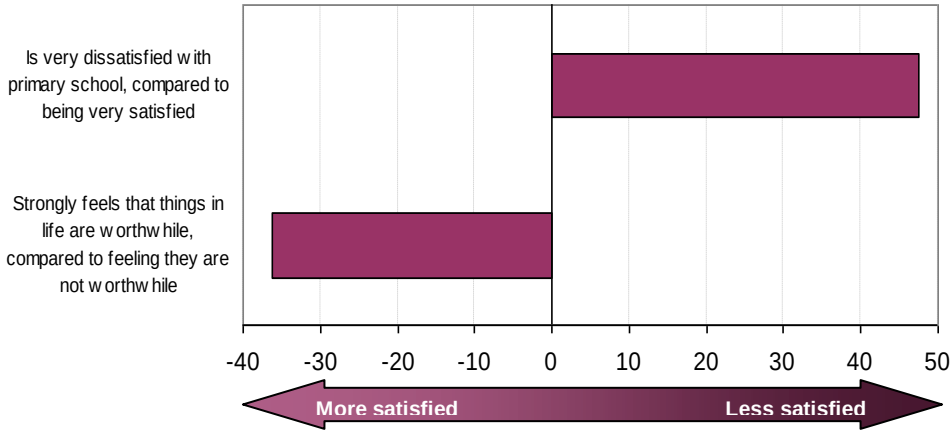
Direct current experience of education, albeit through one's children, is likely to influence levels of dissatisfaction with education – as experience of the topic being measured will necessarily be more direct or current. To explore levels of dissatisfaction with education within this context, two logistic regressions were undertaken – the first for people whose children attended state primary schools and the second for people whose children attended state secondary schools. In both instances, the interest was in establishing, for these populations, which characteristics predict levels of dissatisfaction.

The chart below shows that, for the population who have children attending a state primary school, there are two key predictors of levels of dissatisfaction. Being very dissatisfied with the primary school itself is associated with a maximum percentage increase of almost 50 percentage points in dissatisfaction levels with education in Wales, compared to being very satisfied. This is far from surprising – clearly, parents' experiences of their children's own primary schools strongly influence their perceptions of education in Wales as a whole. It is also interesting to note that strongly feeling that things in life are worthwhile exerts only a slightly smaller impact than do experiences of primary schools on views in this area. Those expressing the opposite view (disagreeing that things in life are worthwhile) are much more likely to express dissatisfaction with the state of education in

Wales. This is a similar finding to that reported previously in relation to dissatisfaction levels with health services – indicating that feeling worthwhile may be a characteristic associated with higher levels of satisfaction with service provision across the board. We can therefore conclude that, for those with children at primary school, attitudes to education in Wales can be explained largely, though not exclusively, by attitudes to the schools that their children attend – and that improving perceptions of performance in primary schools, could potentially have a significant impact in reducing levels of dissatisfaction.

Figure 4.1: Drivers of being d*issatisfied with education (for people with children attending state primary schools)*

Percentage point change in the probability of being dissatsified with the state of education if a person:



It is possible to predict how likely it is for a person with a child in a primary school in Wales and with a particular set of characteristics to feel dissatisfied with the state of education in Wales. This probability has been calculated using the predictors of dissatisfaction levels identified in the above analysis. Overall, the probability of a person who is 'average' on these predictors being dissatisfied with education in Wales is 30%.

The probability of a typical person being dissatisfied with the state of education (if has children in state primary school)	**30%**

When we consider the predictors of dissatisfaction for those with children at state secondary schools in Wales, however, a different picture emerges. As

shown below, being dissatisfied with the secondary school attended by the child and not feeling that things in life are worthwhile are the two major predictors of levels of dissatisfaction with education – consistent with the pattern noted above in relation to those with children at primary school. However, to a lesser degree, being non-white and being very highly educated also predict lower levels of satisfaction. In the case of the latter characteristic, it could be that those who are very highly educated themselves have higher expectations of education, and are consequently more likely to feel that secondary schools are not performing at to the necessary level.

Figure 4.2: Drivers of being d*issatisfied with education (for people with children attending state secondary schools)*

Percentage point change in the probability of being dissatsified with the state of education if a person:

Interestingly, when we predict the probability of an 'average' person (based on the characteristics included in the model above) with children at secondary school being dissatisfied with education, this is found to be 37% - somewhat higher than the level of dissatisfaction with education for an 'average' person with children at primary school (30%).

The probability of a typical person being dissatisfied with the education services (if has children in state secondary school)	**37%**

Table 4.1 presents the probabilities of 'average' individuals, with children at state secondary schools, with all combinations of characteristics in relation to ethnicity, education levels and gender, being dissatisfied with education levels

in Wales. These three characteristics were included because, as demonstrated above, they stand out among socio-demographic variables in that they have all been shown to predict dissatisfaction with education services. The analysis holds all other predictors constant, which allows for these combined probabilities to be compared[7].

It reveals higher probabilities of being dissatisfied for those with higher levels of education, those who are non-white and those who are male. Thus, we see that the probability of a white female with no qualifications being dissatisfied is 24% while the probability for a person, with otherwise all the same characteristics, who is non-white, is male and has an NQF qualification level 4-8 is 88%. The disparities between predicted probabilities confirm the finding above, that among socio-demographic variables, ethnicity has the greatest role in predicting dissatisfaction levels.

Table 4.1 The probability of being dissatisfied with the state of education (for respondents with children attending state secondary schools) for distinct groups of people

Societal characteristics			Probability of feeling dissatisfied
Education	**Ethnicity**	**Gender**	
No qualification	White	Male	35%
No qualification	White	Female	24%
No qualification	Non-white	Male	76%
No qualification	Non-white	Female	65%
Below NQF level 2	White	Male	42%
Below NQF level 2	White	Female	30%
Below NQF level 2	Non-white	Male	80%
Below NQF level 2	Non-white	Female	71%
NQF level 2	White	Male	49%
NQF level 2	White	Female	36%
NQF level 2	Non-white	Male	84%
NQF level 2	Non-white	Female	77%
NQF level 3	White	Male	55%
NQF level 3	White	Female	43%
NQF level 3	Non-white	Male	88%
NQF level 3	Non-white	Female	81%
NQF levels 4-8	White	Male	62%
NQF levels 4-8	White	Female	50%
NQF levels 4-8	Non-white	Male	90%
NQF levels 4-8	Non-white	Female	85%

Finally, considering the Welsh population aged 16+ as a whole (including both parents and non-parents) the table below depicts the factors associated with dissatisfaction with education in Wales. The biggest predictor of satisfaction is

[7] For further information on the choice of variables please consult section A1.2 – *Effect sizes and presentation* in Appendix 1.

the view that things in life are worthwhile – reflecting what we found in relation to attitudes to health services at the general population level. Being in a younger age group, being happier and living in a terraced rather than a detached house are also associated with greater levels of satisfaction, as is having no educational qualifications, in comparison to being highly educated.

Figure 4.3: The main drivers of being *dissatisfied with the state of education in Wales*

Maximum percentage point change in the probability of being dissatsified with the state of education if a person:

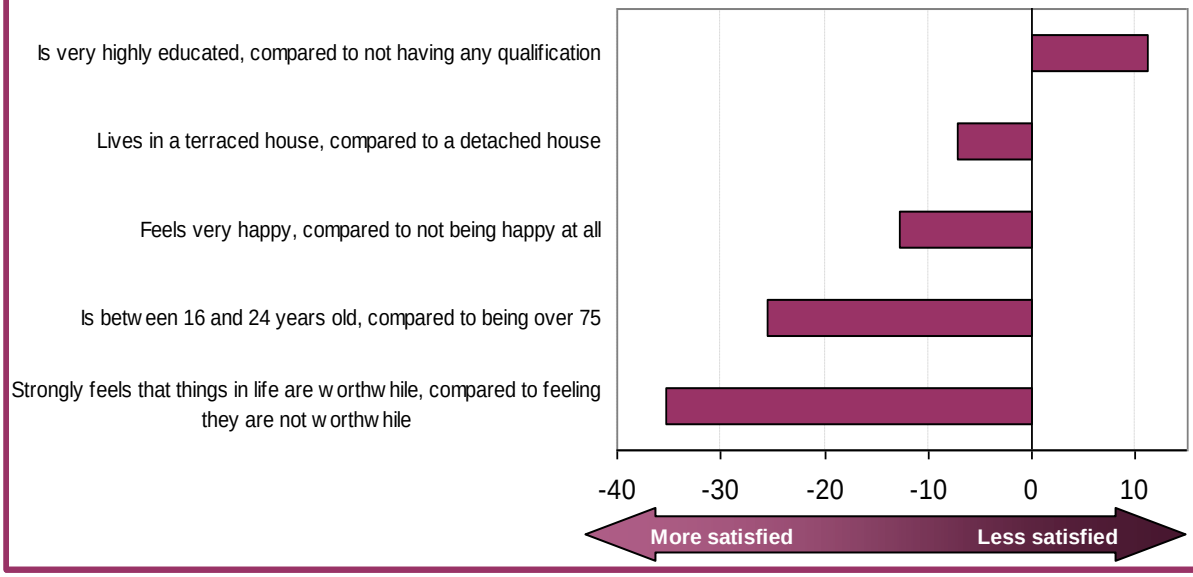
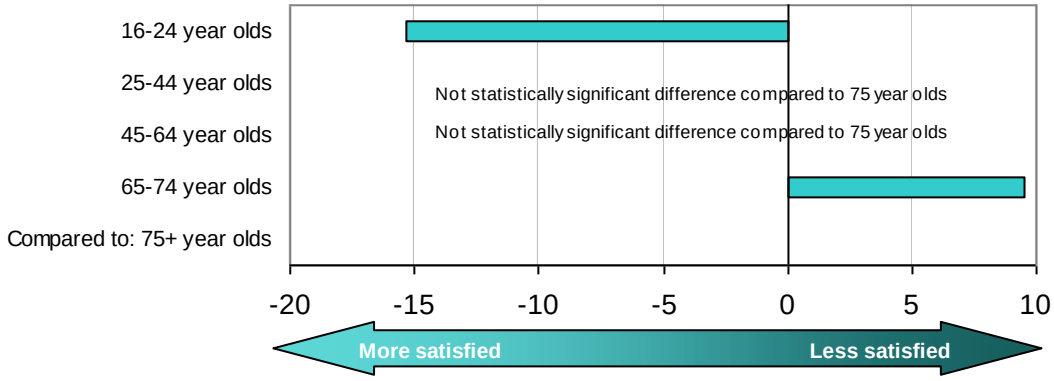


Figure 4.4 illustrates the effect of age on levels of dissatisfaction with education in Wales. Being 65-74 years old is associated with an increase in the probability of being dissatisfied of almost ten percentage points, while a marked decrease is evident for the youngest age group, those aged 16-24.

Figure 4.4: Effect of age on being dissatisfied with education

The change in the probability of being dissatisfied with the state of education when compared to over 75s



Similarly, we see that having a very high level of qualifications is associated with a rise in the probability of being dissatisfied with education of more than ten percentage points.

Figure 4.5: Effect of education on being dissatisfied with the state of education

The change in the probability of being dissatisfied with the state of education when compared to people with no qualification

When we consider the probability of a typical person being dissatisfied with the education system (when they are 'average' in all characteristics found to be significant predictors of dissatisfaction at the population level), we find that this is somewhat higher than that for parents of primary or secondary school children – at 44%. This suggests that having school aged children may itself contribute to lower levels of dissatisfaction with education – even though it is clear that an improvement in perceptions of individual schools' performance, could potentially reduce dissatisfaction levels with education services for parents.

The probability of a typical person being dissatisfied with the education system	**44%**

4.3 Conclusions

Levels of dissatisfaction with education vary more substantially between local authorities than do levels of dissatisfaction with health. The characteristics which predict these differ markedly for parents of primary aged children, compared to secondary aged children, and for these two groups compared to the population as a whole. While school performance (for parents) is clearly very important, we again see a substantial effect of feeling that things in life are worthwhile – confirming the view that this attitude is important in predicting satisfaction with service provision in a range of areas. This suggests that any

work individual schools can undertake to improve satisfaction levels with the individual school, could have a marked impact on satisfaction levels with education as a whole – although this would only be limited to the views of parents – which tend to be more positive than the views of non-parents.

5 Satisfaction with transport

The National Survey asked people how satisfied they felt with the transport system in Wales, using the following question.

> The Welsh Government is interested in your views about transport in Wales. When answering these questions please think about all aspects of transport – from roads, rail and bus services to cycling and walking. For this question I'd like you to give an answer on a scale of nought to ten, where nought is 'extremely bad' and ten is 'extremely good.
>
> Please say what you think overall of the state of the transport system in Wales nowadays".

In the analysis below, those who selected a score of between 0 and 6 on the 11 point scale are defined as "dissatisfied" with the Welsh transport system.

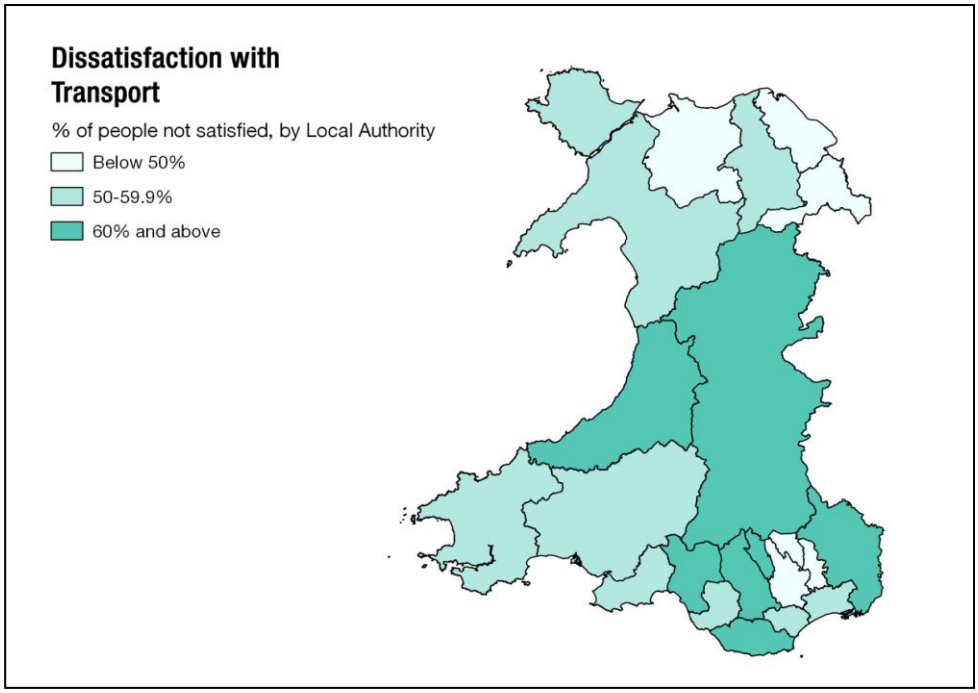
5.1 Geographical distribution

Levels of dissatisfaction with transport services varied markedly for different local authorities.

A low level of dissatisfaction (with 50% or fewer respondents indicating that they were dissatisfied) was reported in a number of local authorities, namely:

- Torfaen (44%)
- Caerphilly (48%)
- Blaenau Gwent (48%)
- Flintshire (49%)
- Conwy (49%)
- Wrexham (50%)

On the other hand, high levels of dissatisfaction with transport services, of over 60%, were reported in six different local authorities; these were Monmouthshire, Powys, Merthyr Tydfil, Rhondda Cynon Taf, Vale of Glamorgan, Ceredigion and Neath Port Talbot. For these local authorities, levels of dissatisfaction ranged from 61% in Monmouthshire to 68% in Neath Port Talbot. Thus, across all local authorities, there was a variation in levels of dissatisfaction with transport services of 23 percentage points.



5.2 The drivers of feeling dissatisfied with transport

Analysis was undertaken to identify the attitudes and characteristics that predict dissatisfaction with transport services, even once their relationships with other variables included in the model had been controlled for. As shown Figure 5.1 below, being happier and being non-white predicted higher levels of satisfaction with transport services, while being highly educated, feeling unsafe on public transport, agreeing that there is heavy traffic in the area and living in a rural area were all characteristics associated with lower levels of satisfaction, even once their relationships with each other had been controlled for.

It is unsurprising that those expressing more negative attitudes to particular features of the transport system are more likely to report dissatisfaction with it overall. In addition, those in rural areas are likely to be more reliant on the transport system. Being highly educated was also found to significantly predict levels of dissatisfaction with transport; it may be that those who are highly educated have higher expectations for service provision in general, which are harder to achieve. Finally, the link between levels of happiness and levels of satisfaction is interesting; a similar link was identified between feeling worthwhile and satisfaction with services in other areas, indicating that these general feelings can exert impacts on a number of specific service areas. However, the direction of the relationship is unclear – it may be that dissatisfaction with service provision generates feelings of unhappiness, rather than vice versa.

Figure 5.1: Drivers of being *dissatisfied with the transport system*

Percentage point change in the probability of being dissatsified with the transport system if a person:

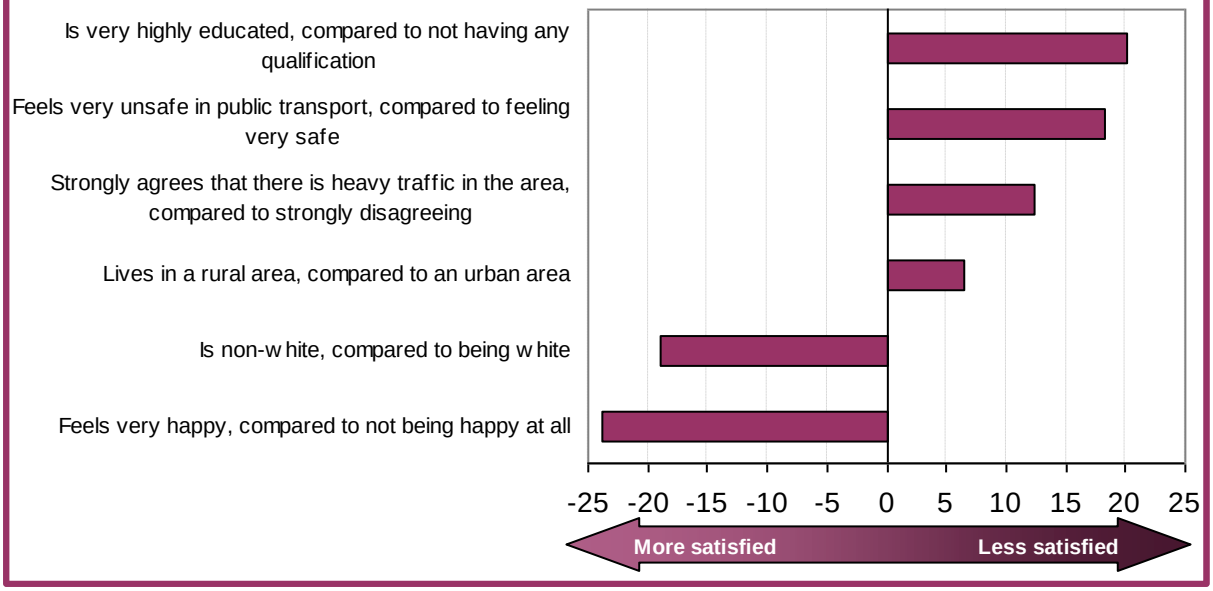
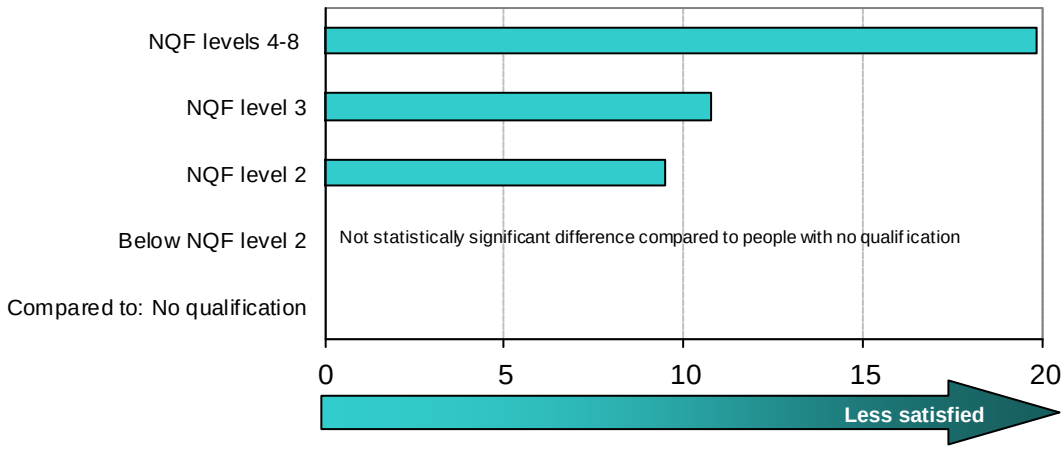


Figure 5.2 demonstrates how levels of dissatisfaction with transport services are predicted by higher qualification levels. The probability of being dissatisfied with the transport system for someone with the highest level of qualifications, compared to someone with no qualifications, increases by around 20 percentage points. Less marked impacts are observed for those with lower levels of qualifications, compared to those with no educational qualifications.

Figure 5.2: Effect of education on being dissatisfied with transport system

The change in the probability of being dissatisfied with the transport system when compared to people with no qualification



The probability of a person who is 'average' on all of the characteristics included in the above model being dissatisfied with the transport system is 47%.

The probability of a typical person being dissatisfied with the transport system	**47%**

Table 5.1 indicates how predicted probabilities vary for those with different combinations of characteristics in relation to their location and ethnicity. The analysis holds all other predictors constant, which allows for these combined probabilities to be compared[8].

It confirms the findings, highlighted by the model presented above, that living in a rural area and being white are associated with higher levels of dissatisfaction. Thus, we see that a non-white person living in an urban area has a probability of 36% of being dissatisfied, compared to a probability of 62% for a person who is white and living in a rural area. These probabilities confirm the fact, indicated in the chart above, that ethnicity is a bigger predictor of dissatisfaction with the transport system than is rurality.

Table 5.1 The probability of being dissatisfied with the transport system for distinct groups of people

Societal characteristics		Probability of feeling dissatisfied
Urban / rural	**Ethnicity**	
Urban	White	55%
Urban	Non-white	36%
Rural	White	62%
Rural	Non-white	43%

[8] For further information on the choice of variables please consult section A1.2 – *Effect sizes and presentation* in Appendix 1. 'Education' was not included as it has a non linear effect and is discussed separately in Figure 5.2.

5.3 Conclusion

Levels of dissatisfaction with the transport system in Wales vary considerably among local authorities. While transport-related attitudes and experiences do have a role to play in predicting dissatisfaction levels, other non-specific attitudes and characteristics – notably levels of happiness, ethnicity and levels of education – have a greater role to play. This suggests that improving particular elements of transport (such as experiences of congestion and feelings of safety), while they would have some impact in reducing dissatisfaction levels, would likely only be able to do so to a limited degree.

6 Satisfaction with the Welsh Government

The National Survey asked people how satisfied they felt with the Welsh Government, using the following question.

> "For this question, I'd like you to give an answer on a scale of nought to ten, where nought is "extremely dissatisfied" and 10 is "extremely satisfied". Now thinking about the Welsh Government, how satisfied are you with the way that it is doing its job?"

In the analysis below, those who selected a score of between 0 and 6 on the 11 point scale are defined as "dissatisfied" with the Welsh Government.

Respondents were also asked the following question

> "How much would you say you've seen or heard about the work of the Welsh Government over the last 12 months?"
>
> *A great deal*
> *A fair amount*
> *Just a little*
> *Seen or heard about their work but know nothing about it*
> *Not seen or heard anything about their work*

In this section we also focus on those respondents who categorised themselves in the final category – who had not seen or heard anything about the Welsh Government's work in the last 12 months.

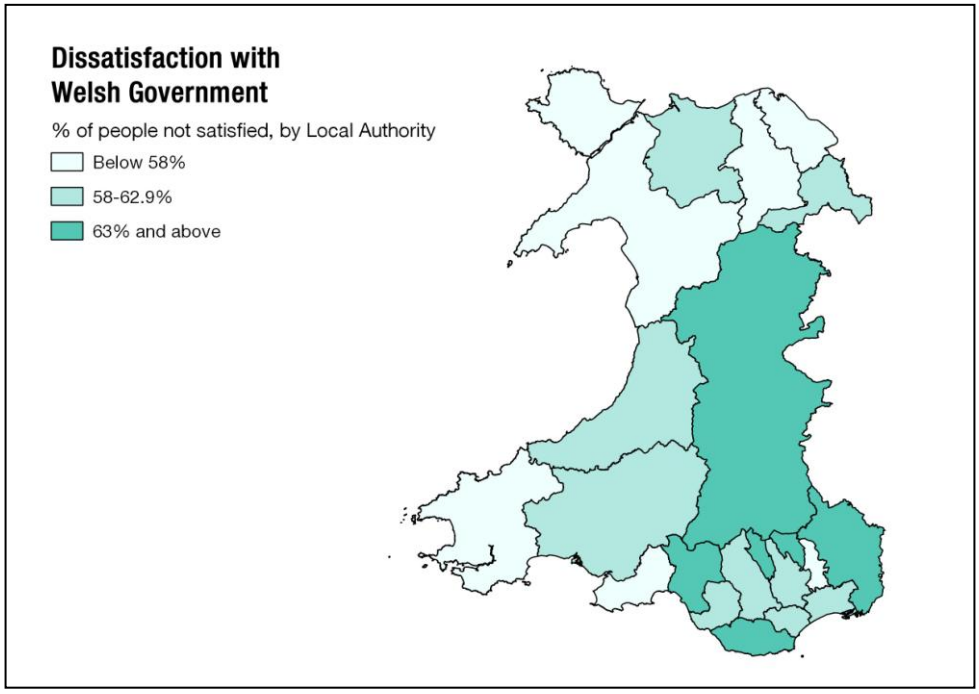
6.1 Geographical distribution

There was less diversity in levels of dissatisfaction with the Welsh Government between local authorities compared with the variation we witnessed previously in levels of dissatisfaction with health services, education and transport systems. This is likely to be because the Welsh Government does not deliver at a local level, meaning local differences in service provision would not have a role to play in influencing satisfaction levels.

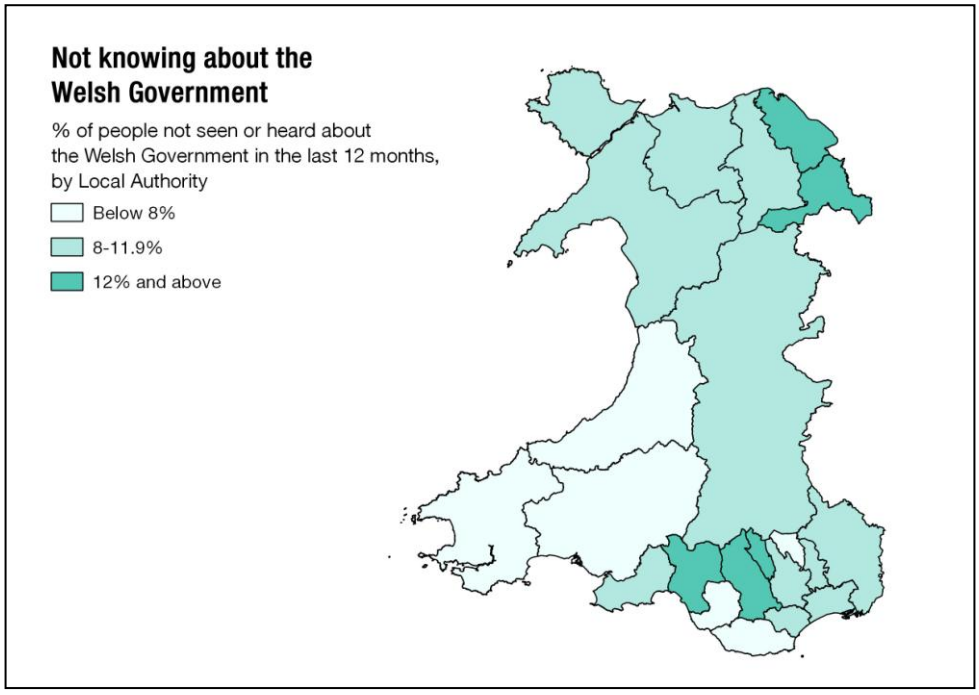
Although the magnitude of the differences between local authorities is small (and may not be statistically significant), a lower level of dissatisfaction (58% and below) was reported in a number of local authorities. These were Gwynedd, Denbighshire, Torfaen, Flintshire, Isle of Anglesey, Pembrokeshire and Swansea.

On the other hand, a higher level of dissatisfaction (63% and above), was measured in:

- Monmouthshire (63%)
- Blaenau Gwent (63%)
- Vale of Glamorgan (63%)
- Merthyr Tydfil (63%)
- Neath Port Talbot (64%)



Similarly, little variation is evident between local authorities in relation to the proportion of people who had not seen or heard anything from the Welsh Government in the last 12 months; this proportion ranged from 5% to 14%.



6.2 The drivers of satisfaction with the Welsh Government

Analysis was undertaken to identify those factors that predict an individual being less satisfied with the Welsh Government, even when the relationships between different factors have been controlled for. The results, presented in the Figure 6.1, indicate that a wide range of individual attitudes and socio-demographic characteristics predict lower levels of governmental satisfaction.

The biggest predictor is the view that things in life are worthwhile; strong agreement with this view is associated with an increase of 25 percentage points in the probability of being satisfied with the Welsh Government. This reflects the major role of this attitude in predicting levels of satisfaction in other services, noted elsewhere. Level of awareness of the Welsh Government is also important, with a lack of awareness being associated with an increase in the probability of being less satisfied with the Welsh Government of around 15 percentage points. Other negative attitudes to the Welsh Government, to the local area and to other service provision have a similar effect, suggesting that performance in all of these areas is directly associated with the performance of the Welsh Government in respondents' minds. Being employed and being highly educated are also associated with lower levels of satisfaction with the Welsh Government; as noted elsewhere, having these characteristics may be associated with higher expectations of performance. On the other hand, being non-white and being in a younger age group is associated with higher levels of satisfaction – again reflecting a trend noted in satisfaction levels in other spheres.

Figure 6.1: Drivers of being d*issatisfied with the Welsh Government*

Procentage point change in the probability of being dissatsified with the Welsh Government if a person:

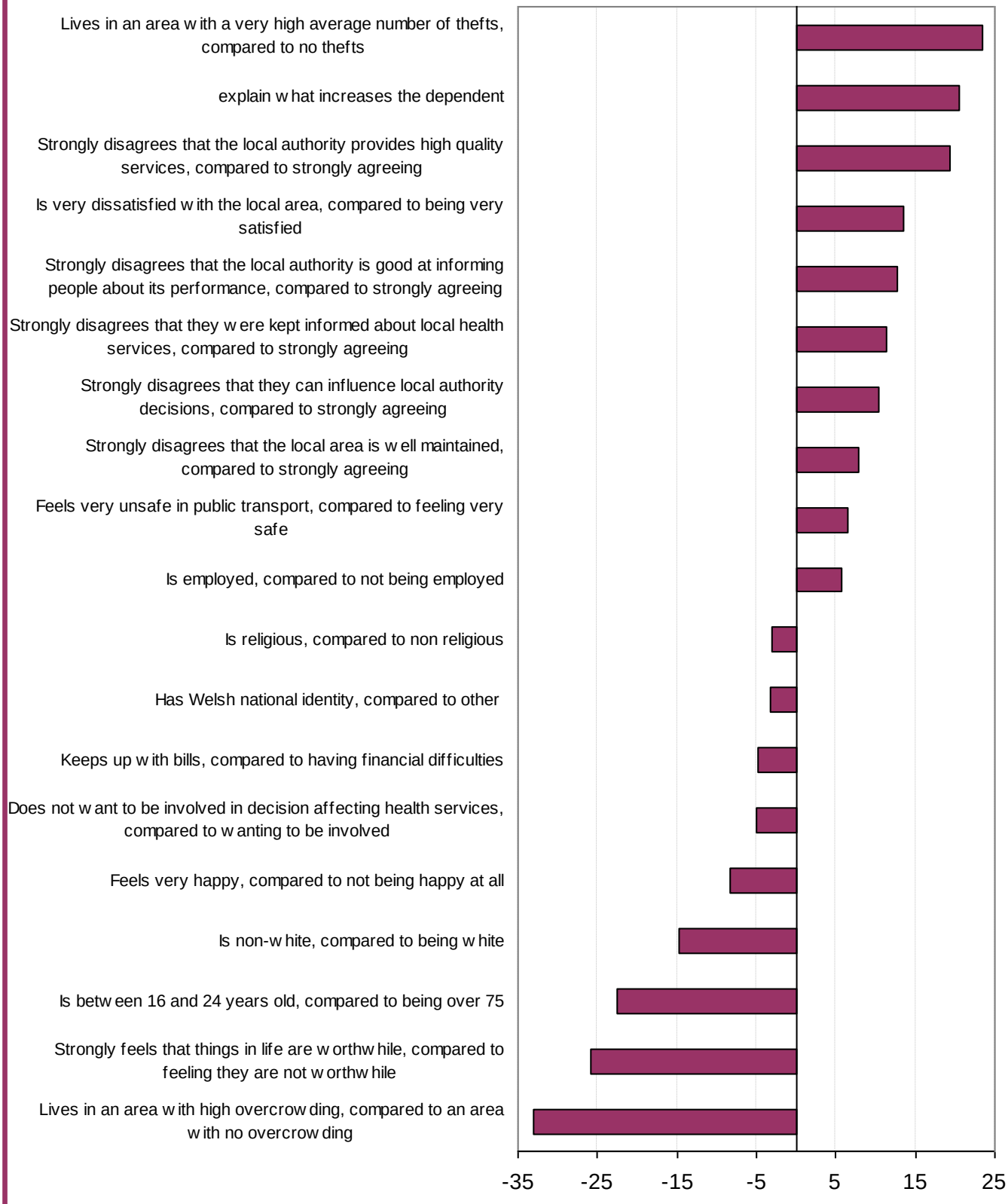
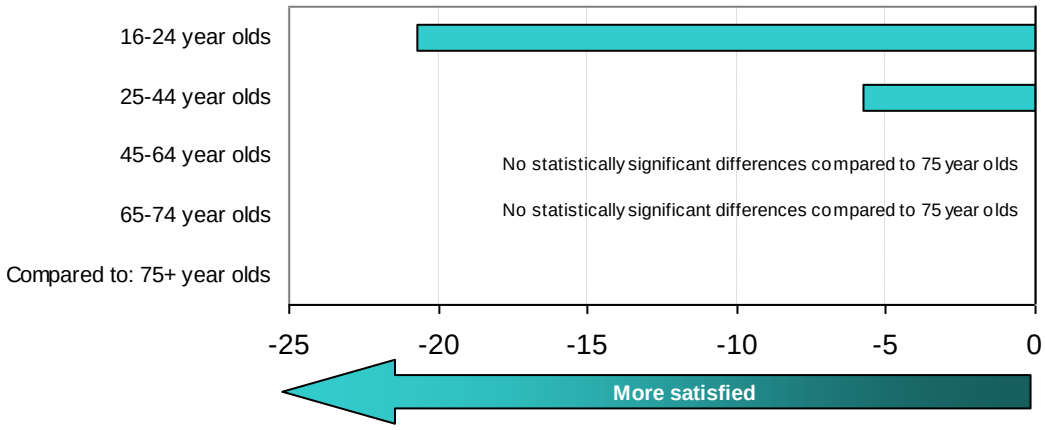


Figure 6.2 depicts the relationship between age and levels of satisfaction with the Welsh Government. Being in the youngest age group (16-24) is associated with an increase of more than 20 percentage points in the probability of being satisfied with the Welsh Government, compared to being aged 75+. A similar, but less pronounced, effect is evident for the 25-44 years age group.

Figure 6.2: Comparative effect of age on being dissatisfied with the Welsh Government

The change in the probability of being dissatisfied with the Welsh Government when compared to over 75s



We can calculate the probability of a typical person, who is 'average' on all of the characteristics included in the above model, being dissatisfied with the Welsh Government. This probability is 60%, which is somewhat higher than the comparative probabilities calculated for satisfaction with other services and systems.

The probability of a typical person being dissatisfied with the Welsh Government	**60%**

Table 6.1 illustrates how the probability of an 'average' person being dissatisfied with the Welsh Government varies based on different combinations of characteristics relating to national identity, knowledge about the Welsh Government and ethnicity. The analysis holds all other predictors constant, which allows for these combined probabilities to be compared[9].

[9] For further information on the choice of variables please consult section A1.2 – *Effect sizes and presentation* in Appendix 1.

It confirms the findings of the regression model reported above – namely that being white, not having heard about the work of the Welsh Government in the last year and, to a lesser degree, being non-Welsh are associated with higher levels of dissatisfaction with the Welsh Government.

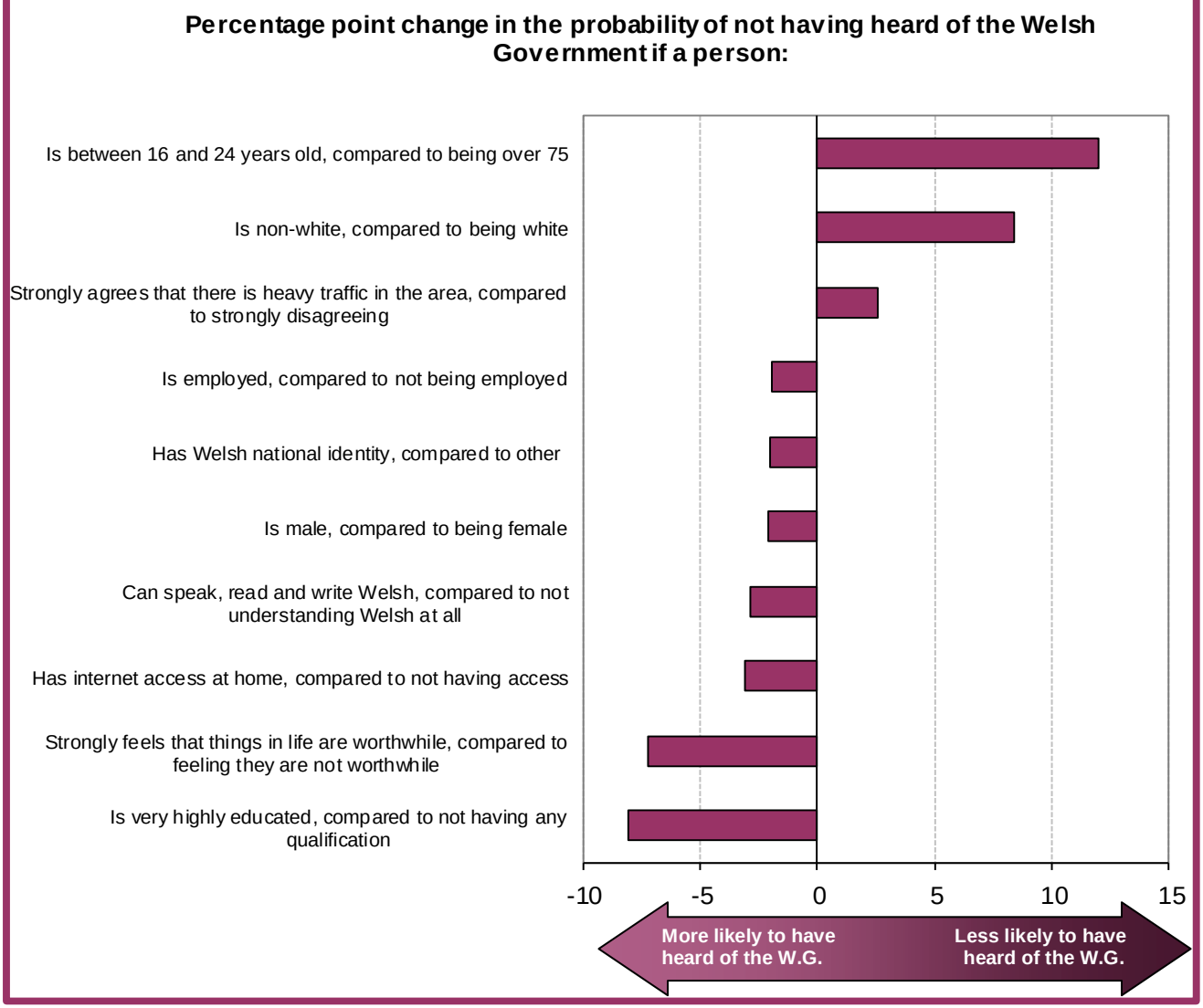
Table 6.1 The probability of being dissatisfied with the Welsh Government for distinct groups of people

Societal characteristics			Probability of being dissatisfied
National identity	**Knowledge about the Welsh Government**	**Ethnicity**	
Welsh	Has seen or heard about the Welsh Government	White	61%
Welsh	Has seen or heard about the Welsh Government	Non-white	46%
Welsh	Has not seen or heard about the Welsh Government at all	White	82%
Welsh	Has not seen or heard about the Welsh Government at all	Non-white	71%
Not Welsh	Has seen or heard about the Welsh Government	White	64%
Not Welsh	Has seen or heard about the Welsh Government	Non-white	49%
Not Welsh	Has not seen or heard about the Welsh Government at all	White	84%
Not Welsh	Has not seen or heard about the Welsh Government at all	Non-white	74%

6.3 Who knows more about the Welsh Government?

We next consider which factors predict a lack of awareness of the Welsh Government, denoted by not having heard or seen anything about the Welsh Government in the past year. Interestingly, two of the characteristics associated with higher levels of satisfaction with the Welsh Government are also associated with a lack of awareness of it – namely being young and being from a non-white ethnic group. This contradicts the general trend for those who are satisfied with the Welsh Government to be more likely to be aware of it. This suggests that the relationship for those who are young or non-white relates to particular features of those groups (for instance, the well-documented general low level of interest in governments by the young and the difficulties of those who do not speak English as a first language in accessing information about them).

Figure 6.3: Drivers of *not having heard of the Welsh Government*

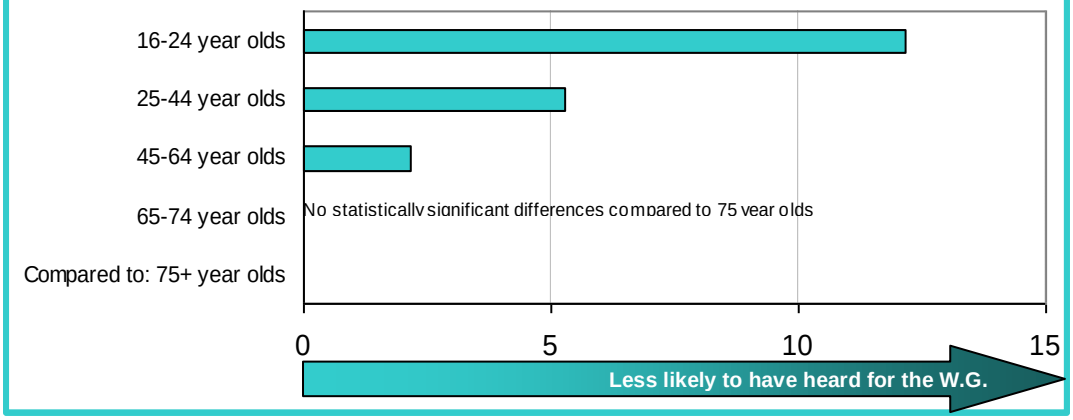


Strongly thinking that things in life are worthwhile and being highly educated are associated with greater levels of awareness of the Welsh Government, although as previously discussed the latter factor was associated with higher levels of dissatisfaction. This suggests that the characteristics which determine awareness of the Government are often the same ones which predict dissatisfaction with it - despite the fact that a lack of awareness per se predicts lower levels of satisfaction.

Figure 6.4 illustrates the comparable effect of age on whether someone has heard of the Welsh Government or not. Being in the youngest age group (16-24) is associated with an increase of more than ten percentage points in the probability of not being aware of the Welsh Government, as compared to being aged 75+.

Figure 6.4: Effect of age on whether a person has heard of the Welsh Government

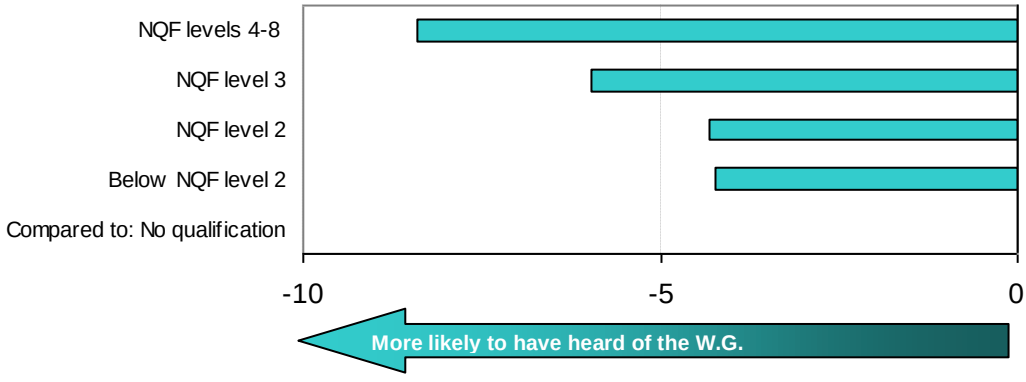
The change in the probability of having heard of the Welsh Government when compared to over 75s



On the other hand, the higher an individuals' level of educational qualifications, the greater the probability of them being aware of the work of the Welsh government over the previous year. Having the highest level of educational qualifications is associated with a rise, of nearly ten percentage points, in the likelihood of having seen or heard of the Welsh Government in the past year.

Figure 6.5: Effect of education on whether a person has heard of the Welsh Government

The change in the probability of having heard of the Welsh Government when compared to people with no qualification



We can predict the probability of a person who is 'average' on all the characteristics included in the model above, not being aware of the Welsh Government in the previous year. This probability is 9% - suggesting a greater likelihood of dissatisfaction with the Welsh Government for the average person, compared to the likelihood of not being aware of its activities.

The probability of a typical person not being aware of the Welsh Government	**9%**

Table 6.2 demonstrates the predicted probability of not having heard of the Welsh Government in the last year, for a person who is 'average' on all other characteristics reviewed above, with specific combinations of characteristics in relation to work status, gender and internet access in the home. The analysis holds all other predictors constant, which allows for these combined probabilities to be compared[10].

It supports the findings of the regression analysis, presented above, that being out of work, being female and not having internet access in the home are associated with a greater likelihood of not being aware of the Welsh Government. While the predicted probability of this for a male, in work, with Internet access is 5%, the equivalent probability for a woman, without internet access and out of work, is 13%.

Table 6.2 The probability of not having heard of the Welsh Government for distinct groups of people (1)

Societal characteristics			Probability of being unaware of W.G.
Work Status	**Gender**	**Internet access at home**	
In work	Men	Yes	5%
In work	Men	No	8%
In work	Women	Yes	7%
In work	Women	No	10%
Not in work	Men	Yes	7%
Not in work	Men	No	10%
Not in work	Women	Yes	9%
Not in work	Women	No	13%

[10] For further information on the choice of variables please consult section A1.2 – *Effect sizes and presentation* in Appendix 1.

6.4 Conclusions

Levels of dissatisfaction with the Welsh Government and awareness of its recent activities can be explained by a range of factors which are often at odds with each other. Characteristics associated with a greater level of dissatisfaction are often also associated with a greater level of awareness – confirming that awareness and satisfaction do not rise in unison. Most markedly, the youngest age group are more likely to be satisfied but less likely to be aware of the Welsh Government while the opposite pattern is true of the most highly educated group. Moreover, we see similar relationships between certain socio-demographic groups satisfaction levels with the Welsh Government as we did in relation to satisfaction levels with a range of services including education, health and transport – most notably with non-white and more financially stable groups being more likely to be satisfied.

While improving awareness of the Welsh government has the potential to reduce dissatisfaction levels, it is clear that the relationship is not a straight-forward one for all groups. Some of the groups who are least likely to be dissatisfied are comparatively unaware of what the Welsh Government are doing.

7 Wales compared to countries that participated in the European Social Survey (ESS)

In this section we consider how satisfaction levels in Wales compare to those in a range of other European countries.

7.1 Methodology

In order to do this, we analysed data from the European Social Survey from a broadly equivalent time period (while fieldwork for the National Survey ran from April 2012 to March 2013, data collection for the 2012 European Social Survey took place between September and December 2012). The European Social Survey is an annual survey of attitudes, undertaken using a consistent methodology in a large number of countries across Europe. The approach to sampling, questionnaire content and weighting are replicated across all countries, so that we can be confident that any differences between countries detected are a result of actual diversity, rather than differences in methodological approach. Please note that data from France, Albania, Italy, Lithuania, Ukraine and Hungary were not available at time of writing.

Nevertheless, when making comparisons between the European Social Survey and the National Survey, caution must be applied in a number of areas. While both surveys used a random probability sampling approach, the population for the ESS included those aged 15 years and over while the equivalent figures for the National Survey was 16 years. Moreover, the nature of topics covered and ordering of questions varied within the two survey instruments; for instance, while the two surveys ask identical questions about satisfaction with the national government, the ESS included these after a section of questions on political affiliation and economic circumstances – a context which could influence the satisfaction ratings provided. Further information is provided in a question comparability study, undertaken in relation to the National Survey for Wales[11]. In addition to a general caution in making comparisons, we flag specific issues below in relation to the three questions where we are making comparisons.

7.2 Ranking table for Wales and EU states (plus UK)

Both the National Survey and the ESS asked respondents about their satisfaction with the national government. However, it should be borne in mind that, in Wales, respondents were asked this question in relation to a devolved government, which has a different range of responsibilities to the national governments being asked about in other countries.

The mean level of satisfaction with the national government in Wales is somewhat higher than for many other European countries, although these are located closely on a gradient in many cases. Only three countries – Switzerland, Finland and Norway – report a higher mean satisfaction score.

[11] http://wales.gov.uk/docs/caecd/research/120706nswMeth2Comparabilitystudyen.pdf

There is a clear tendency, reflected in this ordering, for countries in Northern Europe to report a greater level of satisfaction than those in the south.

Figure 7.1: Satisfaction with national governments across Europe

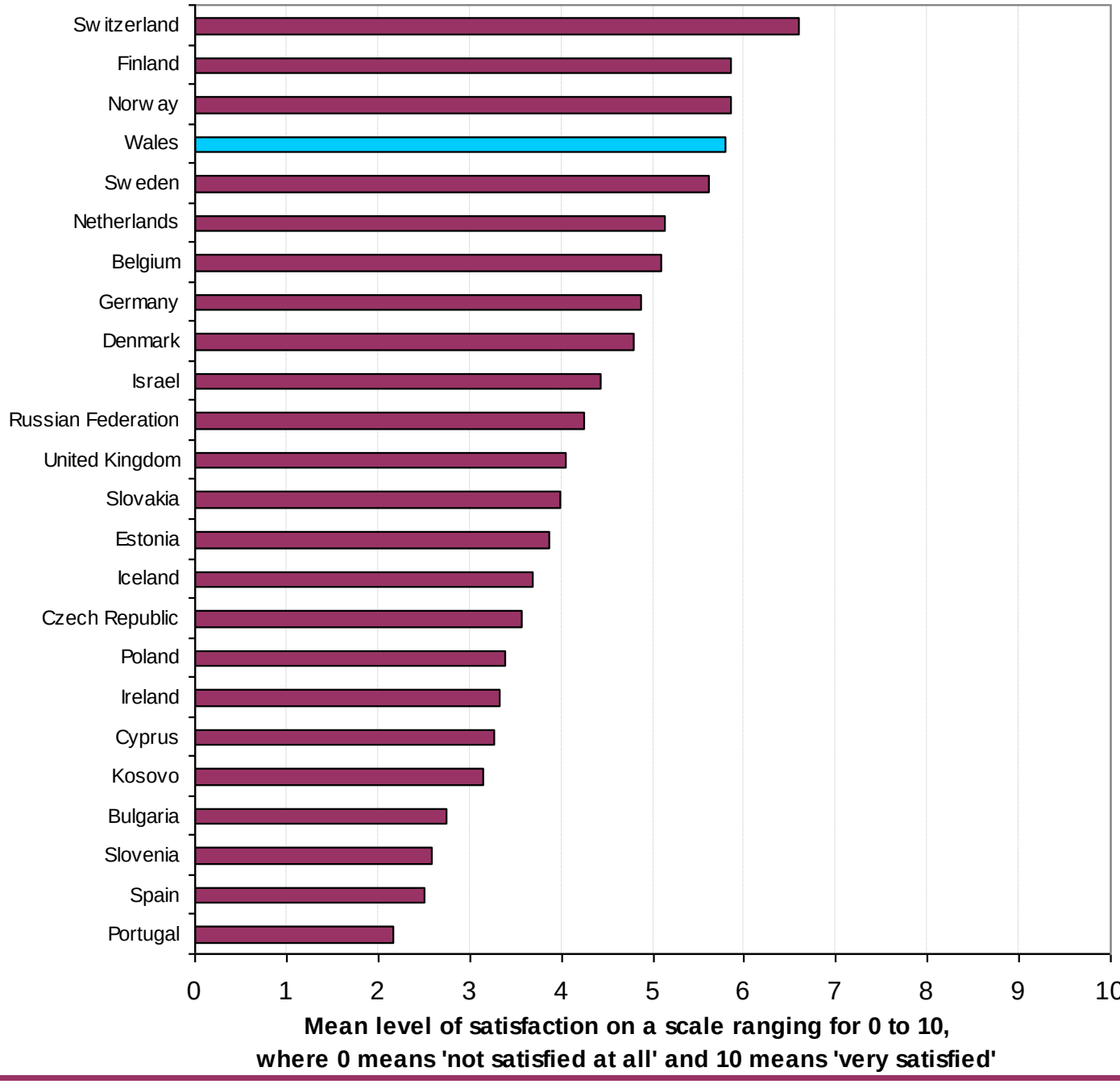


Figure 7.2: Satisfaction with the state of education across European nations

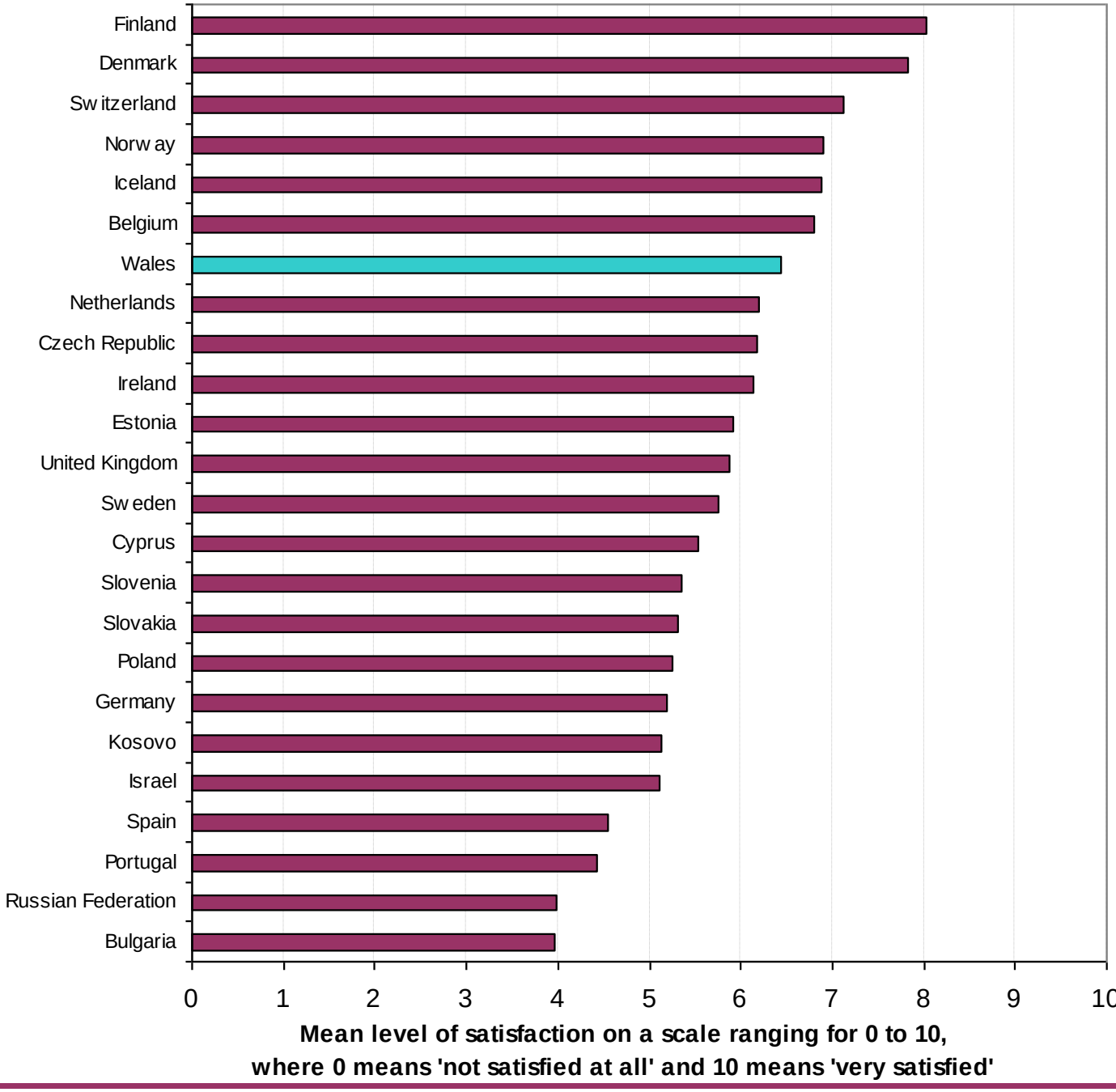
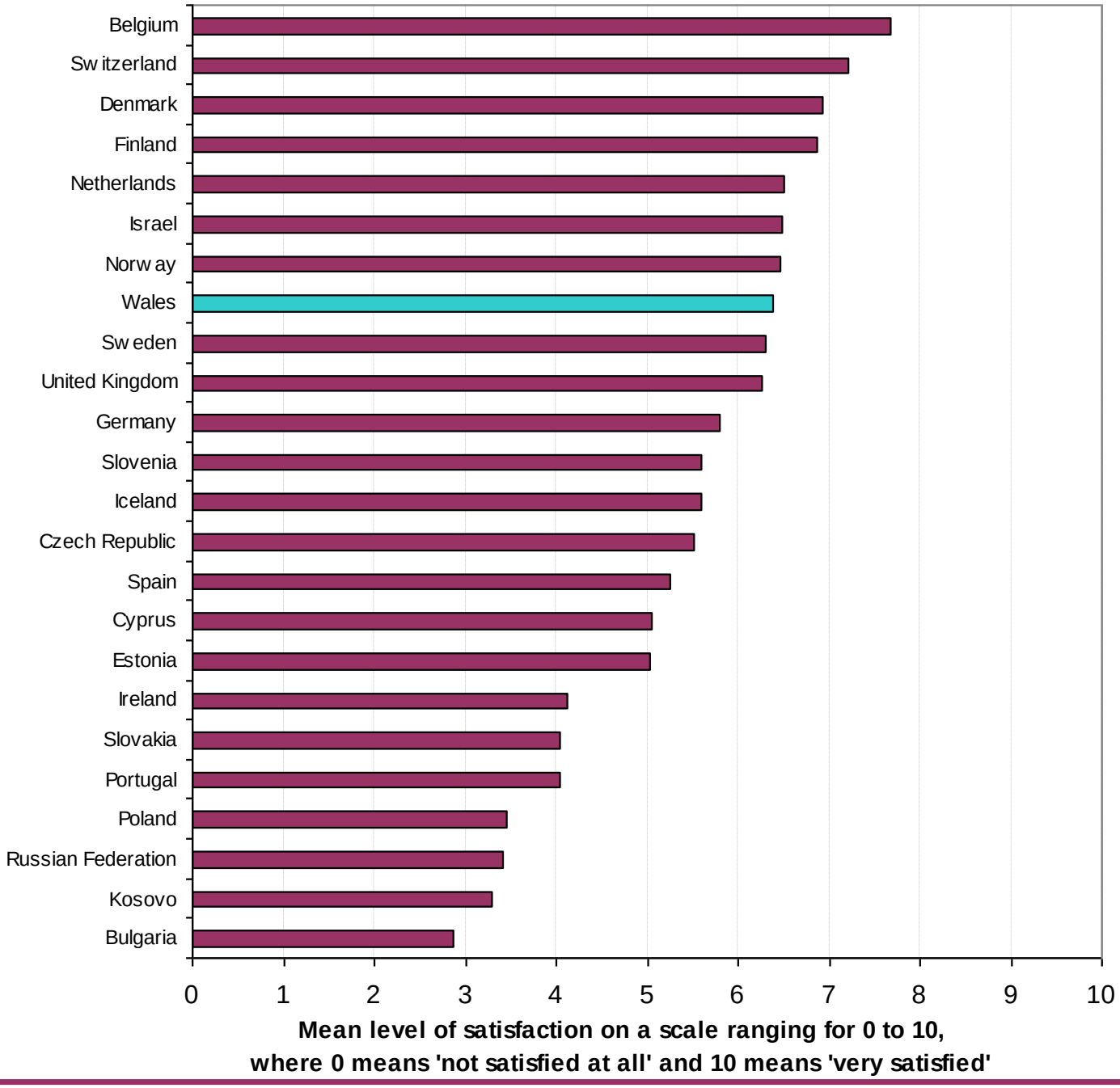


Figure 7.3: Satisfaction with the state of health services across European nations



As the previous tables illustrate, Wales also reports a higher than average mean level of satisfaction with the state of education, compared to other European countries, being the seventh highest in this regard. We again see a tendency for Northern European countries to report greater average levels of satisfaction than those in the south. Similarly, levels of satisfaction with health services are the 8th highest in Wales, among a range of European countries – with services in Belgium and Switzerland being rated most highly.

7.3 Conclusion

In a European context, satisfaction levels in Wales with some of the bodies and services reviewed in this report are comparatively high. However, this may be explained by a tendency for higher satisfaction levels in North European countries, including Wales, as compared to South European countries. While average satisfaction with the national government in Wales is the third highest in Europe, levels of satisfaction with education and health services are slightly lower, standing at 7th and 8th respectively.
It is interesting to note that satisfaction levels reported for Wales are higher than those reported for the United Kingdom – particularly in relation to the national government satisfaction levels and, to a lesser degree, the state of education.

Appendix 1: Methodology

A1.1 Recoding

Both outcome and explanatory variables were extensively tidied up and recoded for the purposes of this analysis. Those who refused to answer a particular question, or for those who were otherwise missing, were excluded from any particular regression including that category. Efforts were made however to ensure the largest possible sample sizes for each section of the analysis.

Explanatory variables
In the case of the explanatory variables, the general approach was to code variables as either continuous or binary variables, in order to facilitate interpretation of the final models. For example, several categorical variables were grouped into two categories. In the case of religion, this meant those who were religious in one group, and all others in another group.

Other categorical variables were recoded into several binary variables. In the case of a variable such as tenure, three binary 'dummies' representing owner occupier, private renter and social renter were created, and in the regressions, these were used to interpret the effect of being in each category compared to the reference category, which in this case was owner occupier. In other cases, such as with economic status, it was decided to use one dummy which compared those in employment versus everyone else.

In other cases, variables were treated as continuous in the regression. Age was grouped into five age categories, and then treated as an ordinal / continuous variable. In the regressions, a difference in the outcome variable by age was interpreted as the difference when jumping one age category to the next.

Attitudinal questions on a Likert scale (e.g. strongly agree to strongly disagree) were also treated as continuous variables in the regressions.

Outcome variables
It was decided to use logistic regression to model factors associated with feelings of satisfaction and whether people know of the Welsh Government. This would produce easier to interpret results.

- Answers to satisfaction questions (with health, education, transport services and Welsh Government) in the National Survey for Wales were originally measured on a continuous scale ranging from 0 to 10 (where 10 meant that they are very satisfied). For the purposes of logistic regression, the outcome variables were recoded into dichotomous variables, grouping people into those who were satisfied (7-10) and dissatisfied (0-6). Those who refused, or volunteered a 'don't know' answer were excluded.
- Satisfaction with public authority services were measured by measuring how strongly they agree with the fact that the local authority provided high quality services. The answer option were recorded on a 5 point scale and

ranged from ‘strongly agree’ to ‘strongly disagree’. We recoded the variable into a dichotomous variable by grouping together people who stated they agreed and those who said they strongly agree. The second group was formed by the people who did not agree (neither agree nor disagree; disagree and strongly disagree). Those who refused, or volunteered a ‘don’t know’ answer were excluded.

- Finally, looking at whether people are familiar with the Welsh Government, we recoded the original variable included in the survey into a dichotomous variable by setting people who have not heard or seen anything about the Welsh Government at all against all people who are knowledgeable of it (irrespective of how knowledgeable they are). Those who refused, or volunteered a ‘don’t know’ answer were excluded.

A1.2 Multivariate analysis (logistic regressions)

A multivariate regression approach was taken to assess the relationships between a variety of demographic, attitudinal and behavioural variables on the outcome variables while controlling for other factors. Background demographic variables were chosen to be the same across all regressions, and then a range of other explanatory variables were chosen to include based on the hypothesis that they would be related to the outcome variable.

Before running the regressions, correlations between these explanatory variables were tested, with variables which correlated very highly not included in the same regression. Some variables with correlations over 0.7 were identified. To further ensure relationships between explanatory variables would not undermine the validity of the regressions, they were then tested for multicollinearity (that is, relationships with a range of other variables). Any variables with a VIF (variance inflation factor) above 5 or so would indicate danger. This was not found to be the case for any of the regressions.

The logistic regressions were performed in Stata (Version 12), using the ‘logistic’ command using a backwards stepwise approach, and weighted by the adult sample weight[12].

Backwards stepwise regressions use an iterative method, whereby all explanatory variables are included in a model, whereupon variables that don’t meet the threshold of significance (in this case a p-value of .05) are removed in order of decreasing p-value, with the model re-run each time, until a final model is generated containing only those variables found to have significant relationships with the outcome measure.

However, it is also possible to ‘force’ certain variables into the final model regardless of significance, and this was done here for a set range of

[12] To be able to generate the R Squared coefficient we chose to individually weight each regression by the sample adult weight as opposed to using the automatic ‘svy’ command in Stata. This also means that sample stratification structure (stratification by LAs) is not modelled. This is appropriate as there are virtually no differences in the Standard Errors between models which take into account the stratification and those who do not.

demographic variables. This was done in order that results across regressions would consistently control for the same background factors. These variables included age, gender, urbanity, economic status, educational qualifications, financial struggles, ethnicity, religion and Welsh identity.

Approaches to effect interpretation

There are two general approaches to understanding and presenting the effects the explanatory variables have on the outcome:

1. Classical Regression (logistic regression in this case): the explanatory variables are introduced in the regression as ordinal or continuous variables, in which case the regression coefficients show the impact on the outcome if an explanatory variable increases by 1 unit. Such an approach is very useful when the aim of the regression is to identify a ranking of the explanatory variables in terms of the size of their effect. That is, being able to point out which factor has the biggest effect on the outcome.

2. Dummy variable (logistic) regression: this approach works in a similar way to the one above however all ordinal or continuous explanatory variables are recoded into dummy variables which are then entered into the regression. In all cases one would enter a number of dummy variables which equals the number of values the original variable had minus one. The omitted dummy represents the 'reference category'. This means that the regression coefficients now produced indicate how the effect associated with one category of a variable differs compared to the reference category. This is useful in comparing demographic differences (and allows for non-linear effects) within the same variables, but it cannot be used to compare the effect of variables.

To summarise, the first approach indicates which are the primary drivers of an outcome while the second approach indicates how people in different demographic subgroups (e.g. people in different age groups) compare on the outcome. We believe both approaches are necessary to provide the adequate insight, which is why we decided to implement a combination of the two.

In the analysis of each outcome variable we start by running a regression based on the first approach. If this regression identifies that age or education[13] (both included as ordinal variables) as significant predictors of the outcome we proceed to apply the second approach, in which we rerun the initial regression but include age and education as dummy variables. We present the results in subsequent tables displayed in Appendix 2.

For each regression, the tables in Appendix 2 include the relevant coefficients (and other measures of effect size – see below) levels of statistical significance, the sample size and the model fit (R squared or Pseudo R squared for logistic regressions). The R Squared coefficient indicates how well each regression model fits the data. In other words, it shows whether the

[13] We chose age and education for this exercise given that they re the most likely demographics that might not have linear effects.

regression contains the appropriate variables that can explain the outcome. The r square ranges from 0 to 1, where 0 indicates a very poor fit and 1 indicates a perfect fit. In general the fit of our models is between 0 and 0.5, which for social data is not the least surprising.

Effect size and presentation

To aid the interpretation of the regression results by policy makers without a statistical background we provide several tools.

1. The results of the classical regressions (which include the ordinal and continuous explanatory variables) are presented in a graph (coloured in purple). The graph displays the size of the effect for the variables that were shown to have a statistically significant effect (we use the 95% cut-off). Appendix 2 contains the full regression results. Even though traditionally logistic regression results are interpreted (and reported) in terms of odds ratios, we decided on using a more intuitive method. As such, for each variable we computed the percentage point difference between the probability of the outcome occurring when it is at its highest level (e.g. the probability of being dissatisfied for people with high education, levels 4-8) and the probability of the outcome occurring when it is at its lowest level (e.g. the probability of being dissatisfied for people with no qualification). The resulting figure indicates the maximum impact the explanatory variable can have on the outcome.

2. If in the initial regression we observe that age or education has a significant effect on the outcome, as mentioned before, we run a dummy variable regression to try to tease out the differences in the outcome that are due to being a member of a specific societal subgroup compared to a reference category. The results are reported in the graphs (coloured in light blue) which display the differences between the different levels of age and education and the respective reference categories. Even though the regressions include an identical set of variables to the original regressions, for ease of interpretation these variables are not included in the graphs. Please see Appendix 2 for the full regression tables.

3. Based on the initial regressions we computed what the probability of a typical individual experiencing the outcome is (e.g. being dissatisfied). This probability is computed based on holding all explanatory variables at their *median.* This means that the probability is associated with the most common type of person in Wales (e.g. Welsh national, urban, male, white, aged between 45 and 64, educated to NQF level 2, keeping up well with financial obligations).

4. Finally, once more, based on the initial regressions we also provide a table containing fitted probabilities for specific societal subgroups. The probabilities are computed while all other variables in the regression are held at their mean. This means that the probabilities are

comparable between each row of the table. To build the tables we chose from between the demographic variables which the regressions showed to have significant effects on the outcome. A maximum number of three demographic variables were chosen – generally these were the demographics with the largest effect on the outcome. This section of the analysis is meant to be a 'profiling' exercise through which we supply information on distinct social groups - that is why only demographic variables are included.

Additional analyses

In addition to the logistic regression approach we discussed above people's satisfaction with the health, education and transport system was also assessed using an alternative approach. Satisfaction with these three types of services might be affected by the local small area differences. In other words, there might be differences in how these services work at LSOA level, which would introduce bias in the analysis because the data is nested. Moreover, these relationships cannot be appropriately modelled through multilevel modelling. This is because these questions were each only asked of 1/3 of the sample but also because the suspected differences are at LSOA level and the individual level sample sizes across such granular units are insufficient to be able to implement a multilevel model. Therefore, to obtain unbiased confidence intervals we proposed not to model the differences between the areas but to treat them as a nuisance and try to eliminate them from the models. This was achieved by fitting a single-level model (i.e. a simple linear regression) in which we adjusted the standard errors to take into account clustering. Technically we implemented a GEE (Generalized Estimation Equation with a Binomial family and Logit Link) approach to generate consistent parameter estimates and avoid deflated standard errors.

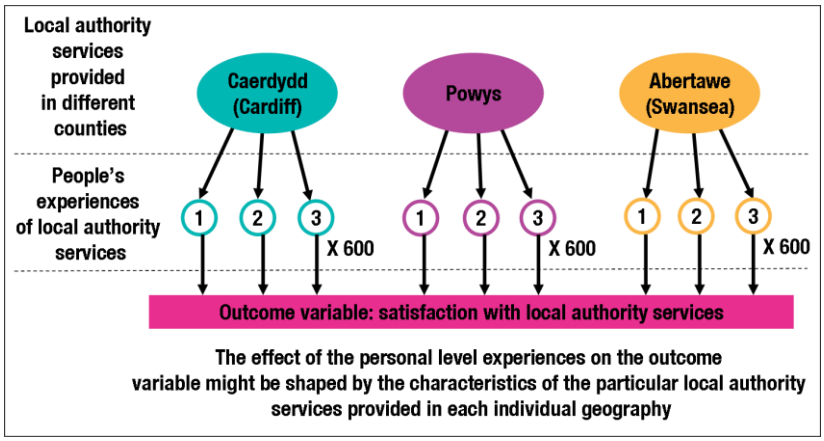
However, as the GEE model described above cannot be implanted with weighted data we used this model to check our original analysis (logistic regression with weighted data). As such, aside from running a GEE model with unweighted data we also ran a logit model with unweighted data. We present the results in Appendix 2 and conclude that there no differences between the results of the two models and clustering at the LSOA level does not seem to be a problem. As such, we analysed the data obtained in our original logistic model.

A1.3 Multivariate analysis: Multilevel modelling

The National Survey was carried out in all 22 local authorities (LA) within Wales, with a sample of approx. 600 adults (16+) being selected in every LA. As such, aside from allowing us to understand how people's characteristics affect their attitudes it can also provide us with a description of how LA level characteristic might affect people's attitudes. We analyse those differences by using Multilevel modelling.

Multilevel modelling is the appropriate advanced modelling technique to be used when the data is structured spatially with people being nested in higher level units (counties / local authorities). The goal of multilevel analysis is to account for variance in an outcome at the individual level by taking into account the information measured at all levels. Such an approach has strong substantive and statistical justifications. Substantively, multilevel modelling makes it possible to run the analysis in a single comprehensive model as opposed to having to implement an individual regression for each county of interest. Also since the effect of an individual level predictor on the outcome can be modelled as a result of the effect of a county level predictor, multilevel analysis can tap into causal heterogeneity. Statistically, the use of multilevel is required when modelling data structured on separate levels to avoid generating incorrect (deflated) standard errors and inflated Type 1 error rates.

The diagram below illustrates how people's experience of public authority services might be shaped by the type and quality of the actual services provided in each distinct local authority.



In implementing the analysis we ran several sequential models in Stata (Version 12):

1. **Null Multilevel model: Random effects ANOVA**. This model does not include any predictors and is meant to indentify what proportion of the variance of satisfaction is due to cross-LA differences as compared to differences between individuals. The results of the model are reported in Appendix 2. Aside from regular regressions outputs the results also include the values of the variance components (i.e. the errors at the different levels). These are the 'within Local Authority, between respondent variance of the mean (WLA)' and the 'between Local Authority variance of the mean' (BLA)[14]. Based on these values we computed the Intra-class Correlation coefficient[15] which indicates what

[14] The WLA shows how an individual's level of satisfaction deviates from the mean level of satisfaction in the Local Authority in which he/she resides. The BLA shows how the mean level of satisfaction in a particular Local Authority deviates from the grand mean of satisfaction (i.e. across Wales).
[15] The ICC (Intra-class Correlation) is computed base on this formula:
ICC=(BLA / (BLA+WLA))*100

% of the variance if satisfaction is due to differences between Local Authorities.

2. **Random Intercept Model.** This is a fixed effects model, similar to the previous one, but in which we included the individual level predictors found to be significant in the simple regression. Based on the results of this model (Appendix 2) we estimated (and graphed) the mean level of satisfaction in each of the 22 Local Authorities. The estimated means (and their 95% Confidence Intervals) were computed based on the regression coefficient for the Intercept to which we added the estimated level-2 error term which was estimated using the Empirical Bayes estimation method. Finally, it needs to be mentioned that the predictor variables were centred so that their mean would equal 0.

3. **Accounting for the variations in the intercepts.** Having shown that the intercepts (i.e. means) vary across Local Authorities we now included LA level explanatory variables to account for such differences. After several manual iterations we discovered which LA level variables have a significant impact on the outcome and introduced these in the final model. Based on the results generated by the model we computed the proportion of the BLA the Local Authority level variables explain[16]. Furthermore, we graphed the effect the Local Authority characteristics have on modifying the level of satisfaction.

4. **Random slope and intercept model.** Aside from letting the intercept (mean) differ across Local Authorities we now also allow for the slopes of a predictor variable to differ across Local Authorities, meaning that we acknowledge that a given variable could have different effects in different areas. We ran the analysis choosing to include random slopes for the predictor which had the highest effect on the outcome, which in this case was the assessment of area maintenance. The results were presented in a graph which indicates the strength of the effect of area maintenance on satisfaction in different Local Authorities. The graphs shows that while in Cardiff area maintenance has almost no effect on satisfaction, in Newport it is a far more important issue on people's minds, it having a large effect. The estimated coefficients presented (and their 95% Confidence Intervals) were computed based on the regression coefficient for the 'Area Maintenance' to which we summed the estimated level-2 error term which was estimated using the Empirical Bayes estimation method.

5. **Cross-level interaction model.** Finally, having shown that there are differences between the slopes of 'area maintenance' we attempted to assess whether the Local Area characteristics already shown to influence the variation in the intercepts could account for them. We included interaction terms between the area characteristics and 'area maintenance'. However, the results (Appendix 2) show that the interaction terms are not statistically significant.

[16] This was computed using the formula:
% variation explained = 1 - ($BLA_{\text{this model}}$ / $BLA_{\text{random intercept model}}$)

Appendix 2: Full regression results

Table A.1: Logistic regression results: being dissatisfied with public authority services

Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	1.036	0.914	1.175	0.86%
dvagegrp3	Derived variable - Age group 3	1.041	0.970	1.117	3.93%
dvethnicity	Derived variable - Ethnicity (White or non-white)	0.528	0.311	0.897	-14.31%
dvhiqual2	Highest educational qualification	0.985	0.944	1.028	-1.45%
rel	Religion	0.904	0.793	1.029	-2.47%
urbrurdum	Urban-Rural classification	1.082	0.950	1.233	1.93%
working	In paid or unpaid work	1.209	1.044	1.399	4.60%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.896	0.835	0.963	-10.79%
gender	Gender	0.979	0.870	1.102	-0.52%
expdiscr	Experienced any discrimination, harassment or abuse in the last 12 months	1.322	1.056	1.654	6.88%
uamreinvol	Local authority services - would like to be more involved in the decisions local	0.861	0.812	0.913	-14.33%
lafreegraf	Local area - free from graffiti and vandalism	1.091	1.025	1.161	8.54%
uacomperf	Local authority services - good at letting local people know how well it is performing	1.584	1.500	1.672	42.12%
lasafe2	Local area - safety at home after dark	1.110	0.997	1.237	7.72%
flat	Flat or maisonette	0.706	0.540	0.922	-8.19%
lasafe6	Local area - safety walking in nearest town/city centre after dark	1.107	1.032	1.187	7.40%
soctenant	Tenure - Social housing tenant	1.241	1.040	1.480	5.29%
uainfdecs	Local authority services - can influence decisions affecting my local area	1.287	1.219	1.359	23.48%
lawelmain	Local area - well maintained	1.705	1.599	1.818	48.80%
uaperfinfo	Local authority services - would like more information on how local authority is	0.916	0.860	0.975	-8.46%
wbanxyest	Well-being - overall anxiety yesterday (0-10 scale)	1.036	1.013	1.059	8.60%
wgoversat	Welsh Government - overall satisfaction with way Welsh Government is doing its j	1.157	1.125	1.190	34.48%
terrace	Semi or terrace	0.824	0.721	0.943	-4.71%
_cons	Intercept	0.017	0.009	0.032	
Model fit:	*Pseudo R squared*	*0.2*			
Base:		*11559*			
	Effect not statistically significant				

Table A.2: Multilevel models predicting satisfaction with public authority services by Local Authorities						
Independent variables	Description	Model 1 Random effects ANOVA	Model 2 Random intercept model	Model 3 Variations in the intercept	Model 4 Random slope and intercept	Model 5 Cross-level interaction
_cons	Intercept	2.66	2.64	2.80	2.79	2.79
wgoversat	Welsh Government - overall satisfaction with way Welsh Government is doing its j		0.06	0.06	0.06	0.06
working	In paid or unpaid work		0.07	0.07	0.07	0.07
dvethnicity	Derived variable - Ethnicity (White or non-white)		-0.24	-0.23	-0.24	-0.24
finbilcred	Finance - ability to keep up with bills and credit commitments at present		-0.07	-0.07	-0.07	-0.07
expdiscr	Experienced any discrimination, harassment or abuse in the last 12 months		0.15	0.15	0.15	0.15
soctenant	Tenure - Social housing tenant		0.15	0.15	0.15	0.15
lafreegraf	Local area - free from graffiti and vandalism		0.05	0.05	0.05	0.05
uacomperf	Local authority services - good at letting local people know how well it is perf		0.26	0.26	0.26	0.26
uaperfinfo	Local authority services - would like more information on how local authority is		-0.03	-0.03	-0.03	-0.03
terrace	Semi or terrace		-0.05	-0.05	-0.05	-0.05
flat	Flat or maisonette		-0.08	-0.08	-0.07	-0.07
lasafe8	Local area - safety traveling by public transport after dark		0.04	0.04	0.04	0.04
uainfdecs	Local authority services - can influence decisions affecting my local area		0.10	0.10	0.11	0.11
lawelmain	Local area - well maintained		0.26	0.26	0.27	0.24
uamreinvol	Local authority services - would like to be more involved in the decisions local		-0.06	-0.06	-0.06	-0.06
wbhapyest	Well-being - overall happiness yesterday (0-10 scale)		-0.01	-0.01	-0.01	-0.01
la00009	LA - Other gross revenue expenditure (£ per head, FY 2012-13)			-0.0012	-0.0012	-0.0012
la00007	LA - Gross revenue expenditure on Planning and economical development (£ per head			0.0022	0.0021	0.0021
lawelmain * la00007	Interaction between area maintenance and planning and economic development expenditure					0.0001
lawelmain * la00009	Interaction between area maintenance and LA expenditure on 'other'					0.0001
Between LA variance of mean		0.021	0.013	0.010	0.01	0.01
Within LA, between responded variance of the mean		1.211	0.796	0.796	0.793	0.793
Between LA variance of lawelmain		-	-	-	0.002	0.003
Base:		14427	11147	11147	11147	11147
	Effect not statistically significant				*Significant at the 90% level*	

Table A.3: Logistic regression results: not having seen or heard about the Welsh Government (categorical)

Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	0.755	0.629	0.907	-2.02%
_Idvagegrp3_2	65-74 year olds	1.121	0.834	1.506	0.82%
_Idvagegrp3_3	45-64 year olds	1.477	1.094	1.992	2.86%
_Idvagegrp3_4	25-44 year olds	2.210	1.557	3.137	6.46%
_Idvagegrp3_5	16-24 year olds	4.012	2.627	6.128	16.07%
Compared to: 75+ year olds		0.000			
dvethnicity	Derived variable - Ethnicity (White or non-white)	2.303	1.391	3.813	8.13%
_Idvhiqual2_1	Below NQF level 2	0.640	0.476	0.859	-2.67%
_Idvhiqual2_2	NQF level 2	0.631	0.494	0.806	-2.87%
_Idvhiqual2_3	NQF level 3	0.500	0.356	0.702	-3.92%
_Idvhiqual2_4	NQF levels 4-8	0.313	0.230	0.425	-6.87%
Compared to: No qualification		0.000			
rel	Religion	0.890	0.727	1.090	-0.82%
urbrurdum	Urban-Rural classification	0.930	0.754	1.147	-0.50%
working	In paid or unpaid work	0.811	0.643	1.021	-1.46%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.973	0.881	1.075	-0.78%
gender	Gender	0.738	0.611	0.890	-2.08%
inthhhave	Internet - household has access to the internet	0.710	0.576	0.876	-2.55%
welangabil	Welsh language ability	0.887	0.820	0.959	-3.01%
lafreetraf	Local area - free from heavy traffic	1.097	1.026	1.174	2.62%
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhile	0.918	0.874	0.964	-7.38%
_cons	Intercept	0.372	0.190	0.728	
Model fit:	*Pseudo R squared*	*0.073*			
Base:		*13097*			
	Effect not statistically significant				

Table A.4: Comparison of logistic regression and generalized estimating equations (controlling for LSOA-level clustering) for dissatisfaction with health services

		Logistic regression (without weights)			Generalized estimating equation (Binomial family; logit link)		
Independent variables	Description	Logistic regression coefficient (log odds)	95% Confidence Interval		Logstic regression coefficient (log odds)	95% Confidence Interval	
natidwel	National Identity - Welsh	0.089	-0.135	0.314	0.088	-0.136	0.313
dvagegrp3	Derived variable - Age group 3	-0.007	-0.133	0.118	-0.007	-0.133	0.118
dvethnicity	Derived variable - Ethnicity (White or non-white)	-0.333	-1.228	0.561	-0.331	-1.225	0.564
dvhiqual2	Highest educational qualification	0.057	-0.019	0.132	0.057	-0.018	0.133
rel	Religion	-0.337	-0.582	-0.093	-0.337	-0.581	-0.092
urbrurdum	Urban-Rural classification	0.195	-0.037	0.428	0.195	-0.036	0.427
working	In paid or unpaid work	0.072	-0.187	0.330	0.073	-0.186	0.331
finbilcred	Finance - ability to keep up with bills and credit commitments at present	-0.035	-0.167	0.098	-0.035	-0.167	0.098
gender	Gender	-0.316	-0.536	-0.096	-0.317	-0.537	-0.097
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhile	-0.130	-0.190	-0.069	-0.130	-0.190	-0.069
gpappease	GP - ease of getting an appointment at a convenient time	0.218	0.112	0.325	0.218	0.112	0.325
nhsmrinvol	NHS - would like to be more involved in the decisions local health services make	-0.270	-0.358	-0.182	-0.270	-0.359	-0.182
gpoversat	GP - overall satisfaction with care received	0.305	0.164	0.447	0.304	0.162	0.445
nhskptinf	NHS - kept informed about how well local health services are performing	0.160	0.069	0.250	0.160	0.070	0.251
hspknewinf	Hospital - at the start of the appointment the health professional knew all the	0.350	0.242	0.458	0.350	0.242	0.458
_cons	Intercept	-0.116	-1.163	0.932	-0.117	-1.165	0.931
Base:		*1671*				*1671*	
	Effect not statistically significant						

Table A.5: Logistic regression results: being dissatisfied with education services (primary school)

Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	0.780	0.476	1.276	-5.86%
dvagegrp3	Derived variable - Age group 3	0.816	0.490	1.359	-14.41%
dvethnicity	Derived variable - Ethnicity (White or non-white)	1.981	0.749	5.242	16.74%
dvhiqual2	Highest educational qualification	1.061	0.892	1.261	5.46%
rel	Religion	0.700	0.448	1.094	-8.33%
urbrurdum	Urban-Rural classification	0.706	0.436	1.143	-7.95%
working	In paid or unpaid work	1.292	0.716	2.332	5.87%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	1.096	0.851	1.413	8.37%
gender	Gender	0.897	0.559	1.440	-2.53%
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhile	0.827	0.699	0.978	-36.23%
psschsat	Primary schools - overall satisfaction with child's primary school	1.692	1.173	2.441	47.56%
_cons	Intercept	2.204	0.147	33.097	
Model fit:	*Pseudo R squared*	*0.061*			
Base:		*606*			
	Effect not statistically significant				

Table A.6: Comparison of logistic regression and generalized estimating equations (controlling for LSOA-level clustering) for dissatisfaction with education services (primary school)

		Logistic regression (without weights)			Generalized estimating equation (Binomial family; Logit link)		
Independent variables	Description	Logistic regression coefficient (log odds)	95% Confidence Interval		Logistic regression coefficient (log odds)	95% Confidence Interval	
natidwel	National Identity - Welsh	-0.115	-0.494	0.265	-0.102	-0.476	0.273
dvagegrp3	Derived variable - Age group 3	-0.179	-0.583	0.226	-0.184	-0.585	0.218
dvethnicity	Derived variable - Ethnicity (White or non-white)	0.208	-0.665	1.082	0.351	-0.486	1.187
dvhiqual2	Highest educational qualification	0.114	-0.025	0.254	0.095	-0.038	0.229
rel	Religion	-0.164	-0.527	0.198	-0.202	-0.562	0.157
urbrurdum	Urban-Rural classification	-0.278	-0.676	0.119	-0.211	-0.588	0.167
working	In paid or unpaid work	0.328	-0.122	0.777	0.336	-0.106	0.778
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.032	-0.159	0.223	0.065	-0.123	0.254
gender	Gender	-0.021	-0.400	0.357	-0.055	-0.428	0.317
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhile	-0.137	-0.259	-0.015	-0.153	-0.275	-0.031
psschsat	Primary schools - overall satisfaction with child's primary school	0.658	0.427	0.888	0.667	0.438	0.896
_cons	Intercept	-0.199	-2.262	1.864	-0.158	-2.188	1.872
Base:		*606*				*606*	
	Effect not statistically significant						

Table A.7: Logistic regression results: being dissatisfied with education services (secondary school)

Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	0.688	0.395	1.198	-9.24%
dvagegrp3	Derived variable - Age group 3	0.813	0.505	1.308	-15.24%
dvethnicity	Derived variable - Ethnicity (White or non-white)	5.776	1.162	28.723	38.43%
dvhiqual2	Highest educational qualification	1.322	1.074	1.626	26.46%
rel	Religion	1.133	0.675	1.901	3.07%
urbrurdum	Urban-Rural classification	0.675	0.400	1.136	-9.55%
working	In paid or unpaid work	0.994	0.498	1.985	-0.15%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	1.062	0.810	1.393	5.89%
gender	Gender	1.673	0.998	2.804	12.70%
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhile	0.700	0.582	0.842	-65.70%
ssschsat	Secondary schools - overall satisfaction with child's secondary school	1.919	1.441	2.555	54.58%
_cons	Intercept	3.690	0.267	51.035	
Model fit:	*Pseudo R squared*	*0.161*			
Base:		*469*			
	Effect not statistically significant				

Table A.8: Logistic regression results: being dissatisfied with education services (secondary school) / (categorical)

Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	0.676	0.386	1.184	-9.66%
dvagegrp3	Derived variable - Age group 3	0.822	0.508	1.328	-14.43%
dvethnicity	Derived variable - Ethnicity (White or non-white)	5.118	1.008	25.984	36.51%
_Idvhiqual2_1	Below NQF level 2	0.774	0.263	2.280	-6.20%
_Idvhiqual2_2	NQF level 2	1.090	0.408	2.915	2.13%
_Idvhiqual2_3	NQF level 3	2.122	0.733	6.144	18.59%
_Idvhiqual2_4	NQF levels 4-8	2.296	0.879	5.994	20.44%
Compared to: 75+ year olds		0.000			
rel	Religion	1.145	0.684	1.915	3.32%
urbrurdum	Urban-Rural classification	0.668	0.393	1.136	-9.78%
working	In paid or unpaid work	0.987	0.495	1.969	-0.32%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	1.071	0.818	1.403	6.73%
gender	Gender	1.656	0.976	2.809	12.45%
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhile	0.705	0.587	0.847	-65.12%
ssschsat	Secondary schools - overall satisfaction with child's secondary school	1.952	1.470	2.592	55.53%
_cons	Intercept	4.307	0.270	68.668	
Model fit:	*Pseudo R squared*	*0.158*			
Base:		*469*			
	Effect not statistically significant				

Table A.9: Comparison of logistic regression and generalized estimating equations (controlling for LSOA-level clustering) for dissatisfaction with education services (secondary school)

		Logistic regression (without weights)			Generalized estimating equation (Binomial family; Logit link)		
Independent variables	Description	Logistic regression coefficient (log odds)	95% Confidence Interval		Logistic regression coefficient (log odds)	95% Confidence Interval	
natidwel	National Identity - Welsh	0.038	-0.408	0.483	0.020	-0.425	0.464
dvagegrp3	Derived variable - Age group 3	-0.320	-0.733	0.094	-0.303	-0.717	0.111
dvethnicity	Derived variable - Ethnicity (White or non-white)	1.314	-0.102	2.730	1.212	-0.145	2.568
dvhiqual2	Highest educational qualification	0.284	0.123	0.445	0.296	0.136	0.456
rel	Religion	0.085	-0.346	0.516	0.064	-0.367	0.495
urbrurdum	Urban-Rural classification	-0.203	-0.673	0.268	-0.233	-0.694	0.229
working	In paid or unpaid work	0.202	-0.346	0.750	0.179	-0.367	0.724
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.107	-0.127	0.342	0.122	-0.113	0.357
gender	Gender	0.485	0.048	0.923	0.472	0.033	0.911
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhile	-0.300	-0.448	-0.152	-0.310	-0.458	-0.162
ssschsat	Secondary schools - overall satisfaction with child's secondary school	0.766	0.538	0.993	0.771	0.544	0.997
_cons	Intercept	0.349	-1.806	2.503	0.320	-1.841	2.482
Base:		*469*				*469*	
	Effect not statistically significant						

Table A.10: Logistic regression results: being dissatisfied with education services (all adults)

Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	0.928	0.771	1.118	-1.86%
dvagegrp3	Derived variable - Age group 3	0.770	0.695	0.853	-25.48%
dvethnicity	Derived variable - Ethnicity (White or non-white)	1.183	0.641	2.181	4.19%
dvhiqual2	Highest educational qualification	1.119	1.051	1.190	11.11%
rel	Religion	0.842	0.695	1.021	-4.29%
urbrurdum	Urban-Rural classification	0.873	0.717	1.062	-3.39%
working	In paid or unpaid work	1.220	0.996	1.494	4.94%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.923	0.834	1.023	-7.94%
gender	Gender	1.114	0.936	1.326	2.69%
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhi	0.859	0.807	0.915	-35.27%
terrace	Semi or terrace	0.750	0.613	0.916	-7.18%
flat	Flat or maisonette	0.815	0.547	1.214	-5.06%
wbhapyest	Well-being - overall happiness yesterday (0-10 scale)	0.950	0.906	0.997	-12.69%
_cons	Intercept	13.413	6.408	28.078	
Model fit:	*Pseudo R squared*	*0.032*			
Base:		*3873*			
	Effect not statistically significant				

Table A.11: Logistic regression results: being dissatisfied with education services (all adults) / (categorical)					
Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	0.941	0.781	1.133	-1.53%
_Idvagegrp3_2	65-74 year olds	1.465	1.066	2.015	9.49%
_Idvagegrp3_3	45-64 year olds	1.174	0.845	1.631	4.01%
_Idvagegrp3_4	25-44 year olds	0.719	0.498	1.038	-8.12%
_Idvagegrp3_5	16-24 year olds	0.525	0.332	0.832	-15.35%
Compared to: 75+ year olds		0.000			
dvethnicity	Derived variable - Ethnicity (White or non-white)	1.267	0.678	2.366	5.90%
_Idvhiqual2_1	Below NQF level 2	1.186	0.848	1.659	4.20%
_Idvhiqual2_2	NQF level 2	1.289	0.984	1.688	6.27%
_Idvhiqual2_3	NQF level 3	1.184	0.862	1.626	4.14%
_Idvhiqual2_4	NQF levels 4-8	1.598	1.229	2.079	11.63%
Compared to: No qualification		0.000			
rel	Religion	0.809	0.666	0.982	-5.29%
urbrurdum	Urban-Rural classification	0.875	0.718	1.067	-3.32%
working	In paid or unpaid work	1.137	0.915	1.415	3.21%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.932	0.840	1.034	-7.01%
gender	Gender	1.108	0.930	1.320	2.55%
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhi	0.854	0.802	0.910	-36.42%
terrace	Semi or terrace	0.760	0.620	0.932	-6.84%
flat	Flat or maisonette	0.847	0.567	1.265	-4.13%
wbhapyest	Well-being - overall happiness yesterday (0-10 scale)	0.954	0.910	1.001	-11.64%
_cons	Intercept	6.440	3.141	13.204	
Model fit:	*Pseudo R Squared*	*0.039*			
Base:		*3873*			
	Effect not statistically significant				

Table A.12: Comparison of logistic regression and generalized estimating equations (controlling for LSOA-level clustering) for dissatisfaction with education services (all adults)

		Logistic regression (without weights)			Generalized estimating equation (Binomial family; Logit link)		
Independent variables	Description	Logistic regression coefficient (log odds)	95% Confidence Interval		Logistic regression coefficient (log odds)	95% Confidence Interval	
natidwel	National Identity - Welsh	-0.047	-0.185	0.091	-0.048	-0.186	0.090
dvagegrp3	Derived variable - Age group 3	-0.164	-0.238	-0.089	-0.164	-0.239	-0.089
dvethnicity	Derived variable - Ethnicity (White or non-white)	0.040	-0.445	0.524	0.040	-0.444	0.525
dvhiqual2	Highest educational qualification	0.114	0.067	0.161	0.114	0.067	0.161
rel	Religion	-0.085	-0.231	0.060	-0.085	-0.230	0.061
urbrurdum	Urban-Rural classification	-0.099	-0.248	0.050	-0.097	-0.247	0.053
working	In paid or unpaid work	0.160	0.006	0.314	0.161	0.007	0.315
finbilcred	Finance - ability to keep up with bills and credit commitments at present	-0.014	-0.091	0.063	-0.014	-0.091	0.063
gender	Gender	0.020	-0.111	0.151	0.021	-0.110	0.152
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhi	-0.120	-0.165	-0.074	-0.119	-0.164	-0.074
terrace	Semi or terrace	-0.364	-0.517	-0.211	-0.363	-0.516	-0.209
flat	Flat or maisonette	-0.284	-0.564	-0.003	-0.280	-0.561	0.001
wbhapyest	Well-being - overall happiness yesterday (0-10 scale)	-0.061	-0.097	-0.026	-0.061	-0.097	-0.026
_cons	Intercept	1.873	1.322	2.423	1.868	1.318	2.419
Base:		*3873*				*3873*	
	Effect not statistically significant						

Table A.13: Logistic regression results: being dissatisfied with transport services					
Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	1.156	0.950	1.407	3.57%
dvagegrp3	Derived variable - Age group 3	0.997	0.890	1.117	-0.27%
dvethnicity	Derived variable - Ethnicity (White or non-white)	0.463	0.235	0.912	-18.99%
dvhiqual2	Highest educational qualification	1.228	1.152	1.310	20.04%
rel	Religion	0.939	0.758	1.163	-1.54%
urbrurdum	Urban-Rural classification	1.305	1.068	1.596	6.48%
working	In paid or unpaid work	1.141	0.912	1.429	3.25%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.927	0.830	1.036	-7.29%
gender	Gender	1.167	0.961	1.416	3.78%
lafreetraf	Local area - free from heavy traffic	1.135	1.059	1.216	12.32%
lasafe8	Local area - safety traveling by public transport after dark	1.291	1.154	1.444	18.31%
wbhapyest	Well-being - overall happiness yesterday (0-10 scale)	0.901	0.861	0.942	-23.90%
_cons	Intercept	0.807	0.357	1.821	
Model fit:	*Pseudo R squared*	*0.045*			
Base:		*3740*			
	Effect not statistically significant				

Table A.14: Logistic regression results: being dissatisfied with transport services (categorical)					
Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	1.154	0.948	1.404	3.51%
dvagegrp3	Derived variable - Age group 3	1.017	0.908	1.138	1.64%
dvethnicity	Derived variable - Ethnicity (White or non-white)	0.450	0.229	0.881	-19.67%
_Idvhiqual2_1	Below NQF level 2	1.094	0.777	1.542	2.25%
_Idvhiqual2_2	NQF level 2	1.465	1.105	1.941	9.51%
_Idvhiqual2_3	NQF level 3	1.543	1.103	2.157	10.78%
_Idvhiqual2_4	NQF levels 4-8	2.271	1.742	2.962	19.86%
Compared to: No qualification		0.000			
rel	Religion	0.944	0.763	1.168	-1.41%
urbrurdum	Urban-Rural classification	1.299	1.063	1.588	6.35%
working	In paid or unpaid work	1.137	0.909	1.421	3.15%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.927	0.830	1.035	-7.33%
gender	Gender	1.184	0.974	1.440	4.14%
lafreetraf	Local area - free from heavy traffic	1.135	1.059	1.217	12.33%
lasafe8	Local area - safety traveling by public transport after dark	1.291	1.154	1.444	18.33%
wbhapyest	Well-being - overall happiness yesterday (0-10 scale)	0.901	0.861	0.942	-23.93%
_cons	Intercept	0.796	0.353	1.795	
Model fit:	*Pseudo R Squared*	*0.039*			
Base:		*3873*			
	Effect not statistically significant				

Table A.15: Comparison of logistic regression and generalized estimating equations (controlling for LSOA-level clustering) for dissatisfaction transport services

		Logistic regression (without weights)			Generalized estimating equation (Binomial family; logit link)		
Independent variables	Description	Logistic regression coefficient (log odds)	95% Confidence Interval		Logstic regression coefficient (log odds)	95% Confidence Interval	
natidwel	National Identity - Welsh	0.032	-0.111	0.176	0.030	-0.113	0.174
dvagegrp3	Derived variable - Age group 3	0.064	-0.011	0.139	0.066	-0.009	0.140
dvethnicity	Derived variable - Ethnicity (White or non-white)	-0.795	-1.246	-0.345	-0.797	-1.247	-0.347
dvhiqual2	Highest educational qualification	0.160	0.112	0.207	0.157	0.109	0.204
rel	Religion	-0.048	-0.200	0.103	-0.046	-0.197	0.105
urbrurdum	Urban-Rural classification	0.252	0.098	0.407	0.244	0.082	0.406
working	In paid or unpaid work	0.275	0.118	0.432	0.268	0.111	0.426
finbilcred	Finance - ability to keep up with bills and credit commitments at present	-0.083	-0.163	-0.003	-0.090	-0.170	-0.010
gender	Gender	0.056	-0.084	0.196	0.059	-0.081	0.198
lafreetraf	Local area - free from heavy traffic	0.095	0.045	0.144	0.097	0.048	0.147
lasafe8	Local area - safety traveling by public transport after dark	0.288	0.203	0.373	0.289	0.204	0.374
wbhapyest	Well-being - overall happiness yesterday (0-10 scale)	-0.085	-0.118	-0.053	-0.084	-0.116	-0.051
_cons	Intercept	-0.382	-0.964	0.200	-0.369	-0.952	0.214
Base:		*3740*				*3740*	
	Effect not statistically significant						

Table A.16: Logistic regression results: being dissatisfied with the Welsh Government					
Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
working	In paid or unpaid work	1.288	1.126	1.473	5.86%
wgseehear2	Amount seen or heard about Welsh Government in the last 12 months	2.866	2.137	3.843	20.42%
wbsat6	Well-being - overall satisfaction with area lived in (0-10 scale)	1.059	1.020	1.099	12.48%
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhi	0.876	0.841	0.913	-26.26%
wbhapyest	Well-being - overall happiness yesterday (0-10 scale)	0.966	0.935	0.998	-7.77%
violentcrime	violent crime incidences (% of day-time population)	0.949	0.900	1.000	-16.81%
urbrurdum	Urban-Rural classification	1.067	0.938	1.214	1.50%
uaqualserv	Local authority services - provides high quality services	1.239	1.163	1.320	19.22%
uainfdecs	Local authority services - can influence decisions affecting my local area	1.118	1.060	1.179	10.42%
uacomperf	Local authority services - good at letting local people know how well it is perf	1.147	1.087	1.210	12.62%
rel	Religion	0.875	0.770	0.995	-3.07%
nhsmrinvol	NHS - would like to be more involved in the decisions local health services make	0.946	0.900	0.996	-5.10%
nhskptinf	NHS - kept informed about how well local health services are performing	1.130	1.073	1.189	11.43%
natidwel	National Identity - Welsh	0.877	0.777	0.989	-3.03%
lawelmain	Local area - well maintained	1.087	1.020	1.159	7.62%
lasafe8	Local area - safety traveling by public transport after dark	1.109	1.030	1.194	7.12%
gender	Gender	0.990	0.881	1.112	-0.24%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.955	0.889	1.026	-4.17%
dvhiqual2	Highest educational qualification	1.042	1.001	1.084	3.80%
dvethnicity	Derived variable - Ethnicity (White or non-white)	0.545	0.345	0.861	-14.79%
dvagegrp3	Derived variable - Age group 3	0.777	0.726	0.831	-23.01%
_cons	Intercept	1.816	0.962	3.427	
Model fit:	*Pseudo R squared*	*0.084*			
Base:		*10463*			
	Effect not statistically significant				

Table A.17: Logistic regression results: being dissatisfied with the Welsh Government (categorical)					
Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	0.885	0.785	0.998	-2.79%
_Idvagegrp3_2	65-74 year olds	1.209	0.996	1.468	4.12%
_Idvagegrp3_3	45-64 year olds	1.018	0.831	1.247	0.40%
_Idvagegrp3_4	25-44 year olds	0.781	0.621	0.983	-5.74%
_Idvagegrp3_5	16-24 year olds	0.426	0.318	0.571	-20.72%
	Compared to: 75+ year olds	0.000			
dvethnicity	Derived variable - Ethnicity (White or non-white)	0.552	0.350	0.872	-14.43%
_Idvhiqual2_1	Below NQF level 2	1.195	0.960	1.488	4.06%
_Idvhiqual2_2	NQF level 2	0.950	0.797	1.133	-1.20%
_Idvhiqual2_3	NQF level 3	1.035	0.841	1.273	0.80%
_Idvhiqual2_4	NQF levels 4-8	1.170	0.987	1.387	3.59%
	Compared to: No qualification	0.000			
rel	Religion	0.869	0.763	0.988	-3.22%
urbrurdum	Urban-Rural classification	1.084	0.952	1.233	1.84%
working	In paid or unpaid work	1.160	1.004	1.339	3.41%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.974	0.906	1.047	-2.41%
gender	Gender	1.002	0.891	1.126	0.04%
uaqualserv	Local authority services - provides high quality services	1.228	1.153	1.309	18.36%
lasafe8	Local area - safety traveling by public transport after dark	1.117	1.037	1.203	7.54%
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhile	0.874	0.838	0.911	-26.49%
wbhapyest	Well-being - overall happiness yesterday (0-10 scale)	0.968	0.937	1.000	-7.29%
lawelmain	Local area - well maintained	1.088	1.021	1.160	7.67%
nhskptinf	NHS - kept informed about how well local health services are performing	1.123	1.067	1.183	10.85%
wbsat6	Well-being - overall satisfaction with area lived in (0-10 scale)	1.059	1.020	1.099	12.35%
nhsmrinvol	NHS - would like to be more involved in the decisions local health services make	0.957	0.910	1.007	-4.04%
uacomperf	Local authority services - good at letting local people know how well it is performing	1.150	1.090	1.214	12.81%
uainfdecs	Local authority services - can influence decisions affecting my local area	1.119	1.061	1.180	10.49%
wgseehear2	Amount seen or heard about Welsh Government in the last 12 months	2.971	2.221	3.973	20.79%
violentcrime	violent crime incidences (% of day-time population)	0.950	0.901	1.000	-16.42%
_cons	Intercept	0.923	0.500	1.706	
Model fit:	*Pseudo R squared*	*0.09*			
Base:		*10463*			
	Effect not statistically significant				

Table A. 18: Logistic regression results: not having seen or heard about the Welsh Government					
Independent variables	Description	Odds Ratio	95% Confidence Interval		Percentage point change between maximum and minimum values
natidwel	National Identity - Welsh	0.756	0.629	0.909	-2.04%
dvagegrp3	Derived variable - Age group 3	1.484	1.322	1.665	12.01%
dvethnicity	Derived variable - Ethnicity (White or non-white)	2.331	1.413	3.843	8.42%
dvhiqual2	Highest educational qualification	0.765	0.712	0.821	-8.09%
rel	Religion	0.896	0.732	1.097	-0.79%
urbrurdum	Urban-Rural classification	0.926	0.751	1.141	-0.54%
working	In paid or unpaid work	0.756	0.602	0.950	-1.97%
finbilcred	Finance - ability to keep up with bills and credit commitments at present	0.994	0.899	1.098	-0.18%
gender	Gender	0.743	0.615	0.897	-2.07%
inthhhave	Internet - household has access to the internet	0.670	0.547	0.820	-3.07%
welangabil	Welsh language ability	0.896	0.828	0.969	-2.83%
lafreetraf	Local area - free from heavy traffic	1.095	1.024	1.171	2.61%
wblifewrth	Well-being - overall extent of feeling that the things done in life are worthwhile	0.920	0.877	0.966	-7.24%
_cons	Intercept	0.179	0.082	0.390	
Model fit:	*Pseudo R squared*	*0.07*			
Base:		*13097*			
	Effect not statistically significant				

NatCen Social Research

NatCen Social Research is Britain's leading independent social research institute with around 120 research staff (located in London and Edinburgh). We are a not-for-profit organisation with charitable status, dedicated to making an impact on society and advancing the role of social research in the UK. Our research covers all areas of social policy, and our findings have direct, practical application in terms of understanding social behaviour and informing policy.

Many of the UK's most important social surveys are run by NatCen, including the:
Welsh Health Survey (WHS),
Health Survey for England (HSE),
Scottish Health Survey (SHeS),
British Social Attitudes (BSA),
Scottish Social Attitudes (SSA),
Adult Psychiatric Morbidity Survey (APMS),
National Study of Work-search and Wellbeing (WSWB),
English Longitudinal Survey of Aging (ELSA), and
Understanding Society.

We carry out secondary analysis of our survey datasets, as well as of survey and administrative data collected by others. The analytical methods we use range from summary tabulations to multivariate techniques such as regression, multi-level modelling and latent class analysis. We report findings in a variety of ways, including through substantive reports, short evidence papers, blogs and presentations. We have a dedicated team of interviewers in Wales and regularly carry out Welsh-specific research.

NatCen Social Research
35 Northampton Square
London EC1V 0AX
T 020 7250 1866
www.natcen.ac.uk

A company Limited by Guarantee
Registered in England No.4392418
A Charity registered in England and Wales (1091768) and Scotland (SC038454)