



National Travel Survey

Comparing methods of collecting attitude data, 2016

Most questions within the NTS concern factual travel behaviours. However, there is a short section which asks about attitudes to local transport provision. In 2016, an experiment was carried out. For a random half of all households, the attitude questions were asked of the household reference person (HRP) as part of the Household interview, as in previous years. In this factsheet, this sample is referenced as 'HH'. For the other half of households, a random adult was selected from those present during the interview. The selected adult then completed the questions themselves, using a computer, rather than being asked by the interviewer. This sample that self-completed are referenced as 'SC'. This factsheet analyses the results of this experiment.

This factsheet consists of these sections:

- How do the respondents in the two samples compare demographically, and how do they compare with the adult population of England as a whole?
- How do the respondents in the two samples differ in their attitudes?
- What implications do these results have for a possible break in the series of attitude questions?
- An appendix at the end gives more details on how the questions and response options in the Self-Completion section differ from the questions in the conventional Household section.

For most attitude questions, those in the Household interview sample were more likely to be very satisfied, and less likely to respond neutrally, than those self-completing (as in the chart below).



These differences are not explained by different sex and age proportions within the two samples.

This means that years will not be comparable across the two methods.

However, it is likely that the SC sample will be more representative of English adults, and self-completion answers will be less biased.

Demographic make-up of the two samples

Information such as the urban or rural location of the household, household income quintile, or number of household cars are still asked at the household level for both samples. Since households were selected at random for the two samples, there is no significant difference in the sample composition on these measures.

However, the whole point of changing from asking just the Household Reference Person to asking a random adult within the household was to obtain a sample of individuals which is less biased and more representative of the population of England. The weight used for the new self-completion attitudes questions is designed to reduce this bias. We would therefore expect the two samples to be different in their composition. Since gender and age are the two main ways in which the proportions of individuals differs in the two samples, analysis in this factsheet concentrates on these factors.

Household Reference Person

In the National Travel Survey (NTS), the household questionnaire is asked of the Household Reference Person (HRP), which is the householder with the highest income, or their spouse or partner. In exceptional cases the household questionnaire can be asked of another responsible adult aged 16 or over.

Gender

In the modules completed by the Household Reference Person, 47% of respondents are men, and 53% are women. In the self-completion mode, the proportions are closer to the national average: 49% male, 51% female.

Age Group

The HRPs completing the Household interview consist of disproportionately fewer young people (aged 16-29), and more older people (aged 60 or more) than the general population (estimated by the Office for National Statistics). The Household module also contains a slightly high proportion of people aged 30 to 59. The respondents completing the SC module are distributed much more closely to the ONS figures (Chart 1). The number of adults aged 16-20 in the sample is too small to be reliably analysed separately, so they have usually been combined here with the 21-29 group.

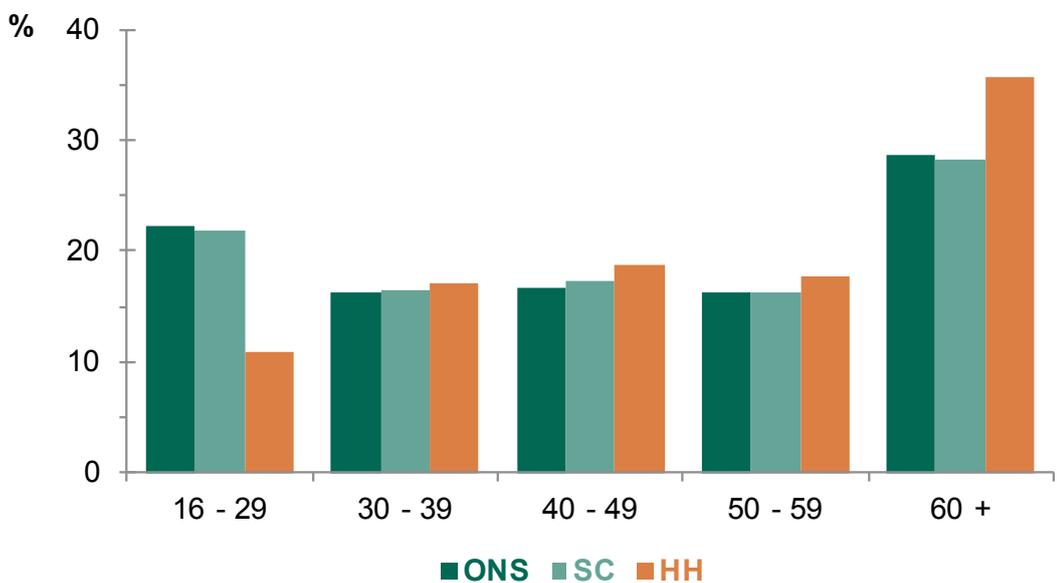


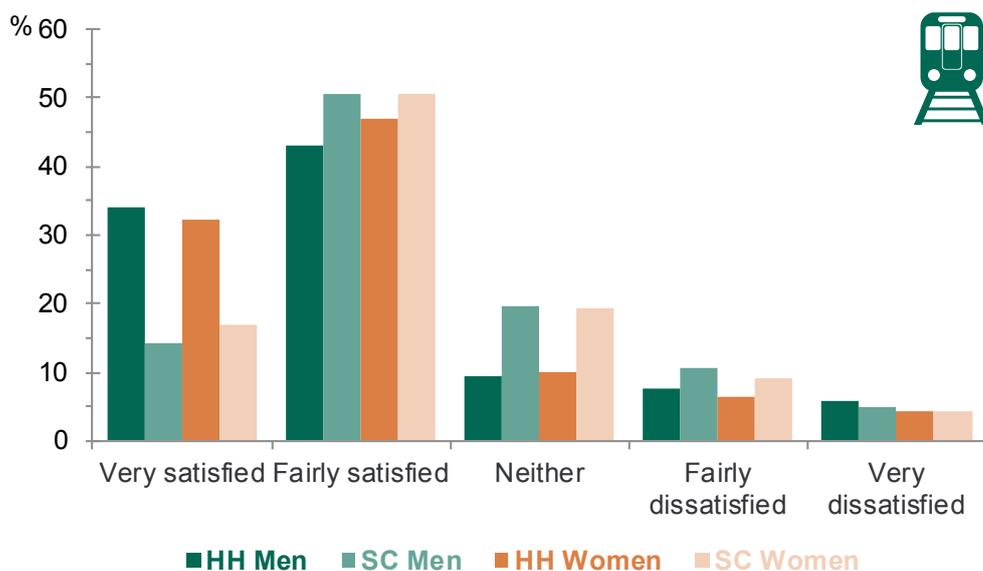
Chart 1: Age groups in ONS population estimates, Self-completion & Household samples: England, 2016

Attitudes to train and bus services, by gender

As shown in Table 1 in the Appendix, in the Household interview, the question asks about *all* rail services (that includes light rail and the London Underground); the response options include “Don’t use”. In the Self-completion module, the question asked is just about train services; the response options include “Don’t know”.

Since the “Don’t know” and “Don’t use” responses don’t match, percentages were calculated using just the five Likert responses (see box opposite). The major difference between the two samples is that responses in the household module had a far higher proportion than the self-completion module who were very satisfied, and a lower proportion who answered “Neither”. For other responses, the differences between the two modes are relatively negligible (see Chart 2).

Chart 2: General satisfaction with rail / train services: England, 2016



Likert scale

A Likert scale is a set of response options ranging from very positive to very negative, through a neutral point in the middle – usually, as in the NTS, across 5 points: eg “Very satisfied”, “Satisfied”, “Neither satisfied nor dissatisfied”, “Dissatisfied”, “Very dissatisfied”.

A very similar pattern applies for other questions about train services, and bus services. In both samples though, responses were still predominantly positive. For bus services, the self-completion responses include an option for “No local bus service in my area”, which does not exist in the Household interview. (See charts 3-7).

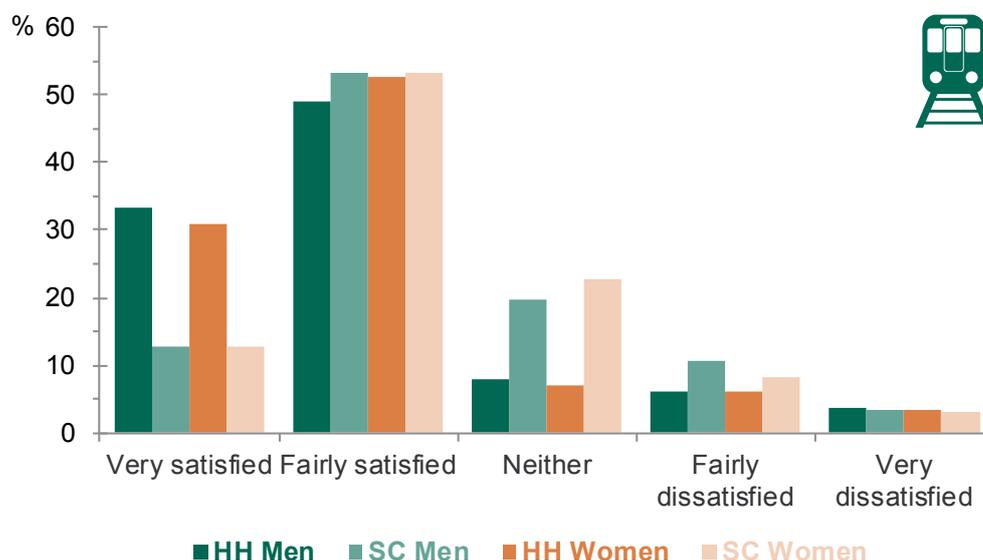


Chart 3: Satisfaction with rail / train reliability: England, 2016

Chart 4: Satisfaction with rail / train frequency: England, 2016

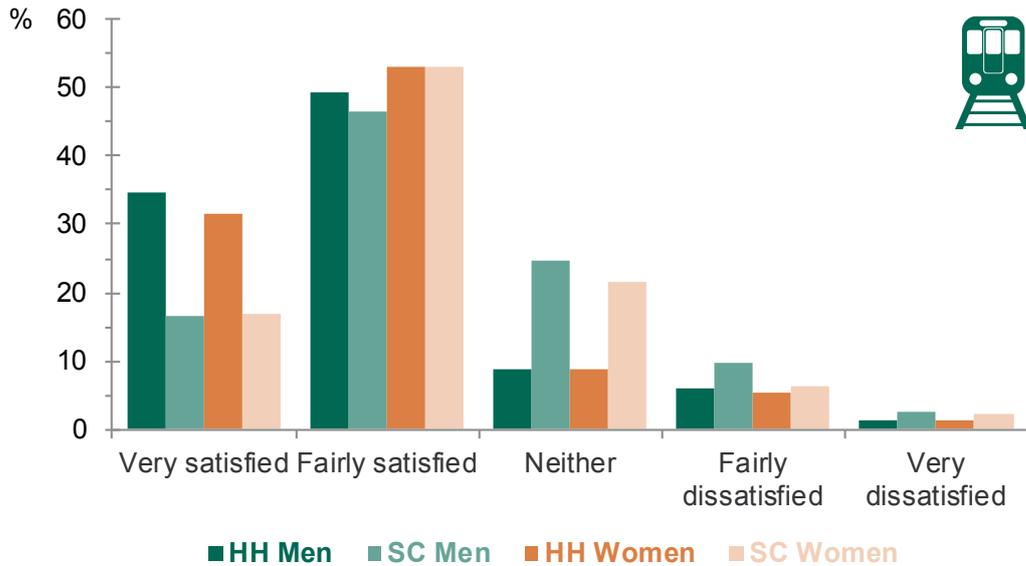


Chart 5: General satisfaction with bus services: England 2016



Chart 6: Satisfaction with reliability of buses: England, 2016

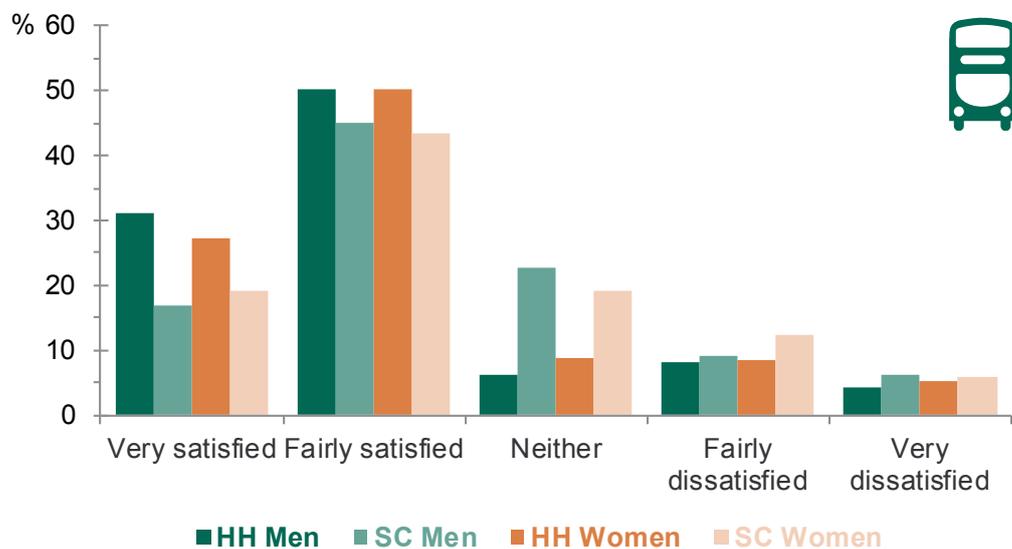
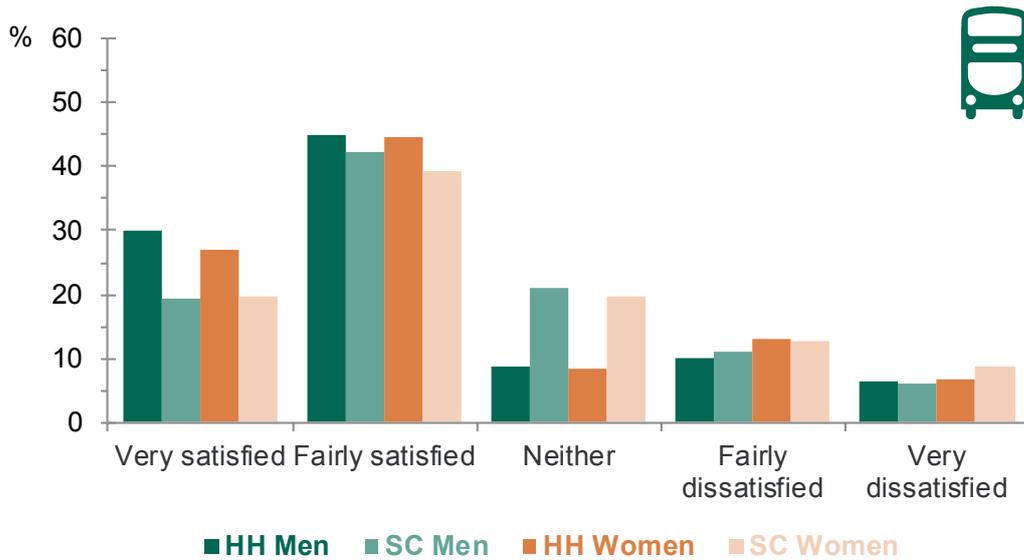


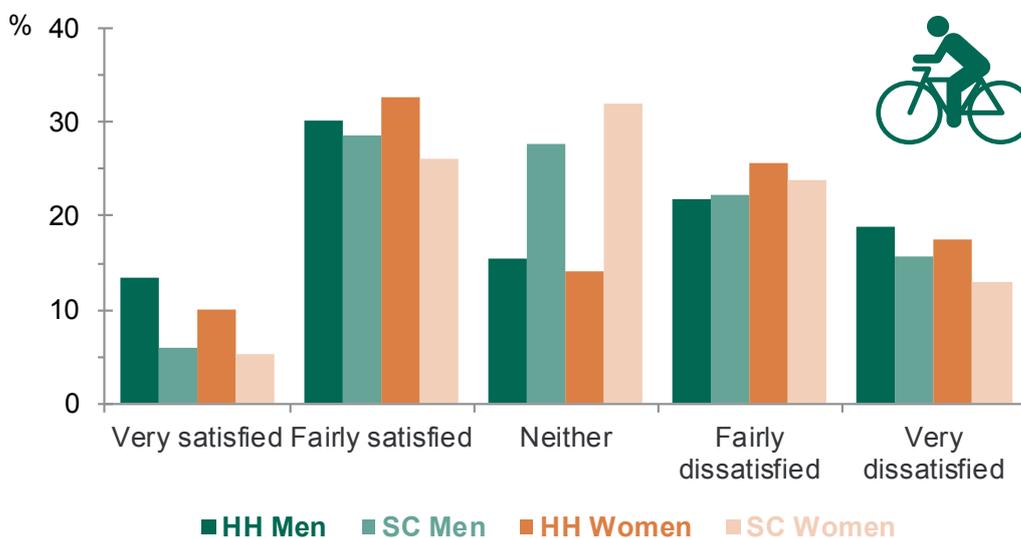
Chart 7: Satisfaction with frequency of buses: England, 2016



Cycling and Walking, by gender

Responses about attitudes to local cycling provision tend to be less positive than attitudes to bus and train services, in both samples. However, the same general pattern appears as seen above: responses in the household sample had a far higher proportion than the self-completion sample who were very satisfied, and a lower proportion who answered “Neither” (see Chart 8).

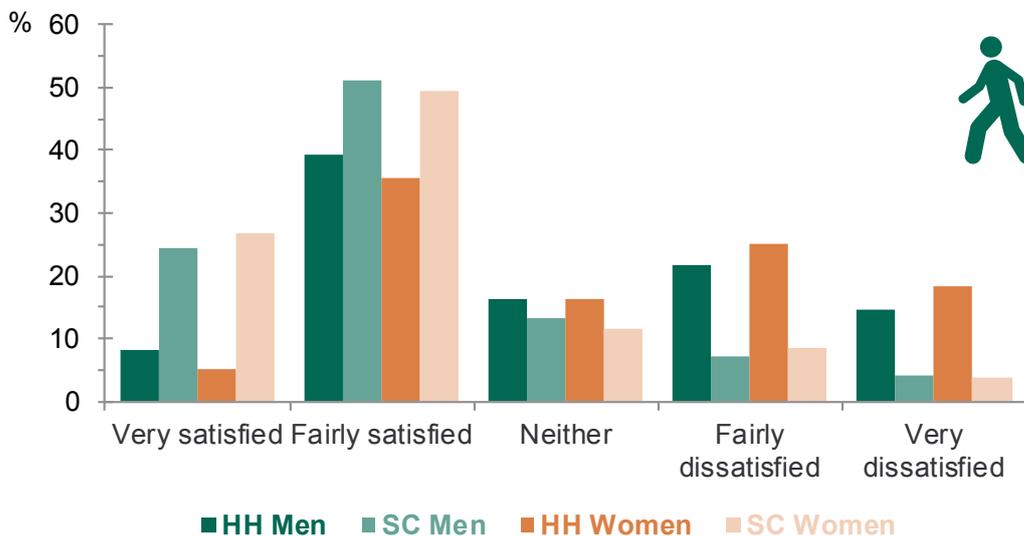
Chart 8: Satisfaction with cycling provision: England, 2016



The household questionnaire has response options for “No local cycle lanes” and “Do not use”, which do not exist in the self-completion module, so it may be that many who might have used these options answered “neither” in the self-completion module.

The pattern for the questions about provision for walking is the reverse of that seen for all the above. Whereas, for other attitudes, those completing the household interview showed themselves much more positive than those answering the self-completion module, for walking it appears the other way round (see chart 9). There are fewer differences in those answering “neither”, so differences are much more polarised between the two modules.

Chart 9: Satisfaction with walking provision: England, 2016



The different pattern from the other items may be due to a greater difference in the questions. The Household sample were asked specifically “How would you rate the condition of pavements locally where you live?”, with options for “Not many pavements in your area”, “Do not use” or “No opinion / Don’t know”. The SC sample were asked more generally “Overall how satisfied or dissatisfied are you with provision for walking in your local area?”, with only an option for “Don’t know”, besides the 5 Likert responses. General satisfaction appears to be higher than concern with pavement condition.

Although there are slight differences by gender in both modules around which sex is the more positive or negative, the differences are too small to account for the size of the differences between them. These differences cannot be principally due to the different proportions of men and women in the two samples. In the next section, therefore, we examine differences by age group.

Differences by age group

In charts 10a and 10b below, showing general satisfaction with rail / train services, we have produced graphs for men and women separately. Because there are so few adults aged 16-20, they have been combined with those aged 21-29 – but still make up a somewhat smaller group than other age groups. Across every age group, those answering the household questionnaire are much more likely to be “very satisfied”, and, when “very satisfied” and “fairly satisfied” responses are combined, the same pattern holds. The differences are especially marked among the youngest and oldest age groups. Those answering the self-completion questionnaire are more likely, at every age group, to answer “neither satisfied nor dissatisfied”.

Chart 10a: Satisfaction with rail / trains, by age and sex - Men: England, 2016

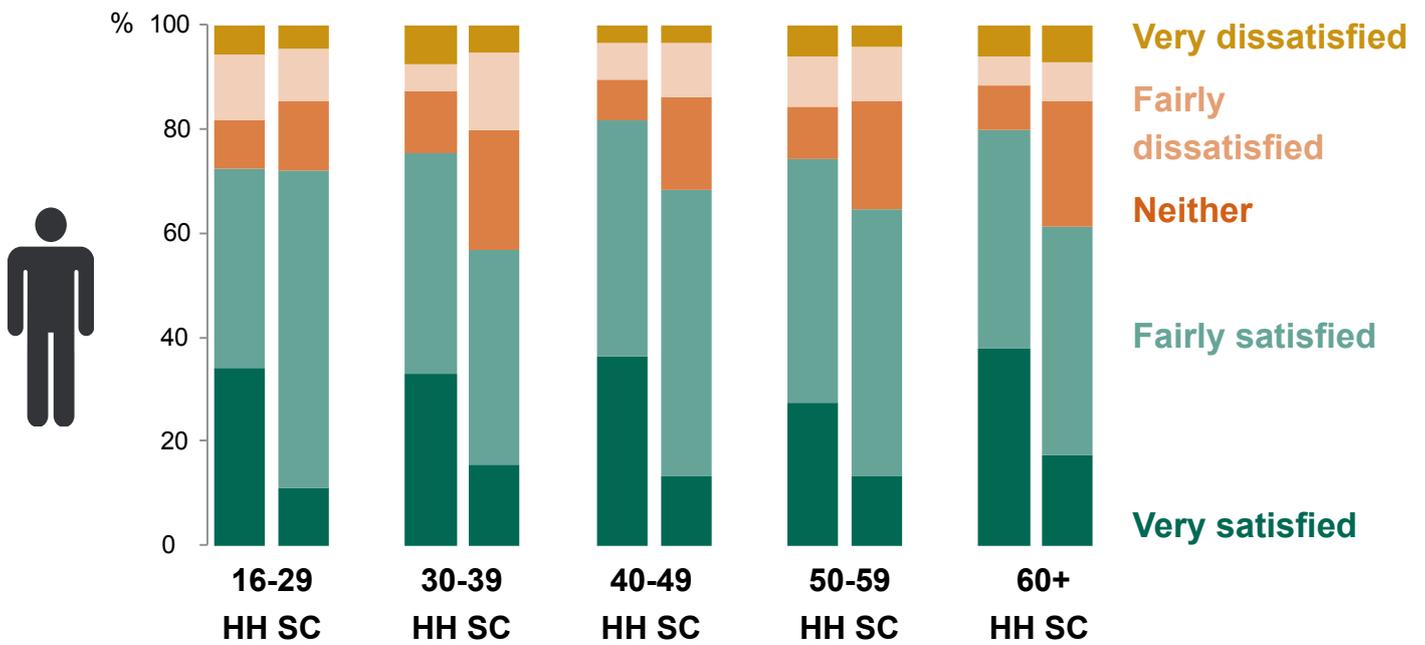
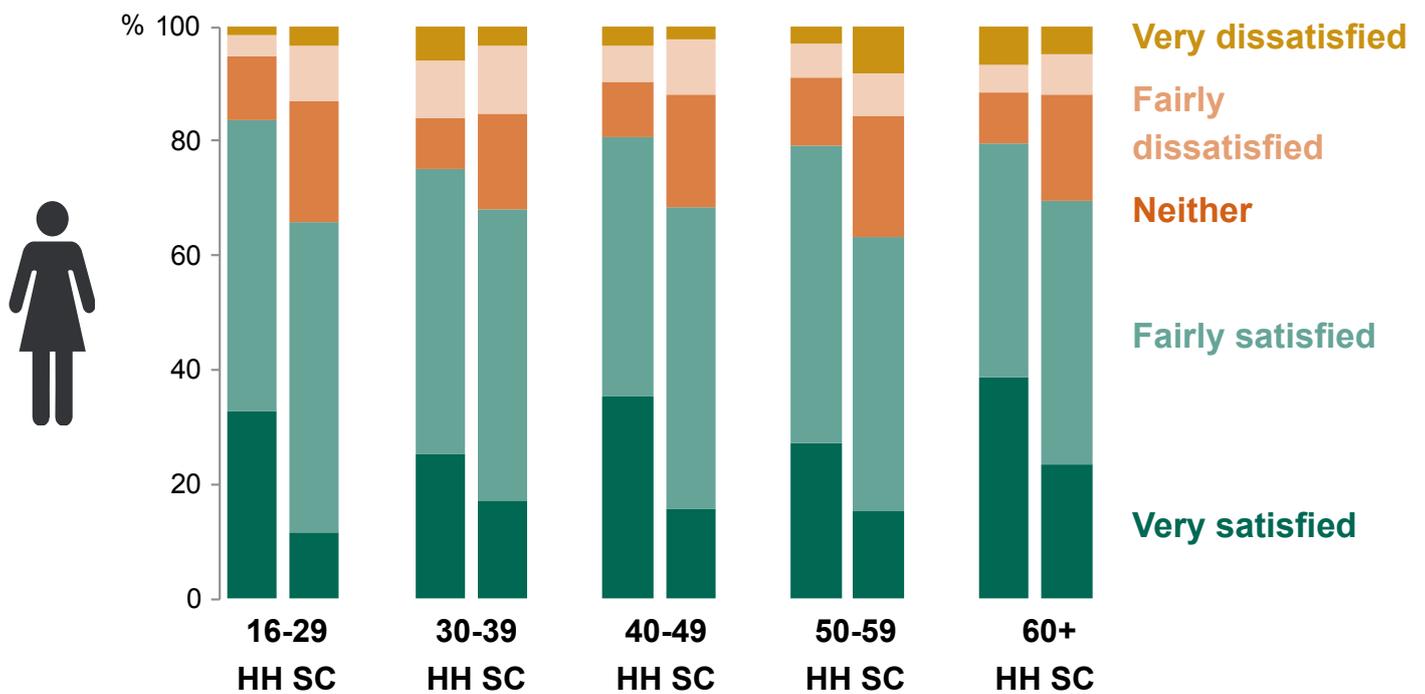
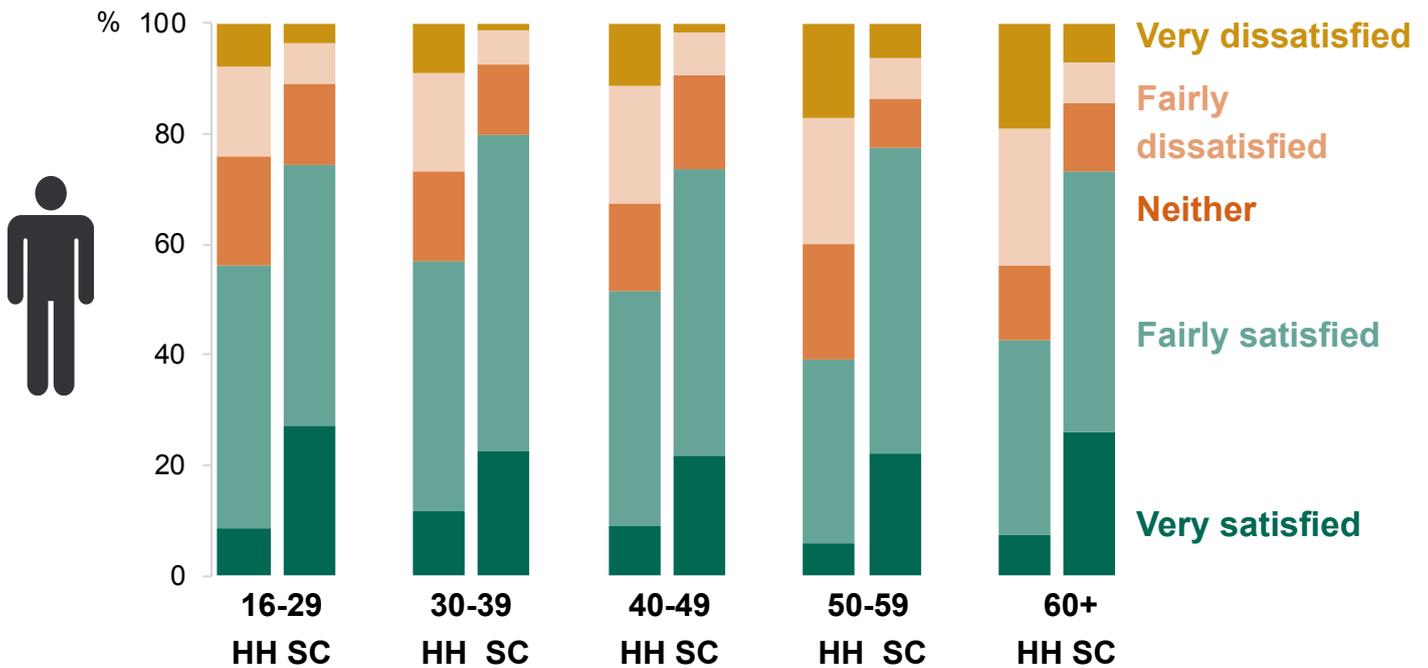


Chart 10b: Satisfaction with rail / trains, by age and sex - Women: England, 2016



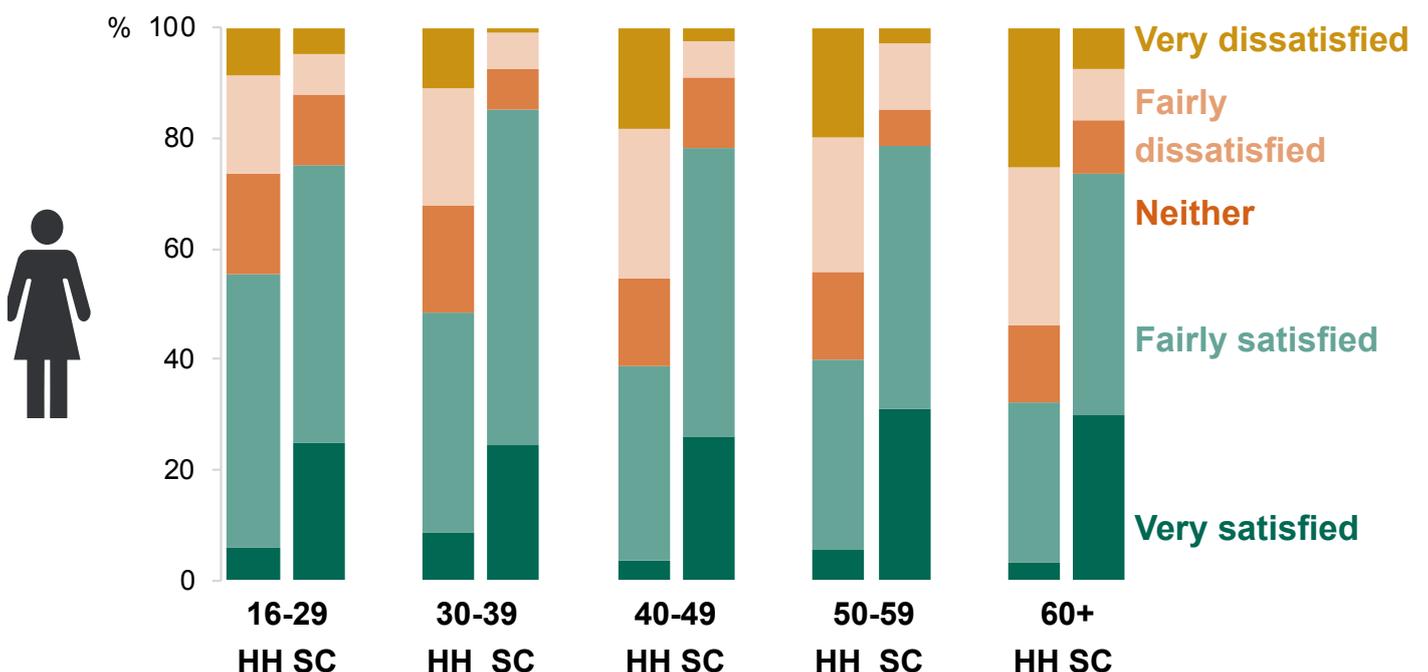
Because the charts for train, bus and cycling were all similar when analysed by sex, we have not reproduced analysis of all the questions by age group.

Chart 11a: Satisfaction with walking provision, by age and sex - Men: England, 2016



When attitudes towards walking provision are analysed by both age and gender, the greatest differences are *between* the HH and SC samples; the differences by age or by sex *within* each sample are less (charts 11a and 11b). As when the differences were analysed just by gender, the difference for walking is the reverse of that for other travel modes - for both sexes and across all age groups, those in the SC sample are *more* satisfied than those in the HH interview, not less. In both samples, people over 30 tend to become less satisfied with walking provision with age, but this is less marked in the SC sample. Again, the differences between the two samples may be attributable to differences in the question wording and response options.

Chart 11b: Satisfaction with walking provision, by age and sex - Women: England, 2016



Social desirability

Since the differences between the Household questionnaire and the Self-completion module do not seem to be explained by either the gender or the age-group composition of the sample, a further possible explanation is that of “social desirability”: those answering the household questionnaire to the interviewer are more likely to give a positive or very positive response, whilst those completing the questionnaire privately on the computer are less likely to do so, and are more likely to give a neutral response.

Conclusions

By selecting an adult at random, instead of asking attitude questions of the household reference person, the sample is much more balanced by gender, and also much closer to the national English distribution by age.

In general, across seven of the eight attitude questions, those self-completing the questions are less likely to express positive satisfaction about transport services, and more likely to give a neutral answer, than those replying to the interviewer as part of the usual household interview. Nonetheless, attitudes towards trains and buses overall, for both methods, were broadly positive. For attitudes to walking, however, this situation is reversed: those using the self-completion mode tend to be *more* satisfied. Since these patterns hold regardless of sex or age group, it seems unlikely that the differing proportions within the samples can account for the differences in positive or negative response.

We cannot be sure, therefore, what accounts for the differences in responses to the two samples. A possible explanation for the tendency for those self-completing to give a higher neutral response is that the response options for this sample do not include “no local service” or “don’t use”, so such respondents may opt for the neutral response instead.

A possible explanation for the more positive responses to the conventional household questionnaire is social desirability - the tendency for the respondent to give answers to the interviewer which are more socially acceptable, or which they think the Department for Transport may wish to hear.

Whatever the explanation for the differences, the use of self-completion in future for attitude questions will entail a break in the series, so that answers from previous years will not be directly comparable with later years. It is likely, though, that the social composition of the respondents will be more representative of English adults, and possible that the answers may be more honest and reliable. This will create scope to extend the range of attitude questions asked of individuals within the NTS in future years.

Appendix: Background

Up to 2014, attitude questions in the NTS were asked as part of the Household section, and answered by whichever adult was available, described as the Household Reference Person (HRP). It seemed doubtful, though, that the people answering the household section were a random sample of the population: by virtue of being “available”, they tended to exclude young adults or those in employment, and disproportionately included people at home more often (for example, the retired and carers). Whilst it is considered acceptable for a single adult to answer behavioural questions by proxy if necessary, this is not so for attitudes, as different members of a household may well hold different opinions, depending on their age, sex or use of public transport.

In 2015, an experiment was carried out whereby the attitude questions were printed on paper, and interviewers’ computers selected a random adult from the household to complete this section. Having the questions on paper meant that the selected adult did not have to be present, and the completed forms were collected at the pick-up interview, along with travel diaries. As expected, the demographic makeup of respondents for the paper questionnaires was closer than the usual household reference people to the makeup of the general adult population.

Having questions on paper, however, was administratively burdensome. So, in 2016, a split experiment was carried out, with all questions and responses on the computer: in a random half of households, attitude questions were administered by the interviewer to the HRP as part of the usual household interview. In the other half of households, the computer selected a random adult *from among those present*, and this adult answered the questions directly on the computer, without the interviewer. This self-completion procedure helps reduce social desirability bias.

The attitudes thus expressed were those of individuals, and not taken to be representative of whole households. However, it was not appropriate to use the usual Household / Individual weights (W3), since children and adults not present were excluded. So a new weight (W6) was calculated, to apply just to the new Attitude level created by this method. Having a new Attitude level creates the possibility of adding further attitude questions in future, if desired, and obtaining them from a more representative sample than the household reference person.

Question wording

In both modules, there is a set of three question items about each of bus and train services: a general question about services, one about reliability, and one about frequency.

There are a number of differences between the two formats in question wording about attitudes, which mean that, although similar, they are not strictly comparable. For example, the old Household questions about rail specifically combined train, underground, metro, light rail and tram services; the Self-completion module simply refers to “trains”.

The Household format asks about “provision of the cycle lanes in your area”, and “the condition of the pavement where you live” whereas the Self-completion module asks about “provision for

cycling in your local area”, and “provision for walking in your local area”. The full list of comparable questions in the two modules is given in Table 1 below.

Table 1: Wording of questions

Household interview module	Self-Completion module
<ul style="list-style-type: none"> • How satisfied are you with train / underground / metro / light rail / tram services? • How would you rate the reliability of trains / LU / light rail / metro / tram? • How would you rate the frequency of trains / LU / light rail / metro / tram? • How satisfied are you with your local bus services? • How would you rate the reliability of local buses? • How would you rate the frequency of local buses? • How would you rate the provision of the cycle lanes in your area? • How would you rate the condition of the pavement where you live? 	<ul style="list-style-type: none"> • Overall how satisfied or dissatisfied are you with train services? • How satisfied or dissatisfied are you with the reliability of trains? • How satisfied or dissatisfied are you with the frequency of trains? • Overall how satisfied or dissatisfied are you with local bus services? • How satisfied or dissatisfied are you with the reliability of local buses? • How satisfied or dissatisfied are you with the frequency of local buses? • Overall how satisfied or dissatisfied are you with provision for cycling in your local area? • Overall how satisfied or dissatisfied are you with provision for walking in your local area?

The Household format asks “How would you rate” different services, with five **Likert** response options such as “Very reliable / fairly reliable”, “Very frequent / Fairly frequent” or “Very good / Very poor”; the Self-completion module asks “How satisfied or dissatisfied are you” with the services, with a five-point scale from “Very / fairly dissatisfied” to “Fairly / Very satisfied”.

Response options both between questions and between the two HH and SC formats differ on whether or not they offer additional options for “Do not use”, “No local service”, “No opinion / Don’t know”. It is not possible within either format to establish whether someone does not use a bus or train service because they are dissatisfied with it, or if they have no opinion because they do not use the service, since these response options are mutually exclusive. The Self-completion module also asks two questions about satisfaction with “motorways and these major A roads” (shown a map of A roads), and with “local roads” – question items for which there is no equivalent in the Household module. Whilst acknowledging the differences in question wording and response options described above, for the purposes of this factsheet, responses on approximately similar questions were compared, using percentages calculated only from the 5 Likert-scale items.

Likert scale

A Likert scale is a set of response options ranging from very positive to very negative, through a neutral point in the middle – usually, as in the NTS, across 5 points: eg “Very satisfied”, “Satisfied”, “Neither satisfied nor dissatisfied”, “Dissatisfied”, “Very dissatisfied”.



Notes on the NTS

The NTS is a survey of private households. Data are collected from around 16,000 individuals a year through a face-to-face interview and a 7-day travel diary. As these statistics are derived from a sample survey, resulting estimates can fluctuate as a result of sample variability. Therefore users should be careful when drawing conclusions, particularly from short-term changes or analyses based on small sample sizes.

Coverage

Figures cover England, unless specifically stated.

Further reading and references

More details about travel behaviours of English residents can be found in the 2016 National Travel Survey publication: <https://www.gov.uk/government/statistics/national-travel-survey-2016>.

Full guidance on the methods used to conduct the survey, response rates, weighting methodology and survey materials can be found in the [National Travel Survey Technical Report: 2016](#) on the above page.

More factsheets on further specific topics from the National Travel Survey can be found at: <https://www.gov.uk/government/publications/nts-factsheets>.

The attitude questions in the NTS differ from those in the travel module of the British Social Attitudes survey, which can be found at: [British Social Attitudes Survey, 2016 Report](#)

The NTS also differs from attitude questions on the National Train, Bus and Tram Passenger Surveys, which sample only users of those services, not the general population. Results from those surveys may be found at:

[National Rail Passenger Survey](#)

[National Bus Passenger Survey](#)

[National Tram Passenger Survey](#)

Contact us

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