

## Changes to the method for the Tram Passenger Survey in Autumn 2015 Summary of the changes and their impact

### 1. Introduction

Changes were made to the way tram services were sampled for the Tram Passenger Survey (TPS) in Autumn 2015, compared to previous years. In summary these were:

- As previously, tram services were selected with probability proportional to the volume of passengers they carry. Up to and including the 2014 survey, the number of services running at different times of the day was used as a proxy for the number of passenger journeys taking place at these times. This was changed in 2015 to be based on actual passenger journey information, supplied by operators
- As part of this, sampling (and therefore weighting) took into account the differences between different day-parts<sup>1</sup>, specifically differentiating between morning and evening peaks, rather than 'total' peak as previously
- Shifts were set so they started 1.5 hours earlier than the tram services selected at the sampling stage, effectively making those selected services the mid-point of shifts rather than the start point. Previously, manual adjustments were made so that a proportion of late-evening shifts were actually conducted in the early morning, and in some cases based on further judgement.

In theory, these changes could mean that greater fieldwork emphasis has been put on earlier times in the day than in previous years, which in turn could impact on satisfaction recorded with tram journeys. This document summarises the impact of these changes; it is a summary of a more detailed analysis which is given in the full Technical Report for the Autumn 2015 wave.

In addition, this document summarises key implications of the data collection method, in which tram passengers are offered the choice to take either a paper self-completion questionnaire, or to provide their email address so that they can be sent a link to an online version of the survey. This method has always been in place for the TPS since its launch and has not changed.

---

<sup>1</sup>'Day-parts' are: 'Morning peak' (weekdays 07:00-09:30), 'Evening peak' (weekdays 16:00-18:30), 'Off-peak' (weekdays at other times) and 'Weekends' (any time on Saturdays or Sundays).

## **2. Implications of the changes to sampling in Autumn 2015**

### **Impact on profile of fieldwork shifts and respondent profile**

The changes to the sampling process in Autumn 2015 actually resulted in a similar pattern for when fieldwork shifts took place as in 2014 though the proportion of evening peak shifts was slightly lower, and the proportion of weekday off-peak shifts slightly higher. This is because of the few manual adjustments which were made to the fieldwork shifts in 2014 following sense checks at that time; it is simply that the method to arrive at this fieldwork profile was more evidence-based and more systematic in 2015.

In both years, the un-weighted profile of people responding to the survey was also similar to the fieldwork profile, although overall slightly less weighting was needed in 2015 to bring the respondent profile fully into line with the original universe data in terms of day-part. Further, although there were some small changes in the weighted profile compared to 2014, these were minor and we were able to conclude that the change in the sampling process had not impacted on the profile of respondents who took part in the 2015 survey, compared to 2014.

### **Impact on survey results**

With little change to the sample profile since 2014, we would not expect to see big changes in satisfaction either, except where real events or changes to services had caused this. Indeed the TPS in 2015 did show some increases in passenger satisfaction for some measures (e.g. overall journey satisfaction rose from 90 per cent to 92 per cent). In all cases, these could be explained by genuine increases in satisfaction within one or more of the day-parts, rather than being a function of those day-parts contributing more or less than in previous years. Other factors also being equal, improvements in passenger satisfaction at the 'All Network' level, are therefore genuine.

In conclusion, we saw that the change in the sampling methods in 2015 did not notably impact on the results of the TPS. By making the sampling process more systematic and evidence-based however, they have enhanced the credibility of the survey, therefore bringing a net improvement overall. The recommendation is therefore to continue with the sampling and weighting procedures used in 2015, in future waves of the survey.

## **3. Implications of using dual modes of completion**

In previous waves of the TPS, it has been shown that completion method (online or paper) may have a very small influence on the way people respond to questions, and therefore on the satisfaction results – but that this is extremely minor in comparison to other factors, particularly age, which the use of an online method in addition to paper is designed to help control.

The table below shows the relative influence that a number of factors were found to have on how positively or negatively people answer. These relative levels of influence were determined by a key driver analysis on overall journey satisfaction, using gender, age, route and mode of interviewing as the potential drivers of satisfaction. Age, route and gender are significant drivers of overall journey satisfaction, and while mode of interviewing does have a small impact, this is not statistically significant. Age is by far the most significant driver of overall journey satisfaction.

#### Relative strength of influence on overall journey satisfaction ratings

Source	
Age group	205.799
Gender	30.091
Route	21.860
Mode of interviewing	3.075

Although the influence of interviewing mode is extremely small, the 2015 survey saw a lower contribution from online surveys than in previous waves (23 per cent compared to 34 per cent in 2014 and 27 per cent in 2013). Since online respondents usually answer more negatively (linked to the fact that they are typically more likely to be commuters and fare-payers), and given that satisfaction has improved overall in 2015, it was worth checking again whether this improvement was real, or influenced by (more positive) paper respondents contributing more to the 2015 results.

Looking at satisfaction results for various measures between online and paper respondents, and controlling for age in particular, we found no pattern to indicate that online respondents were systematically and significantly more negative than paper respondents. This supported the previous findings: that online respondents are typically more negative than paper respondents, but this is mainly a function of their age, and while the mode of completion itself can have a very small impact on satisfaction this is relatively insignificant compared to the impact of age.

We also looked at the trend in the proportion of online versus paper contribution to the survey over time, and the trend in satisfaction over time (again, also controlling for age), and saw no relationship between these, nor between satisfaction and proportion of surveys completed by any particular age group. Rather, satisfaction had increased within each of these groupings; therefore it was a real improvement over time.

From these various analyses we can conclude that:

- Mode of interviewing may have an effect on the percentage of passengers who report that they are satisfied; however this effect is very small
- Other factors have a much greater effect on passenger satisfaction, particularly age

- The dual data collection method remains valid. While mode of interviewing has a very minor impact on satisfaction, this is offset by the benefit of reducing age and gender bias.

### The contribution of online versus paper responses

A final observation on the dual online / paper method was that, as noted above, online responses contributed a little less to the overall (un-weighted) dataset in 2015 compared to previous waves. One reason for this could be the increasing preference that respondents have to enter the survey via a touch device (mainly smartphones but also includes tablets), rather than on a desktop computer or laptop, and the higher likelihood that touch device respondents have to drop out.

The table below shows the proportion of all online survey starters who did so using a touch device versus a desktop. Clearly, more people are attempting the survey on touch devices over time, as these become more popular and ‘everyday’. However, the table also shows consistently that fewer touch users go right to the end of the questionnaire, indicating that the likelihood to drop out at some point during the survey is higher among these respondents. Recent work for all three *Passenger Surveys* has highlighted certain question types where online, and particularly touch device respondents tend to be more likely to drop out of the survey. This learning can be used to inform changes, where possible, to the presentation of questions from Autumn 2016, to reduce drop-out and therefore increase the contribution of online responses to the survey overall.

Table 21: survey starters and completers by online device

	Autumn 2013	Autumn 2014	Autumn 2015
<b>Device used by online survey starters</b>			
Desktop	65%	57%	47%
Touch	31%	41%	53%
Other <sup>2</sup>	4%	1%	0.8%

<b>Device used by online survey completers</b>			
Desktop	74%	67%	57%
Touch	23%	32%	43%
Other	3%	0.7%	0.2%

<sup>2</sup>‘Others’ are primarily non-touchscreen mobile devices which are connected to the internet, such as older models of Blackberrys. As the table indicates, these are becoming increasingly less common within the UK population.