



# Transport Focus Tram Passenger Survey

Technical Report - Winter 2019/20

July 2020

## Table of Contents

1.	Background.....	3
2.	Summary of approach.....	5
3.	Data Collection .....	7
	Fieldwork dates.....	7
3.1	Data collection method .....	7
3.2	Questionnaire .....	10
3.3	Response rates and validation of returns .....	10
3.3.1	Response rates achieved .....	10
3.3.2	Validation of completed surveys.....	12
3.3.3	Coding of open-ended question .....	14
3.3.4	Data preparation and analysis .....	16
4.	Generating representative samples of passenger journeys.....	17
4.1	Route coverage .....	17
4.2	Sample sizes .....	18
4.3	Sampling process .....	18
4.4	Weighting.....	24
4.4.1	Establishing demographic and day-part profiles.....	25
4.4.2	Establishing line and network proportions .....	27
4.4.3	Creating demographic rim weights and applying line and network weights .....	27
5.	Implications of using dual modes of completion .....	33
6.	Key driver analysis.....	40
	Appendix 1: Typical Questionnaire .....	44

## 1. Background

Transport Focus is the official, independent consumer organisation representing the interests of train, bus, coach and tram users across England outside London. A key part of the Transport Focus mandate is to provide evidence-based research to support its stance on the views and priorities of passengers. To this end, Transport Focus (and its predecessors) established:

- The National Rail Passenger Survey (NRPS) in 1999 – this twice-yearly survey (Spring and Autumn) provides data for each Train Operating Company on its passengers' perceptions regarding key measures of station and train performance
- The Bus Passenger Survey (BPS) in 2009 – this annual Autumn survey provides data for many PTE, unitary and county council areas on passengers' perceptions regarding key bus stop, bus vehicle and bus driver measures
- The Tram Passenger Survey (TPS) in 2013 – a pilot study was undertaken in Spring 2013, followed by full Autumn waves in 2013, 2014, 2015, 2016, 2017 and 2018. In 2019, a Winter wave was completed. The survey provides data for tram networks across Britain on passengers' perceptions regarding tram journeys, vehicles and stops.

A number of different methodologies were tested in the initial TPS pilot. As well as the traditional paper self-completion approach used historically on the NRPS and BPS, passengers were offered the choice of completing a paper self-completion questionnaire or an online survey, by means of providing an email address. Those providing email addresses were sent an invitation to participate in an online version of the survey one to two days following contact. The pilot demonstrated that the 'choice' option generated a similar final sample size to the traditional paper self-completion approach at similar cost, but in addition did reduce the age bias present in undertaking just a paper self-completion approach and furthermore did not significantly affect the results. As a result, TPS uses this combined approach. (Indeed, this approach is also now used both for the BPS and the NRPS). In 2016 measures were taken to increase the speed of the process of sending email invitations to those providing their email address. An automated system was set up to enhance the online methodology.

In 2019, the funding model between Transport Focus and the networks was amended due to a smaller budget being available for the survey. This resulted in fewer networks participating. However, both Greater Manchester and South Yorkshire saw the value in

adopting measures, such as reducing the survey length, to provide a measure of passenger satisfaction across their systems. This report describes the methodology used for the Winter 2019/20 TPS in detail, including where this has differed at all from previous waves.

## 2. Summary of approach

Key features of the research methodology used in the TPS were:

- The TPS is a measure of experiences with tram journeys. Each individual response related to a single passenger journey (rather than to a passenger who may have made multiple individual journeys).
- The sampling unit was an individual tram service (e.g. the 06:15 from Manchester Piccadilly on a specific Tuesday), in the same way that BPS sampling is based on bus services. (In NRPS, in contrast, most sampling is based on stations.) This is a more cost-effective sampling unit than a tram stops, as passenger numbers are greater for a service over a given time period than for most stops over the same period.
- The sampling frame thus needed was the list of all tram services that ran each week. This was downloaded from the published timetables and, to maximise value from the budget, the sampling frame used in 2018 was repurposed for the 2019/20 survey.
- A core standard questionnaire was used across the networks, with the majority of questions remaining consistent from one annual survey to the next. For 2019/20, the questionnaire was shortened to six pages in Sheffield (from eight previously) and the sample size halved. As Transport for Greater Manchester (TfGM) already had its own passenger satisfaction survey prior to the establishment of the TPS, the questionnaire used for the Metrolink network was slightly longer as it included questions specific to the previous TfGM survey. (TfGM funded these additional questions.) In 2019/20, the Manchester questionnaire was shortened to eight pages from twelve, while the sample size remained the same.

The standard questionnaire used for the Winter 2019/20 survey is given in Appendix 1. A similar version of the survey questions was used both for the paper and online respondents. To ensure online respondents answered specifically about the journey they were taking when recruited by the interviewer, the date and time they were approached was inserted into the wording of the online questionnaire they completed.

As indicated above, all passengers were approached and asked if they would provide feedback about the specific journey they were undertaking. If willing, they were offered the choice between a paper self-completion questionnaire, a postcard with a link to the online questionnaire (new for 2019/20) and providing their email address so that they could be sent a link to an online version of the questionnaire.

## 3. Data Collection

Fieldwork took place between Friday 1<sup>st</sup> November 2019 and Tuesday 28<sup>th</sup> January 2020. There was a pause within this to avoid the school Christmas holidays and to allow for a review of the project's progress. In Sheffield, flooding led to all tram services being cancelled in the run up to Christmas. Fieldwork dates in each area are below

### Fieldwork dates

Manchester: 1<sup>st</sup> November to 20<sup>th</sup> December 2019 and 6<sup>th</sup> January to 18<sup>th</sup> January 2020  
Sheffield: 25<sup>th</sup> November to 10<sup>th</sup> December 2019 and 10<sup>th</sup> January to 28<sup>th</sup> January 2020

### 3.1 Data collection method

#### Recruiting respondents

Before each fieldwork period began, all interviewers had a face-to-face briefing at a central location in each network area. During this briefing, all interviewers were given instructions on how to undertake the fieldwork as well as being given and talked through all the materials necessary for each shift. They were shown how to administer the on-line questionnaire and guided through each of the record sheets they were required to administer during fieldwork. The first briefing was held on Wednesday 30<sup>th</sup> October 2019 in Manchester.

Fieldworkers boarded the tram services selected from the sampling process (see section 4) on the specified day and start time and at the specified end of the route. They travelled to the final destination of the route and then made the first return trip possible on that route, returning to their start point. They repeated this process to make as many trips as possible within their three-hour shift. During this time fieldworkers approached as many passengers as possible who boarded the tram and gave them the opportunity to participate in the research.

Passengers were offered the choice to take a paper questionnaire, along with a post-paid envelope, or to complete the survey online. If they chose the latter, the fieldworker took their email address and a survey invitation was emailed to them immediately (see section 5 for a full explanation of this process). Both the paper and the online option have been offered in all waves of the TPS (and the original pilot) and have been shown to increase the potential for participation among certain demographic groups (especially younger males) who are otherwise typically under-represented in this type of research. The

usefulness of this dual data collection method in the TPS has led to its adoption on the BPS and the NRPS. In 2019/20, respondents were also offered the option of taking a postcard containing the link to the on-line questionnaire.

In total, 16,042 paper questionnaires were distributed (an average of 66 per shift), 2,162 email addresses were collected (an average of 9 per shift) and 540 postcards were handed out (an average of 2 per shift). In total, 18,744 people were recruited to take part in the survey, an average of 77 per shift.

### **Further tasks performed during fieldwork**

As described further in the later section on weighting, fieldworkers were issued with an “Observation Record Form” on which they recorded the total number of passengers on board at a given point in time, and the observed age and gender profile of those passengers at that time. This observation was conducted twice within a fieldworker shift: 20 minutes after the start of the shift and 20 minutes before the end. These details allowed the creation of a representative passenger demographic profile to be used for weighting purposes.

Fieldworkers were also issued with a “Respondent Record Form” on which they recorded gender and estimated age of all recruits, as well as contact details for a sample of people willing to provide this. This was used to enable standard quality control back-checks, as well as other validation measures on returned questionnaires.

### **Authorisation to work on board trams**

Regarding permission to conduct recruitment on the trams, each of the tram network operators provided a letter which the fieldworker was able to show to any staff (or passengers, if requested) to vouch for the bona fides of the survey.

### **Monitoring fieldwork**

Throughout fieldwork, fieldworkers reported the number of questionnaires and postcards they had handed out and how many email addresses they had collected (i.e. how many people they had recruited). This was reported by the next working day after each shift and these metrics were monitored by the team at AECOM. In addition, the software used to issue emails kept an automatic tally of the number of emails issued. This was used to check interviewer’s report metrics.



As questionnaires were returned to AECOM, their serial number was checked to provide additional confirmation that a fieldwork shift took place, and a number of data fields from the questionnaire were recorded manually to enable a first stage of validation checks to take place. The same information from electronic surveys completed online was recorded automatically. The numbers of completed and validated questionnaires were matched with the reported recruitment figures, to allow the project team to monitor the overall productivity of the fieldwork. Several actions could be triggered by this information, including for example:

- If the sample sizes in certain areas appeared likely to fall below the target, additional 'top up' shifts could be scheduled to make up the shortfall
- If it was found that all of the supplied questionnaires were routinely given out in certain areas or on certain routes, this was recorded, and more questionnaires may be printed where relevant in future waves
- Steps could be taken to address lower productivity in certain fieldworkers if this was found to be the case.

AECOM carried out all fieldwork in accordance with the MRS Code of Conduct, the IQCS (Interviewer Quality Control Scheme) and ISO 20252. Exceeding normal industry standards, at least 10% of all TPS shifts were subject to unannounced spot-checks by AECOM supervisors and other project team staff. The majority of shifts to be spot-checked were selected at random, but some were chosen specifically, to monitor new or less productive fieldworkers or areas more closely, and indeed to observe more productive fieldworkers in order to study and pass on best practise techniques.

## 3.2 Questionnaire

Historically, for most tram networks, the paper questionnaire was an eight-page self-completion booklet that was handed out along with a reply-paid envelope to all passengers on the trams who were willing to take part. The online questionnaire was exactly the same in terms of question content, with small modifications so that it would display appropriately depending on the type of device (desktop, smartphone, etc.) being used to view it by the respondent. In 2019/20, the core questionnaire was reduced to six pages to obtain greatest value from the budget.

The questionnaire had a core set of questions to provide consistent measurement of the components of journey experience. Some minor variations were present for the questionnaire used for each tram network, for example to allow for specific ticket types in use on some networks. The questionnaire used for Manchester Metrolink was reduced to eight pages in 2019/20 (it was 12 pages in 2013, 2014, 2015, 2016, 2017 and 2018), but the extra two pages beyond the core version enabled them to include a number of additional questions useful for TfGM.

Networks had the opportunity to add one or two bespoke questions to their questionnaire, to cover topics of interest (and, as mentioned above, Manchester Metrolink had an extra two pages of their own additional questions, which they funded).

An example copy of the standard questionnaire is shown in Appendix 1.

## 3.3 Response rates and validation of returns

### 3.3.1 Response rates achieved

The metric of fieldwork outcome was the product of recruitment rates achieved and response rate achieved. The table below shows the metrics achieved from fieldwork in this wave.

Table 1: Fieldwork metrics: TPS Winter 2019/20

Network	No. shifts	Recruits: paper	Responses: paper	Response rate: paper	Recruits: online	Responses: online	Response rate: online	Recruits: postcards	Responses: postcards	Response rate: postcards	Recruits: total	Responses: total	Response rate: total	Online response rate of overall sample	Average responses per shift (total)
Manchester - Total	210	13986	2093	15%	2001	595	30%	426	188	27%	16413	2876	18%	27%	14
Manchester - Altrincham	31	2036	336	17%	302	97	32%	71	24	26%	2409	457	19%	26%	15
Manchester - Ashton	32	2155	274	13%	321	83	26%	61	26	28%	2537	383	15%	28%	12
Manchester - Bury	31	2088	337	16%	425	122	29%	50	19	29%	2563	478	19%	29%	15
Manchester - East Didsbury	22	1453	305	21%	252	59	23%	40	34	23%	1745	398	23%	23%	18
Manchester - Eccles/ MediaCity	30	1989	243	12%	310	117	38%	61	23	37%	2360	383	16%	37%	13
Manchester - Rochdale	29	1944	312	16%	216	51	24%	72	27	20%	2232	390	17%	20%	13
Manchester - Airport	35	2321	286	12%	175	66	38%	71	35	26%	2567	387	15%	26%	11
Sheffield - Total	33	2056	391	19%	161	40	25%	114	24	14%	2331	455	20%	14%	14
Sheffield - Blue/Purple	12	824	184	22%	60	13	22%	43	6	9%	927	203	22%	9%	17
Sheffield - Yellow	11	620	123	20%	70	18	26%	38	8	17%	728	149	20%	17%	14
Sheffield – Tram train	10	612	84	14%	31	9	29%	33	10	18%	676	103	15%	18%	10
<b>Winter 2019/20 total</b>	<b>243</b>	<b>16042</b>	<b>2484</b>	<b>15%</b>	<b>2162</b>	<b>635</b>	<b>29%</b>	<b>540</b>	<b>212</b>	<b>39%</b>	<b>18744</b>	<b>3331</b>	<b>18%</b>	<b>25%</b>	<b>14</b>

### 3.3.2 Validation of completed surveys

Completed questionnaires were subject to two stages of checks and validation; once before they were data entered to pick up the tick-box responses (for paper questionnaires) and once afterwards:

#### 1a. Pre-data entry checking of question responses (for paper questionnaires)

The first stage took place immediately after completed questionnaires were received.

Firstly, each paper questionnaire was opened to check that the respondent had answered the questions and not simply returned a blank or mostly blank form. Sometimes, with self-completion questionnaires, respondents miss some questions, either accidentally or because they choose not to or cannot answer. They may however have provided sufficient, valid answers to most of the questionnaire and so it would be wrong to waste their other answers. Questionnaires were therefore accepted according to these guidelines:

- Providing the respondent had reached the “overall journey satisfaction” question or beyond (including a small number of cases where the respondent had clearly reached the end of the questionnaire but missed the “overall satisfaction” question itself), the questionnaire was accepted. In other words, if they had left some subsequent questions blank, such as the demographic questions which some people prefer not to answer, they would be accepted on this basis since they would have completed the majority of the questions.
- If the respondent had missed two whole consecutive pages, where this was clearly the result of the pages having been turned over together and the respondent had not realised they were there, the questionnaire would be accepted – providing most of the other questions were completed. If the respondent had missed four whole pages, the questionnaire would be rejected since in this scenario they would have missed at least half of the questions.
- A small number of questionnaires were rejected where the respondent had written nonsense or expletives (which were unconnected to their feedback on the tram journey) or had defaced part of the questionnaire.

Each questionnaire had a unique ID number; once the above basic checks were completed, for paper questionnaires this was taken from a serial number on the front page.

The answers to certain questions were then manually entered into a database – these were the date (top right on the paper questionnaire and time/date stamped on the electronic questionnaire), the start and end points of the passenger's journey (Q1a and b; see questionnaire example in the Appendix A). These were checked against the original details of the fieldwork shift, to check that the passenger filled in the questionnaire about a verified journey (this also served as a check that fieldwork had been carried out as intended). Questionnaires which did not tally with the expected journey details were investigated and would be rejected if they could not be verified as corresponding to the correct fieldworker shift.

### 1b. Validation of online responses

The same basic checks were made at the equivalent stage for online questionnaires:

- Respondents were counted as “complete” providing that they had reached and answered at least the “overall journey satisfaction” question. Of course, the questions up to this point would also have all been answered in the online questionnaire since unlike the paper version there was no possibility of a respondent accidentally missing any.
- The online questionnaire reminded respondents of the date and time when they were first approached by the fieldworker. However, they were also asked to confirm these details at the beginning of the survey (just in case there had been any unexpected changes on the day, for example due to fieldworker illness or significant disruption to the tram service).

It was useful to carry out this stage of the validation immediately (rather than later on alongside other data processing checks), because it enabled more accurate monitoring of the real number of ‘useable’ responses which had been collected for each tram network/route.

### 2. Data merging and final checks

The validation checks described above were carried out during fieldwork, as paper questionnaires were returned, and online responses recorded. Once fieldwork ended, paper questionnaires were returned in the post (one week was allowed for the return of paper questionnaires although responses received up to 5<sup>th</sup> February 2020 were accepted) and online respondents given a chance to complete the survey, the two methods of completion were merged into one final dataset. This involved aligning the

paper and online data and checking that all questions had been answered correctly. There was also a final validation check once data were merged to check for issues such as:

- Paper questionnaires having not been data entered correctly. Checks were conducted to ensure there were no issues with this process, for example pages being stuck together during data entry, respondents' ticks on the paper questionnaire not being recognised, any questions with abnormal levels of non-response etc.
- Data from the paper questionnaire had been merged correctly. Each tram network had its own bespoke questionnaire, meaning all versions had to be merged into one data file. Checks were carried out to ensure this merging had been completed correctly
- Merging of the paper and online data had been done correctly
- A final data validation to check for respondents that did not answer large sections of the questionnaire, any journey information that did not fit (e.g. incorrect date ranges, journey times that were abnormal etc.), questions with a large proportion of nonresponse, any nonsensical answers to open ended questions etc.

### 3.3.3 Coding of open-ended question

The Tram Passenger Survey included an open-ended question which asked about improvements to the tram service. The question was coded to understand the main themes that passengers raised. The question was:

- If something could have been improved on your journey today, what would it have been?

In order to quantify the results from this question, respondents' answers went through the following process:

- For each network, all responses were coded into the main themes arising, using the code frame shown below. Each answer could contain more than one theme; multiple codes were used in these instances
- During the coding process any potential new themes/codes were flagged for review. Where new themes/codes were common they were added to the code frame and answers were recoded using the new code (e.g. "Pushchair provision / Limit prams/buggies" was added in the 2017 wave of the survey). No new codes were added in the 2019/20 survey.
- Any profanity was removed from respondents' answers
- AECOM and Transport Focus both checked the coding. AECOM sent through an Excel spreadsheet containing the coding by network that had been conducted by

coders at AECOM. Transport Focus reviewed and sent it to AECOM to be added into the data.

Code frame used in 2019/20:

If something could have been improved on your journey today, what would it have been?	
1	Tram staff (including tram driver, conductors, customer service staff, ticket inspectors etc.)
2	Tram stop (incl. seats at stop, weather cover, safety, availability at stop of timetable/route info)
3	Fares/tickets (incl. prices, expense, info about fares/tickets/prices, better ticketing facilities/vending machines/smartcards etc.)
4	Frequency/routes (incl. not having to wait too long for the next tram, suggested better routes, etc.)
5	Information about routes (incl. availability of timetables, accurate timetables, next stop info on the tram)
6	Journey times (speed, my journey takes ages, should drive faster etc.)
7	Tram: Design/comfort/condition (incl. seats on board, temperature etc.)
8	Passenger behaviour
9	Punctuality (trams should adhere to timetable, tram was cancelled, unreliable etc.)
10	Other
11	Nothing could be improved/positive statement (incl. no /none/ n/a / dk / No improvements on this journey etc.)
12	Real time information/updates at the tram stop (this relates to the electronic information screens/boards at the tram stop)
13	Tram: On-board amenities like Wi-Fi, tea & coffee facilities, USB charging points, etc.
14	External factors (road works, congestion, bumpy ride, signal failures etc.)
15	Real time information/updates via online sources (incl. websites, phone apps, social media e.g. Twitter, Facebook)
16	Seating and capacity (bigger/longer tram, less crowding)
17	Comment about another journey
18	Security (incl. on tram, at stops, at car parks)
19	Disabled provision / Wheelchair provision etc.
20	Pushchair provision / Limit prams/buggies
21	Cleanliness of tram (inside or outside)

### 3.3.4 Data preparation and analysis

After the data were validated, coded and edited, an SPSS data file was provided to Transport Focus. Transport Focus also ran some checks on this file before it was signed off as final.

Summary reports were then produced for each tram network. Historically, an 'All Network' report showing aggregate results for the survey as a whole had been compiled; but this was not considered relevant for the 2019/20 survey, given that the survey consisted of only two networks, which would not be comparable with previous years. Transport Focus invests time to share these reports and any further useful analysis with operators and relevant local and transport authorities.



## 4. Generating representative samples of passenger journeys

### 4.1 Route coverage

The Winter 2019/20 TPS covered two different tram operators. The Sheffield network had three lines and Manchester had seven routes.

For cost and logistical reasons, the blue and purple routes in Sheffield were merged and so this wave covered ten routes in total as follows:

- Manchester – Altrincham
- Manchester – Ashton
- Manchester – Bury
- Manchester – East Didsbury
- Manchester – Eccles/Media City
- Manchester – Rochdale
- Manchester – Airport
- Sheffield – Blue/Purple routes
- Sheffield – Yellow route
- Sheffield – Tram train.

The Manchester Metrolink Airport line was opened in November 2014, during the TPS fieldwork for Autumn 2014, and so was included in the survey for the first time in 2015. West Midlands Metro opened a network extension to Grand Central on 30<sup>th</sup> May 2016 which was included in the 2016, and subsequent, surveys. The Sheffield Tram Train line to Rotherham Parkgate was opened in October 2018, during the TPS fieldwork and so was included in the survey for the first time in 2018. All other routes above were surveyed in the same way in 2014, 2015, 2016, 2017, 2018 and 2019/20.

Nottingham Express Transit was not included in 2018 or 2019/20 but was previously surveyed as one single route and was first covered as two separate lines in 2015.

Edinburgh Trams was first launched at the end of May 2014 and so had been included in the survey for the first time in 2014. Edinburgh Trams chose not to take part in the TPS since 2017.

Glasgow Subway was covered alongside the TPS for the first, and only, time in 2017. See the 2017 Technical Report for the sampling approach used for this network.

The sampling process described in section 4.3 below was applied in turn to each of these ten routes and a separate sample selected for each. Each route was also weighted according to passenger profile information on demographics and times of travel, in order to provide results which were representative at route level; this is described in section 4.5. The routes were then also weighted according to their relative volume of passenger journeys, so that when looking at aggregated results at 'All Network' level in the overall dataset, the routes with the largest numbers of passengers have the greatest weight and each route contributes appropriately.

## 4.2 Sample sizes

The sample sizes specified for each network are shown in the table below. These sample sizes were used to determine the number of fieldwork shifts required for each network and the shift numbers used to determine which tram services should be sampled. The sampling process is discussed in detail in section 4.3.

Table 2: Target and achieved sample size, Winter 2019/20

Network/route	Sample size required	Sample size achieved
Manchester – Altrincham	450	457
Manchester – Ashton	380	383
Manchester – Bury	450	478
Manchester – East Didsbury	380	398
Manchester – Eccles/MediaCity	380	383
Manchester – Rochdale	380	390
Manchester – Airport	380	387
Sheffield – Blue/Purple routes	150	203
Sheffield – Yellow route	125	149
Sheffield – Tram train	100	103

Within the Manchester sample a minimum quota was also applied of one hundred passenger journeys between tram stops located within the 'City Zone'. These journeys both started and ended within a group of nine tram stops in the centre of Manchester. In practice, 104 surveys were completed for the 'City Zone'.

## 4.3 Sampling process

For Winter 2019/20, the sampling process followed that employed in autumn 2018. The 2019/20 sample frame was the same as that used in 2018 in Manchester. In Sheffield, the

number of shifts undertaken was adjusted from that used in 2018 to reflect the reduced sample size; the appropriate number of shifts being removed at random.

In Autumn 2015 some enhancements were made to the process (in line with similar enhancements made to the BPS method at the same time).

The sampling process in Autumn 2018 was as follows:

1. The tram timetable for each route was downloaded from the network's website
2. From this, a list was generated of the tram services which ran each day of the week including start point, start time, end point and end time
3. These lists were sorted by direction, the seven days of the week and the start time of the service – this generated a list of the tram services in a week. Because fieldworker shifts only operated between 6am and 10pm, services starting outside of these times were then removed from the lists<sup>1</sup>
4. The next stage was to systematically select services from this list which would form the basis of a fieldworker shift; i.e. the service which fieldworkers would board at the start of their shift. During this selection, steps were taken to minimise the level of weighting needed at the later analysis stage to produce an accurate time of day profile. These steps have been improved upon in past waves of the TPS:
  - a. In the first full wave of the TPS in Autumn 2013, a random start point was identified in the list of services, and from there every  $n^{\text{th}}$  journey was selected from the same list based on the total number of records. The selected journeys then formed the start of a fieldworker shift.
  - b. In Autumn 2014 this approach was adapted by taking into account the weights applied in the previous wave, to achieve a more accurate spread of shifts according to the different passenger volumes in different time segments (weekday peak, weekday off peak and weekend). Each journey in the sample frame was allotted a 'passenger value' weight, based on the weight applied to each time segment within that tram network in Autumn 2013. For Edinburgh,

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<sup>1</sup> There are very few public transport services prior to 6am and the additional costs for running fieldwork at this time – hourly rates and transport to the start point – are not justified given the very small number of passengers. Although there are more journeys after 10pm, safety concerns rule out fieldworkers operating after this time – the only feasible option would be to ensure fieldworkers operate in pairs and again the cost of this and providing transport at the end of the shift is not justified given the relatively low number of passengers

where Autumn 2013 weights were not available, the passenger value was calculated using the average weight applied to each time segment across all networks. Selection of the sample was then made at intervals based on the passenger value rather than the total number of records, meaning that more services would be likely to be selected during busier times, to reflect passenger footfall throughout the day and week.

- c. In Autumn 2015, patronage data were supplied by each of the tram operators, indicating the proportion of all passenger journeys which were made in each of four 'dayparts'<sup>2</sup>. This enabled a passenger value weight to be applied to each journey in the same way as previously, but this time based on real data. An example of how the passenger value weight was calculated is shown below (this example uses illustrative data only since the data supplied by the operators is confidential to those organisations):

Table 3: Calculating passenger value weights

	Passenger journey profile (supplied by operator)	Proportion of all weekly scheduled services (from lists generated from published timetables)	Weight applied to each timetabled journey
Morning peak*	15%	12%	1.25
Off-peak	40%	52%	0.77
Evening peak	20%	13%	1.54
Weekend	25%	23%	1.09

\*See definitions of these dayparts in footnote below

A random start point in the list of timetabled services was identified, and from this point, as in 2014, services were selected at intervals based on the cumulative passenger value, rather than being selected at intervals based on the absolute number of scheduled service departures. In the example above (which is fairly typical), this would mean that morning and especially evening peak tram services would have a slightly higher chance of being selected, and weekday off-peak services a slightly lower chance, reflecting the overall profile of when passenger journeys are taking place.

- d. The sampling approach used in 2018 was identical to that used in 2017, 2016 and 2015.

<sup>2</sup> 'Dayparts' 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).

5. The result of step 4 was a shortened list of tram journeys, which would form the basis of fieldwork shifts. In waves of the TPS before 2015, fieldworkers boarded the tram selected during this process and made journeys all the way along the route and back from that time onwards, within a three-hour period. However, in an independent consultant's review following the Autumn 2014 Bus Passenger Survey (which followed the same principle), a concern was raised that this approach skewed the overall survey coverage towards later journeys in the day. This is because, for example, passenger journeys happening at 6am could only ever be picked up by fieldwork shifts arranged to start at 6am, whereas journeys starting at 8am could be picked up by shifts starting at 6am, 7am, 8am, and anywhere in between. Therefore, from Autumn 2015 onwards, a step was added here to correct for this: for every service selected at this point, the identical service 1.5 hours earlier was identified. That is, the tram service with the same start and end point and on the same day of the week but 1.5 hours earlier (or as close to this as possible). If the original selection was actually one of the earliest in the day and there was no alternative a whole 1.5 hours earlier (but still starting from 6am or later), then the first service of the day, from the same start point, was selected. This newly 'adjusted' journey then became the start point for the fieldworker's shift, meaning that, in practice, the originally selected start time became the mid-point of the shift. This meant that the overall profile of fieldwork shifts (based on their mid-point time) matched the passenger journey profiles supplied by operators, which gave a better opportunity than in previous waves, to represent passenger journeys across the day.
  
6. Fieldworker shifts were then scheduled based on the newly adjusted selected services: the time and day of the week that was selected dictated the beginning of the shift, and return journeys were made thereafter on the same vehicle for the duration of that shift, approximately three hours. The three hour shift length allowed for two return journeys in most shifts, adjusting as necessary to ensure this. A three hour shift length provides time for fieldworkers to encounter plenty of passengers for distributing questionnaires. A longer period than this can introduce more clustering – e.g. if a particular day is affected by service disruption.
  
7. A small number of manual amendments were made at this point, in particular:

- a. To address instances where some selected services still fell towards the end of the day, meaning that a full three hour shift would have run beyond 10pm, which is the usual latest reasonable time for fieldworkers to finish. In these cases, all such selected services were replaced by an identical one starting at 7pm (or as close this time as possible), so the fieldwork shift would cover the period 7pm-10pm. (NB. In previous waves, half of such shifts were moved forward to begin at around 7pm, and the other half were moved so that they covered the same or a similar tram journey, starting at 6am. This also addressed the issue of under-sampling earlier times in the day, which was no longer relevant in Autumn 2015 thanks to the 1.5 hour adjustment described above.)
  - b. In some cases, if a return journey from one end of a route to the other did not fit well within a standard three-hour shift, that shift would take place over up to four hours instead. In 2017, five six hour shifts were conducted at tram stops in central Manchester (rather than on board trams) targeting trips wholly conducted in the City Zone. Due to the volume of trips generated in the City Zone within the 2018 data set, this approach was not required.
8. A final manual amendment was made, to deal with the presence of double-carriage trams in Manchester, where many services are doubled up with a second carriage during busy times to create extra capacity. While it can be possible for a fieldworker to move between carriages in quieter times of the day, to make sure that passengers in both carriages have the opportunity to take part in the survey, this is difficult in busy periods where both carriages may be full. To address this, some shifts involving double trams were assigned two fieldworkers – one for each carriage. This ensured that the views of passengers on busier services were better represented. In 2016 a more systematic approach to surveying double trams was introduced and used again in 2017. The approach in previous waves was as follows:
- a) In 2014:
    - Shifts affected by double tram services were identified; there were 22 in total
    - Two thirds of the double tram shifts were assigned two fieldworkers. Only two thirds were so treated to avoid over-clustering the sample, while also gaining the benefit of some double tram shifts
    - To maintain the total number of interviewer shifts, the same number of shifts was then removed at random from the rest of the sample.
  - b) In 2015:
    - The same process was initially used in 2015; however due to a large increase in the incidence of double-carriage trams this year, including during the off-

peak, this resulted in a large number of double interviewers shifts and therefore significantly fewer shifts overall, presenting a greater risk of sample clustering. It was therefore decided that the same number of fieldworker shifts should be doubled up with two interviewers in 2015 as in 2014, despite the increased number of double carriage services, and that these would be focussed at peak times only

- In addition, one double-fieldworker shift was assigned to each of the Eccles/Media City and Ashton routes, which had not had any double-carriage trams in 2014 but did by 2015
- The shifts where two interviewers would work simultaneously were selected at random from within the peak-time shifts, and as before the same number of shifts were removed from the schedule, at random from other day-parts

The approach used in 2017 and 2016 to survey double trams identified where doubled-up fieldwork would happen, in a way that treats each line equally, as well as focussing the extra fieldwork attention at the time of day when it is most relevant. The approach required some input from Metrolink and was as follows:

- a) Establish full list of shifts as described above in sampling process
- b) Metrolink then identified which shifts would be affected by double trams (i.e. which routes and times of day have double trams running)
- c) For these potential double-tram shifts Metrolink then estimated the proportion of shift time for which the double-tram capacity would be in full use, i.e. the times at which it would be particularly difficult for one fieldworker to cover both carriages and so having two fieldworkers would be the ideal
- d) The average percentage journey time across all shifts for the line would then be calculated. Let's say that, across all shifts for a given line, 30% of all journey time uses double-carriage trams and full use is made of them. This is similar to saying that, for 30% of total fieldwork time on this line, the research provider would need two fieldworkers on board the same tram simultaneously
- e) The research provider then selected 15% of all shifts, on which two fieldworkers would work together simultaneously throughout the shift. At the same time, the same absolute number of shifts would be selected to be removed. The overall effect would be that 30% of fieldwork would be performed with two people working simultaneously. The proportion of all fieldwork being performed in this way could be different for each line, but would be proportionate for that line relative to all the others



- f) The process for selecting which shifts on which to double up the fieldwork, and which to remove, would also be systematic: they would be selected with probability proportional to the percentage journey time where doubled-up fieldwork would be desired, in the same way that tram services themselves are selected for inclusion in the sample in the first place

For the 2018 research, Metrolink did not provide data on which shifts double trams would be operating. It was therefore agreed that the double tram information from the 2017 survey would be applied to the 2018 sampling. This applied again in 2019/20. As such, weekend and off-peak shifts did not require two interviewers working at the same time; the same applying to the Oldham-Rochdale route. Double shifts were required for shifts where the start time fell in the AM inbound and the PM outbound time periods. For such shifts, two interviewers were allocated to work simultaneously both arriving at the required stop at the allocated time. If that tram was not a double tram, both interviewers would wait until a double tram arrived and both would board it. To maintain the required shift numbers, the overall number of weekday peak period shifts were then reduced by the corresponding number of double shifts at random.

When the double-tram shift selection approach was carried out as above, it resulted in eleven shifts being appropriate for two interviewers:

- 3 shifts on the Altrincham route
  - 5 shifts on the Bury route
  - 3 shifts on the East Didsbury route
9. On almost all routes, additional ‘top up’ fieldwork was needed to ensure that targets had a good chance of being met, where the strike rate was lower than expected. Extra shifts were added throughout the fieldwork period based on its productivity up to that point. In total, 11 top up shifts were conducted on top of an original 232.
  10. Once travelling on the selected tram services, fieldworkers approached all passengers (except those apparently under 16 years of age) as soon as possible after they boarded, to offer them a paper questionnaire or the opportunity to provide an email address to which a link to an online version could be sent; thus all passengers over 16 had the opportunity to be included in the sample. (Interviewing those under 16 requires consent from a responsible adult.)

## 4.4 Weighting



The final survey data were weighted to correct for any imbalance in response levels by age and gender, and by day-part. This weighting was applied within each of the seven sampled tram lines, plus the City Zone, for Manchester, in order that results were representative at line level (rather than at overall network level). For Sheffield, the weighting was applied at an overall network level (given the relatively small sample sizes for each of the lines).

The lines were also then subsequently weighted appropriately to ensure that they were in proportion within each network, and each network was weighted appropriately within the total survey dataset so that in any 'All Networks' results, each network contributed to the results in relative proportion to the number of passenger journeys it carries.

This process was slightly different to that used in previous waves of the survey, when a greater degree of interlocking cells had been used (demographics within day-part, within line) and the two stages of weighting had been combined into one.

The sources for each of the weighting targets, and the processes for generating and applying them, are described below.

#### 4.4.1 Establishing demographic and day-part profiles

No known source of information exists to detail the demographic of journeys by age and gender consistently for each network; therefore, this information was collected during the fieldwork via passenger counts.

Passenger counts were completed during each interviewer shift to establish a passenger profile with which to weight the data. They were conducted as follows:

- Passenger counts were undertaken twice during the shift to record passenger characteristics (gender and observable age). For Sheffield, the fieldworker was given times at which to start these counts:
  - After 20 minutes
  - After two hours 40 minutes
- In most cases this ensured one count on an outward journey and one count on an inward journey. For Manchester, due to the high number of shifts, interviewers were given times that ensured one outward and one inward count
- If necessary, these times were varied to ensure the time coincided with the fieldworker being on board the tram

- In a few cases, where the tram was too busy to undertake a count at peak times, estimates of passenger numbers were made – see below for more details on this.
- The data produced by the counts were used to weight responses to a more representative gender and age profile for each line. The time at which passenger counts took place was recorded, meaning that an age and gender profile was actually created for each day-part, within each line. In 2013 and 2014 the day-parts were: 'weekday peak', 'weekday off-peak' and 'weekend'. From 2015 onwards the peak day-part was split in two to provide 'weekday morning peak' and 'weekday evening peak'.
- Profiles by age were recorded in three bands: 16-34, 35-59 and 60+.
- The passenger counts were used to compile the weighting matrix (shown in section 4.5.3) used at the data analysis stage.

Of the total 486 planned passenger counts, 448 were completed and used to inform the weighting. There were 38 passenger counts that were not completed or not used to inform the weighting:

- 16 of these were at off-peak times and it was assumed the total counts and demographic profile of passengers on these shifts would have been the same as the average for that route and time of day
- 38 were in peak hours when the tram was full, and this prevented the fieldworker moving around the tram to affect the count; in these cases, we could not assume that the count was the same as the average for the route. In the first full wave of the TPS, Autumn 2013, we investigated an appropriate assumption to use for these missing counts and found that using the crush capacity of the trams (which can be provided by operators) in place of missing counts was the best approach. This approach was further verified in Autumn 2014, Autumn 2015 and Autumn 2016 and was therefore also used this wave. Where the crush capacity figure was used to estimate the total number of passengers, the split between the three age groups and between males and females was based on the profile for other peak shifts on that route. For example, if the crush capacity for Manchester Bury morning peak is 200 and the average gender breakdown from all Manchester Bury morning peak observations was 60/40 Male/Female, it was assumed that the full tram had 120 men and 80 women on board
- In the case of a double-carriage tram, where there were two fieldworkers present the count was taken twice. Where the count was taken only once (in most cases), this was doubled; similarly, where the count was not undertaken at peak hours for a double tram, the estimated passenger numbers using crush capacity figures provided by the operator were doubled.

Using the sum of all observations (including those estimated using the crush capacity), an overall age and gender profile was then derived for each line (in previous years this was derived for each of the four day-part segments, within each line).

The two operators involved in the 2019/20 survey had provided information about how their total passenger journeys would break down by day-part in a typical week for the 2018 survey and this information was used again in 2019/20. This was the same information as used earlier in the sampling process.

Therefore, at this point we had established target profiles for age, gender and day-part for each line, which would be used as the basis for rim weighting.

#### **4.4.2 Establishing line and network proportions**

To ensure that each line contributed proportionately to its overall network, and that each network contributed proportionately to any aggregated 'All Network' results, journey volume data were used to establish the correct profiles.

Annual passenger journeys for 2018/2019 were used, as published by the Department for Transport (DfT)<sup>3</sup>, for each of the tram networks. Historically, where networks had more up-to-date annual passenger journey statistics these were used in place of the DfT figures. The DfT data were used directly as published for Sheffield and Manchester Metrolink in the 2019/20 survey.

The data published by the DfT are at total network level only. Therefore, for networks with more than one line, operators provided information about how the total annual passenger journey data should be split by line.

This information was then used to generate the share that each line (and network) should make up of the total sample, to act as targets in the second stage of the weighting process.

#### **4.4.3 Creating demographic rim weights and applying line and network weights**

The first stage of the weighting process was to generate the weights required to correct for any imbalances in the data according to age, gender and day-part for each of the lines. This entailed using the age, gender and day-part profiles determined earlier for each line.

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<sup>3</sup><https://www.gov.uk/government/collections/light-rail-and-tram-statistics>

In practice, some respondents did not answer the questions on the survey about age and / or gender, or chose the 'prefer not to say' option. The percentages for each cell were therefore adjusted slightly to account for this and to include a 'not answered' category, so that the weighting would work.

Manchester City Zone is not a route, in itself, in the same way as the main seven Metrolink routes. It therefore does not have passenger observations conducted on board trams. In the absence of observations, the Manchester total profile was used for the City Zone.

As mentioned above, in 2019/20, the weighting process was amended slightly from that used previously, to simplify the process, by removing the inter-locking aspect of the weighting of the demographics within day-part for each line. This significantly reduced the number of weighting cells (many of which would have contained small samples) and thereby made the process more robust (and in line with what is carried out on Transport Focus's Bus Passenger Survey).

Thus, three separate weighting target proportions were inputted into the rim weighting process by overall line:

- Day-part
- Gender
- Age

When attempting to apply the rim weighting to the data it became clear that the relatively small sample sizes for the separate lines in Sheffield were making it difficult to generate the necessary weights, so the decision was taken to weight Sheffield as a network overall, rather than by each line.

The final set of target proportions for the rim weighting were as shown in the table below.

*Table 4a: Winter 2019/20 target demographic and day-part proportions for rim weighting: Manchester and Sheffield*

Line	AM peak	PM peak	Off-peak	Weekend	16-34	35-59	60+	NA	Male	Female	NA
Manchester – Airport	15%	13%	55%	17%	35.19%	39.05%	15.63%	10.14%	53.21%	44.05%	2.74%
Manchester - Altrincham	20%	13%	50%	17%	32.31%	44.69%	16.49%	6.52%	55.91%	42.52%	1.57%
Manchester – Ashton	13%	10%	60%	17%	39.67%	33.37%	15.63%	11.33%	49.98%	47.26%	2.76%
Manchester – Bury	16%	9%	58%	17%	35.83%	37.54%	21.91%	4.72%	51.47%	47.46%	1.07%
Manchester - East Didsbury	24%	12%	47%	17%	36.34%	39.61%	20.23%	3.82%	48.56%	50.42%	1.02%
Manchester - Eccles/Media City	13%	16%	54%	17%	37.75%	35.24%	13.59%	13.42%	49.61%	46.56%	3.84%
Manchester - Rochdale	16%	10%	57%	17%	37.34%	32.55%	18.67%	11.44%	52.28%	44.27%	3.46%
Manchester - City Zone	10%	20%	53%	17%	36.03%	37.90%	17.41%	8.65%	50.35%	44.84%	4.81%
Sheffield	13%	15%	52%	20%	38.67%	30.04%	26.45%	4.84%	46.32%	52.58%	1.10%

Having applied the rim weighting process, the achieved proportions were as shown in the table below:

*Table 4b: Winter 2019/20 achieved demographic and day-part proportions following rim weighting: Manchester and Sheffield*

Line	AM peak	PM peak	Off-peak	Weekend	16-34	35-59	60+	NA	Male	Female	NA
Manchester – Airport	14.8%	12.7%	55.5%	17.0%	35.1%	39.2%	15.7%	10.0%	53.7%	44.7%	1.6%
Manchester - Altrincham	19.9%	12.9%	50.6%	16.6%	32.0%	45.2%	16.0%	6.8%	56.7%	42.5%	0.8%
Manchester – Ashton	12.8%	9.9%	60.3%	17.1%	39.9%	32.9%	16.1%	11.1%	50.7%	47.6%	1.7%
Manchester – Bury	15.2%	9.0%	58.7%	17.2%	36.2%	40.3%	20.2%	3.2%	52.3%	47.4%	0.2%
Manchester - East Didsbury	24.0%	12.0%	47.6%	16.4%	36.2%	40.4%	20.2%	3.2%	49.0%	50.8%	0.2%
Manchester - Eccles/Media City	12.9%	15.9%	54.7%	16.4%	38.0%	35.1%	14.0%	13.0%	50.9%	46.9%	2.2%
Manchester - Rochdale	15.8%	10.0%	57.7%	16.4%	36.5%	33.3%	19.2%	11.0%	53.1%	45.0%	1.9%
Manchester - City Zone	9.0%	17.6%	58.3%	15.2%	37.9%	38.4%	18.1%	5.6%	50.1%	48.4%	1.5%
Sheffield	11.9%	18.0%	50.8%	19.3%	37.7%	33.0%	25.4%	3.9%	44.7%	55.2%	0.1%

The second stage of weighting was then applied to ensure that each of the lines was in the correct proportion, based on the number of passenger journeys (see section 4.4.2). The target proportions for each line (Sheffield was treated as a single line) were as follows:

*Table 4c: Winter 2019/20 target line proportions: Manchester and Sheffield*

Line	Proportion
Manchester – Airport	5.8%
Manchester - Altrincham	18.2%
Manchester – Ashton	5.7%
Manchester – Bury	15.4%
Manchester - East Didsbury	10.8%
Manchester - Eccles/Media City	9.3%
Manchester - Rochdale	11.2%
Manchester - City Zone	2.3%
Sheffield	21.4%

This then gave each response in the survey a total weight.

The actual average weights for respondents in each cell are given below, for information.

Table 4d: Winter 2019/20 average final weights per cell: Manchester and Sheffield

Line	AM peak	PM peak	Off-peak	Weekend	16-34	35-59	60+	NA	Male	Female	NA
Manchester – Airport	0.58	0.51	0.48	0.69	0.71	0.58	0.29	0.54	0.74	0.40	0.30
Manchester - Altrincham	1.64	0.95	1.31	1.77	1.79	1.65	0.66	1.58	1.57	1.17	0.71
Manchester – Ashton	0.56	0.34	0.56	0.59	0.83	0.60	0.24	0.55	0.62	0.46	0.30
Manchester – Bury	2.29	0.66	1.18	0.83	2.02	1.60	0.46	0.81	1.35	0.93	0.20
Manchester - East Didsbury	0.79	0.83	0.92	1.28	1.21	1.05	0.55	0.73	1.11	0.79	0.25
Manchester - Eccles/Media City	0.75	0.77	0.82	1.21	0.99	1.05	0.44	0.85	1.01	0.74	0.50
Manchester - Rochdale	1.11	0.55	1.03	1.30	2.06	1.16	0.44	1.00	1.32	0.78	0.54
Manchester - City Zone	0.50	1.40	0.74	0.63	1.38	0.91	0.34	0.44	0.91	0.66	0.20
Sheffield	2.36	3.20	1.10	2.80	5.38	2.26	0.65	1.27	1.75	1.47	0.20



## 5. Implications of using dual modes of completion

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

The 2019/20 survey showed an improvement in the proportion of on-line responses from the previous four years and achieved the highest proportion to date for touch screen completion (see table 5 below). Analysis from previous waves shows that online respondents are usually more negative in their responses (which is almost entirely linked to the fact that online respondents are typically younger).

Table 5: proportion of (un-weighted) response from online vs. paper

Mode	Autumn 2013	Autumn 2014	Autumn 2015	Autumn 2016	Autumn 2017	Autumn 2018	Winter 2019/20
Online – total	27.0%	33.6%	22.5%	15.6%	14.7%	17.8%	25.4%
Online – desktop	19.9%	21.9%	12.8%	7.8%	5.1%	6.3%	8.4%
Online – touch (smartphone / tablet)	6.2%	10.5%	9.6%	7.8%	9.7%	11.5%	17.0%
Online – other	0.9%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Paper	73.0%	67.4%	77.5%	84.4%	85.3%	82.2%	74.6%

This section briefly revisits the degree to which mode of interviewing impacted on survey results (which was explored in greater detail in 2015), as well as recapping the impact of automated email invitations to the online survey (introduced in 2016).

### Impact of mode of interview completion

From analysing un-weighted data, comparing online responses with those from the paper self-completion questionnaire, there are some differences which are significant. For example, the table below shows the Winter 2019/20 results for overall journey satisfaction for each mode of completion. Paper respondents are a little more likely to be ‘satisfied’ (either fairly or very), and even more likely to be ‘very satisfied’ compared with online respondents.

*Table 6: Overall journey satisfaction by mode of interviewing (un-weighted)*

Mode	% satisfied	% very satisfied
Online	82%	39%
Paper	93%	61%
Total	90%	55%

However, those responding online tend to have a younger profile than those responding on paper (see table 7 below), and younger people tend to be less satisfied with their overall journey experience, as shown in table 7:

*Table 7: Profile of respondents, online vs. paper (un-weighted)*

	Online	Paper	Total
16-34	35%	18%	23%
35-59	30%	31%	30%
60+	17%	47%	39%
Not stated/prefer not to say	17%	4%	8%

*Table 8: Overall journey satisfaction by age (un-weighted)*

Age group	% satisfied	% very satisfied
16-34	85%	38%
35-59	88%	46%
60+	97%	76%
Total	90%	55%

Given that satisfaction varies by age, and that the online sample has a different age profile from the paper sample, the question arises as to whether there is a real mode effect, or whether the apparently lower satisfaction seen in the online sample comes entirely from the younger age profile.

To test this, we have looked at the overall satisfaction levels by age for each mode of data collection, as shown in the table below:

*Table 9: overall journey satisfaction by age and interviewing mode (un-weighted)*

Age group	Mode	% satisfied	% very satisfied
16-25	Online	76%	25%
	Paper	92%	37%
	Total	85%	32%
26-59	Online	81%	37%
	Paper	90%	48%
	Total	87%	45%
60+	Online	97%	74%
	Paper	97%	76%
	Total	97%	76%
Total	Online	82%	39%
	Paper	93%	61%
	Total	90%	55%

As can be seen in Table 9, within most age groups there is a little variation in satisfaction, when combining both 'very' and 'fairly satisfied' responses as in the majority of reporting on TPS, by mode of interviewing. Notable differences tend to occur for the younger age group where satisfaction is lower in general.

There is greater variance in the positivity of online and paper respondents for those who are 'very satisfied'. There are lower ratings amongst online respondents in general, and more so in the younger age groups.

Whilst there is a pattern that online respondents tend to be more negative than paper respondents, this is also a function of their age with the online option tending to attract a higher proportion of younger people. The mode of completion can have a small impact on satisfaction, but so does age, and the advantage of greater representativeness through offering an online option outweighs this potential impact on results.

### Automated invitations to the online survey

A new automated email invitation was introduced to the TPS in 2016. Analysis from previous waves demonstrated that recruited passengers are more likely to go on to complete the survey if they receive the emailed invitation (with the link to the survey URL) quickly. Response rates were highest where recruits received their survey invitation within one day of first being approached by the fieldworker when they made their tram journey. The same pattern has been seen in the other Passenger Surveys.

The mechanism introduced in 2016 sped up invitations to the online survey. The methodology was therefore repeated in 2017. It involved:

- All interviewers used a tablet to record email addresses of passengers who preferred the online method
- All tablets had a 'mini-survey' with which interviewers recorded email addresses
- All tablets had wi-fi or 3G/4G connectivity ('mi-fi' devices were fitted to all tablets, which act as a mobile wi-fi hotspot and enabled internet access on board trams)
- When an email address was collected it was time and date stamped for a more precise record of recruitment (this was used in the online questionnaire to prompt respondents about when they were on board)
- Once email addresses were collected the data was transferred and an automated email to the online survey was triggered (delivered to the passenger within 10 minutes of them providing their email address).

The specification for the 2018 survey required emails containing links to the on-line version of the questionnaire to be sent to respondents immediately. Interviewers therefore used the method stated above to capture email addresses from respondents. However, due to changes in data collection and storage legislation in May 2018, the cost of creating an encrypted email storage facility was deemed too great. Therefore, following collection of the email address, the software immediately issued a link to the appropriate network's questionnaire. As soon as the link was sent, the email address was deleted. This approach meant that follow-up emails

reminding respondents to complete the questionnaire could not be sent as the email address had not been stored. Also, as no data were stored, the shift the emails were collected in was not captured and the email was not pre-populated with the respondent's journey information. A few weeks into fieldwork, the requirement to send reminder emails and the ability to link the collected email address to the shift on which it was captured were deemed more important than the 'instant' survey link facility and so the software used to collect emails was changed. Following this change, the mini-survey interface used by interviewers remained the same, but the information collected was securely stored. The resulting encrypted data files were downloaded three times a day, every day during the fieldwork period and automated emails sent to respondents. Reminders were automatically generated and sent 24 hours later and then seven days later. The change in approach enhanced the on-line response rate and brought the approach closer to that used in recent waves of the survey, albeit without the same speed of issuing the survey invitation emails. The 2018 approach was used in the 2019 survey.

Table 10 shows that the proportion of dropouts has changed little over the life of the TPS survey. Previous surveys collected the volume of click-throughs (percentage of people that clicked on the link they received via email). This metric was not collected in 2018 and 2019.

*Table 10: Proportion of recruits that click the survey, drop out and complete*

	2013	2014	2015	2016	2017	2018	2019/20
Online recruits	100%	100%	100%	100%	100%	100%	100%
Click-through (all clicking the survey link)	36%	37%	33%	41%	27%	n/a	n/a
Dropouts	9%	10%	11%	20%	9%	11%	8%
Completes (online response rate)	28%	27%	23%	21%	18%	17%	25%

### The contribution of online versus paper responses

At the beginning of this section, it was reported that online responses had contributed a little more to the overall (un-weighted) dataset than in previous waves with touchscreen completion improving more than desktop.

Table 11 below shows the proportion of all online starters and all survey responders using a touch device versus a desktop (and others, which are primarily non-touchscreen mobile devices which are connected to the internet, such as older

models of Blackberrys). The 2018 survey starters figure comprises those who completed the survey having received an email via the initial email method and those who clicked on the survey via the second email method.

As in 2018, for 2019/20 there is a larger proportion using a touch device. And the trend towards more people completing via touch devices continues in the 2019/20 wave of the survey.

Table 11: survey completers by online device

	Autumn 2013	Autumn 2014	Autumn 2015	Autumn 2016	Autumn 2017	Autumn 2018	Winter 2019/20
<b>Device used by online survey starters</b>							
Desktop	65%	57%	47%	62%	31%	30%	28%
Touch	31%	41%	53%	38%	69%	70%	72%
Other*	4%	1%	0.8%	0%	0%	0%	0%
<b>Device used by online survey completers</b>							
Desktop	74%	67%	57%	50%	34%	36%	33%
Touch	23%	32%	43%	50%	66%	65%	67%
Other	3%	0.7%	0.2%	0%	0%	0%	0%

\*data from Autumn 2016 are recorded in a slightly different way from previous years due to a change in data collection online software. iPads are recorded as desktops in 2015 and previous, in 2016 they are recorded as touch devices.

One new feature for the 2018 survey was the inclusion of the online survey address on paper copies of the questionnaire, allowing passengers who took a paper questionnaire to subsequently complete the survey online should they so choose. Each network had its own online survey address (for example “[www.tramsurvey.co.uk/Blackpool](http://www.tramsurvey.co.uk/Blackpool)”) and respondents were required to enter the serial number shown on the paper questionnaire at the start of the online survey before they could complete it. The number of completed online responses received per network via this approach can be seen in Table 12 below.

Table 12: Number of responses completed online following being handed a paper questionnaire

	2018	2019/20
Manchester	124	30
Sheffield	17	0

In 2019/20, respondents were offered postcards with the link to the online questionnaire printed on it. Respondents were required to enter the serial number shown on the postcard at the start of the online survey before they could complete it. The number of completed online responses received per network via this approach can be seen in Table 13 below.

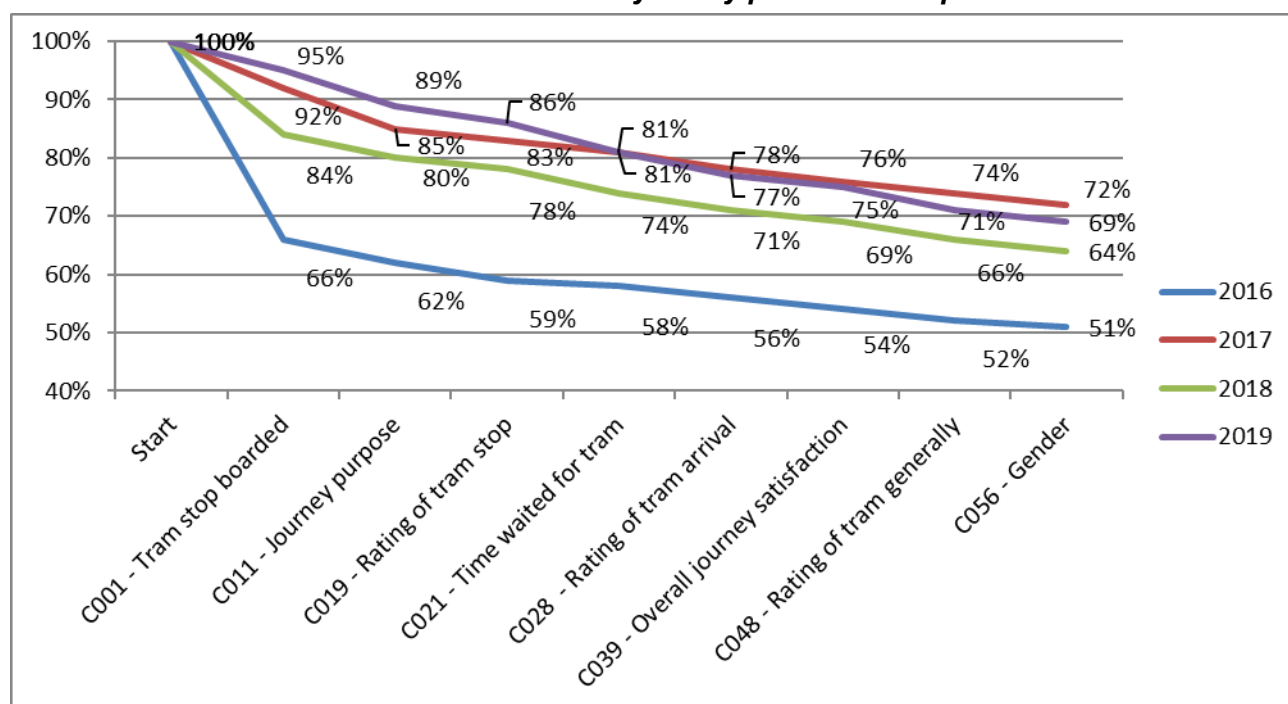
Table 13: Number of responses completed online following being handed a postcard

	2019/20
Manchester	188
Sheffield	24

### Online drop out

The graph below shows those who completed key questions throughout the questionnaire, as a proportion of all people who started the survey. In effect it shows the points at which survey drop out was most prevalent, showing waves for 2019/20, 2018, 2017 and 2016. The drop-out at the start of the online survey has reduced compared to previous years but drop out has also reduced as the questionnaire progresses. Other than network specific information such as ticket type, only minor changes were made to the questionnaire between 2017 and 2018, but for 2019/20 the survey length was reduced, by the removal of several questions, which is likely to have had an impact.

### % of online starters who are still in the survey at key points in the questionnaire:



The pattern of dropouts throughout the survey have remained fairly consistent over the past four years, the main difference being the drop out at the start of the survey, which suggests this has improved since 2016.

## 6. Key driver analysis

### Why do we conduct the Key Driver Analysis?

The headline measure on the Tram Passenger Survey (TPS) is the level of passenger satisfaction with the overall journey, which provides a simple summary for the journey as a whole. The question we are therefore often asked by local authorities, transport bodies and tram operators are ‘how do we improve overall passenger satisfaction?’ and this is often accompanied by ‘where should we focus our attention or resources?’. We conduct the Key Driver Analysis in order to identify those elements of the journey experience that are having the greatest impact upon the overall journey satisfaction rating that passengers give, using the other question ratings from the survey. This then enables us to provide guidance on how to go about improving (or maintaining) overall passenger satisfaction with tram journeys.

### Which questions are included in the Key Driver Analysis?

As mentioned above, the headline measure on the TPS is the level of passenger satisfaction with the overall journey, taken from the core survey question:

*Overall, taking everything into account from the start to the end of the tram journey, how satisfied were you with your tram journey?*

The questions that we then test to see what impact they have on this overall satisfaction are taken from the core survey questions; Tram stop ratings, waiting time and punctuality, Boarding the tram, On the tram and Value for money. (Question numbers across the two questionnaires.

### How do we conduct the Key Driver Analysis?

We use a series of statistical techniques to conduct the Key Driver Analysis. There are three stages to this.

#### *Stage 1: Selecting fare paying passengers (filtering the data)*

We feel that it is important to include value for money as one of the potential influencers of overall journey satisfaction, and this means that the analysis can only be conducted using the survey responses from fare-paying passengers. We therefore remove the responses for non-fare paying passengers from the data before carrying out the Key Driver Analysis.

#### *Stage 2: Categorising the main survey questions into themes (factor analysis)*

This stage was first introduced for the autumn 2016 survey and has been repeated in 2017, 2018 and 2019/20. The aim of this stage is to use a statistical technique (factor analysis) to group together individual questions from the survey into themes,



based upon the way in which passengers respond to the questions. We usually find that there is some degree of overlap between the responses that passengers give to the different satisfaction questions we ask them in the survey. For example, we ask about waiting time and punctuality in two separate questions. While these questions have a slightly different meaning, there are often similarities between the responses that passengers give to these two questions. In such an example, we might regard this as being responded to by passengers as one theme, even though we have asked them two questions.

This is a common phenomenon when it comes to market research data, partly because of genuine overlap in topics covered and partly due to questionnaire effects, where responders to a survey might respond in a similar way across multiple questions or topics.

We have taken all the responses from fare payers to the autumn 2018 and Winter 2019/20 TPS and used them to identify the different themes, using the factor analysis technique. We combine two waves of the survey to increase the robustness of the analysis.

We have identified 10 themes, which are summarised in the table below:

Theme (factor)	Questions
<b>1 On tram environment and comfort</b>	• Sufficient room for all the passengers to sit/stand
	• The comfort of the seats
	• The amount of personal space you had around you
	• Provision of grab rails to hold on to when standing/moving about the tram
	• The temperature inside the tram
<b>2 Tram stop condition</b>	• Its general condition/standard of maintenance
	• Its freedom from graffiti/vandalism
	• Its freedom from litter
<b>3 Boarding the tram</b>	• The ease of getting on the tram
	• The length of time it took to board the tram
	• The ease of getting off the tram
<b>4 Timeliness</b>	• The length of time you had to wait for the tram
	• The punctuality of the tram
<b>5 Access to the tram stop</b>	• Its distance from your journey start e.g. home, shops*
	• The convenience/accessibility of its location*
<b>6 Personal safety throughout journey</b>	• Behaviour of fellow passengers waiting at the stop
	• Your personal safety whilst at the tram stop
	• Your personal security whilst on the tram
<b>7 Cleanliness and condition of the tram</b>	• The cleanliness and condition of the outside of the tram
	• The cleanliness and condition of the inside of the tram
<b>8 Smoothness/speed of tram</b>	• The amount of time the journey took
	• Smoothness/freedom from jolting during the journey
<b>9 Information throughout journey</b>	• The information provided at the tram stop
	• Route/destination information on the outside of the tram
	• The information provided inside the tram
<b>10 Value for money</b>	• How satisfied were you with the value for money of your tram journey?

***\*Theme 5: Access to the tram stop was only included for Sheffield this year. Manchester did not include these questions in the 2019/20 questionnaire.***

We have then used these *themes*, rather than the individual questions, in the next stage of the analysis.

*Stage 3: Identifying how much of an impact each of these themes has on the overall journey satisfaction question (regression analysis)*

We use a second statistical technique (Multiple Linear Regression) to identify how much of an impact each of the themes has on the overall journey satisfaction question. While the generation of the themes is based upon all the responses from fare payers to the autumn 2018 and Winter 2019/20 TPS, the impact scores for each of the themes is calculated from the responses of passengers for each individual network.

The analysis is performed in two stages:

- First, the drivers of satisfaction were identified. 'Satisfied' passengers were defined as those who were either very or fairly satisfied with their journey. Dissatisfied customers were classified as those saying either very/fairly dissatisfied or those saying neither/nor (thus this latter group are perhaps more accurately described as 'not satisfied'). The regression took into account all five points of the satisfaction scale and was run using scalar driver variables (sometimes called independent variables) – this means that moving any one point up the five point scale is assumed to have the same impact.
- Once the drivers of satisfaction had been determined, the 'non-satisfied' (very dissatisfied, fairly dissatisfied and neither/nor respondents) were removed, and a new regression analysis was run to determine which factors drive people to be very satisfied (rather than either fairly or very satisfied), again using scalar driver variables.

The two parts of the analysis therefore indicate, firstly, which service aspects should be improved in order to provide an adequate overall journey experience (i.e. one which is at least satisfactory) and secondly, which service aspects should be improved in order to provide a genuinely good experience.

# Appendix 1: Typical Questionnaire

**transportfocus**

## Tram Passenger Survey

Thank you for agreeing to take part in our survey about the tram journey you made when given this questionnaire.

There are also questions about your general experiences at the end.

All the information you give will be treated in the strictest confidence.

Your views as a passenger are important. Transport Focus is the official, independent consumer watchdog that promotes the interests of transport users.

Tram companies, local authorities and governments act on the survey results. They are the evidence we use to seek improvements on behalf of passengers.

Please fill in the questionnaire after completing your journey with Supertram and return it to us in the reply-paid envelope provided.

If you prefer to fill the questionnaire online, then please go to [www.tramfocus.co.uk/sheffield](http://www.tramfocus.co.uk/sheffield)

**1 About your journey on Sheffield Supertram**

**Q1a** At which stop did you board this tram?

**Q1b** At which stop did you leave this tram?

**Q2** Please fill in the time that you boarded the tram today:            

Use the 24 hr. clock e.g. 5.25pm is 17.25  
Enter your time of boarding into the boxes as shown

**Q3** What type of ticket or pass did you use for this journey on Supertram?

Single ☐ Day or period return ☐  
Adult TravelMaster (this includes daily, weekly, monthly, annual) ☐ Travel for free (this includes senior citizens, mobility or zero fare pass) ☐  
Concession using South Yorkshire 16-18 student pass ☐ Other ☐

**Q4** In what format was your ticket?

A standard paper ticket/ pass ☐ A plastic card you touched on to the fare machine ☐  
A photo card ticket/ pass ☐ Other format ☐  
An n-ticket (sent to your mobile phone) ☐

**Q5** How did you buy that ticket or pass?

On Tram ☐ Off Tram (this includes ticket machine, on-line etc.) ☐

**Q6** What is the main purpose of your journey on Supertram today?

Travelling to/from work ☐ Shopping trip ☐  
Travelling to/from education (e.g. college, school) ☐ Visiting friends or relatives ☐  
On company business (or own if self-employed) ☐ Leisure trip (e.g. day out) ☐  
On personal business (job interview, bank, post office) ☐ Other ☐  
Travelling to/from medical/ other appointment ☐

**Q7** How did you get to the tram stop where you boarded this tram today?

On foot/ walked ☐ Taxi ☐  
Cycled ☐ Bus ☐  
Car - dropped off ☐ Train ☐  
Car - and used Park and Ride ☐ Tram ☐  
Car - parked elsewhere ☐ Other ☐

**2 About the tram stop where you boarded this Supertram**

**Q8** Thinking about the tram stop itself, how satisfied were you with the following?

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don't know/ no opinion
Its distance from your journey start e.g. home/ shops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The convenience/accessibility of its location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Its general condition/standard of maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Its freedom from graffiti/vandalism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Its freedom from litter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Behaviour of fellow passengers waiting at the stop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The information provided at the tram stop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your personal safety whilst at the tram stop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q9** Overall how satisfied were you with the tram stop?

Very satisfied ☐ Fairly dissatisfied ☐  
Fairly satisfied ☐ Very dissatisfied ☐  
Neither satisfied nor dissatisfied ☐ Don't know/no opinion ☐

**3 Waiting for the tram**

**Q10** Approximately, how long did you wait for the tram?    
(Please write the time in minutes)

**Q11a** Did you check any travel information before leaving for the tram stop, to find out when the tram was meant to arrive?

Yes ☐ No ☐

**Q11b** Did you check any of the following at the tram stop to find out when the tram was meant to arrive? (please tick all that apply)

Electronic display at the stop ☐ Information posters at the stop ☐  
Online tram times ☐ Disruption updates (e.g. Twitter/Facebook) ☐  
Telephoned for information ☐ Other ☐

**Q12** Approximately, how long did you expect to wait for the tram?    
(Please write the time in minutes)

**Q13** Thinking about the time you waited for the tram today, was it...

Much longer than expected ☐ A little less time than you expected ☐  
A little longer than expected ☐ Much less time than you expected ☐  
About the length of time you expected ☐

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**Q14** How satisfied were you with each of the following at the tram stop?

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don't know/ no opinion
The length of time you had to wait for the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The punctuality of the tram (arriving on time)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**4 On the tram**

**Q16** Thinking about when the tram arrived, please indicate how satisfied you were with the following:

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don't know/ no opinion
Route/direction information on the outside of the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The cleanliness & condition of the outside of the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The ease of getting onto the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The length of time it took to board the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q18** Thinking about whilst you were on the tram, please indicate how satisfied you were with the following:

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don't know/ no opinion
The cleanliness & condition of the inside of the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The information provided inside the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient room for all the passengers to sit/stand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The comfort of the seats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The amount of personal space you had around you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provision of grab rails to hold on to when standing/moving about the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The temperature inside the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your personal security whilst on the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The amount of time the journey took	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smoothness/freedom from jolting during the journey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The ease of getting off the tram	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q17** Did you get a seat on the tram?

Yes - for all of the journey ☐ No - but you were happy to stand/chose not to sit ☐  
Yes - for part of the journey ☐ No - but you would have liked a seat ☐

**Q18a** Did other passengers' behaviour give you cause to worry or make you feel uncomfortable during your journey?

Yes ☐ No ☐

**Q18b** If yes: Which of the following were the reason(s) for this? (Please tick all that apply)

Passengers drinking under the influence of alcohol ☐ Music being played loudly ☐  
Passengers taking under the influence of drugs ☐ Smoking ☐  
Abusive or threatening behaviour ☐ Graffiti or vandalism ☐  
Rowdy behaviour ☐ Load use of mobile phones ☐  
Passengers not moving out of priority seats ☐ Other (write in) ☐  
Passengers not paying their fares ☐  
Feet on seats ☐

**Q19** Was your journey on Supertram today delayed at all?

Yes ☐ No ☐

**Q20** Thinking about any Supertram staff you encountered on your journey, please indicate how satisfied you were with each of the following:

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don't know/ no opinion
The appearance of any staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Any greeting/welcome you got from the staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The helpfulness and attitude of the staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The safety of the driving (i.e. appropriateness of speed, driver concentrating)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The knowledge of the staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**5 Your overall opinion of the journey you made when given this questionnaire**

**Q21** Overall, taking everything into account from start to end of this journey, how satisfied were you with your journey on Supertram today?

Very satisfied ☐ Fairly dissatisfied ☐  
Fairly satisfied ☐ Very dissatisfied ☐  
Neither satisfied nor dissatisfied ☐ Don't know/ no opinion ☐

**Q22** If something could have been improved on your journey on Supertram today what would it have been?

**Q23** How satisfied were you with the value for money of your journey on Supertram?

Very satisfied ☐ Fairly dissatisfied ☐  
Fairly satisfied ☐ Very dissatisfied ☐  
Neither satisfied nor dissatisfied ☐ Don't know/ no opinion ☐

**6 Your opinion of Supertram generally**

WHEN ANSWERING THIS SECTION PLEASE CONSIDER SUPERTRAM SERVICE! GENERALLY (NOT JUST THE JOURNEY YOU MADE WHEN GIVEN THIS QUESTIONNAIRE)

**Q24a** How would you rate Supertram services for the following:

	Very good	Fairly good	Neither good nor poor	Fairly poor	Very poor
Ease of getting to local amenities (e.g. shops, hospitals, leisure facilities)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connection with other forms of public transport (e.g. trains/buses)...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q24b** And how satisfied are you overall with Supertram services for the following:

	Very satisfied	Fairly satisfied	Neither satisfied nor dissatisfied	Fairly dissatisfied	Very dissatisfied	Don't know/ no opinion
Ease of buying your ticket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliability (running on time)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frequency (how often the trams run)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Range of tickets available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Range of payment options available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q25** How often do you typically travel on the Supertram? (Please tick the closest to your frequency of tram use)

5 or more days a week ☐ Once a month ☐  
3 or 4 days a week ☐ Less frequent ☐  
Once or twice a week ☐ This is the first time I have used the Supertram ☐  
Once a fortnight ☐

**Q26 If you have used Supertram before, how typical would you say today's experience was?**

Much better than usual ..... ☐ A little worse than usual ..... ☐  
 A little better than usual ..... ☐ Much worse than usual ..... ☐  
 About the same as usual ..... ☐

**Q27 To what extent do you agree, or disagree, with the following statement?**

**'Investment in the Supertram system, to enable it to continue to operate reliably into the future, is essential to support regional growth'**

Strongly agree ..... ☐  
 Agree ..... ☐  
 Neither agree nor disagree ..... ☐  
 Disagree ..... ☐  
 Strongly disagree ..... ☐  
 Don't know ..... ☐

**7 About you**

In this final section we ask for some information about you, some of which, like your health and ethnicity, is considered to be sensitive information. Any information you give us here is used for research purposes only and not to identify any particular individual. You are also free to decide whether you want to give us this information or not.

We ask these questions so that we can understand how different passengers' experiences vary, so, for example, what do younger passengers think compared to those who are middle aged or of retirement age.

**Q28 Are you?**  
 Male ..... ☐ Female ..... ☐  
 Prefer another term ..... ☐ Prefer not to say ..... ☐

**Q29 Are you...?**  
 18 to 19 ..... ☐ 35 to 44 ..... ☐ 65 to 69 ..... ☐  
 19 to 21 ..... ☐ 45 to 54 ..... ☐ 70 to 79 ..... ☐  
 22 to 25 ..... ☐ 55 to 59 ..... ☐ 80+ ..... ☐  
 26 to 34 ..... ☐ 60 to 64 ..... ☐ Prefer not to say ..... ☐

**Q30 Which of the following best describes your ethnic background?**  
 White ..... ☐ Black, African/Caribbean or Black British ..... ☐  
 Mixed/multiple ethnic groups ..... ☐ Chinese ..... ☐  
 Asian or Asian British ..... ☐ Arab ..... ☐  
 Other ethnic group ..... ☐ Prefer not to say ..... ☐

**Q31 In terms of having a car to drive, which of the following applies?**  
 You have a car available and don't mind driving ..... ☐ You have a car available but prefer not to drive ..... ☐  
 You don't have a car available ..... ☐

**Q32 How often are you able to ask someone else to drive you for local journeys?**  
 At or most of the time ..... ☐ You don't have anybody you can ask ..... ☐  
 Some of the time ..... ☐ Not applicable ..... ☐

**Q33 Are you affected by any physical or mental health conditions or illnesses lasting or expected to last 12 months or more? (Please tick all that apply)**  
 No, none ..... ☐ Yes ..... ☐  
 Prefer not to say ..... ☐

**Q34 And finally, to help us get a better picture of tram services at a local level, it would be helpful if you could provide us with your home postcode.**  
 If you provide it, this will be used to help understand tram usage and make improvements locally. Your postcode will not be used to identify you personally and will only be used for research purposes.

Please write in your home postcode here .....   
 Live outside the UK ..... ☐

Your response to this survey is being collected by AECOM on behalf of Transport Focus. Any personal data you provide will be held in strict confidence and stored securely and in accordance with all legislation governing the protection of personal information, including the Data Protection Act 2018 and the General Data Protection Regulation (GDPR). We will not make your personal information available to anyone without your knowledge or consent. It will be used solely for the purposes of this research and quality control, and no sales or marketing contact will result from this survey.

You have the right to access, withdraw your consent to use, and object to processing of your sensitive information. For further information about your legal rights and how to exercise these, please visit [aecom.com/privacy-policy](http://aecom.com/privacy-policy) or email AECOM's Data Protection Officer at [privacyquestions@aecom.com](mailto:privacyquestions@aecom.com).

We may share the responses to the questions in this survey, including postcode (if you have provided this) with other organisations that have a legitimate interest in the survey data, such as, but not limited to, local transport authorities, government departments, tram operating companies and academic institutions. Any organisations receiving this data will also be subject to the same restrictions and obligations under GDPR.

As some of the information we ask for in the 'about you' section is considered to be sensitive information we require your consent for this sensitive information to be stored and processed as described above.

Please confirm whether or not you consent to this:  
 Yes I consent ..... ☐ No, I do not consent ..... ☐

If you have any queries about this survey or how your data will be used please contact Jodie Knight at AECOM on 0161 927 8328. If you would like to check that this survey is genuine, you can contact the Market Research Society on 0800 9795996 or [www.mrs.org.uk](http://www.mrs.org.uk) who will verify AECOM's status as a legitimate market research organisation.

To find out more about the Tram Passenger Survey or Transport Focus' work visit our website ([www.transportfocus.org.uk](http://www.transportfocus.org.uk)) or follow us on Twitter (@transportfocus).

If you would be happy to participate in future research projects about the transport industry for Transport Focus please complete the contact details below.

Name: .....  
 Email address: .....

**Thank you for completing this questionnaire.**

Please return it in the envelope provided or use the following Freepost address:

Freepost RTQJLLTT-UHJA  
 AECOM Limited  
 AECOM House  
 179 Moss Lane  
 HALE  
 WA15 8PH

**AECOM**

**transportfocus**

