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University of Edinburgh Travel Surveys

University of Edinburgh

Report of Travel Surveys 2017

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Appendix A. Appendix A: Non-Weighted number of students and staff purchasing bus tickets

Appendix B. Carbon Footprint Calculation Methodology

Executive Summary

The University of Edinburgh is a major contributor to the movement of people in Edinburgh and its surrounding area. Large staff and student populations travel to multiple campuses located in and around the city. Considering local and global transport and environmental issues, the University understands it has a key role to play in influencing sustainable travel practices amongst its staff and students.

The University has commissioned Jacobs UK Ltd to design, manage and analyse their 2017 staff and student travel survey. The University began surveying its staff in 2000 and students from 2004. Since 2007, the University has regularly conducted a travel survey of both staff and students in order to understand and improve its mode share and carbon footprint, to achieve a higher level of sustainability and to reduce its impact on the local and global environment.

Findings

- 2,842 staff completed the survey out of a total of 14,166 staff, which equates to an overall response rate of 20%
- 4,722 students completed the survey out of a total of 39,568 students; this equates to a response rate of 12%

The 2017 survey has shown that the University continues to have a high rate of active travel and public transport usage amongst both staff and students. The main change in mode share since 2016, is a slight decrease in walking and a 3% increase in public bus use. Specific details by campus are contained within the report.

The University's Carbon Footprint has reduced by 6.7% since 2016. The staff carbon footprint has decreased by 11.5%, largely due to a reduction in car-based travel. Conversely, the student carbon footprint has increased by 2.7%, accredited to an increase in public transport usage.

- **Walking** – remains the most popular mode of travelling to/from the University. Despite a slight decrease since 2016, it still accounts for 47% of the overall mode share
- **Bicycle** – is still the third most popular mode, accounting for 13% of the University's overall mode share
- **Public Bus** – has the biggest change in mode share, increasing by 3% since 2016. It is evident across several campuses that staff and students are choosing public transport as their main mode of travel to the University
- **Car-based modes** – represent 9% of the overall mode share, with all types of car journey (car driver alone, car driver with passenger(s) and car passenger) at the same levels as 2016
- **Train** – accounts for 8% of the total mode share, with a greater percentage of staff utilising this mode compared to students
- **Shuttle Bus** – usage has dropped by 1% since the 2016 survey. Both the percentages of staff and students using the shuttle service has decreased; this is likely to be linked with the increase in public transport mode share and removal of the NHS shuttle bus
- **Tram** – was not included as an option in the 2016 survey, therefore the 2017 survey figures act as a baseline. Overall, 0.3% of travel to the University is by tram
- **Taxi, Motorcycle and Mobility Scooter** – each account for less than 1% of the travel mode share

Conclusions & Recommendations

The University continues to achieve a high active travel and sustainable travel mode share amongst its staff and students, clearly demonstrated by the wide range of transport and travel measures put in place to promote, encourage and facilitate sustainable travel. Furthermore, the willingness to engage with local transport operators and pilot transport schemes should be commended.

The 2017-2021 University of Edinburgh Integrated Transport Plan makes a clear commitment to achieving its vision that *'by 2021 our students, staff and visitors will be able to access our estate by the mode of transport best suited to their needs, and have in place facilities and incentives that make walking, cycling and public transport the obvious and preferred way to travel both for commuting and business travel'*.

Nevertheless, it is recommended that the University continues to:

- facilitate its current sustainable transport measures in order maintain its progress and provide the necessary assistance and means for staff and students who already – or wish to - travel sustainably; and
- Promote, encourage and *engage* staff and students who are less aware - or not aware at all - of the University's travel planning measures and how they, the University and surrounding environments can benefit from sustainable travel.

1. Introduction

1.1 Background

Jacobs UK Ltd has been commissioned by the University of Edinburgh to design, manage and analyse their 2017 Staff and Student travel survey.

The 2017 survey provides an update to past surveys which date back to 2000, with the most recent being undertaken in 2016.

1.2 Purpose and Design of the 2017 University Travel Survey

The University is committed to minimising the transport impacts of its activities through the adoption of a number of transport related policies and the implementation of Travel Plans. The University has undertaken staff and student travel surveys on a regular basis since 2000, with the most recent in 2016. The surveys provide a valuable opportunity to measure and understand existing travel behaviours; gauge staff and student propensity to consider alternative travel modes; and allow the University to focus travel planning measures effectively.

As with the previous travel surveys, the 2017 survey was designed to calculate an estimate of the University's travel to work/study Carbon Footprint. The survey was designed as an online questionnaire and was conducted over the following periods:

- Student Survey: 16th October – 10th November
- Staff Survey: 25th/27th October – 24th November

The surveys were made available to all staff and students across all University sites, with the results below taking into account fully completed questionnaires only.

1.3 Existing Travel Plans

As highlighted within the 2016 report, the University undertakes a number of travel planning activities, including the following measures:

- Transport and travel information on the website: www.ed.ac.uk/transport;
- Central Area to King's Buildings Shuttle Bus;
- Shower and locker facilities;
- Interest free staff travel loan for the purchase of public transport season ticket /bicycle purchase;
- Subsidy of Lothian Buses Service 67, which operates between the City Centre and Easter Bush;
- Cycle to Work Scheme;
- Bicycle User Groups at each main campus;
- Secure cycle stores in addition to Sheffield Racks;
- Bike Doctor visiting each University site every month in rotation;
- Discounts at bicycle shops;
- Bike Buddies Scheme for those who want a little support starting out;
- Free cycle training for learners / returners to cycling;
- Emergency toolkits for bikes in specific locations;
- Parking management;
- Member of the TripShare scheme;
- Member of the Corporate Enterprise Car Club; and
- Introduction of electric vehicle charging points.

1.4 Travel Planning Activity Since 2016

Since the last travel survey, the following developments have occurred which impact on transport and travel in the University:

1.4.1 Central Area / King's Buildings Shuttle Bus and Service 41 '£1 Fare' Scheme

The University provides a free shuttle bus service for students and staff travelling between Central Area and King's Buildings; however, due to the high demand for the service and lack of capacity, many passengers are frequently left behind at Potterow or King's Buildings. Ultimately, the desire of the University is to move away from providing shuttle bus services and encourage uptake of existing public transport provision. To test this, a pilot¹ was undertaken between 13th March to 7th April 2017 whereby students and staff could travel on the Lothian Buses Service 41 between Central Area and King's Buildings for free.

The results of the pilot indicated that 48% of passengers used the service for inter-site travel; 52% for travelling to/from home. It also offered greater flexibility for the times passengers travelled – resulting in more passengers using the service than expected. Feedback has also influenced the new shuttle bus timetable which provides a better fit with the academic timetable, and introduced a new 09:53 service to better cater for morning demand.

The University currently supports students and staff by subsidising Service 41 fares from 18.30 until service end. Students and staff can now use the service for £1 (70p University subsidy), with the aim of enhancing travel opportunities between Central Area and King's Buildings during weekday evenings. This offer has now been extended until 25th May 2018².

1.4.2 Royal Infirmary to Western General Shuttle Bus

The NHS Shuttle Bus Service between the Edinburgh Royal Infirmary and Western General Hospital permanently ceased operations as of 26th December 2016. Students have since been encouraged to use the faster and more frequent public bus services for their inter-site business and travel needs³.

1.5 University of Edinburgh 2017-21 Integrated Transport Plan

The University of Edinburgh's Integrated Transport Plan (ITP) sets out how the University will achieve its vision that *'by 2021 our students, staff and visitors will be able to access our estate by the mode of transport best suited to their needs, and have in place facilities and incentives that make walking, cycling and public transport the obvious and preferred way to travel both for commuting and business travel'*.

In order to ensure that this vision is achieved, a number of Integrated Transport Plan (ITP) targets have been set. The University aims to:

- 1) Increase the proportion of staff travelling on foot to University to 30% (25% in 2016) and students to 60% (57% in 2016). (New Target;)
- 2) Increase the proportion of students and staff cycling to University to 15% (from 13% in 2016) (to match Edinburgh Council Local Transport Strategy Target.);
- 3) Through negotiation with Lothian Buses, seek to introduce a number of student ticketing options better suited and priced to the needs of our students;
- 4) Public transport provision to and between University sites regarded as good to excellent by 75% of our student and staff users as measured in our bi-annual travel survey. (new target);
- 5) Reduce car driving to 29% or less at each University campus. (excluding Easter Bush) (to match Edinburgh Council Local Transport Strategy Target);

¹ Evaluation of Lothian Buses Service 41 Pilot: <https://www.ed.ac.uk/transport/public-transport/buses/shuttle-bus/evaluation-of-lothian-buses-service-41-pilot>

² Evening Offer: £1 fare on Service 41: <https://www.ed.ac.uk/transport/public-transport/buses/shuttle-bus/evening-offer-on-service-41>

³ Royal Infirmary to Western General Shuttle Bus: <https://www.ed.ac.uk/transport/public-transport/buses/rie-western>

- 6) Increase the proportion of parking permit holders using an electric vehicle from 0.4% in 2016-17 to 2%. (new target); and
- 7) Increase the proportion of electric vehicles in the University fleet from 4% in 2016-17 to 30%. (new target).

The Strategy outlines a package of measures designed to ensure that its aims, objectives and targets have the best chance of success.

The results of the 2017 survey enable the University to measure progress towards these targets – from a baseline derived from the 2016 survey - and to identify any additional actions necessary in order to achieve them.

1.6 Report Structure

The main body of the report considers the following:

- Overall survey results
- Results and analysis by location, including:
 - Central Area
 - King's Buildings
 - Easter Bush
 - Royal Edinburgh
 - BioQuarter
 - Western General Hospital
 - Pollock Halls
 - Other sites and Accommodation Sites
- Conclusion

2. Overall Survey Results

2.1 Introduction

This chapter summarises survey response rates by University location and considers the Overall mode share across all sites.

2.2 Survey Responses

2,842 responses were received from staff representing a 20% response rate (the same as 2016), while 4,722 responses were received by students representing an 12% response rate (2% higher than 2016). Although the level of responses by both staff and students provides an acceptable sample size when considering overall travel trends to the university, the results at smaller site locations should be treated with some caution given the smaller sample sizes.

As an example, at the Royal Edinburgh Hospital there were 34 staff and 123 student responses in 2017 compared with 31 staff and 21 student responses, in 2016. Consequently, the mode shares have changed quite dramatically; in 2016 the walking mode share was 34% while in 2017 this is 57% - a 23% increase. While it is helpful to acknowledge the results at smaller sites, the potential for significant variation should be noted.

The breakdown of the response rates by location is presented in Table 2-1 below:

Table 2-1: 2017 Survey Response Rates by Location

Location	Staff Academic	Staff Support	Student
Central Area	11%	26%	11%
King's Buildings	11%	23%	16%
Easter Bush	20%	21%	14%
BioQuarter	15%	25%	14%
Western General Hospital	28%	26%	10%
Royal Edinburgh Hospital	53%	86%	17%
Edinburgh College of Art	34%	100%*	10%
Pollock Halls	n/a	23%	n/a
Other Sites	11%	98%	13%

* More support staff completed the survey (56) than are registered as working at this site (47). There is no way of determining incorrect data entries hence all records have been included in the analysis and weighted accordingly.

2.3 University Mode Share

The overall University mode share is illustrated in Figure 2-1, with the overall staff and student mode share shown in Figures 2-2 and 2-3 respectively. Mode-by-mode highlights of the changes since the 2016 survey are then summarised.

Figure 2-1: Overall University Mode Share (2017)

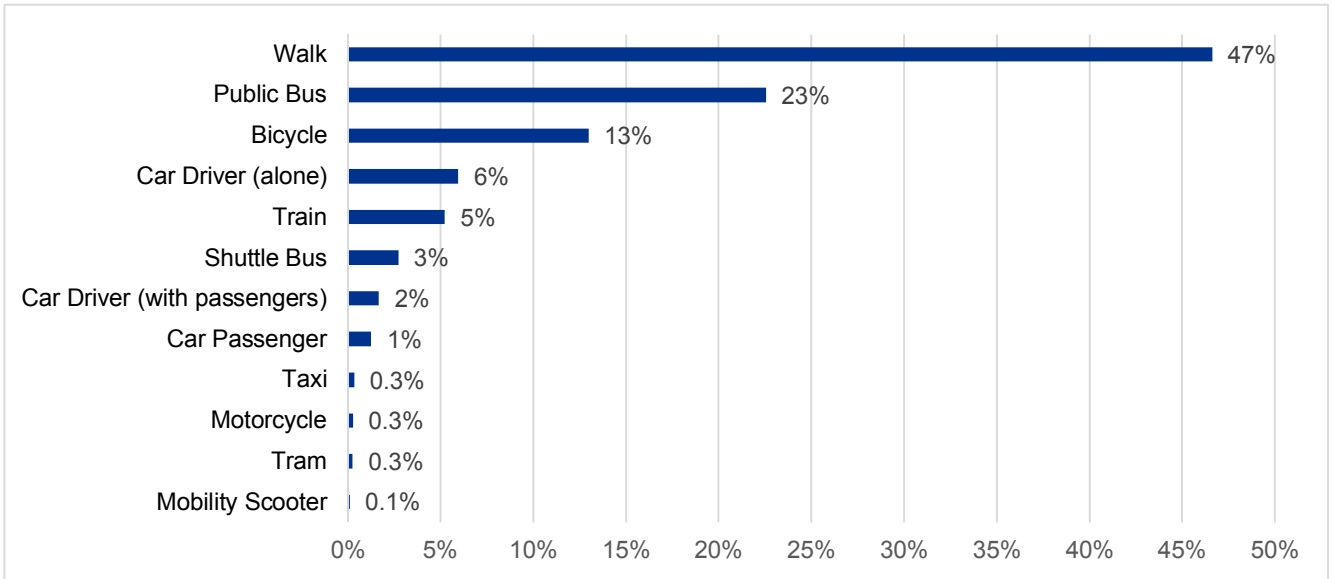


Figure 2-2: Overall Staff Mode Share (2017)

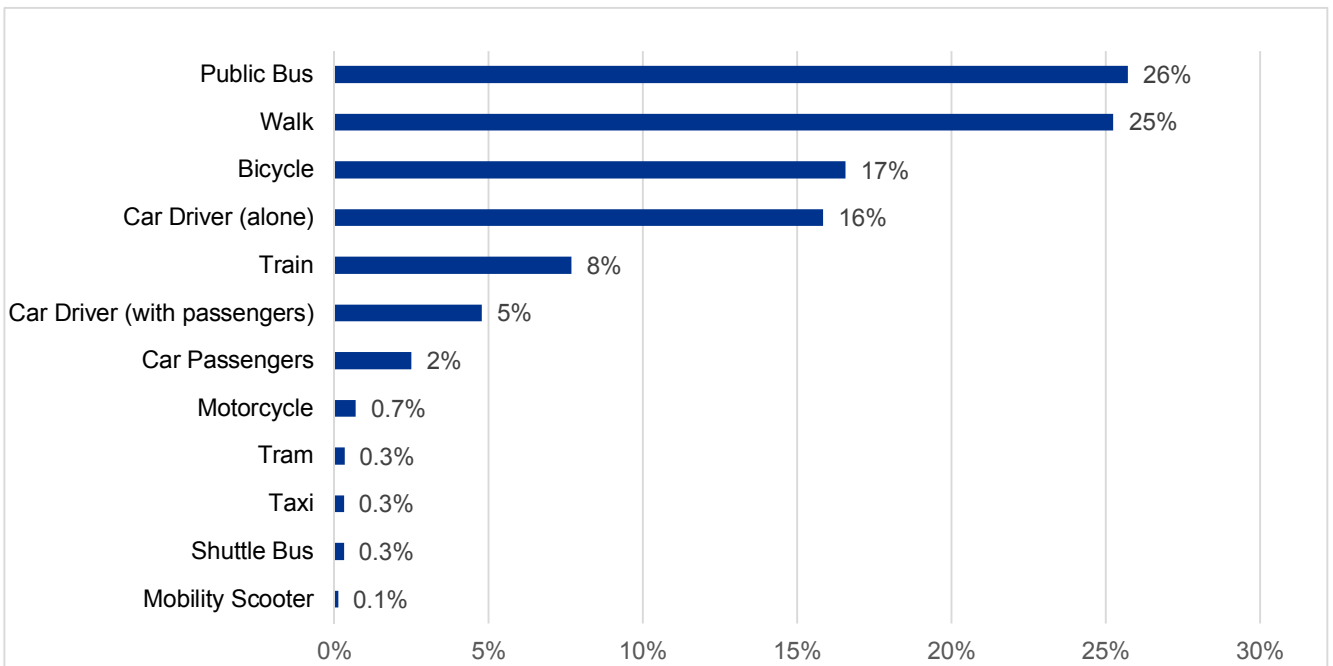
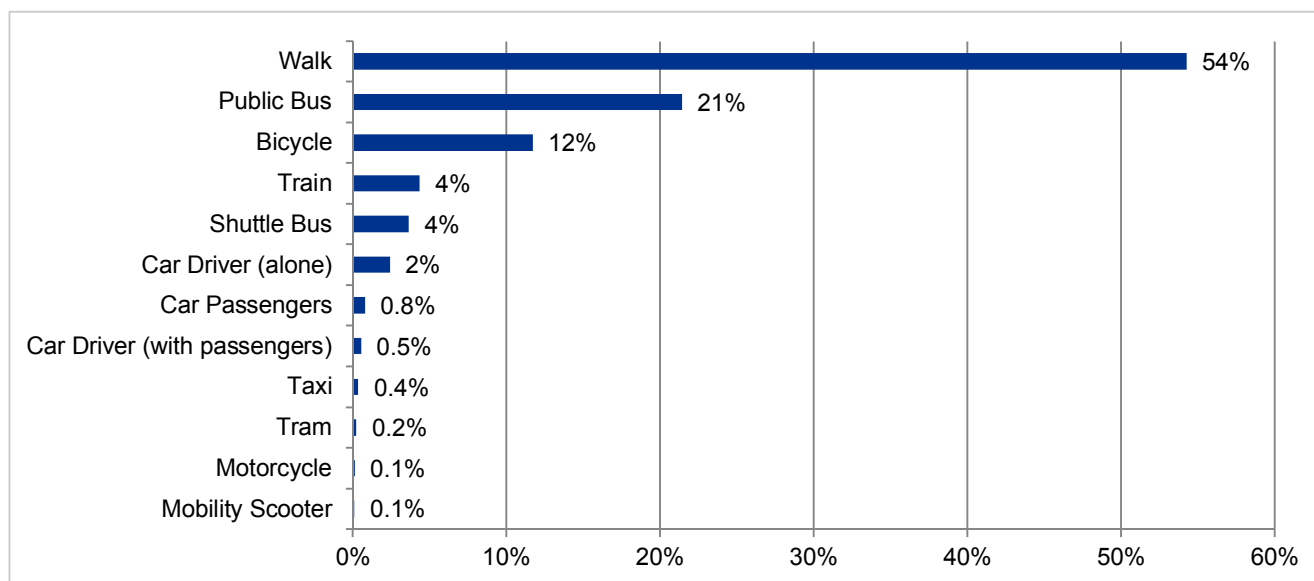


Figure 2-3: Overall Student Mode Share (2017)



2.3.1 Overall

In general, the Overall University mode share proportions have remained similar to those of the 2016 survey, with slight variations in public bus and walking levels. Staff and students walking to the University has slightly decreased by 1%, while overall public bus usage has increased by 3%. Further disaggregation of the data shows more distinct variations between modes, staff and students, and campuses; this is discussed in detail later in this report.

2.3.2 Walking

Total walking to/from the University has decreased by a marginal 1% since 2016, and now represents 47% of the overall mode share. The walking mode share for staff is consistent with 2016 levels, representing 25% of the staff total, and approximately 5% below the ITP staff walking target. Student levels of walking have decreased by 3% since the 2016 survey and are now 6% below the ITP student walking target; however, the decrease is potentially linked to the 3% increase in student public bus usage.

2.3.3 Public Bus

Public bus mode share across the University has increased by 3% since 2016, and now constitutes 23% of the total mode share. There has been a small decrease in public bus usage by staff; however, an overall increase is a result of a 3% increase in student bus travel. It is possible that a proportion of this increase is due to students switching from the shuttle bus to public bus. Similarly, some students may have chosen to travel by bus instead of walking to the University.

Regarding ITP targets, public bus mode share is not a target, however, ticketing options and service satisfaction levels are targeted and will be discussed in more detail in this section.

2.3.4 Cycling

Cycling levels amongst staff have increased by 2% since 2016 and now account for 17% of the overall staff mode share; student cycling mode share remains consistent at 12%. Cycling continues to represent a healthy 13% of the overall University mode share and ensures that the University is in a good position to meet the ITP cycling mode share target of 15% by 2021.

2.3.5 Car-based Travel

Travel by car-based modes has remained static since 2016, for both staff and students, at 9% of the overall 2017 mode share. The ITP car mode share target is 29% or less at all University campuses, excluding Easter Bush. In 2017, all locations achieved this, except at Pollock Halls.

2.3.6 Rail

Rail mode share amongst staff has remained at the same level as 2016 (8% of staff journeys); it has decreased slightly amongst students and now accounts for 4% of student journeys. The total percentage of staff and students taking the train to/from the University remains consistent at 5%.

2.3.7 Taxi

Taxi accounts for less than 1% of travel to/from the University by staff and students. Typical reasons for travelling to the University by taxi include work start and/or finish times that outside public transport hours and inclement weather.

2.3.8 Motorbike

Staff and students travelling to/from the University by motorbike accounts for less than 1% of the overall mode share.

2.3.9 Tram

Tram was not included as an option in the 2016 survey, therefore results from the 2017 survey act as a baseline. The results show that overall, 0.3% of staff and students use the tram to get to/from the University, with 0.3% of staff and 0.2% of students choosing to take the tram as their usual mode of travel.

2.3.10 Mobility Scooter

Staff and students travelling to University by mobility scooter accounts for less than 1% of the University's overall mode share. Whilst this represents a small element of the university population, it is important that both accessible infrastructure and measures to ease accessibility are implemented across all University's campuses.

2.4 Travel Planning Activity

All campuses are subject to the University's travel planning activity and arrangements and, from a review of the survey data, staff and students are generally aware of a number of sustainable travel measures.

The top and bottom 3 measures in terms of staff and student awareness and use are given in Table 2-2, with further breakdowns in Figures 2-4 and 2-5.

The main travel measures that encourage sustainable travel that staff are aware of and use are discounted bike locks for sale, eCycle electric bike pool and Emergency Bike Toolkit. Students are most aware of the Bike Buddies scheme, free cycle training and road safety roadshows.

Staff and students are aware but don't use secure sheltered bike parking and shower and locker facilities. Staff were also aware of but don't use the cycle to work scheme; students don't use the Dr Bike visit.

Staff and student answers on the measures they are not aware of were the same. They are most unaware of travel information on the website, secure sheltered bicycle parking and shower and locker facilities.

Table 2-2: Top 3 Awareness Levels of Travel Planning Measures for Staff and Students

Overall Staff Awareness of Travel Planning Measures			
Rank	Most Aware of and Use	Aware of and Don't Use	Not Aware of
1	Discounted bike locks for sale	Cycle to Work Scheme	Travel information on the website: www.ed.ac.uk/transport
2	eCycle: a pool of 8 electric bikes for inter-site travel	Secure sheltered bicycle parking	Secure sheltered bicycle parking
3	Emergency toolkits for bikes in specific locations	Shower and locker facilities	Shower and locker facilities
Overall Student Awareness of Travel Planning Measures			
Rank	Most Aware of and Use	Aware of and Don't Use	Not Aware of
1	Bike Buddies Scheme for those who want a little support starting out	Secure sheltered bicycle parking	Travel information on the website: www.ed.ac.uk/transport
2	Free cycle training for learners / returners to cycling	Shower and locker facilities	Secure sheltered bicycle parking
3	Travel / road safety roadshows	Dr Bike visiting each University site every month in rotation	Shower and locker facilities

Figure 2-4: Overall - Staff: Are you aware of the following sustainable transport initiatives available from the University?

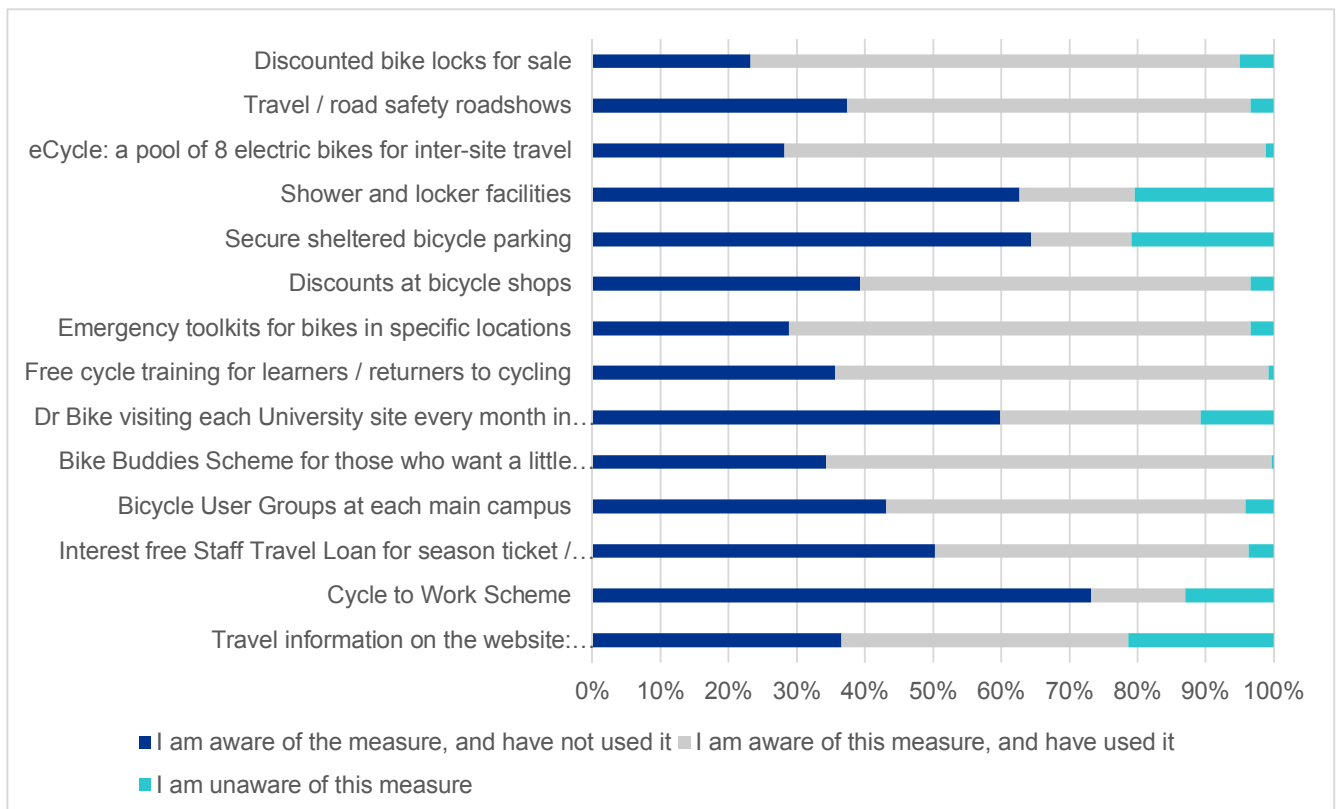
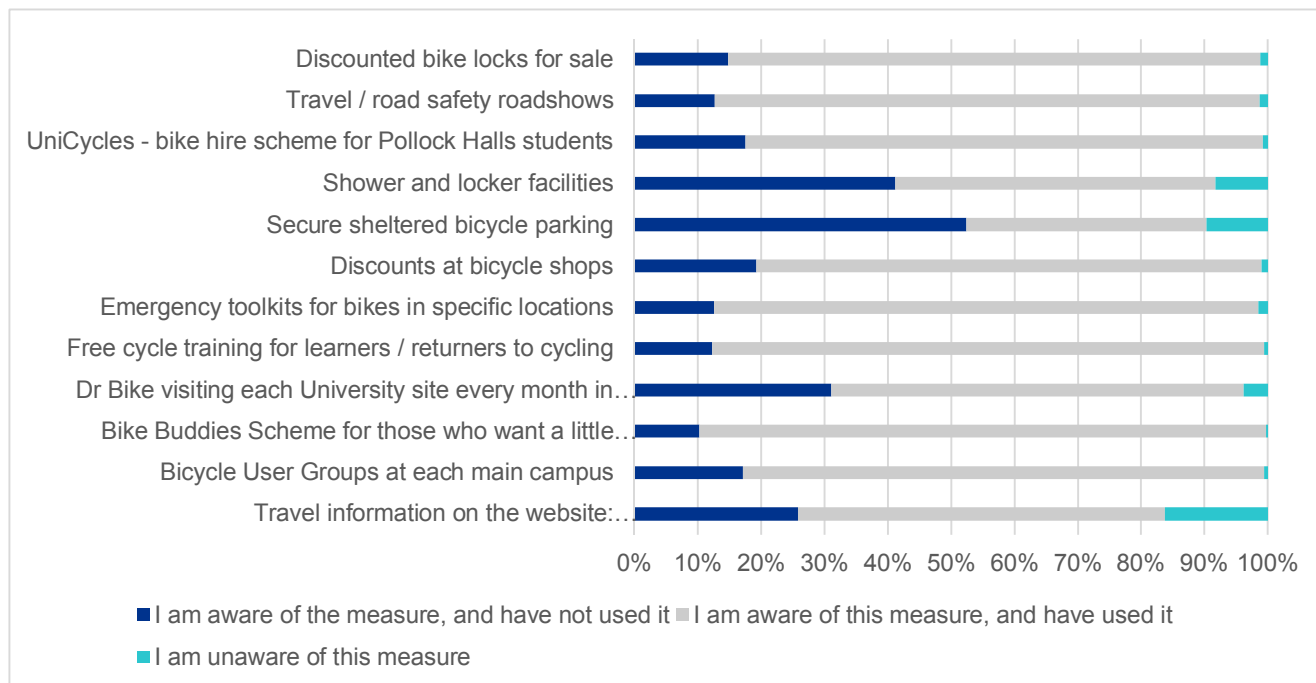


Figure 2-5: Overall – Students: Are you aware of the following sustainable transport initiatives available from the University?



2.4.1 Public Transport

Public Bus Hours of Operation

Staff and students were asked about the adequacy of public bus service hours of operation to support their access needs. As can be seen below, satisfaction with the service provided is rated highly - over 80% by both groups. Where respondents answered that provision was inadequate, the key reasons given were a lack of service frequency (41%) and services not running late enough into the evening (31%).

It should be noted that results vary significantly by campus, most notably at Easter Bush, where only just over 50% of staff and students feel the bus services adequately supports their access requirements.

Table 2-3: Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

All Campuses	Yes	No
Staff	85%	15%
Students	82%	18%

Figure 2-6: Staff Overall - Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?

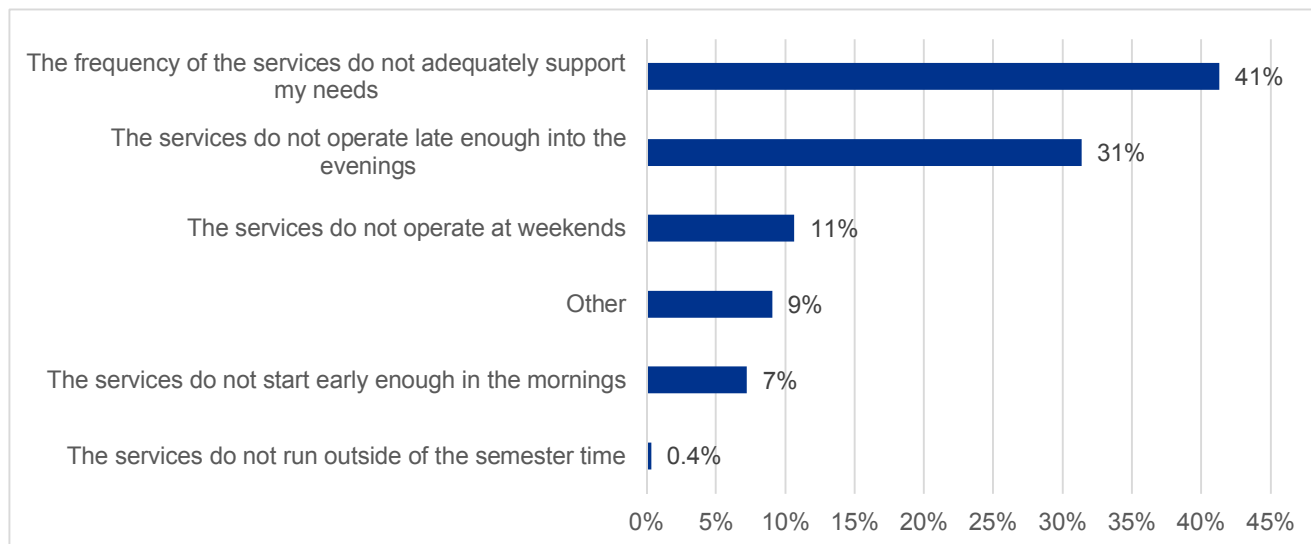
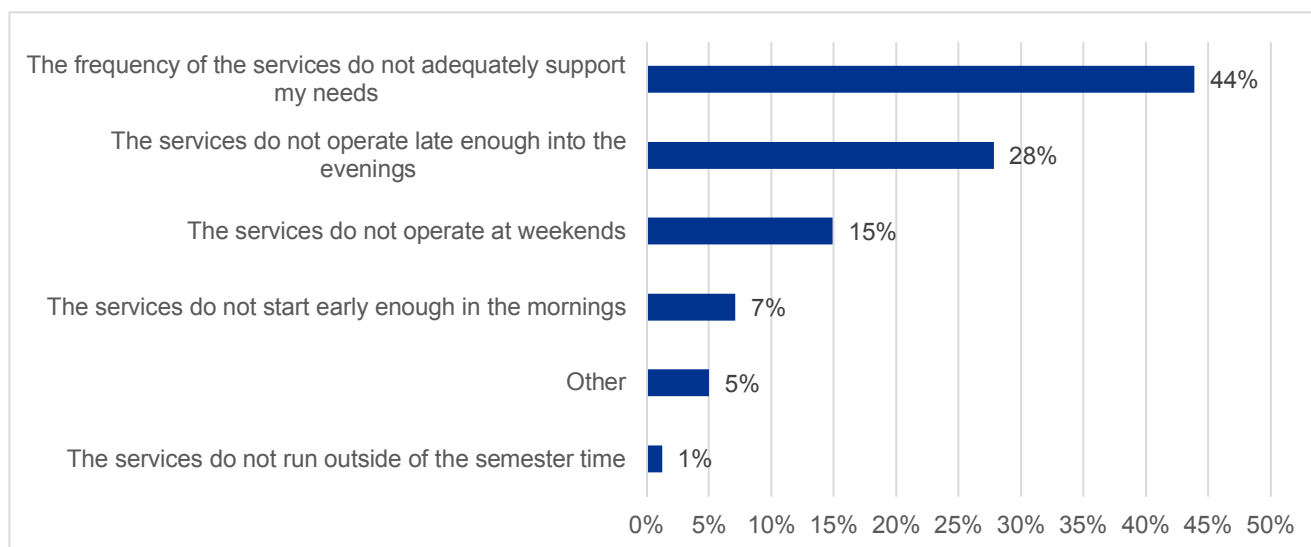


Figure 2-7: Students Overall - Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Satisfaction of Bus Services

Satisfaction levels of public bus service provision to, from and between University campuses is now a target in the ITP, with the aim of achieving at least 75% 'Good' to 'excellent' scores from staff and students. Respondents were asked to rate bus satisfaction across six categories:

- Timetable
- Reliability
- Hours of operation
- Route
- Journey time, and
- Affordability

Key results from the survey, summarised across all campuses, are given below.

- **Overall (see Figure 2-8)** for staff and students combined, none of the categories achieved the 75% ITP target. The highest 'Good' or 'Very Good' rating was 70% for Route Coverage and the lowest rating being 51% for Affordability. In general, Timetable, Reliability, Hours of Operation and Route scored a 'Good' or 'Very Good' rating above 60%. Staff and Students are less satisfied with public bus Journey Times and Affordability with 'Good' and 'Very Good' satisfaction levels under 60% overall.
- **Staff (see Figure 2-9)** were most satisfied with the provision of Routes and - the only category which achieved the ITP target of 75% for 'Good' and 'Very Good'. Staff were least satisfied with Hours of Operation and Affordability, with almost 15% of staff being 'Poor' or 'Very Poorly' satisfied with the Journey Times of services; and 11% 'Poor' or 'Very Poor' satisfaction for Hours of Operation.
- **Student (see Figure 2-10)** satisfaction levels for 'Good' were broadly similar to staff levels (~40%) but scored much lower against the 'Very Good' category. Satisfaction levels are more than 10% lower than the ITP 75% 'Good' or 'Very Good' target. Timetable (60%), Reliability (62%), Hours of Operation (65%) and Route (68%) were the highest scoring for 'Good' and 'Very Good' combined. Journey Time and Affordability only scored 57% and 48%, respectively, for 'Good' or 'Very Good'. Almost a quarter of students described the affordability of public bus services as being 'Poor' or 'Very Poor'.

Figure 2-8: Overall Staff & Student Satisfaction with Public Bus Services

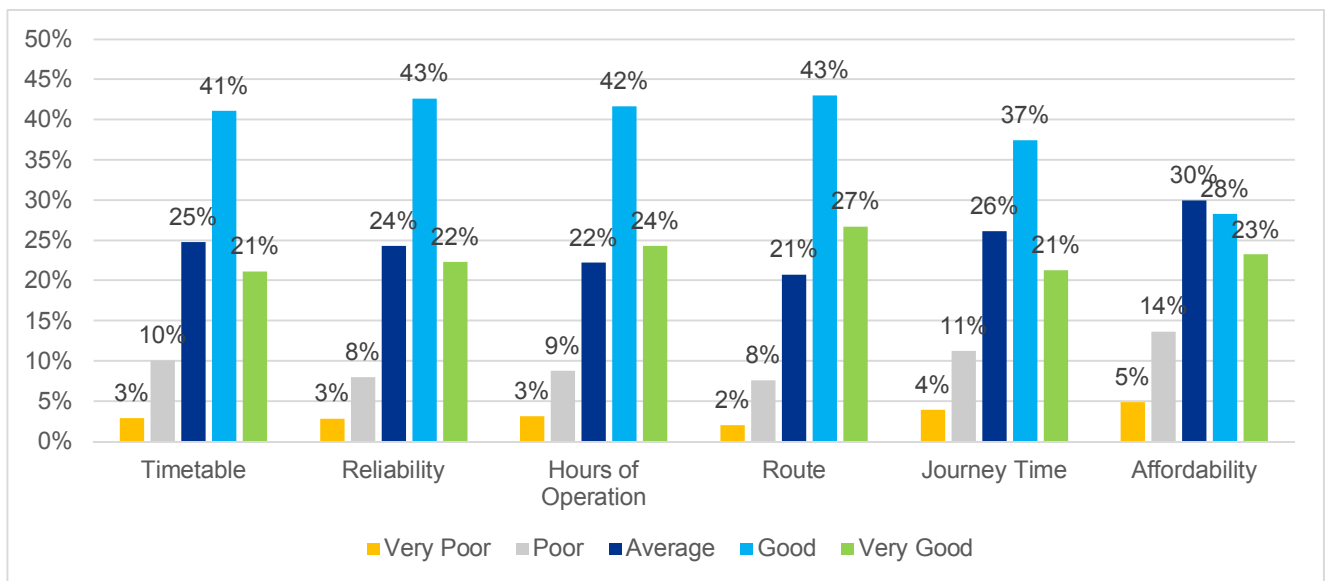


Figure 2-9: Overall Staff Satisfaction with Public Bus Services

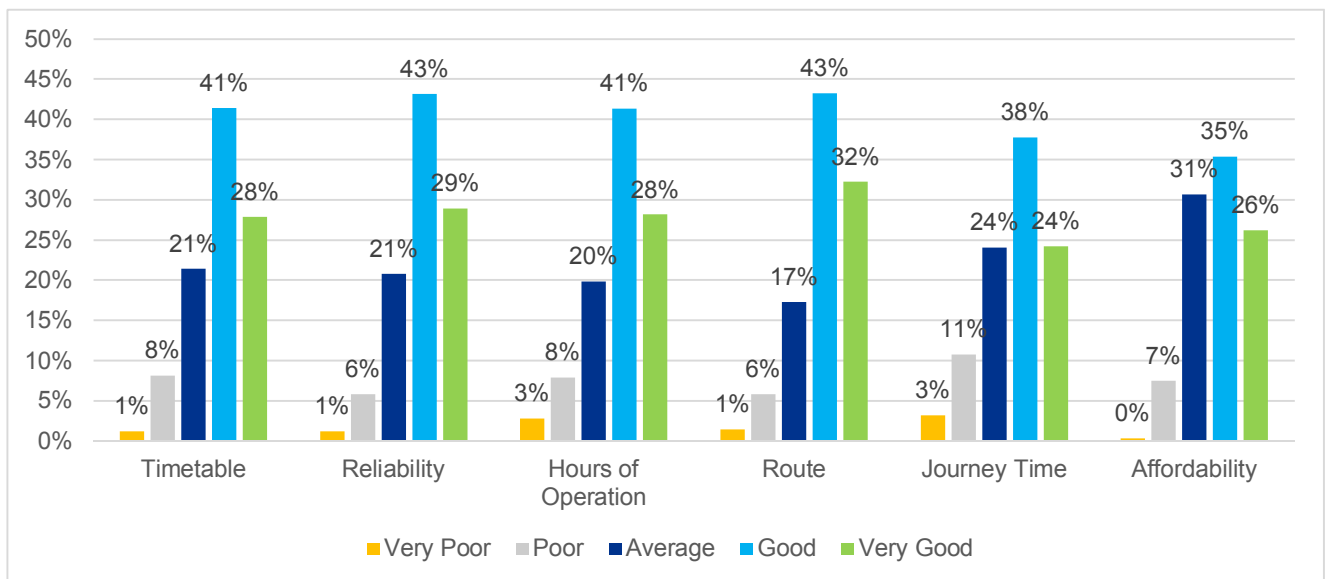
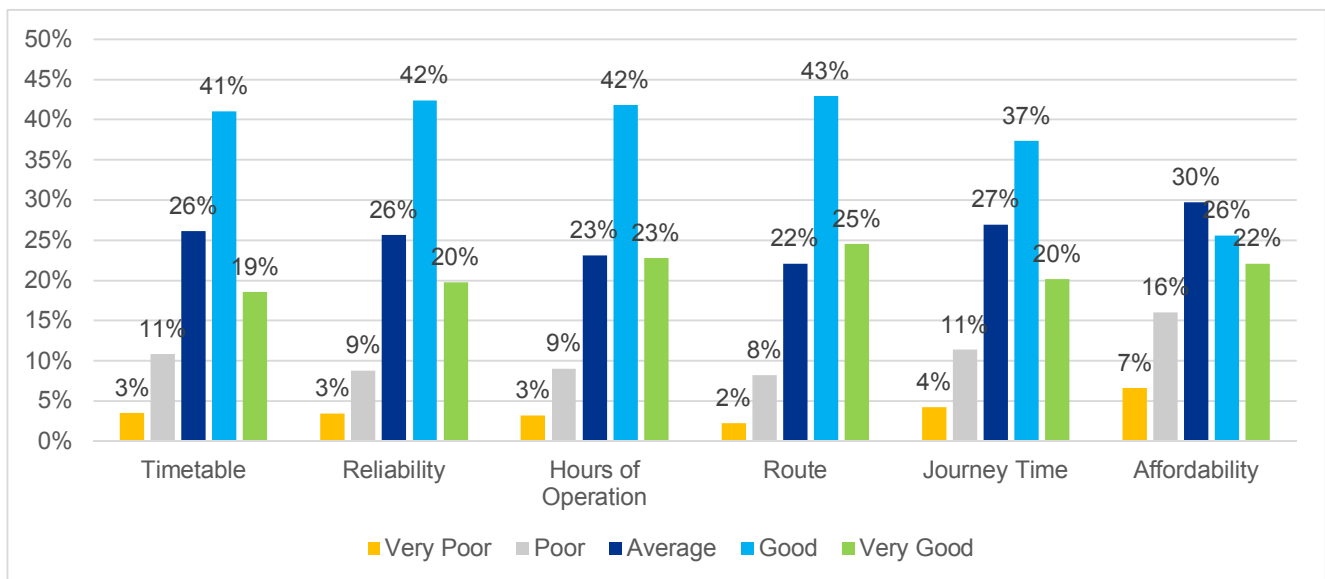


Figure 2-10: Overall Student - Satisfaction with Public Bus Services



Ridacard

Staff and students were asked about their payment method for bus tickets (see Figures 2-11 to 2-13). The key findings are:

Staff – most staff (54%) use the Lothian Buses Ridacard, which grants holders unlimited travel on most Lothian Buses and Edinburgh Trams services. Cash single fares were the second most popular payment method (15%) with mobile ticketing only slightly behind (14%). Approximately 7% of staff pay using a City Smart card; other fare payment methods make up less than 11% of the total.

Figure 2-11: Overall – Overall Combined Staff and Student Public Bus Payment Methods

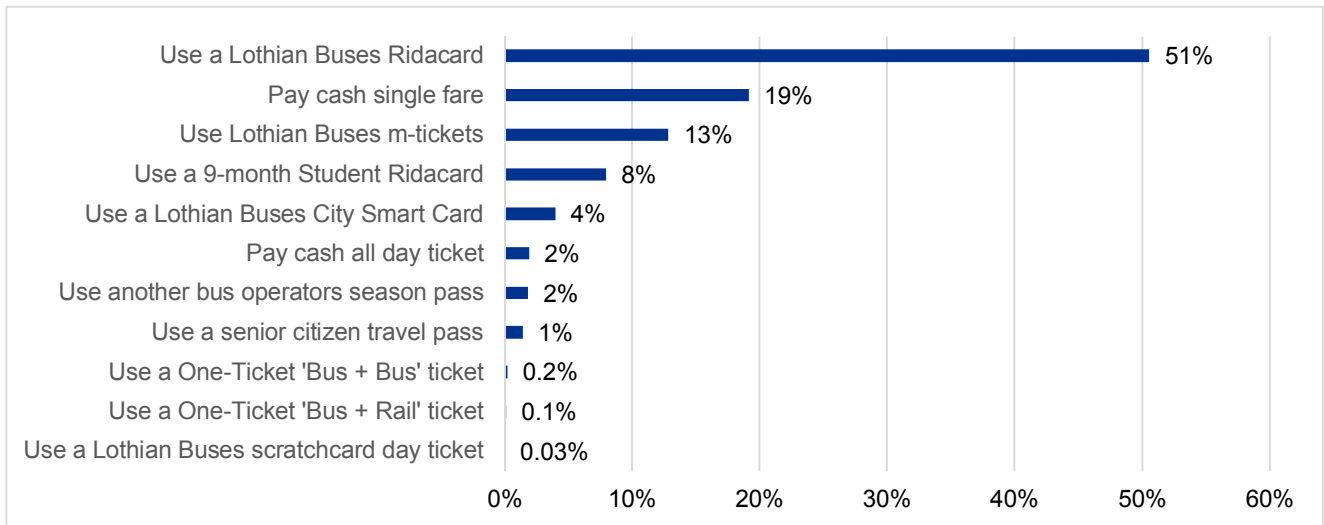


Figure 2-12: Overall Staff Public Bus Payment Methods

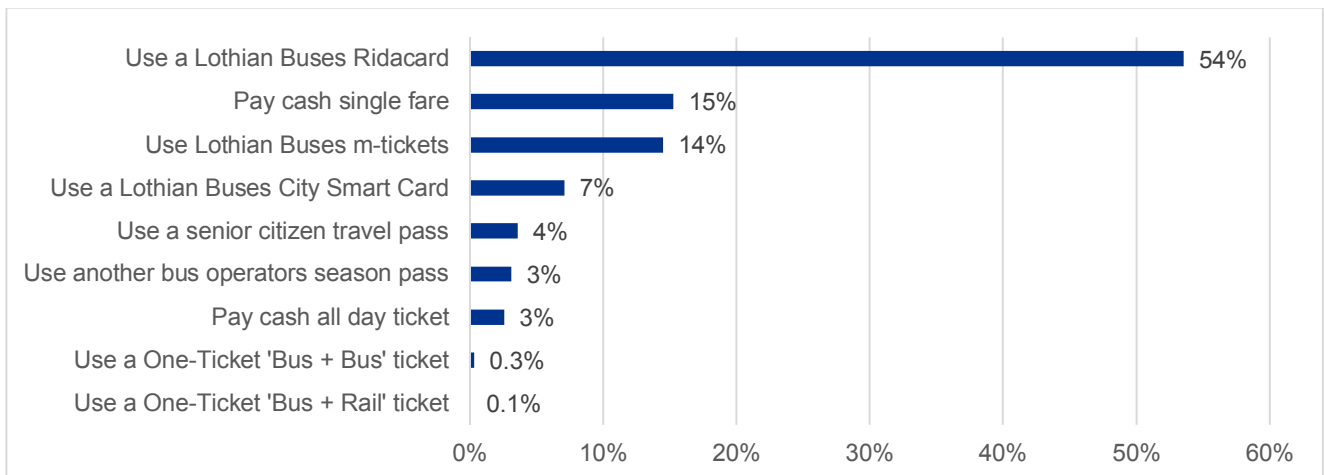
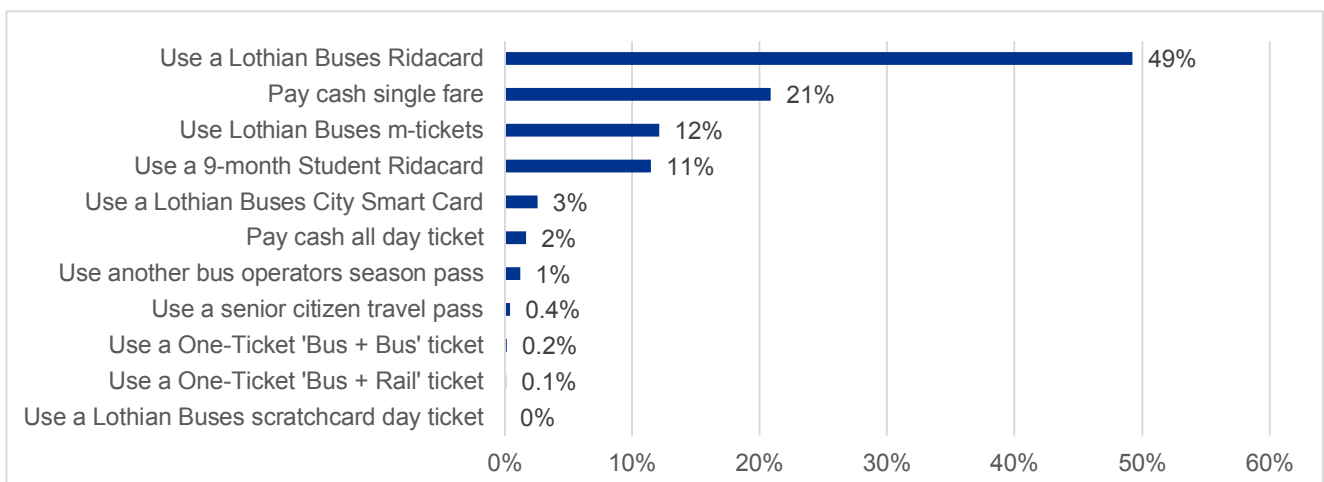


Figure 2-13: Overall Student Public Bus Payment Methods



- **Students** - most students use a Lothian Buses Ridacard (60%), of which 11% purchase the 9-month Student Ridacard ticket for travel within the academic year term dates. By contrast, 38% students overall 'pay as you go', with 21% buying cash single fare tickets, 12% using m-tickets, 3% using a City Smart card and 2% using a cash all day ticket.

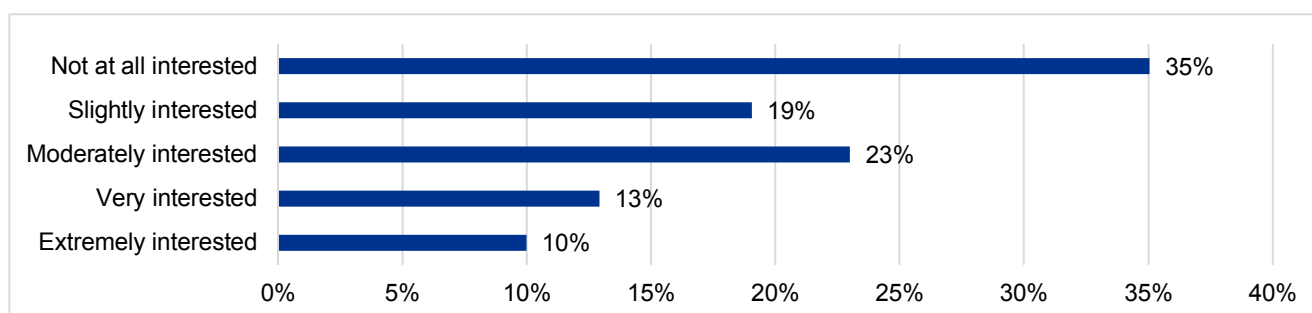
In relation to the University's ITP, the results demonstrate a clear demand for bus season tickets/passes amongst both students and staff – particularly the Lothian Buses Ridacard. It provides evidence supporting the need to explore new flexible ticketing technologies with public transport operators, which benefit staff and students at the University.

Further detailed student results can be found in each campus' chapter, and Appendix A details the actual (non-weighted) number of staff and student respondents who are purchasing public bus fares.

2.4.2 Cycle Hire Scheme

Staff and Students were asked about their interest in a cycle-hire type scheme. Figure 2-14 shows that, across the University, 65% of staff and students have some level of interest in such a scheme, with up to 23% of these being 'very' or 'extremely' interested. Only 35% of staff and students were not interested at all in the scheme.

Figure 2-14: Staff and Student interest levels in a cycle-hire scheme



Comments on why staff and students would not be encouraged to use a scheme included:

- Bike owners and the quality of bikes: "I already own a bike" and "renting a low quality bike that only has a single gear; this would be challenging on hills";
- Proximity and distances of journeys: "I prefer walking" and "I can get everywhere I need to by walking"; and
- Concerns for safety and usability: "Scarcity of locations of where to borrow bike" and "I would not feel safe cycling in the traffic".

2.4.3 Encouraging Walking and Cycling

Encourage Walking

Staff and students were asked what would encourage them to walk on a more regular basis to the University. The overall results are as follows:

Figure 2-15: Overall Staff & Students - What would encourage you to walk to/from the University?

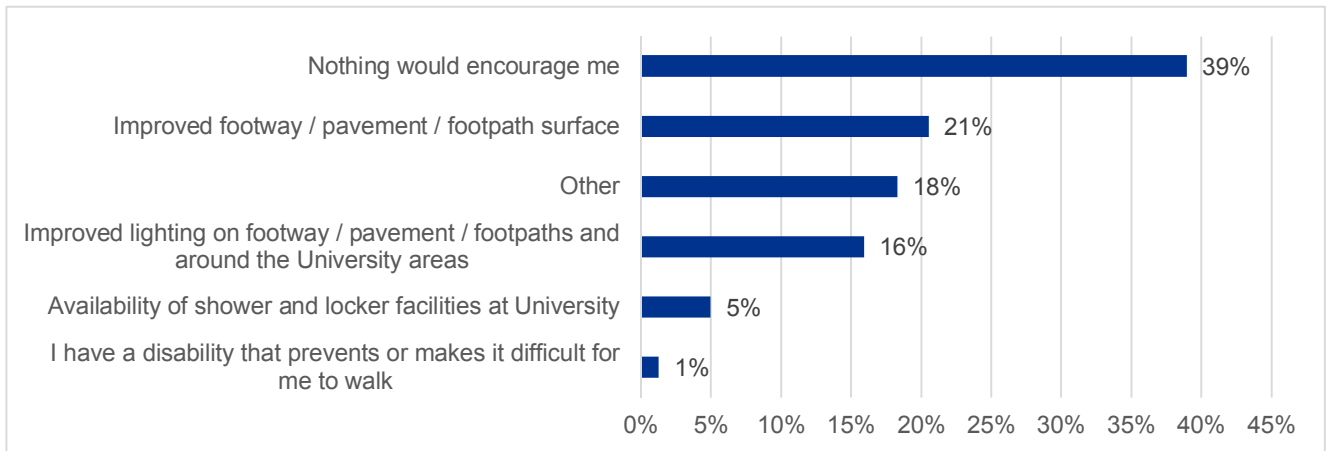


Figure 2-16: Overall Staff - What would encourage you to walk to/from the University?

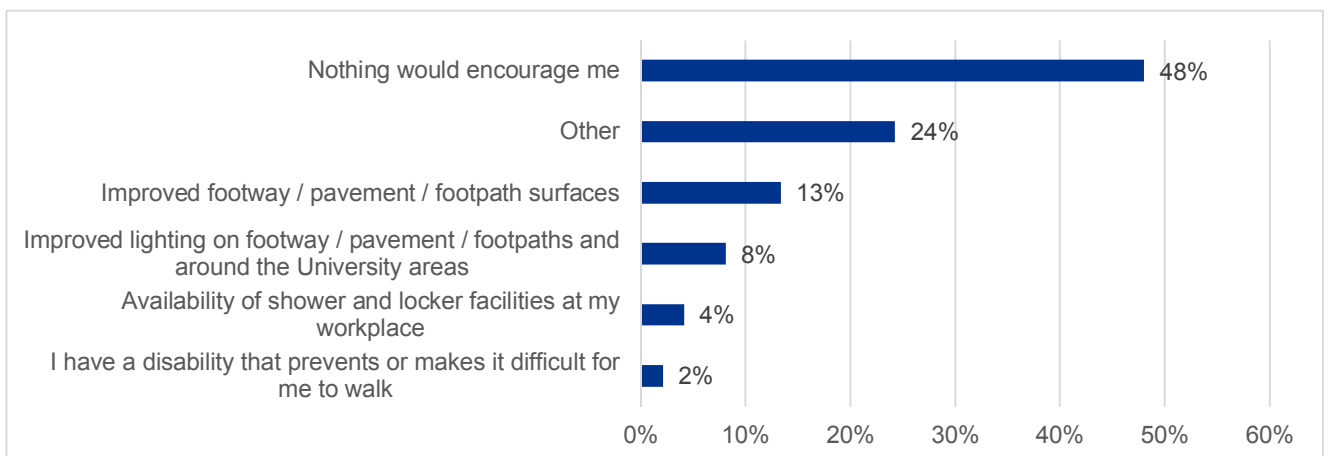
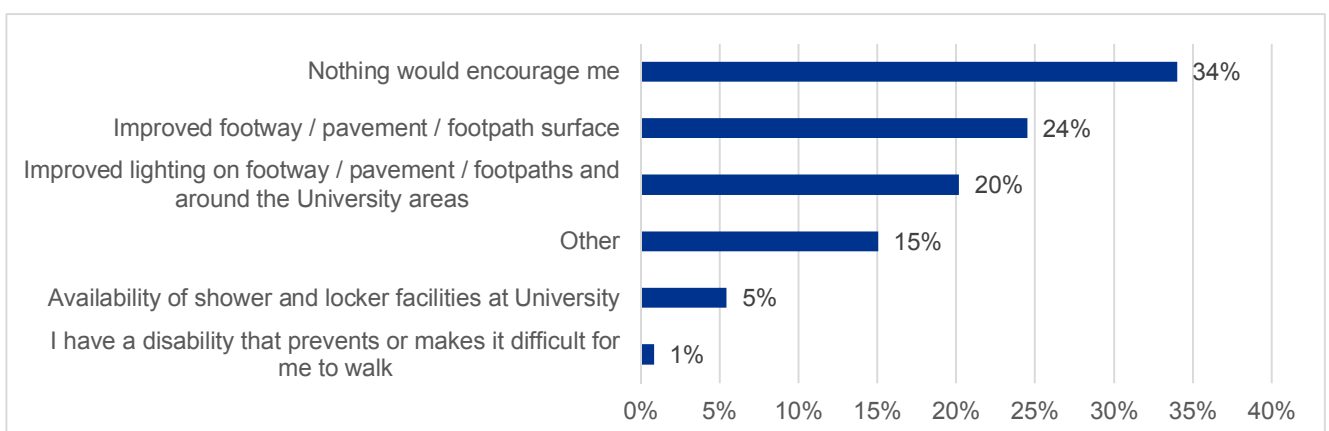


Figure 2-17: Overall Students - What would encourage you to walk to/from the University?



Approximately 55% of staff and students could be encouraged to walk to the University, mainly through the provision of improved footway paving, surfaces and lighting. Around 5% could be encouraged with greater availability of locker and shower facilities. Reasons for those who could not be encouraged include respondents who live beyond a reasonable walking distance from the University and/or have other daily commitments that require the use of another mode of transport.

Encourage Cycling

Staff and students were asked what would encourage them to cycle on a more regular basis to the University. The overall results are as follows:

Figure 2-18: Overall Staff & Students - What would encourage you to cycle to/from the University?

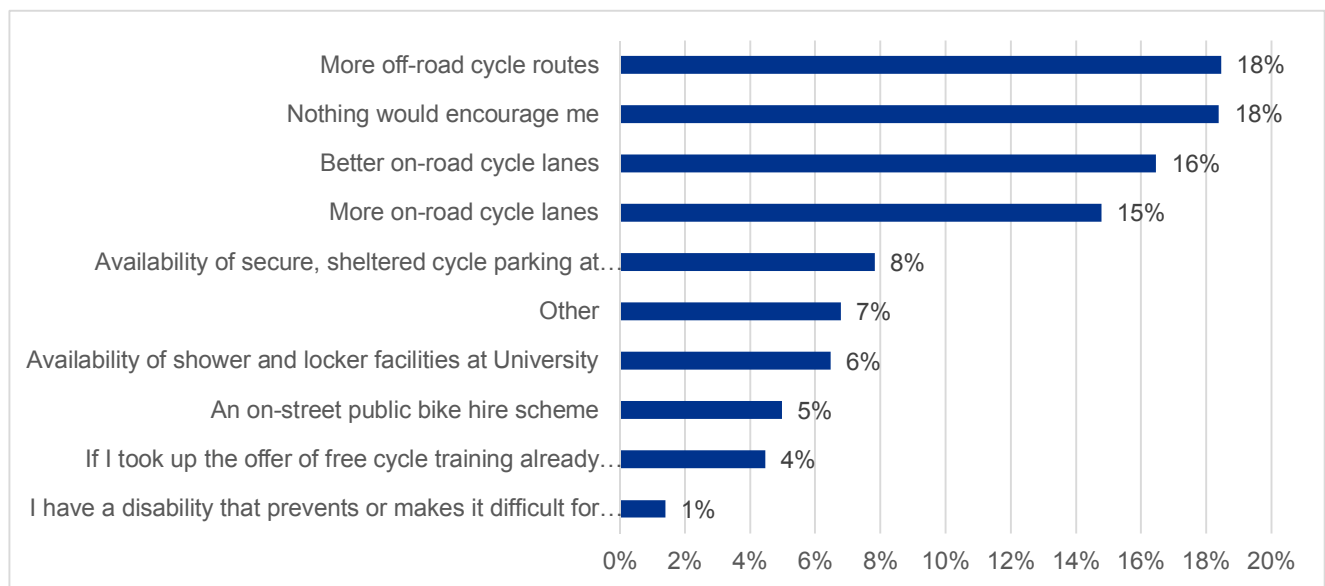


Figure 2-19: Overall Staff - What would encourage you to cycle to/from the University?

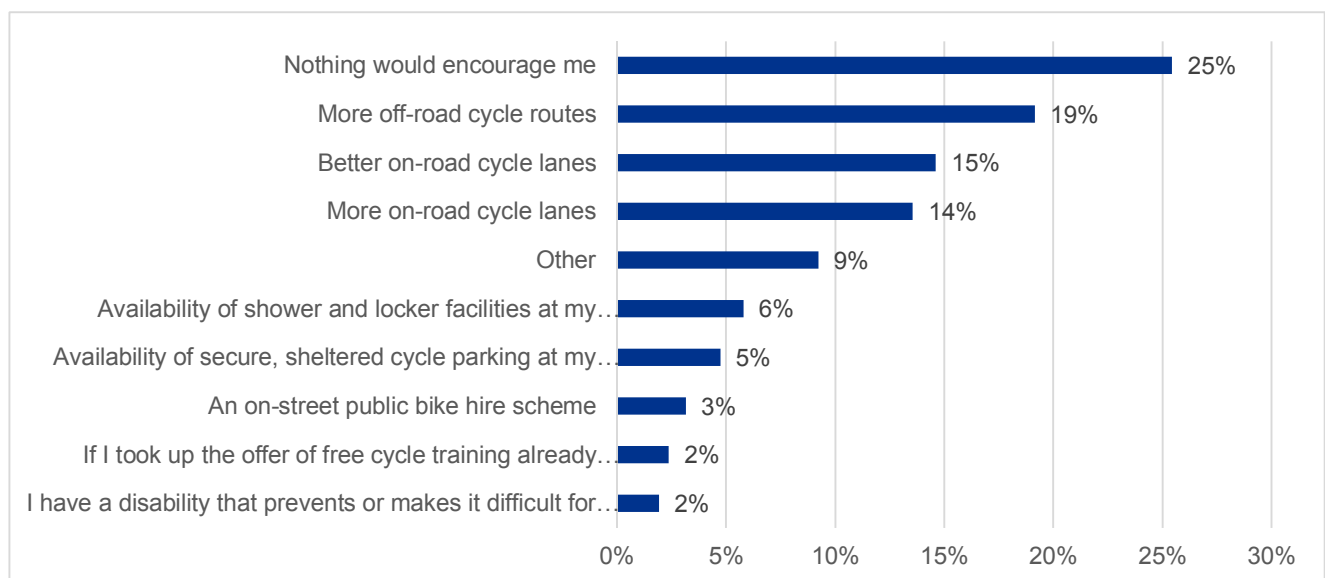
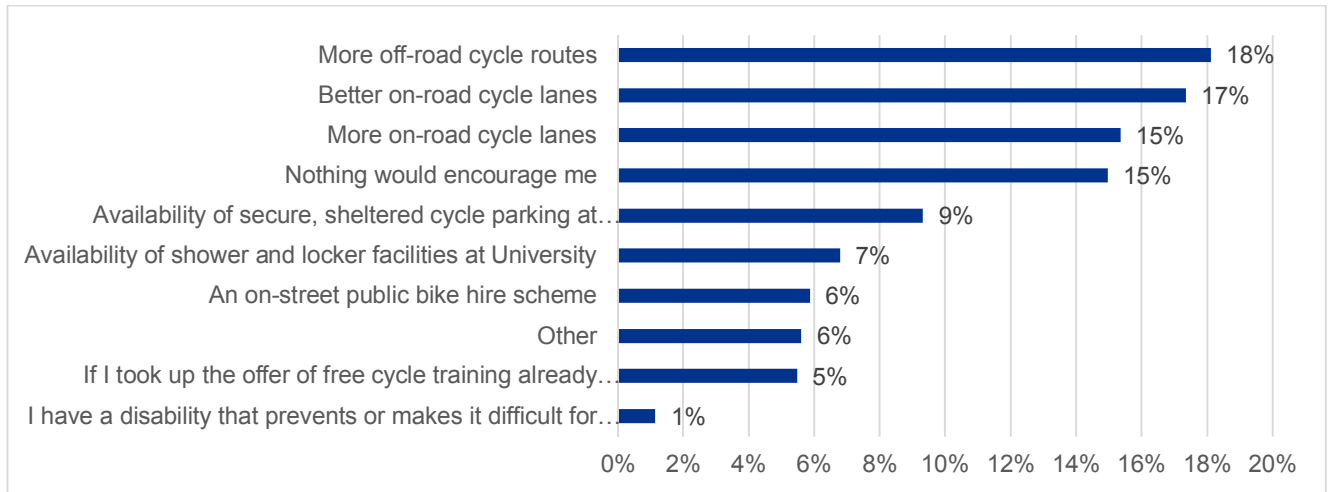


Figure 2-20: Overall Students - What would encourage you to walk to/from the University?



Staff and students both commented that safety was a big concern, whether it be the quality of road/cycle lanes, drivers not giving enough space for cyclists or poor road lighting. It is therefore no surprise the main measures that would encourage staff and students to cycle more are a combination of more on and off road routes, as well as 'better' routes which cater for the needs of cyclists (approximately 50% of responses).

The availability of sheltered, secure bike parking, as well as showering/locker facilities are important to both staff (11%) and students (16%). The University already provides these types of facilities across its campuses. It is recommended that the University continues to both maintain and increase the provision of secured cycle and showering facilities to encourage staff and students to walk and cycle more.

2.4.4 2017 Survey Results Comparison with ITP 2017-21 Targets

As noted previously, the Staff and Student travel survey is an important tool for measuring how the University is performing against its Integrated Travel Plan (ITP) targets. Table 2-4 compares the 2016 and 2017 survey in respect of these targets.

Table 2-4: University Integrated Travel Plan Targets - 2016-2017 Comparison

ITP 2017-21 Target	2016	2017
Increase the proportion of staff travelling on foot to University to 30% and students to 60%	Overall: 48% Staff: 25% Students: 57%	Overall: 47% Staff: 25% Students: 54%
Increase the proportion of staff and students cycling to University to 15%	Overall: 13% Staff: 15% Students: 12%	Overall: 13% Staff: 17% Student: 12%
Through negotiation with Lothian Buses, seek to introduce a number of student ticketing options better suited and priced to the needs of our students	Improved public bus connections to Easter Bush. Extending operational hours of King's Buildings shuttle bus. Full access to students on Little France/Western General NHS Shuttle Bus.	Successful Service 41 free travel pilot for staff and students between Central Area and King's Buildings, currently implemented as a £1 subsidised fare scheme. Ceasing of the NHS Shuttle Bus between Edinburgh Royal Infirmary and Western General Hospital. Students encouraged to take more frequent and reliable public buses. Ultimate aim to reduce reliance on and phase out shuttle buses; and encourage use of public transport services.
Public Transport provision to and between University sites regarded as good to excellent by 75% of staff and students (<i>New Target</i>)	n/a	Overall, none of the measured categories reached the 75% satisfaction target. In general, staff satisfaction levels are higher than students.
Reduce car driving to 29% or less at each University campus (excluding Easter Bush)	All sites achieved this objective, with the exception of Pollock Halls.	All sites achieved this objective, with the exception of Pollock Halls.
Increase the proportion of parking permit holders using an electric vehicle from 0.4% 2016-17 to 2%	7 respondents stated they owned an electric vehicle.	8 respondents stated they owned an electric vehicle, an increase of 1 electric vehicle.

2.5 Carbon Footprint

This section provides details of the overall University travel to work / study carbon footprint and the footprint broken down by location. The 2017 DEFRA carbon emissions factors were used in the carbon footprint calculations. A summary of the carbon footprint calculation methodology is provided in Appendix B.

2.5.1 University overall carbon footprint

Tables 2-4 to 2-7 provide details of the overall carbon footprint for staff and students, respectively.

Table 2-5: Overall Carbon Footprint (2017)

Mode	Average Distance	Annual estimated total CO2e (tonnes)	Annual estimated total CO2e per member (tonnes)
Walk	1.0	0.0	0.0
Cycling	2.3	0.0	0.0
Motorcycle	9.1	86.7	0.8
Car Driver (alone)	13.5	4,428.8	1.5
Car Driver (with passengers)	11.0	908.2	1.3
Car Passenger	0.7	730.7	0.1
Public Bus	4.0	4,115.2	0.3
Shuttle Bus	1.7	279.1	0.1
Tram	3.9	21.0	0.1
Train	27.6	1,790.7	0.7
Taxi	1.6	39.5	0.1
		12,399.8	0.2

Table 2-6: Overall Staff Carbon Footprint (2017)

Staff Mode	Average Distance	Annual estimated total CO2e (tonnes)	Annual estimated total CO2e per staff member (tonnes)
Walk	1.4	0.0	0.0
Cycling	3.4	0.0	0.0
Motorcycle	10.6	85.0	1.0
Car Driver (alone)	13.7	3,419.7	1.6
Car Driver (with passengers)	11.5	908.6	1.4
Car Passenger	8.3	438.6	1.0
Public Bus	4.6	1,601.8	0.4
Shuttle Bus	1.7	8.1	0.2
Tram	4.0	21.6	0.3
Train	24.7	728.4	0.8
Taxi	3.0	11.3	0.4
		7,223.0	0.5

Table 2-7: Overall Student Carbon Footprint (2017)

Student Mode	Average Distance	Annual estimated total CO2e (tonnes)	Annual estimated total CO2e per student (tonnes)
Walk	1.0	0.0	0.0
Cycling	1.9	0.0	0.0
Motorcycle	3.6	4.2	0.2
Car Driver (alone)	12.9	1,071.4	1.1
Car Driver (with passengers)	0.9	2.6	0.1
Car Passenger	6.9	301.1	0.6
Public Bus	3.8	2,477.0	0.2
Shuttle Bus	1.7	270.8	0.1
Tram	3.9	13.0	0.1
Train	29.3	1,093.1	0.7
Taxi	1.5	31.7	0.1
		5,264.9	0.1

Table 2-8: Overall Carbon Footprint - 2016 and 2017 Comparison

	2016 Estimated annual carbon footprint (tonnes of CO2e)	2016 Estimated annual carbon footprint (tonnes of CO2e) per individual	2017 Estimated annual carbon footprint (tonnes of CO2e)	2017 Estimated annual carbon footprint (tonnes of CO2e) per individual
Staff	8,157.3	0.4	7,223.0	0.5
Students	5,126.2	0.1	5,264.9	0.1
Overall	13,283.5	0.2	12,399.8	0.2

Since 2016, the Staff carbon footprint has decreased by 11.5% while the student carbon footprint increased by 2.7%. This results in a decrease of 6.7% in the Overall Carbon Footprint.

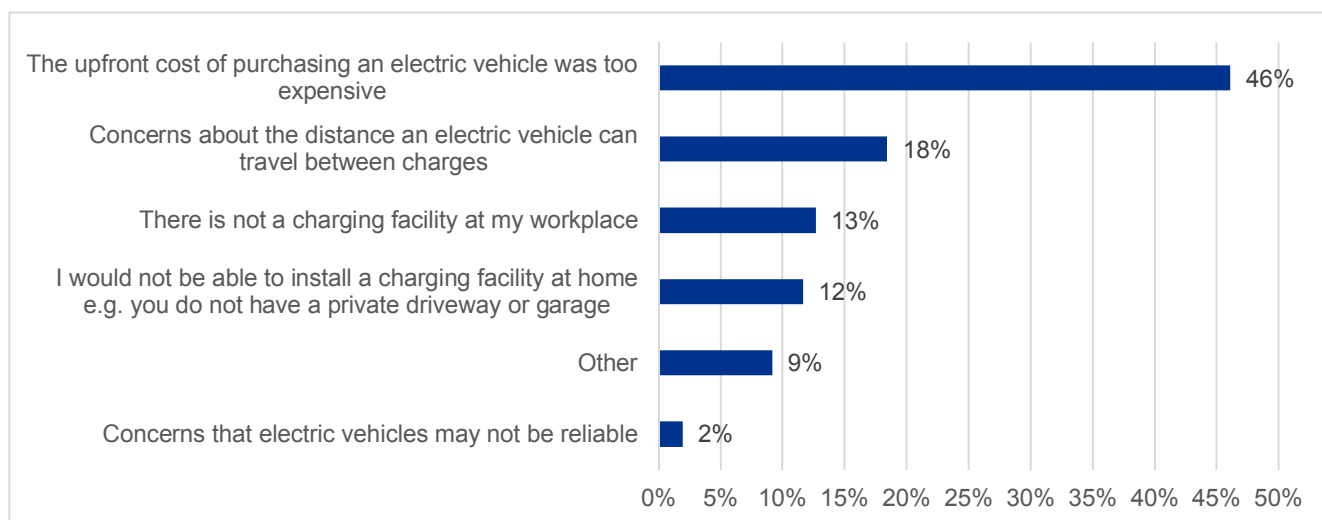
The decrease in the Staff carbon footprint is due to a reduction in the numbers of staff members using car-based modes. The increase in the Student carbon footprint can be attributed to the increase in students using the public bus. As the survey was conducted in November (instead of March in 2016), an increase in bus usage may be attributed to less clement weather.

2.6 Electric Vehicles

The University’s ITP identifies low carbon vehicles as being a crucial influence in reducing its carbon footprint. Staff who indicated that they were car drivers were asked questions about electric vehicles, including whether they owned an electric vehicle, if they had considered buying an electric vehicle and what best describes their reasons for not switching to an electric vehicle.

Of the car driving staff members that answered this question in the survey, 8 stated their car was electric. Approximately 35% of surveyed owners have considered buying an electric vehicle with the remaining 65% having not done so. Figure 2-21 below illustrates the reasons staff car owners have not switched to electric transport.

Figure 2-21 Staff reasons for not switching to an electric vehicle



Comments on why staff have not yet switched to an electric vehicle included:

- The age of their current vehicle: “My petrol car is less than 3 years old” and “My cars is only a couple of years old so too soon to change”; and
- Availability of charging points: “Charging points at work are often occupied all day” and “Only one charge point at workplace”.

3. Central Area

3.1 Introduction

1,485 staff and 2,835 students responded to the 2017 travel survey, equating to a response rate of 19% and 11% respectively. Central Area respondents represent the greatest proportion of travel survey participants. Survey findings are summarised in this section.

3.2 Mode Share

Figure 3-1 to Figure 3-3 summarise the overall, staff and student Central Area mode shares.

Figure 3-1: Central Area – Overall Mode Share (2017)

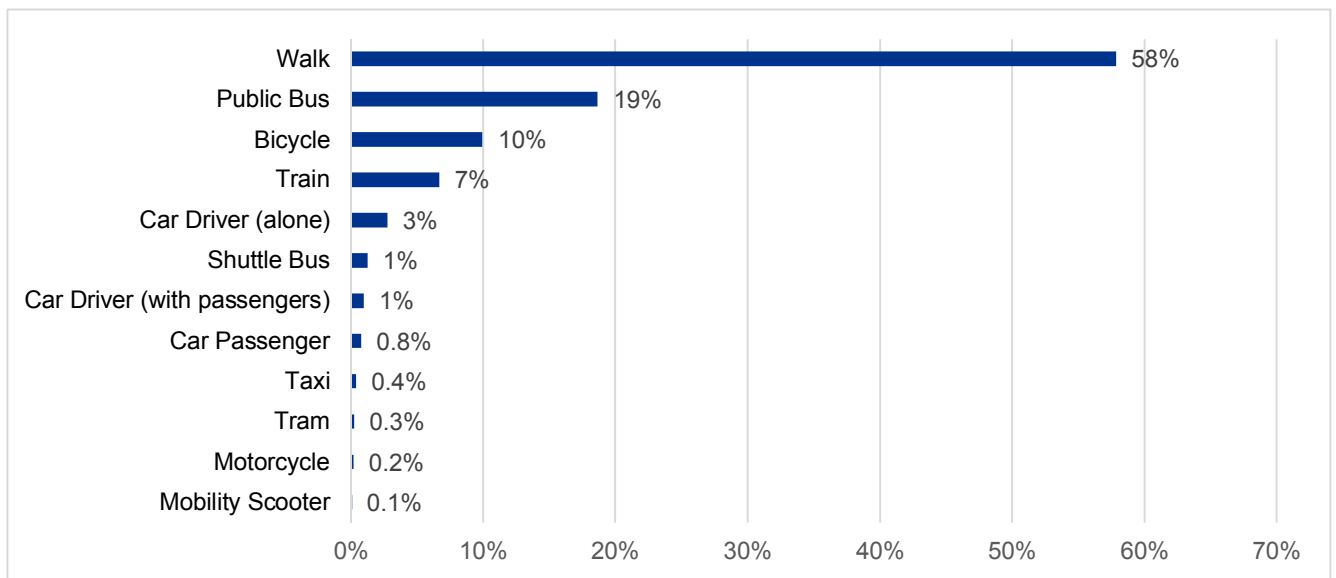


Figure 3-2: Central Area – Staff Mode Share (2017)

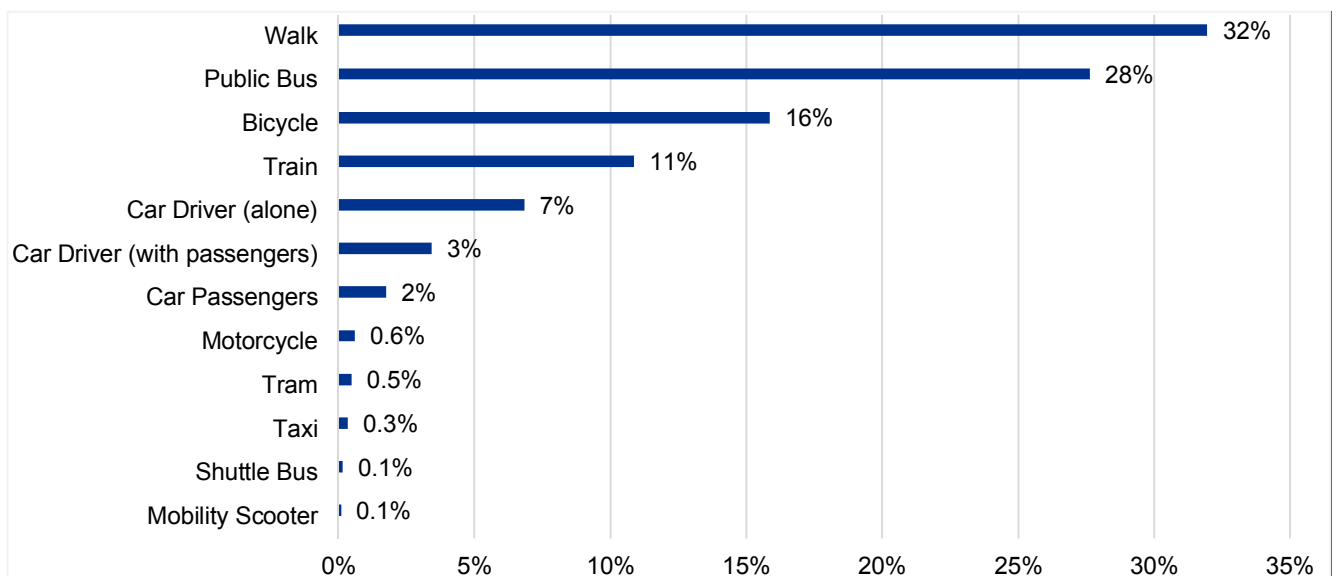
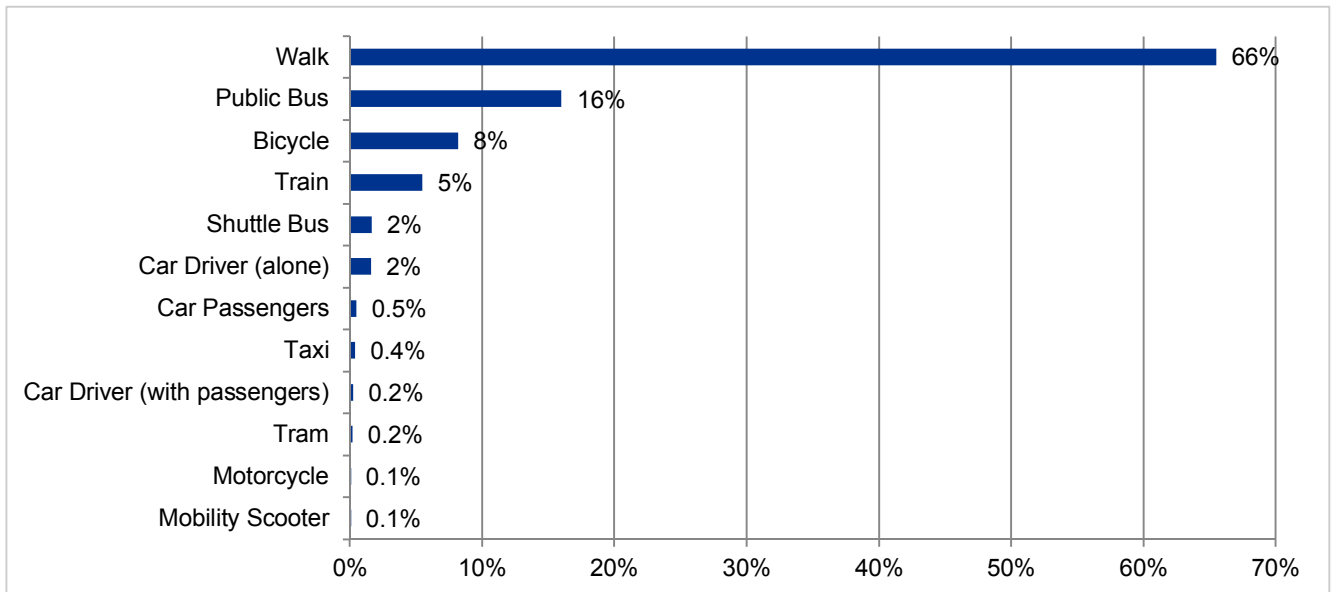


Figure 3-3: Central Area – Student Mode Share 2017



3.3 Key Findings

The key findings are as follows:

3.3.1 Overall

The mode share proportions for the Central Area remain similar to 2016 levels, with the only significant change relating to a 2% reduction in walking and 2% increase in public bus travel. Amongst staff and students, there has been some change across sustainable modes, including a shift from walking and cycling to public bus.

3.3.2 Staff

In general, the mode share has remained largely the same as 2016 levels for walking, train, all car-modes (single occupancy, with passengers and as a passenger); and has achieved the ITP mode share targets for walking, cycling and car driving. Motorcycle, tram, taxi, shuttle bus and mobility scooter all remain at or below 1% of the total share.

- Public Bus usage has reduced by 1%; and
- Cycling has increased by 3%.

3.3.3 Students

- Walking has decreased by 3% to 66%; however, this still exceeds the student walking ITP mode share target of 60%;
- Public Bus is the second most used mode of travel to Central Area and has seen an increase of 3% since 2016, up to 16%;
- Cycling to Central Area has decreased by 1%, representing 8% of the student mode share, falling short of the 15% ITP cycling mode share target;
- Train has remained as 5% of the mode share;
- Car-based modes of travel have remained unchanged since 2016, representing 3% of the mode share – well within the ITP car driving share target of 29%; and
- Shuttle bus usage has increased by 1% since 2016, now representing 2% of the total mode share.

3.3.4 Central Area - Active Travel

The combined proportion of students travelling to or from Central Area by walking or cycling has decreased by 4%. A series of survey questions asked what measures would help encourage increased active travel; the key findings are as follows:

- Improved infrastructure (i.e. off road, on road and more cycle lanes combined) would encourage 46% of students to cycle more; and
- Improved pavements/footways and lighting (combined) would encourage 46% of students to walk more.
- Nothing would encourage 31% of students to walk; and 18% of students to cycle;

Students' 'Other' comments were that they would be more likely to walk if they lived closer to the University, if there were more direct and accessible routes and if there were routes which are nicer to walk along. They would be encouraged to cycle more if the cost of a bike was more affordable, if there was better bike infrastructure and routes that increased the safety of cyclists and if they lived closer to the University.

Figure 3-4: Central Area - Students: What would encourage you to walk to/from the University?

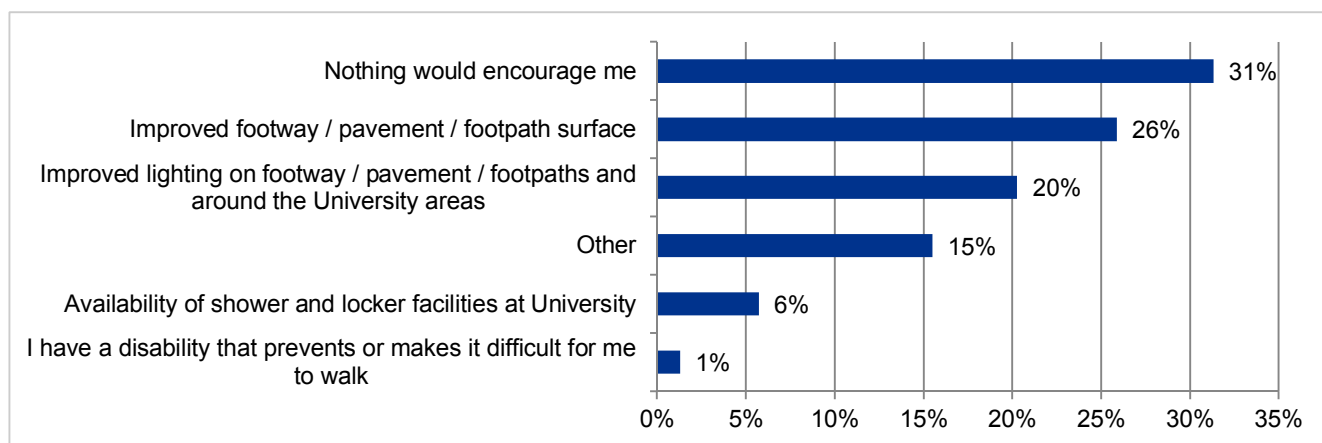
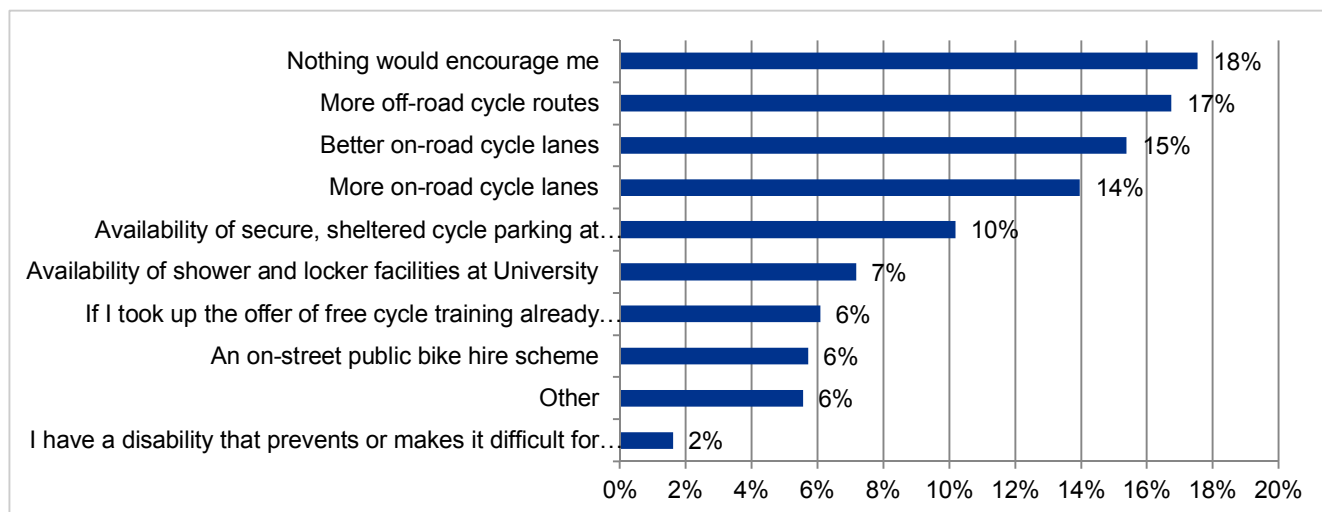


Figure 3-5: Central Area - Students: What would encourage you to cycle to/from the University?



3.3.5 Central Area – Public Bus

Public Bus Hours of Operation

Staff and students were asked about the adequacy of public bus service hours of operation to support their access needs; satisfaction is rated highly (88%) by both groups.

Staff and students identified that lack of service frequency and services not running late enough into the evening were the main reasons they felt bus services did not adequately support their access needs – accounting for approximately 74%-80% of the question’s responses.

Table 3-1: Central Area - Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

Staff / Student	Yes	No
Staff	88%	12%
Students	88%	12%

Figure 3-6: Central Area – Staff: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?

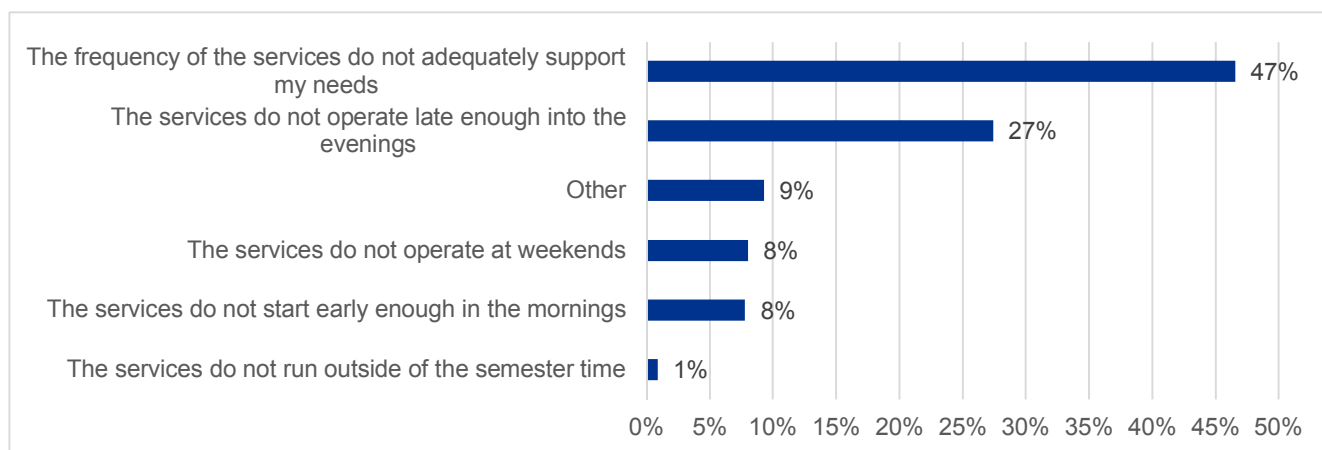
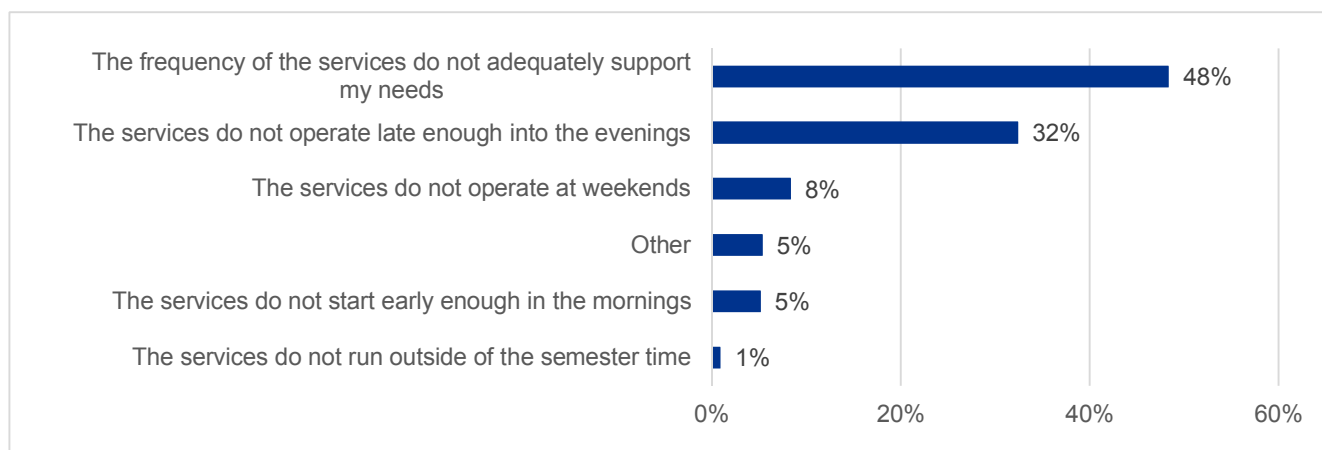


Figure 3-7: Central Area – Students: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Public Bus Satisfaction

The University of Edinburgh’s ITP targets 75% ‘good to excellent’ satisfaction for public bus services for students and staff. In Central Area (see Figures 3-8 and 3-9), this target is reached for staff across the Timetable, Reliability and Hours of Operation categories – each achieving 75% ‘Good’ or ‘Very Good’ ratings. Journey Time and Affordability satisfaction falls below this, with 64% and 61% ‘Good’ or ‘Very Good’ satisfaction rates, respectively.

Student satisfaction falls just below the 75% ‘Good’ or ‘Very Good’ targets for the Hours of Operation category, which was also the highest scoring. This was followed by Timetable and Reliability with ‘Good’ or ‘Very Good’ ratings just above 70%. Categories that fell below 70% satisfaction were Routes (69%), Journey Time (57%) and Affordability (52%).

Figure 3-8: Central Area - Staff satisfaction with public bus services

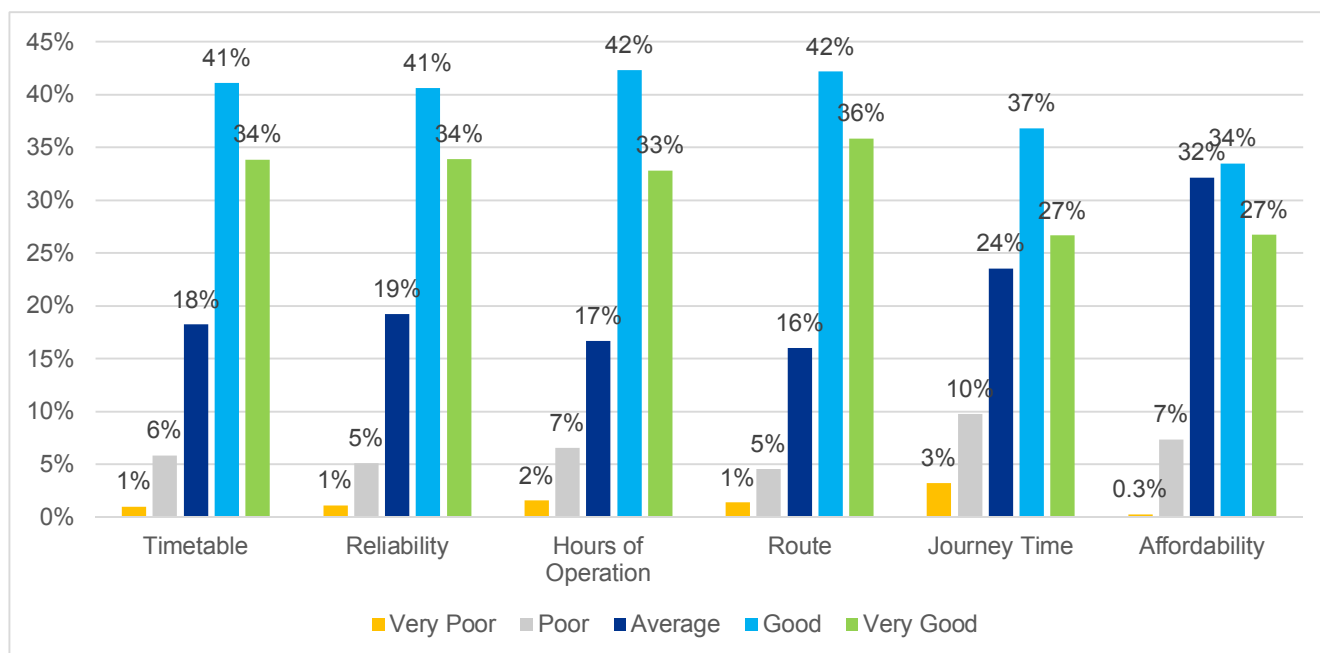
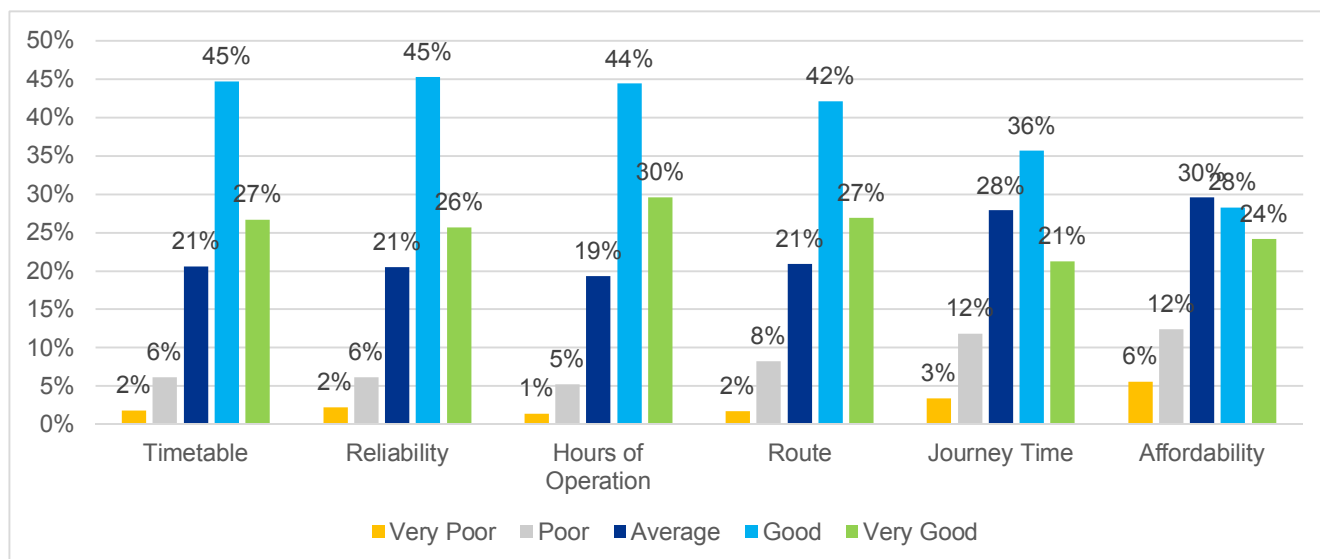


Figure 3-9: Central Area - Student satisfaction with public bus services



4. King's Buildings

4.1 Introduction

394 staff and 1,115 students responded to the 2017 travel survey, equating to a response rate of 15% and 16% respectively. It is noted there were 292 fewer staff responses compared to the 2016 survey, which may slightly affect the latest results. As such, results for staff in this section should be treated with caution.

4.2 Mode Share

A summary of the 2017 overall, staff and student mode share at King's Buildings is presented in Figure 4-1 to Figure 4-3 below.

Figure 4-1: King's Buildings - Overall Mode Share (2017)

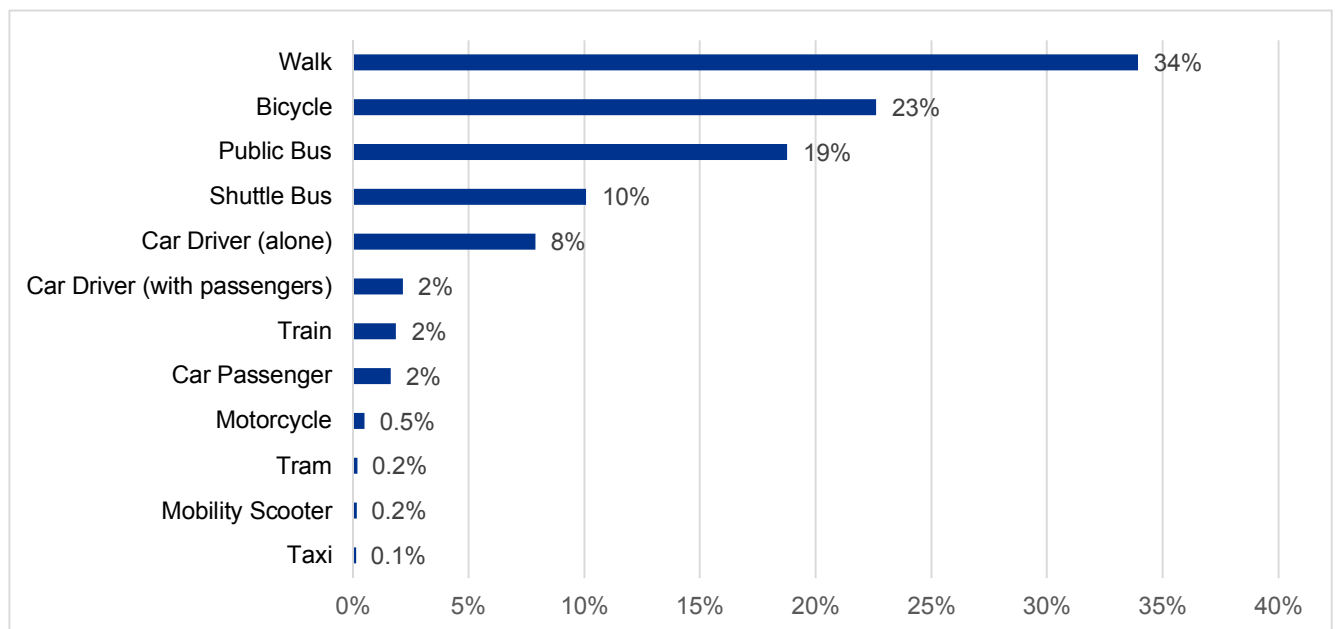


Figure 4-2: King's Buildings - Staff Mode Share (2017)

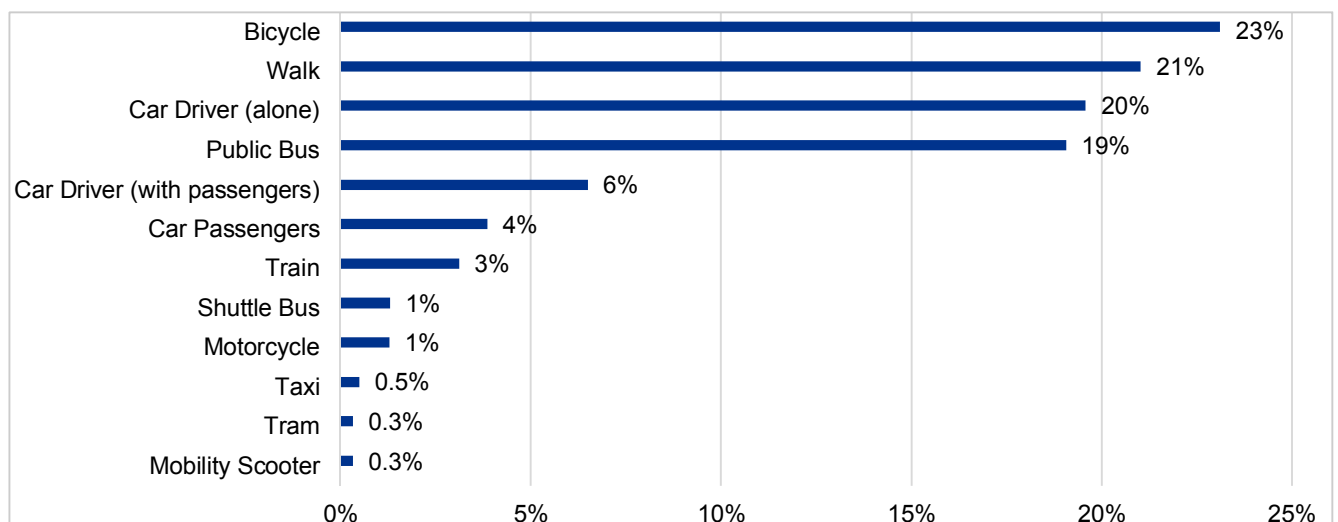
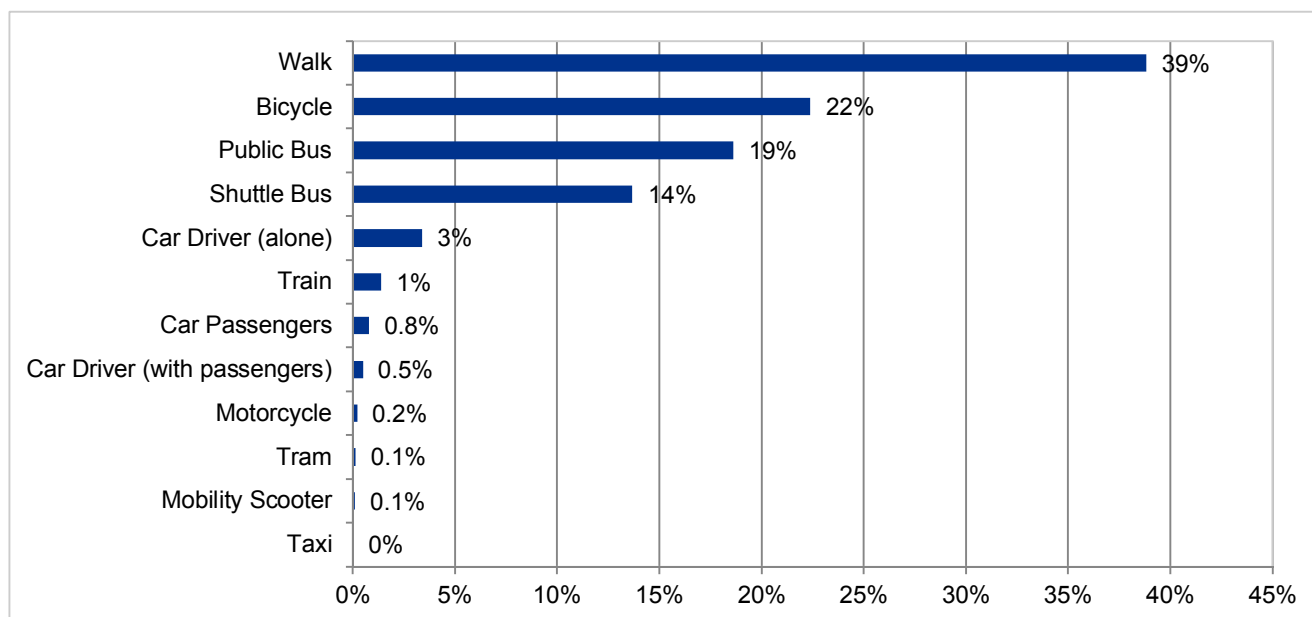


Figure 4-3: King's Buildings - Student Mode Share (2017)



4.3 Key Findings

The key findings are as follows:

4.3.1 Overall

The main change in King's Buildings mode share relates to bus travel. Public bus patronage has increased by 5% while shuttle bus patronage has decreased by 3%. The remaining modes have seen little to no change in proportion, except cycling and car driver (with passengers) which have both decreased by 1% each.

4.3.2 Staff

- Cycling remains the most popular mode of travel to King's Buildings by staff, though its share has decreased by 2%, now accounting for 23% of the total – still significantly exceeding the 15% ITP target;
- Walking to King's Buildings by staff has reduced by 3% to a 21% share; this falls short of the 30% ITP target;
- Public Bus usage has increased by 1%, accounting for 19% of the mode share;
- The proportion of car based travel is within the 29% ITP mode share target and is broken down as follows:
 - single car occupancy accounts for 20%;
 - staff car drivers with passengers account for 6%;
 - In contrast, staff travelling as passengers has increased by 1%;
- Train travel has increased by 1% up to 3% of the mode share; and
- Shuttle Bus has decreased by 1%, to 1% of the staff mode share to King's Buildings.

4.3.3 Students

- Walking is the main student mode of travel to King's Buildings; its share is 39%, the same as 2016 and somewhat short of the ITP target;
- Cycling is the second most popular mode of travel to King's Buildings; however, there has been a slight 1% decrease to a 22% share since 2016. This still exceeds the ITP cycling target of 15%;

- There has been a shift between Shuttle and Public bus, with public bus increasing by 7% since 2016, now representing 19% of the mode share. Shuttle bus share has decreased by 4%, and now accounts for 14% of the total mode share;
- Car-based travel remains at similar levels to 2016, with:
 - Single car occupancy trips remaining at 3%;
 - Car Drivers (with Passengers); and Car Passengers remaining at approximately 1% each of the total.
- Train travel to King’s Buildings amongst students has decreased by 1%, representing only 1% of the overall share.

4.3.4 King’s Buildings - Active Travel

Whilst there has been a drop in active travel as staff’s usual mode of travel at King’s Buildings, the increases have been in other sustainable modes, such as train, car sharing and public bus. Figure 4-4 and Figure 4-5 highlight those measures that could encourage staff to walk and cycle to King’s Buildings more regularly.

Figure 4-4: King's Buildings - Staff: what would encourage you to walk to the University?

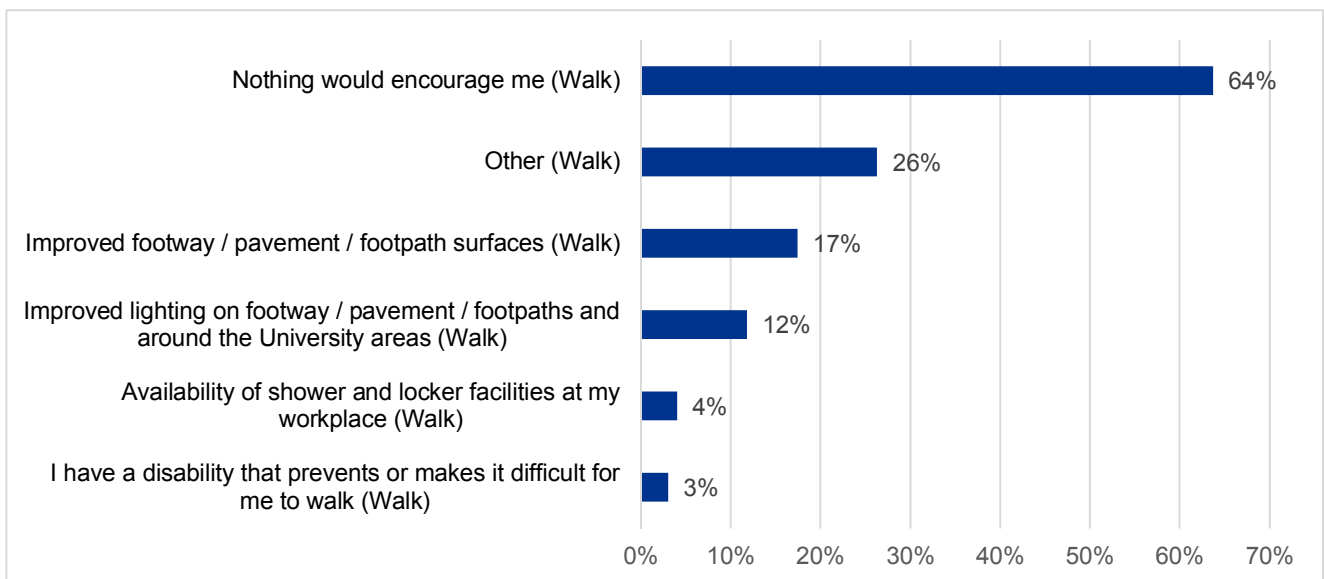
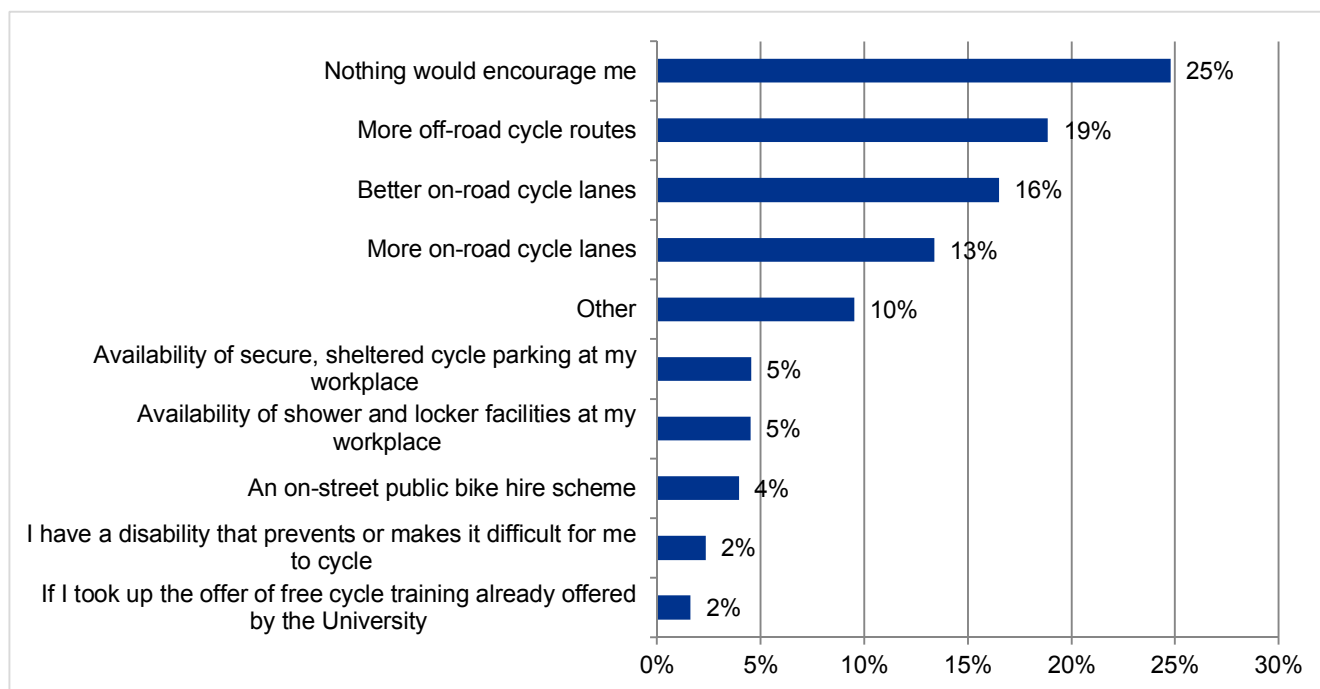


Figure 4-5: King's Buildings - Staff: what would encourage you to cycle to the University?



4.3.5 King's Buildings - Public Bus

Public Bus Hours of Operation

Staff and students were asked about the adequacy of public bus service hours of operation at King's Buildings. As can be seen below, there is a high level of satisfaction from both groups. A lack of service frequency and services not running late enough into the evening were the main reasons respondents felt bus services did not adequately support their access needs; this is similar to the Central Area results.

Table 4-1: King's Buildings - Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

Staff / Student	Yes	No
Staff	83%	17%
Students	77%	23%

Figure 4-6: King’s Buildings – Staff: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?

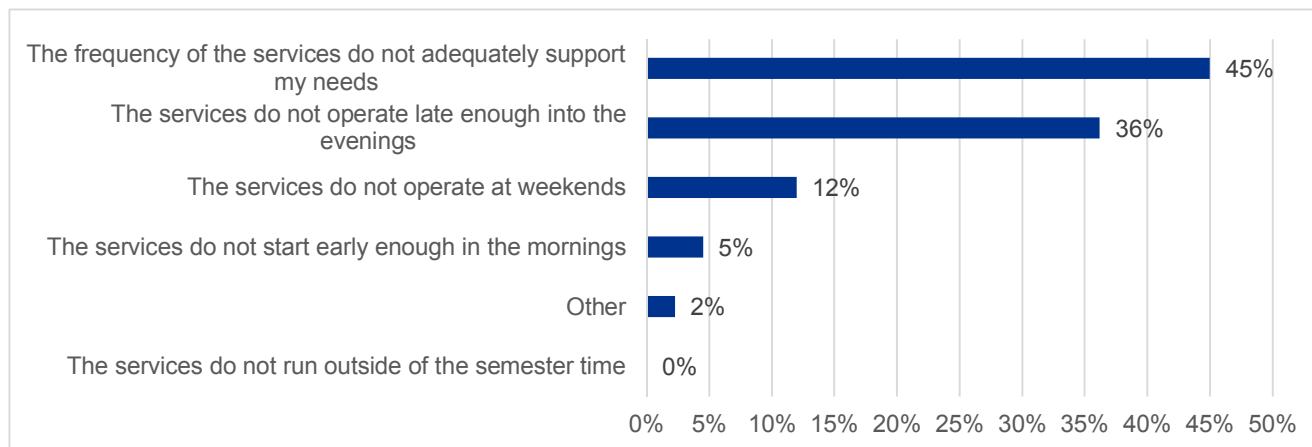
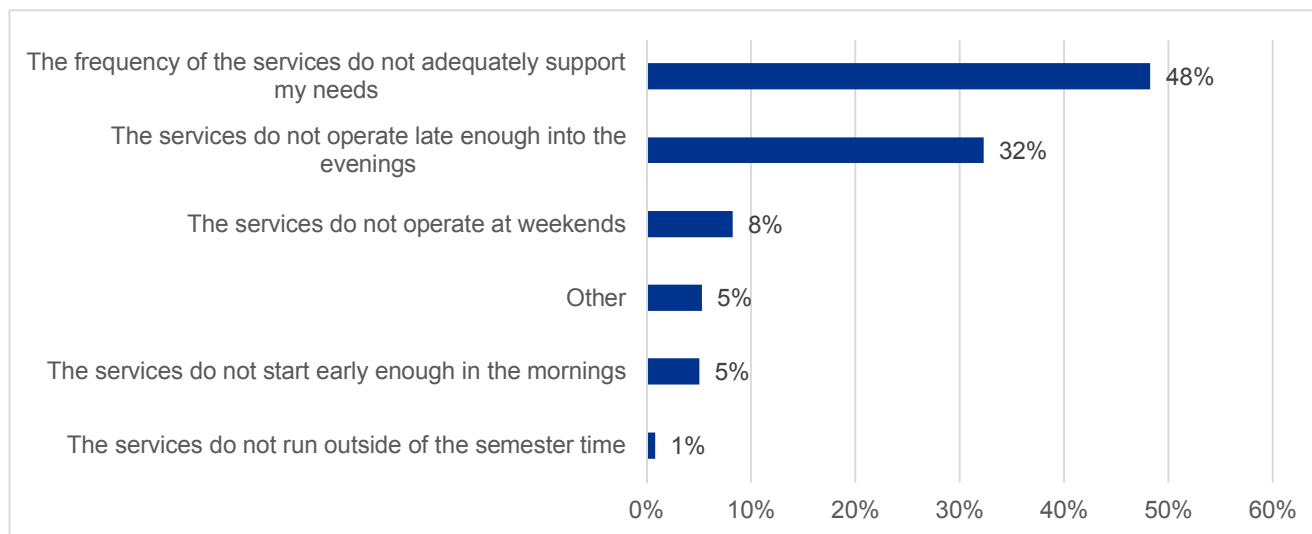


Figure 4-7: King’s Buildings – Student: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Public Bus Satisfaction

In terms of public bus satisfaction levels, staff and student scored the Routes category highest. The staff rating of ‘Good’ or ‘Very Good’ was over the 75% ITP target, the only category to do so at King’s Buildings. Conversely, staff are least satisfied with the Hours of Operation of public bus services (19%), while students are least satisfied with the Timetable (24%).

Interestingly, 33% of students were satisfied that public bus services offered ‘Very Good’ affordability. This may be linked to the various student tickets available on Lothian Buses services, the free University shuttle bus, and also the Service 41 £1 evening fare scheme – which is described in more detail below.

Figure 4-8: King's Buildings - Staff Satisfaction with Public Bus

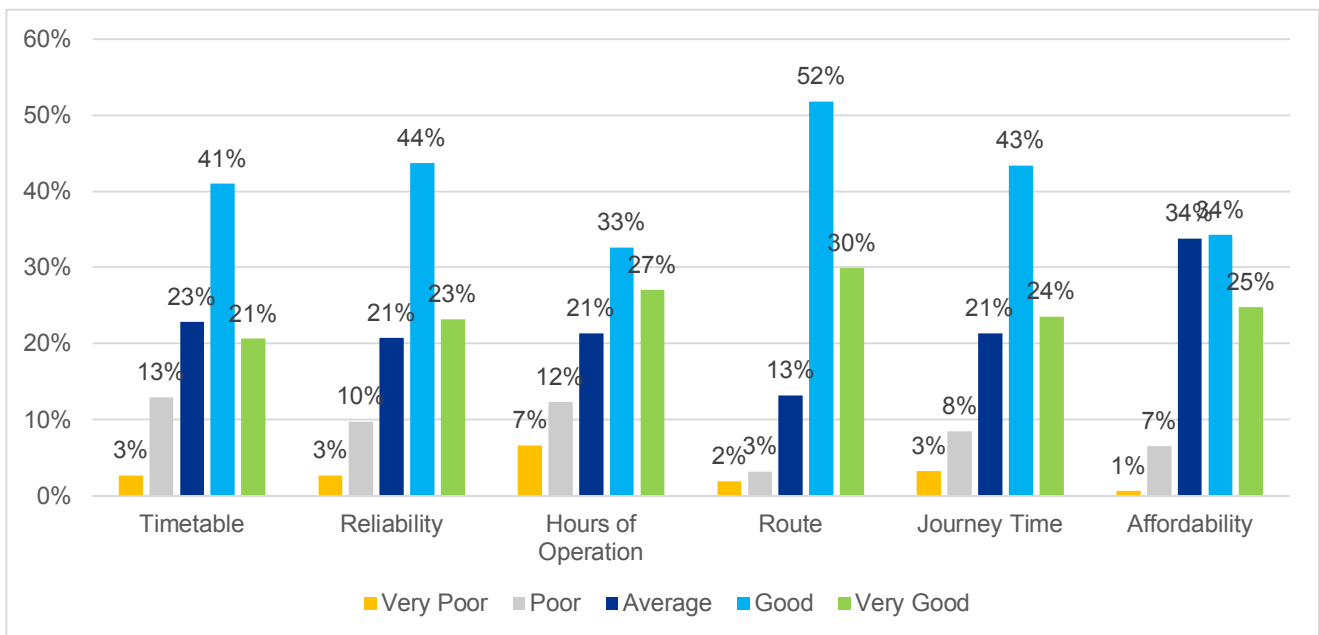
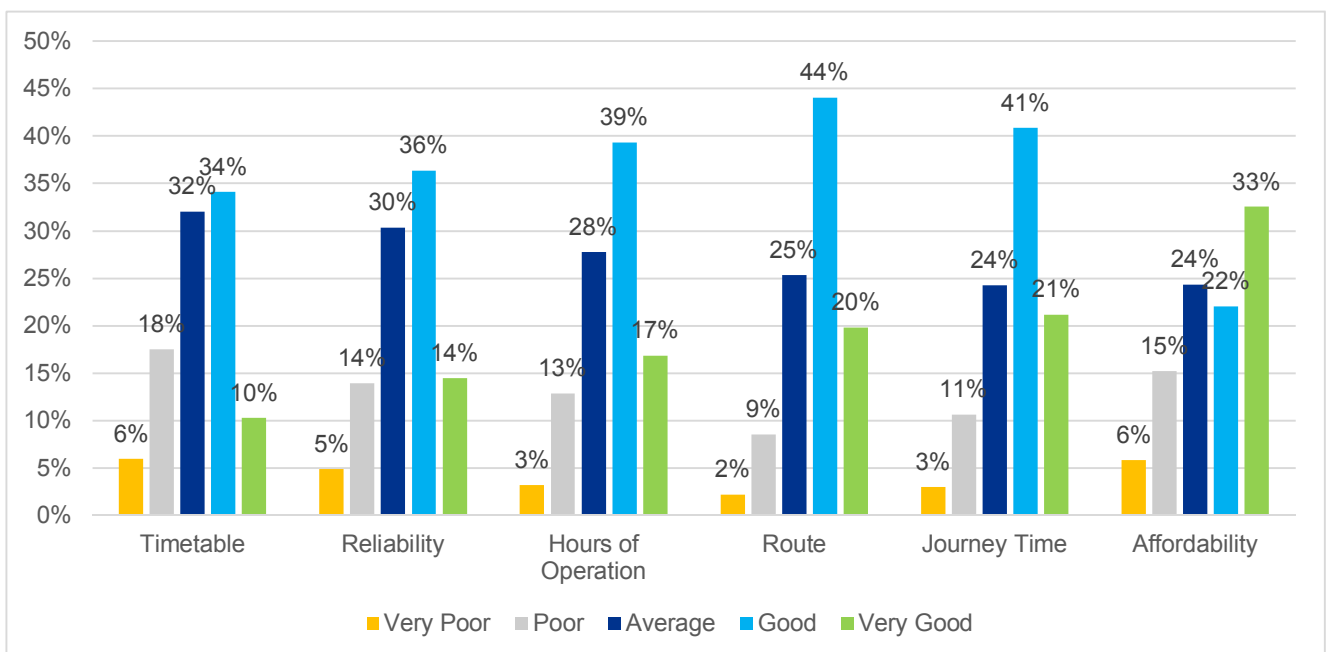


Figure 4-9: King's Buildings - Student Satisfaction with Public Bus



4.3.6 King's Buildings - Shuttle Bus

Shuttle Bus Hours of Operation

A shuttle bus service runs between the Central Area and the King's Building; staff and students were asked about the adequacy of the hours of operation.

As can be seen in the table below, almost three quarters of the staff surveyed are satisfied with the Hours of Operation of the shuttle service whereas less than half of the students questioned felt that the Hours of Operation

were satisfactory. The main reason that staff were not satisfied was due to the shuttle bus not running outside of the semester time; students felt the frequency was not adequate to support their needs.

Table 4-2: King’s Buildings - Do you feel that the hours of operation of the shuttle bus services adequately support your access needs to the University?

Staff / Student	Yes	No
Staff	61%	39%
Students	44%	56%

Figure 4-10: King’s Buildings – Staff: Why do you feel that the hours of operation of the shuttle bus services do not adequately support your access needs to the University?

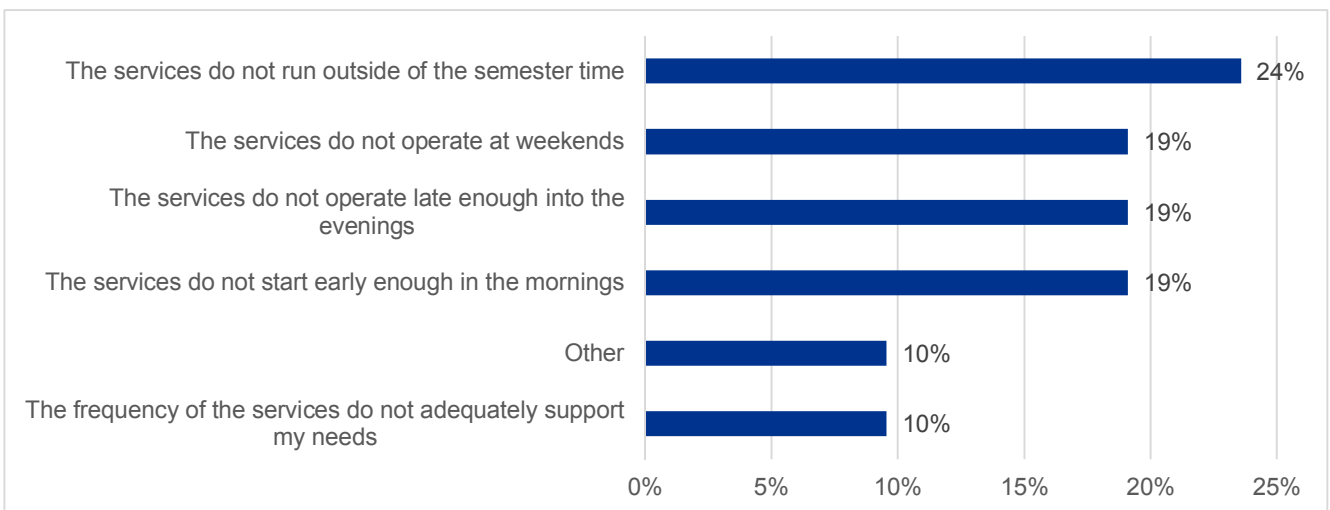
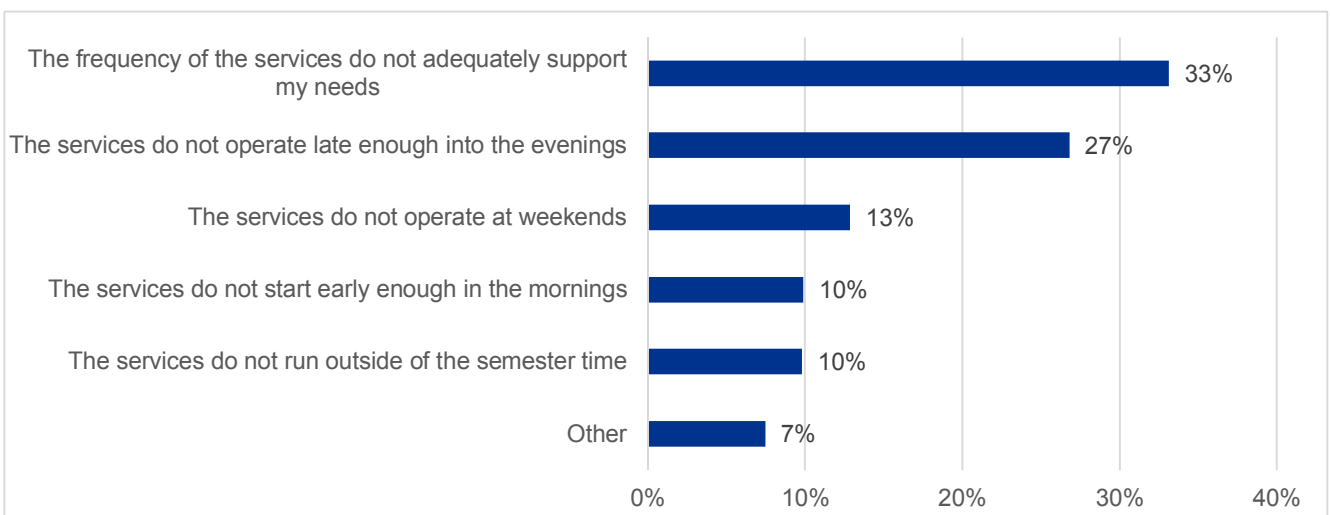


Figure 4-11: King’s Buildings – Student: Why do you feel that the hours of operation of the shuttle bus services do not adequately support your access needs to the University?



Lothian Buses Service 41 £1 Fare Scheme

As described in Section 1, the University implemented a £1 evening fare scheme on Lothian Buses Service 41 at the beginning of the 2017/18 Academic Term. Figures 4-10 and 4-11 summarise students' awareness, usage and acceptability of the new scheme. The key results are:

- Just over half (52%) of students travelling to and from King's Buildings are aware of the scheme, with a further 8% having used it;
- 75% of students either 'strongly' or 'somewhat' agree that the £1 fare is affordable;
- 69% of students either 'strongly' or 'somewhat' agree that the scheme makes King's Buildings more accessible in the evenings; and
- 76% of students either 'strongly' or 'somewhat' agree that the scheme would encourage them to travel by public bus more regularly.

Figure 4-12: Are you aware of the £1 fare scheme on Service 41?

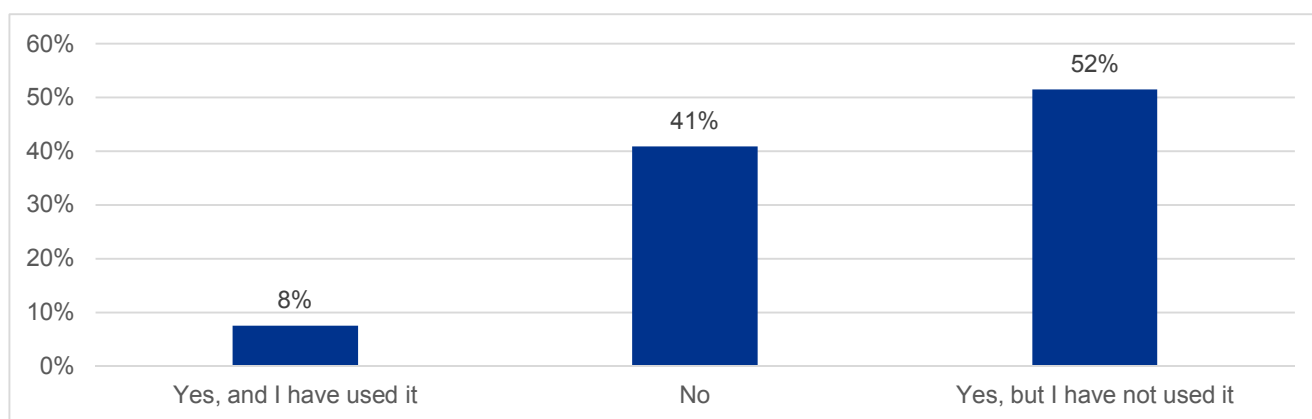
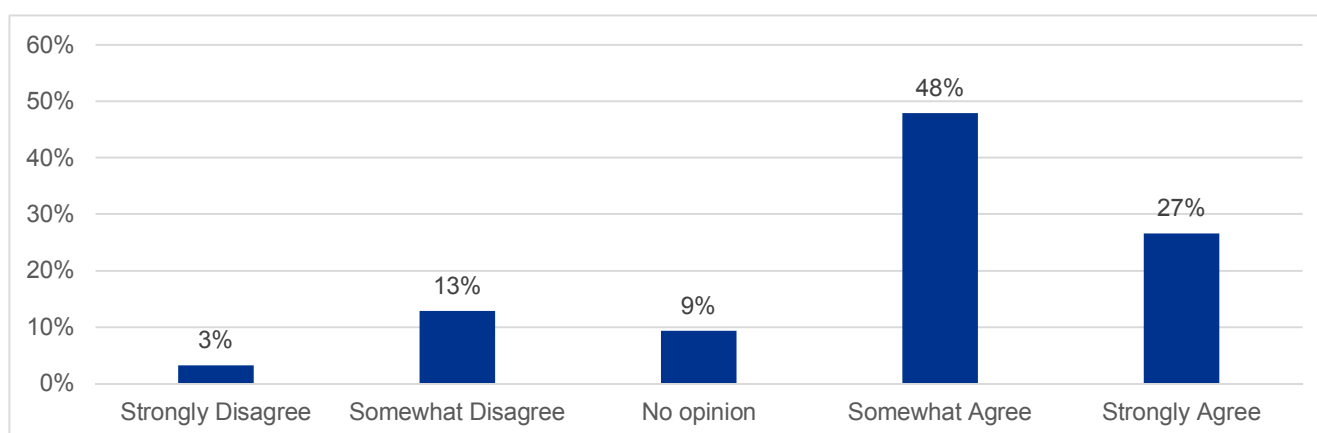


Figure 4-13: To what extent do you agree the £1 fare on Service 41 is affordable?



While the mode share results demonstrate a clear shift away from students using the shuttle bus to public bus, it is unlikely that this has been achieved solely by the Service 41 evening fare scheme - given that only 8% of students have used the scheme. Nevertheless, it is likely to be a contributor. Other factors for this shift could include:

- increased uptake in students purchasing student-type tickets for public bus services;
- an increased number of responses from students at King's Buildings who take the public bus;

- the time of year the survey was carried out - in late October/ early November (compared to March/April for previous surveys) when students may be more likely to take the bus due to less clement weather, darker nights and for safety reasons.

Figure 4-14: To what extent do you agree the Service 41 £1 fare makes King's Buildings more accessible in the evenings

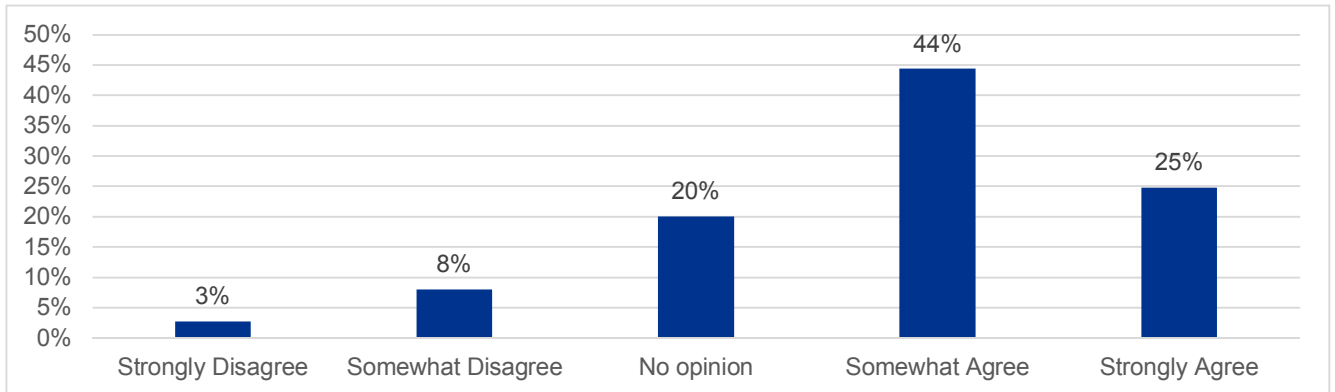
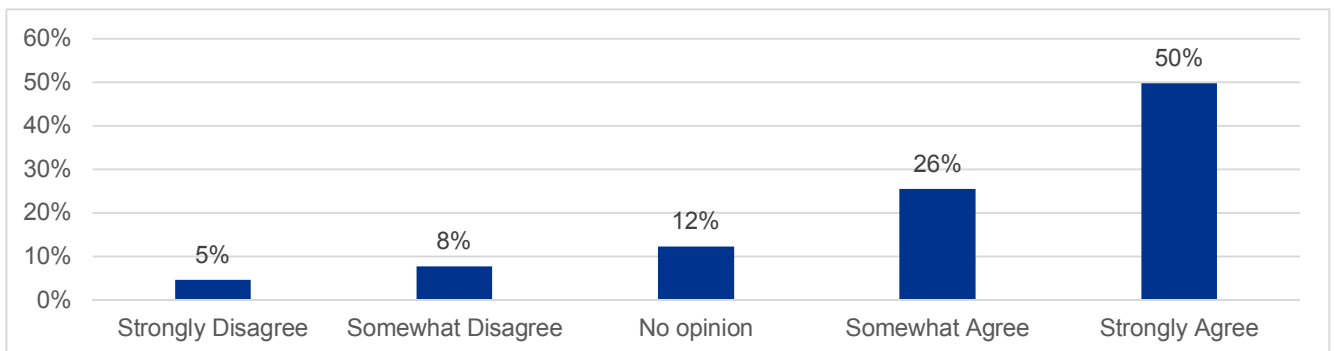


Figure 4-15: To what extent do you agree to the following: "I would travel by public bus more regularly if the £1 fare was extended to all public bus services"



5. Easter Bush

5.1 Introduction

177 staff and 176 students responded to the 2017 travel survey, equating to a response rate of 21% and 14% respectively. The survey findings are summarised in the following section.

5.2 Mode Share

The 2017 Easter Bush overall mode share and disaggregated staff and student shares are given in Figure 5-1 to Figure 5-3 below.

Figure 5-1: Easter Bush - Overall Mode Share (2017)

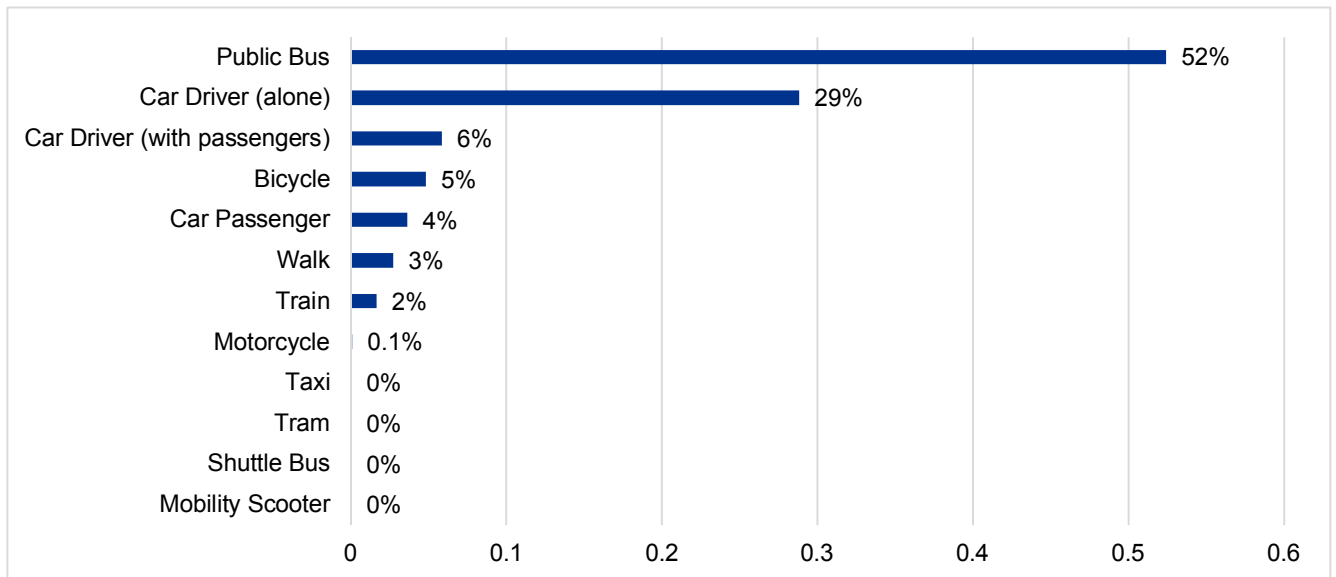


Figure 5-2: Easter Bush - Staff Mode Share (2017)

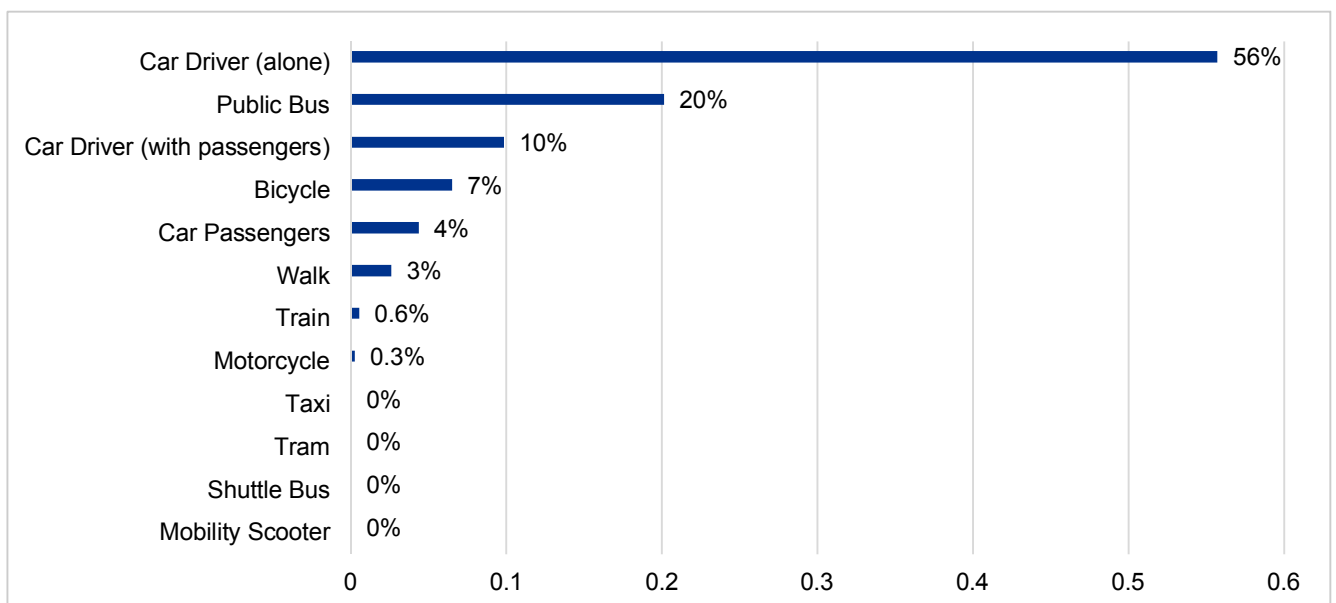
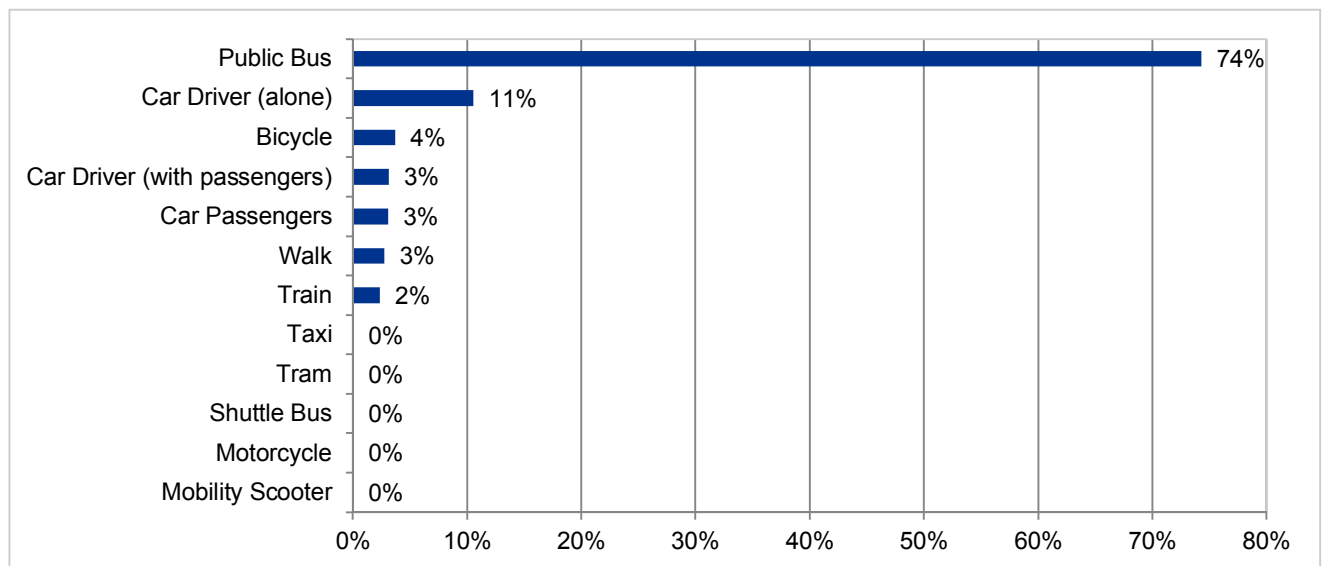


Figure 5-3: Easter Bush - Student Mode Share (2017)



5.3 Key Findings

The key findings are as follows:

5.3.1 Overall

The overall mode share composition at Easter Bush has not changed significantly since 2016. Public bus accounts for a 52% share, a 1% reduction from 2016; single car occupancy is the second highest mode of travel, accounting for a 29% share. There has been a slight shift towards sustainable modes.

5.3.2 Staff

- Single Car Occupancy has increased by 2% amongst staff travelling to Easter Bush since the 2016 survey;
- Public Bus usage has decreased by 2% since the 2016 survey;
- Staff Car Drivers with passengers remains at 10% of the mode share
- Bicycle travel now accounts for 7%, which is a 2% increase on 2016 levels;
- Walking has also increased by 1%, now representing 3% of the mode share; and
- Train still only represent 1% of the travel mode share to Easter Bush, which is to be expected given its distance from the rail network.

5.3.3 Students

- Public Bus remains the most popular mode of travel to Easter Bush, increasing by 5% since 2016 to a 74% student share;
- Car-based mode share has seen an overall reduction since 2016, as follows:
 - Single car occupancy has reduced by 4%, to an 11% share;
 - Car Drivers (with passengers) remains at 3%;
 - Car Passengers have increased by 1%, now representing 3% of all travel;
- Cycling has decreased by 2%, now representing a 4% mode share;
- Walking has increased by 1%, now representing a 3% share; and

- Train travel has increased slightly to a 2% share – an increase of 1% since 2016.

5.3.4 Easter Bush – Public Bus

Public Bus Hours of Operation

Staff and students were asked about the adequacy of public bus service hours of operation at Easter Bush. Satisfaction levels are much lower than at Central Area or King’s Buildings with just over 50% of staff and students being satisfied with the hours of operation. For staff, services do not operate late enough in the evenings and services are not frequent enough; students feel their access needs are not supported by a lack of services at the weekend, as well as a lack of service frequency.

Table 5-1: Easter Bush - Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

Staff / Student	Yes	No
Staff	53%	47%
Students	54%	46%

Figure 5-4: Easter Bush - Staff: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?

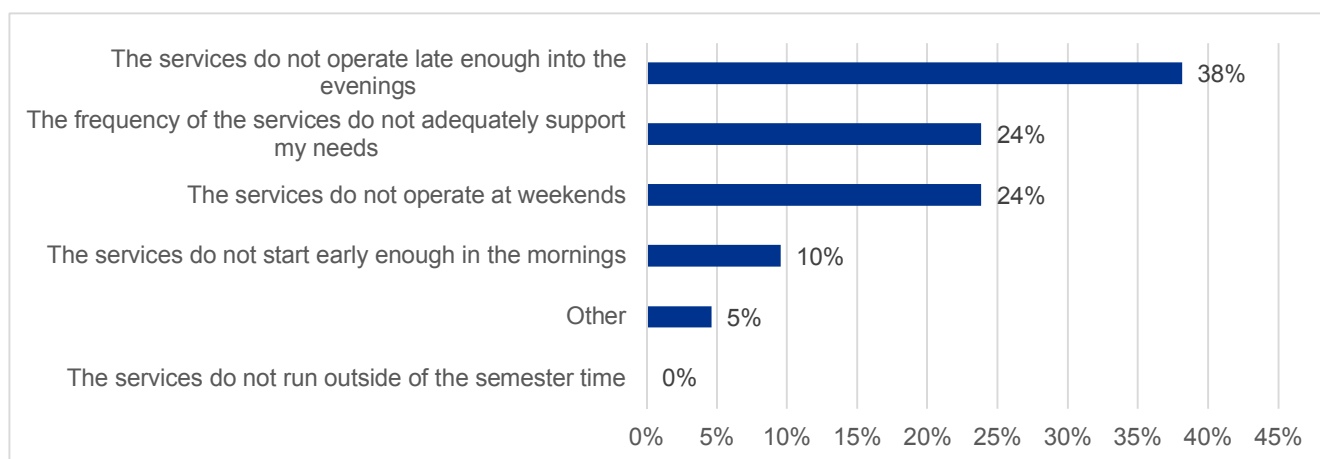
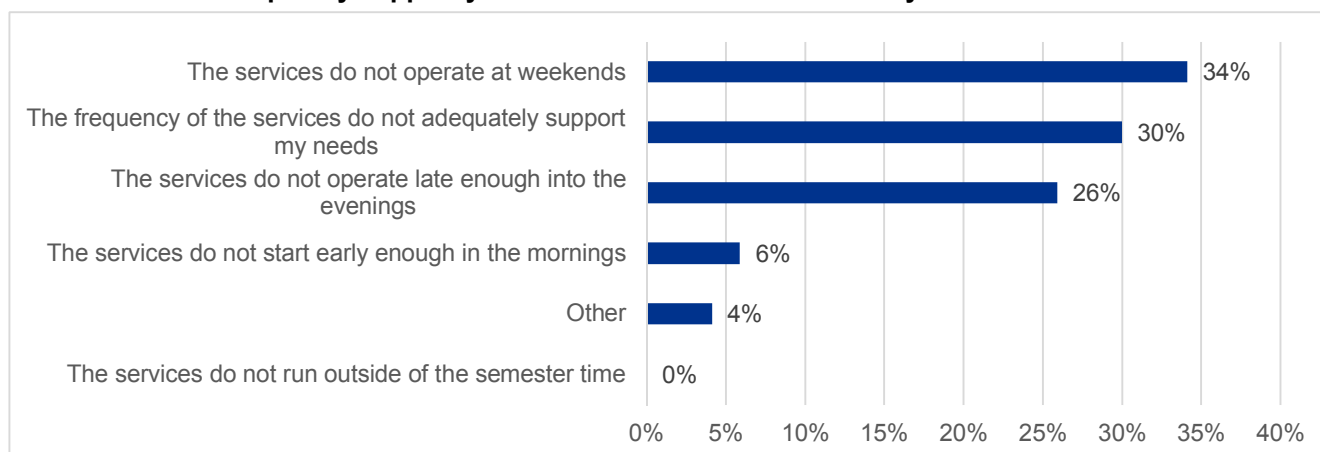


Figure 5-5: Easter Bush - Students: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Public Bus Satisfaction Levels

The survey shows that public bus Routes category achieves the highest satisfaction levels at Easter Bush; 'Good' or 'Very Good' ratings account for 82% of staff and 80% of student responses – both above the 75% ITP target.

Poorest satisfaction ratings of bus service provision are for the Hours of Operation, with 19% of staff and 35% of students regarded this as 'Poor' or 'Very Poor'. Clearly, this falls well below the ITP 75% target for satisfaction. Other low scores are; staff -Timetable (16%) and Reliability (13%); students - Affordability (25%) and Timetable (19%).

Figure 5-6: Easter Bush - Staff Public Bus Satisfaction

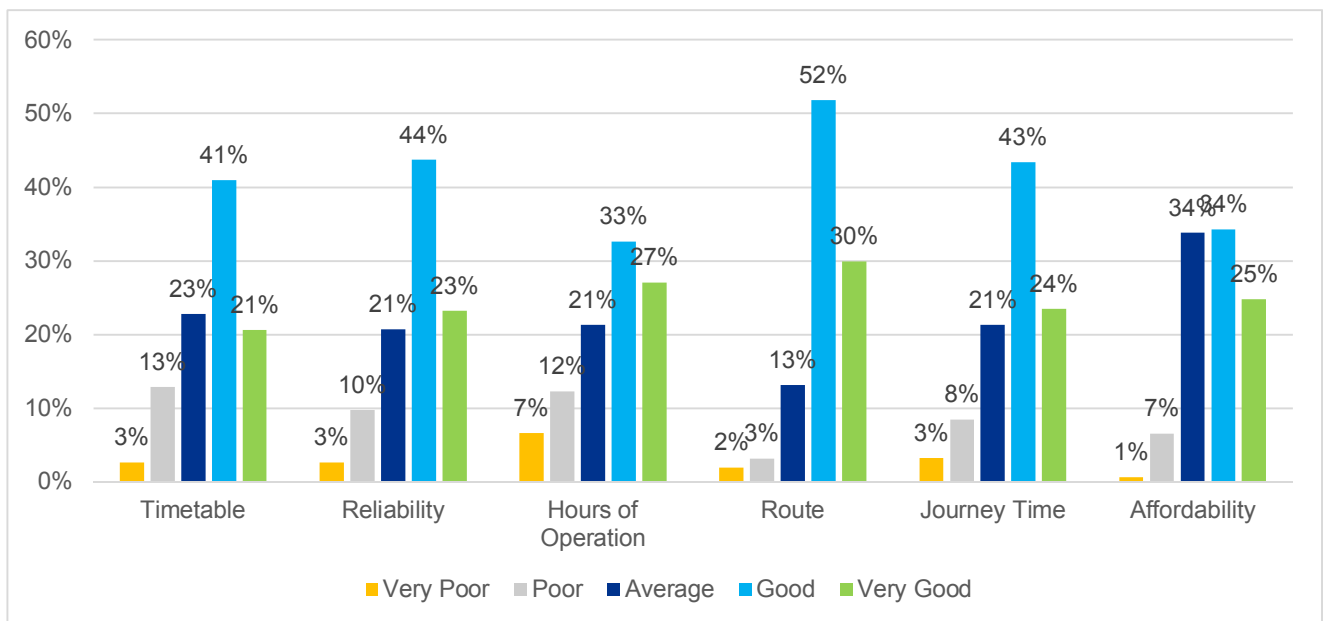
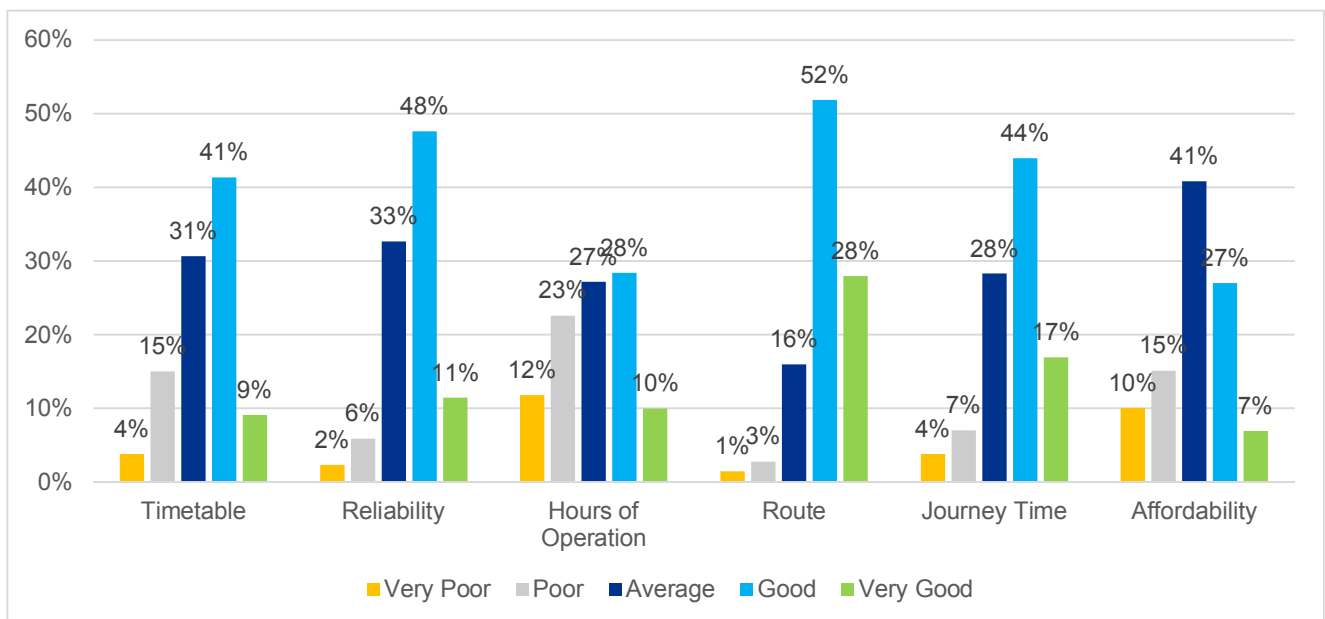
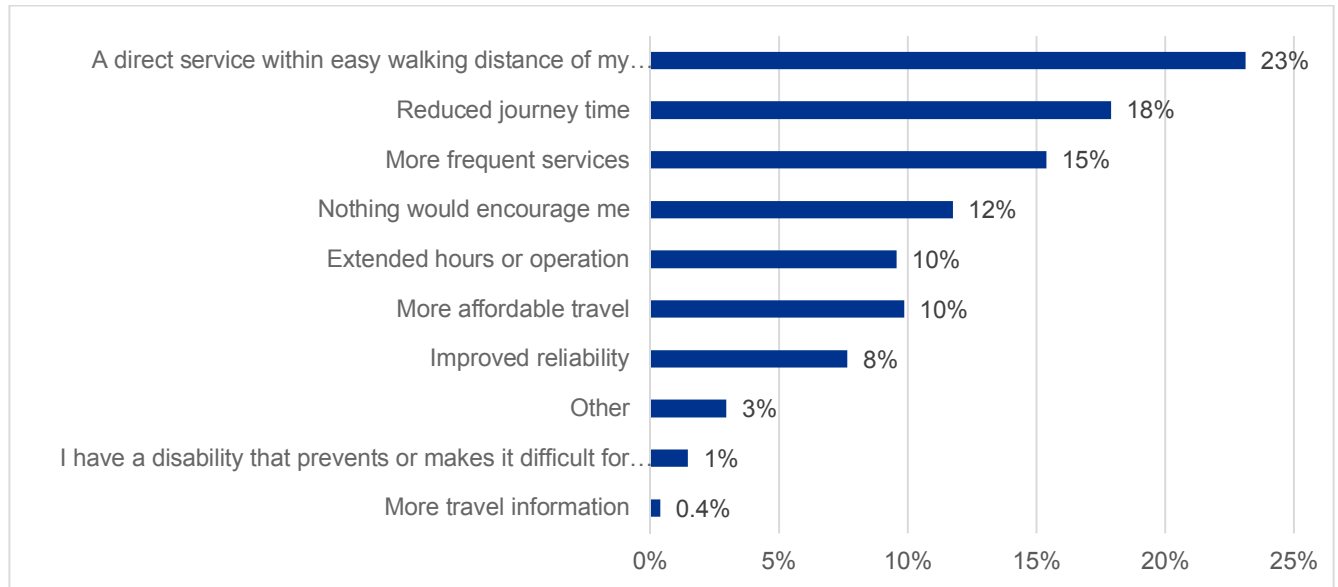


Figure 5-7: Easter Bush - Student Public Bus Satisfaction



There was a 2% drop in staff taking public bus, and 2% increase in the use of car-based modes. Figure 5-8 identifies those measures would encourage more staff to take public bus as their main mode of travel. A direct service within walking distance of their home, reduced journey time and more frequent services are the main improvements that could encourage greater bus use.

Figure 5-8: Easter Bush - Staff: What would encourage you to travel by Public Bus to the University?



Ridacard

Respondents whose regular mode of travel is Public Bus were asked how they purchase tickets. Figures 5-9 and 5-10 highlight the proportion of staff and students paying by cash, Ridacard, m-Tickets and season passes.

Figure 5-9: Easter Bush – Staff: How do you pay for travel on public bus services?

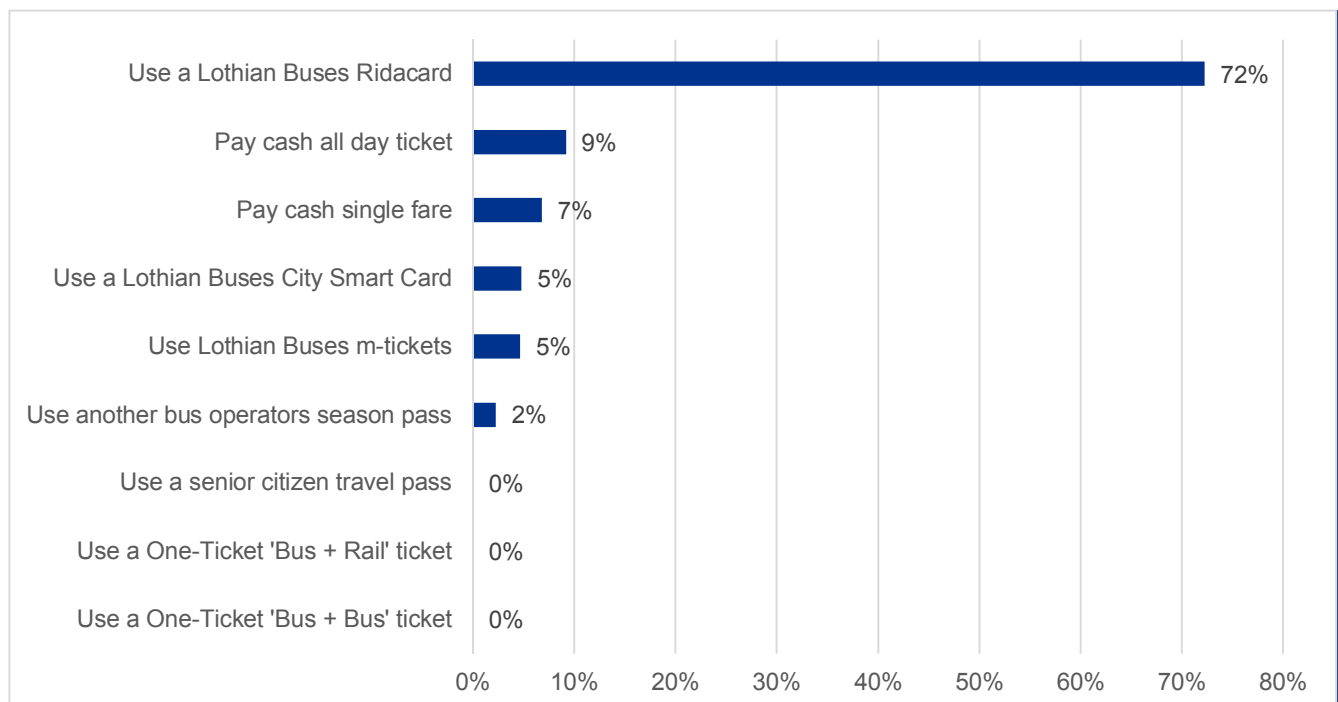
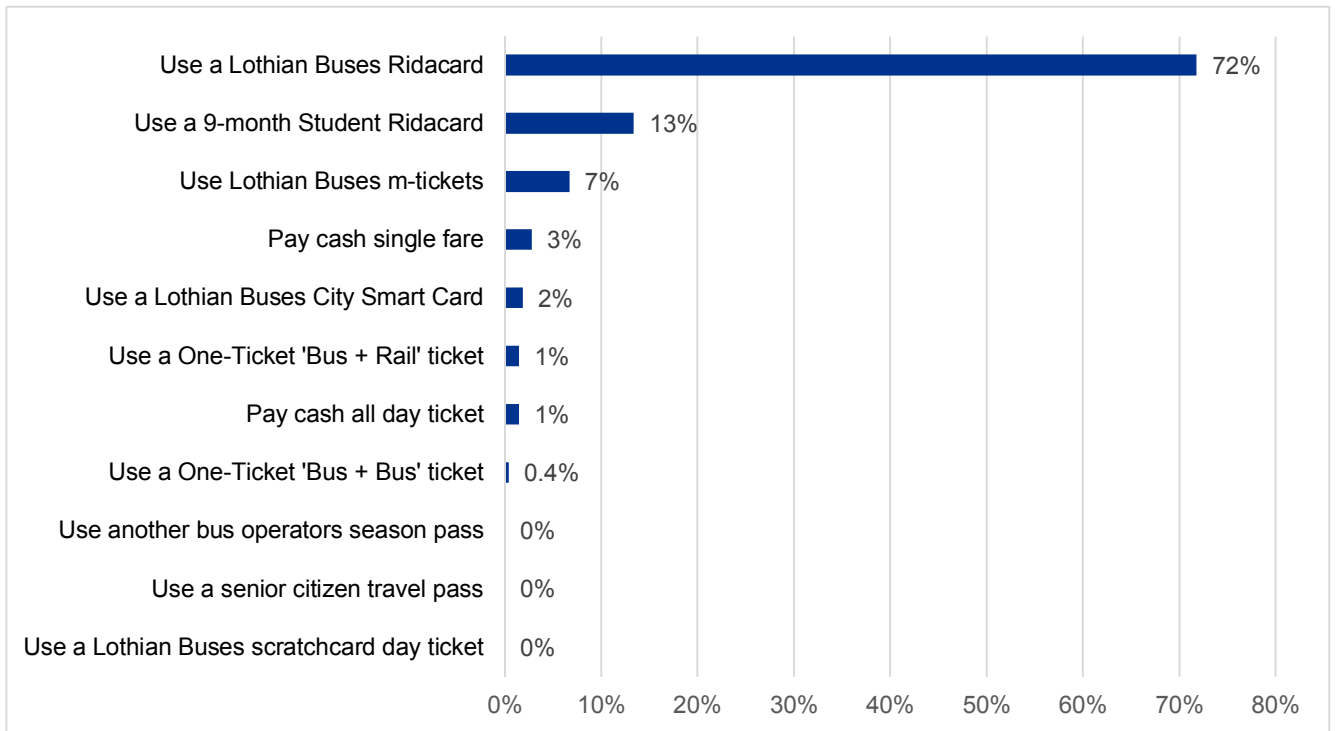


Figure 5-10: Easter Bush – Students: How do you pay for travel on public bus services?



Lothian Buses Ridacard is the most popular payment method, accounting for 72% of staff and 85% of student tickets. Approximately 13% of the students use the 9-month student Ridacard ticket and a further 72% purchase other Ridacard products. In comparison, only 4% of students purchase 'pay as you go' tickets, with 3% paying cash single fares. A greater proportion of staff purchase 'pay as you go' tickets (16%), with 9% purchasing all day tickets, and 7% purchasing single fares.

6. BioQuarter

6.1 Introduction

258 staff and 188 students responded to the 2017 travel survey, equating to a response rate of 19% and 14%. This compares to 341 staff and 134 students who responded to the 2016 survey.

6.2 Mode Share

The 2017 BioQuarter Overall mode share is given in Figure 6-1; separate Staff and Student shares are given in Figure 6-2 to Figure 6-3 below.

Figure 6-1: BioQuarter - Overall Mode Share (2017)

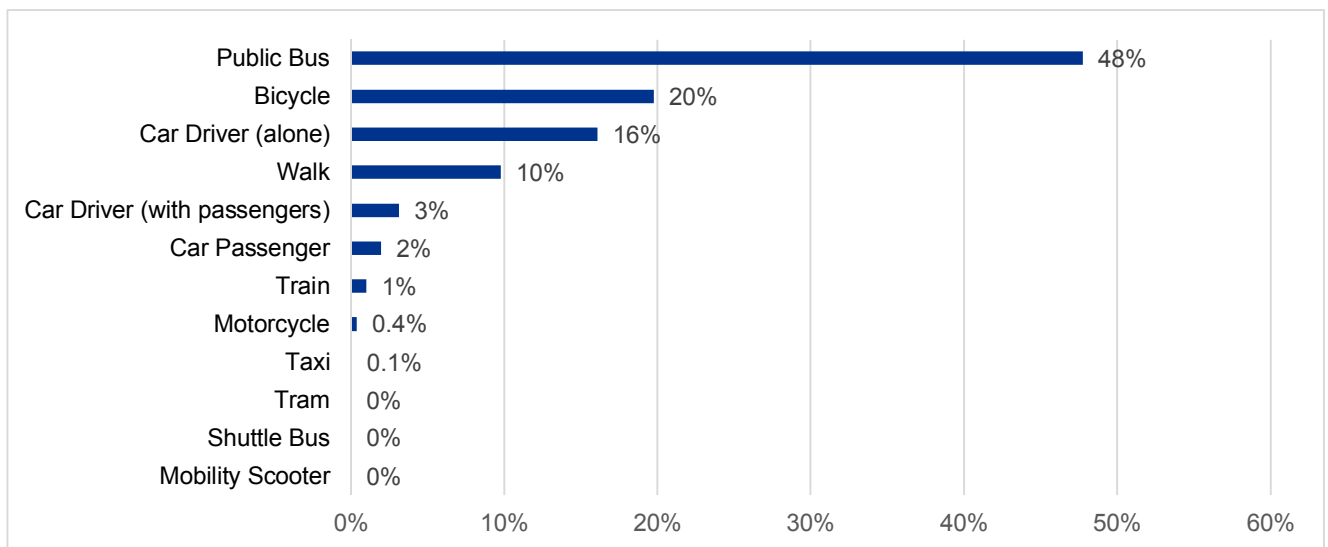


Figure 6-2: BioQuarter - Staff Mode Share (2017)

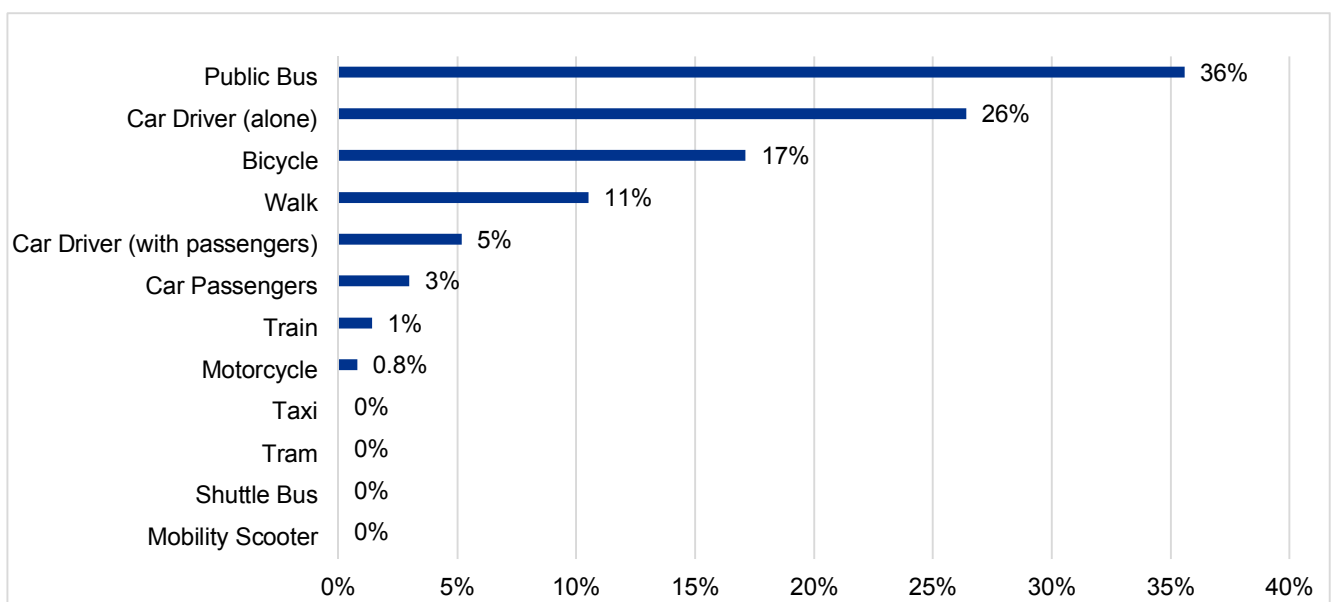
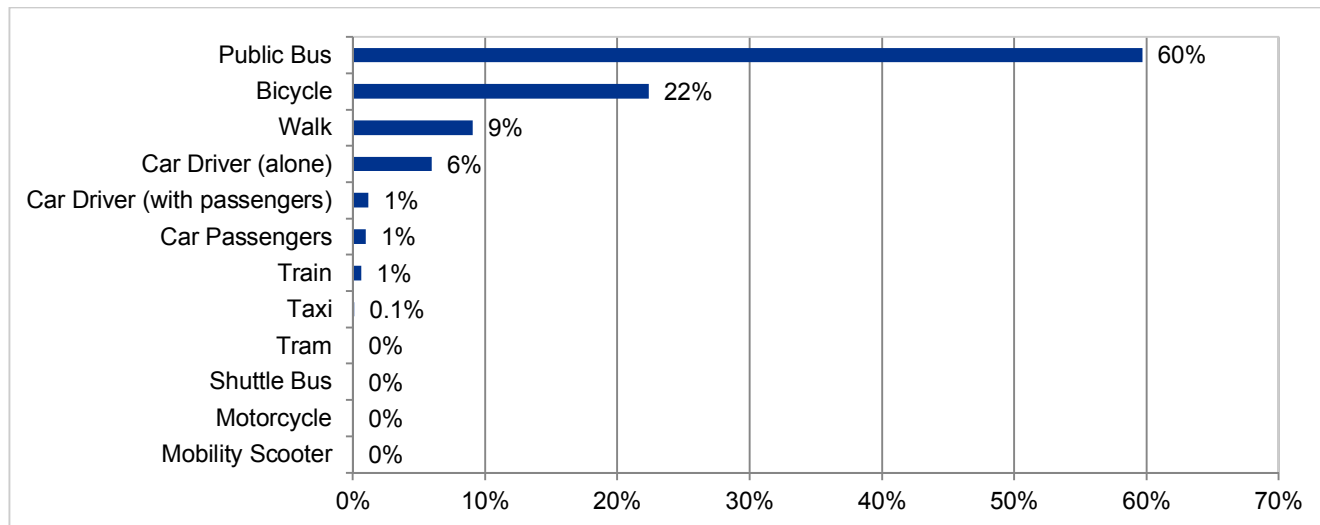


Figure 6-3: BioQuarter – Student Mode Share (2017)



6.3 Key Findings

Key findings from the 2017 survey are as follows:

6.3.1 Overall

There has been a significant increase in the percentage of trips being made by public bus, both by staff and students. This now represents 48% of the total share – up 8% from 2016. In part, this may be due to the ending of the NHS shuttle bus service, previously provided by the University, with many students switching to public bus. Both cycling and walking levels have seen 2% increases since 2016.

6.3.2 Staff

- Public Bus remains the most used mode for staff travelling to BioQuarter, representing 36% of the mode share – a 4% increase since 2016. Approximately 3% of staff used the shuttle bus in 2016; as above, it is likely that many of these staff have switched to public bus;
- Car-based modes have reduced since 2016 and are within the ITP car driver mode share target. Car share is disaggregated as follows:
 - single car occupancy trips reducing by 2% to 26% in 2017;
 - car driver (with passengers) trips reducing 2%;
 - car passenger trips increasing by 1%;
- Train trips have decreased by 3%, representing only 1% of the mode share in 2017.

6.3.3 Students

- Public Bus represents the highest mode share for students travelling to BioQuarter. Usage has increased by 13% since the 2016 survey, representing 60% of the mode share. This high increase may in part be related to the ceasing of the NHS Shuttle Bus which ran between BioQuarter and the Western General; this mode had a 13% student share in 2016;
- Cycling levels have increased by 1% since 2016, now representing 22% of the mode share – exceeding the 15% ITP cycle mode share target;
- Walking levels remain the same as 2016 levels, equating to 9% of the mode share – significantly lower than the ITP walking mode share target;
- The composition of car-based travel mode share has changed since 2016 as follows:

- Single car occupancy has increased by 2%;
- Car driver with passengers has decreased by 1%;
- Car Passengers remains at 1% of the mode share; and
- Train travel has decreased by 2%, now accounting for just under 1% of the mode share to BioQuarter.

6.3.4 BioQuarter – Public Bus

Public Bus Hours of Operation

Staff and students were asked about the adequacy of public bus service hours of operation at BioQuarter. As can be seen below, satisfaction levels are generally high and similar to results for the Central Area and King’s Buildings campuses.

Of the staff and students who voted that bus services did not support their needs, almost 50% responded that services are not frequent enough; a further 30% considered that services do not operate late enough into the evening.

Table 6-1: BioQuarter - Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

Staff / Student	Yes	No
Staff	75%	25%
Students	80%	20%

Figure 6-4: BioQuarter - Staff: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?

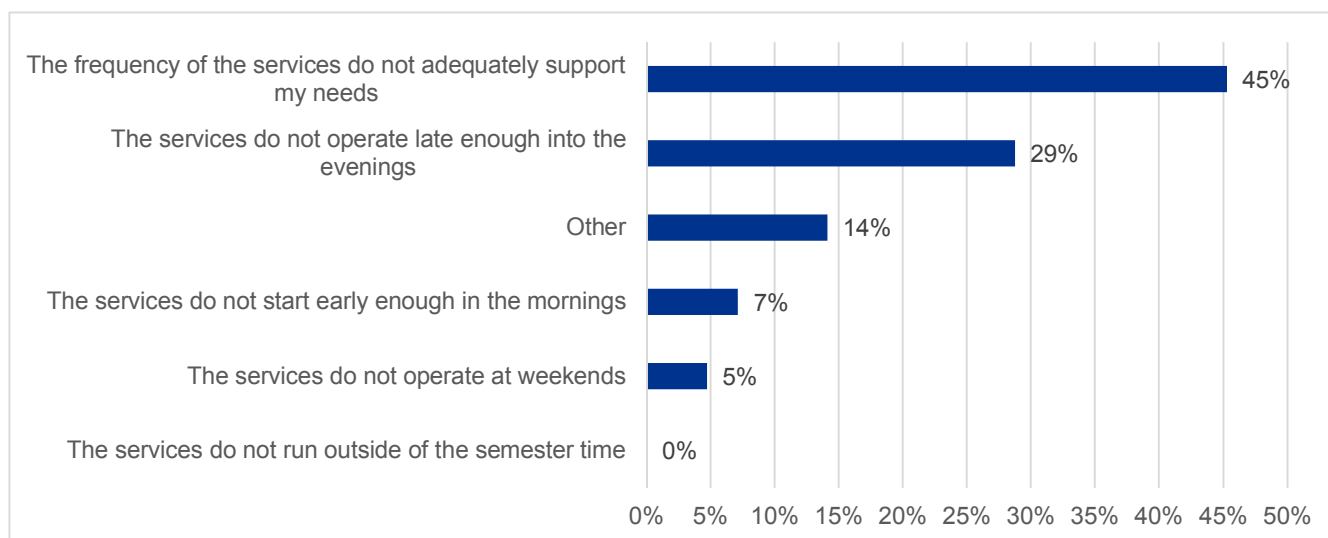
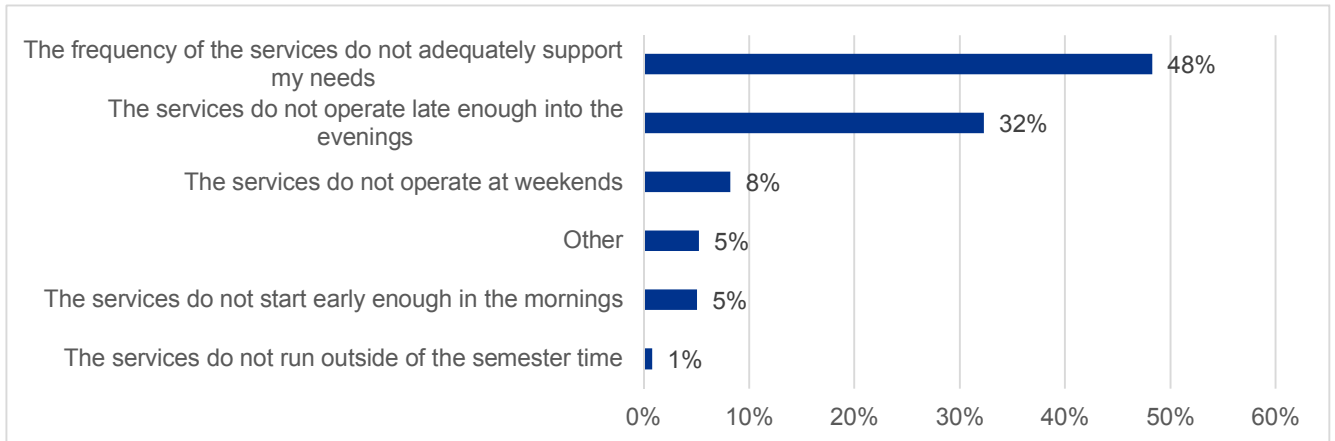


Figure 6-5: BioQuarter - Students: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Public Bus Satisfaction

Results from the survey show that levels of satisfaction are more evenly spread compared to Central, King's and Easter Bush campuses. Reliability and Hours of Operation are termed as 'Good' or 'Very Good' by approximately 70% of staff travelling to BioQuarter; these are the highest scoring satisfaction categories for students too. Nevertheless, none of the categories amongst staff or students exceed the 75% bus satisfaction ITP target.

Affordability satisfaction levels of 'Poor' or 'Very Poor' account for 43% of students travelling to BioQuarter, followed by 28% for Journey Time. This is significantly higher than for other surveyed campuses.

Figure 6-6: BioQuarter – Staff Public Bus Satisfaction

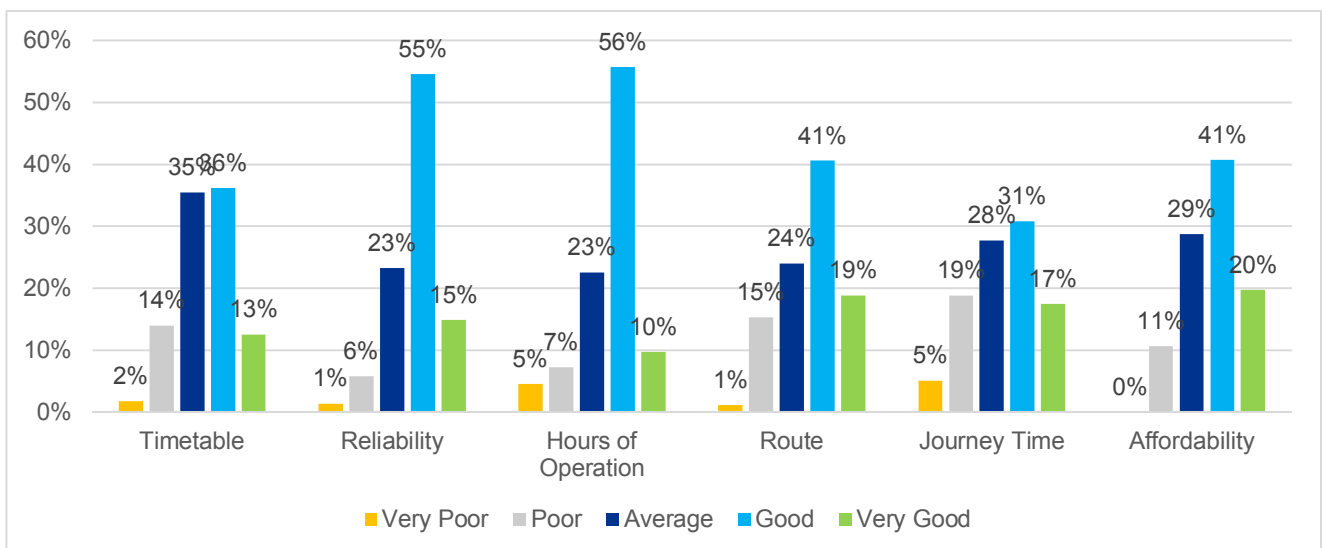
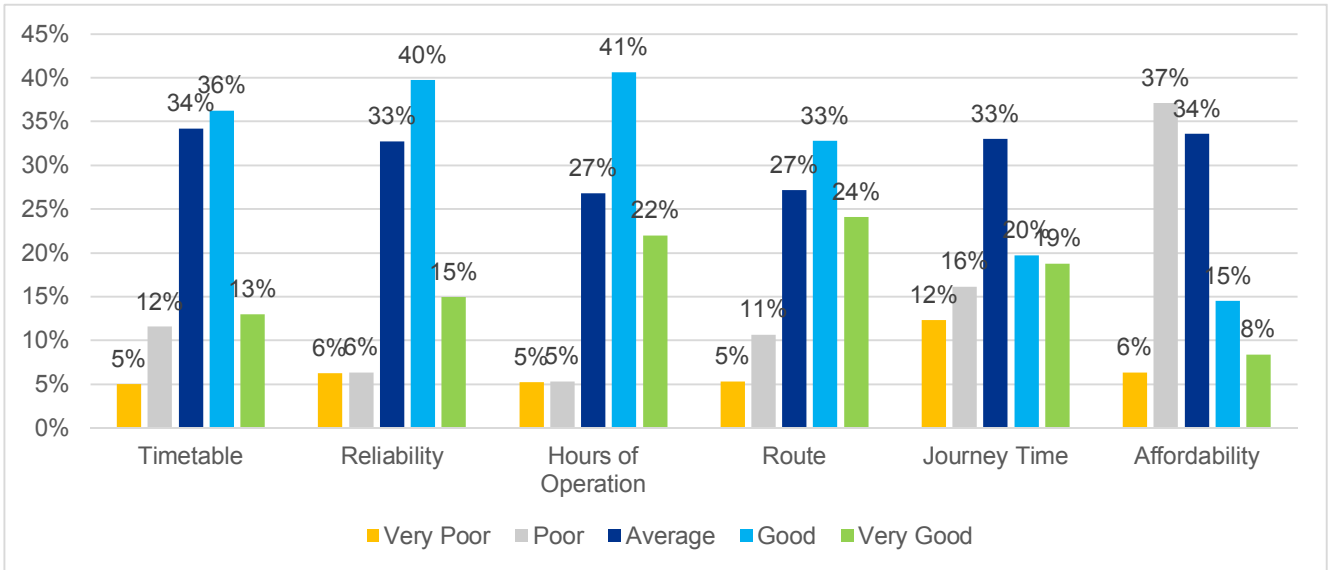


Figure 6-7: BioQuarter - Student Public Bus Satisfaction



7. Western General Hospital

7.1 Introduction

148 staff and 64 students responded to the 2017 travel survey, equating to a response rate of 27% and 10% respectively. This compares with 199 staff and 44 students who responded to the 2016 survey.

7.2 Mode Share

A summary of the Overall, staff and student mode share at the Hospital is presented in Figure 7-1 to Figure 7-3 below.

Figure 7-1: Western General Hospital - Overall Mode Share 2017

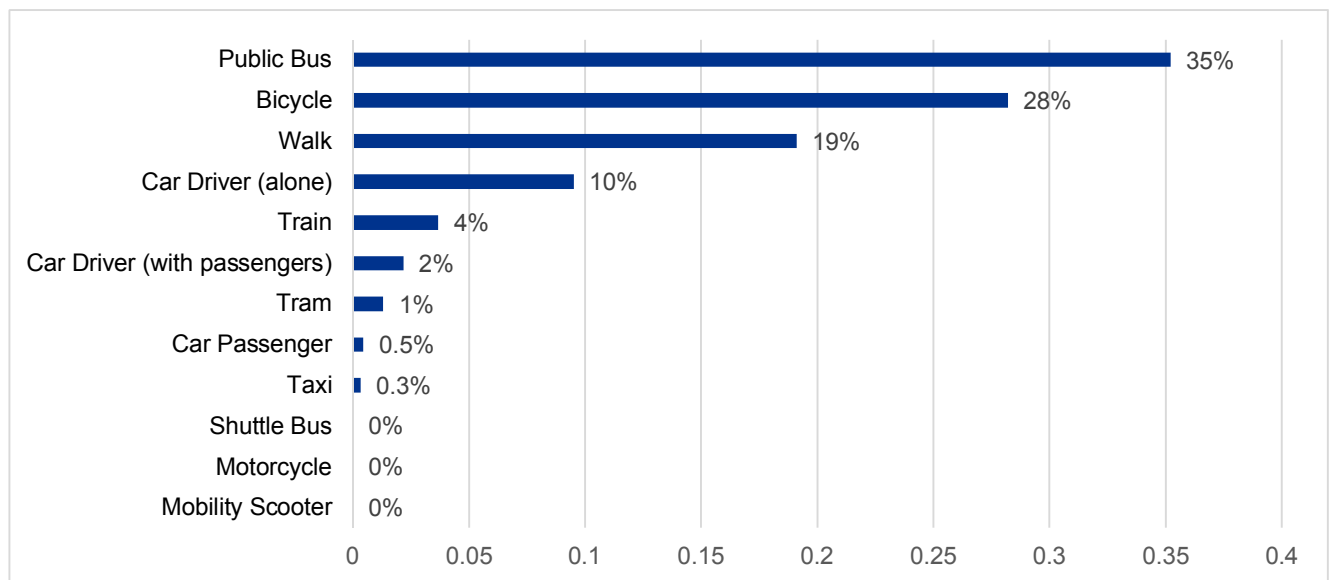


Figure 7-2: Western General Hospital - Staff Mode Share 2017

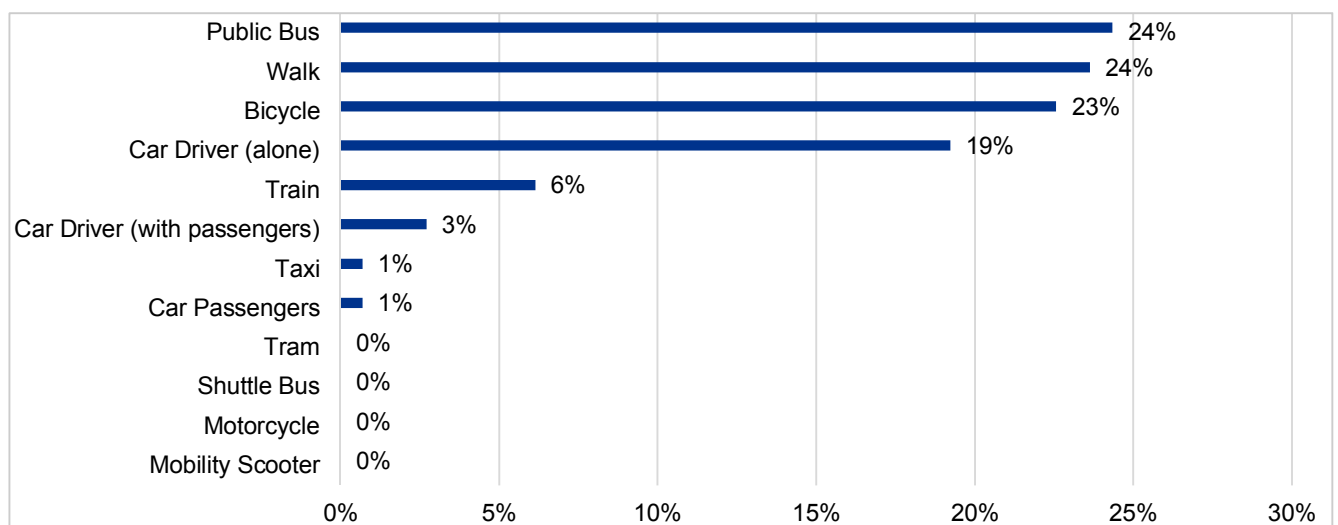
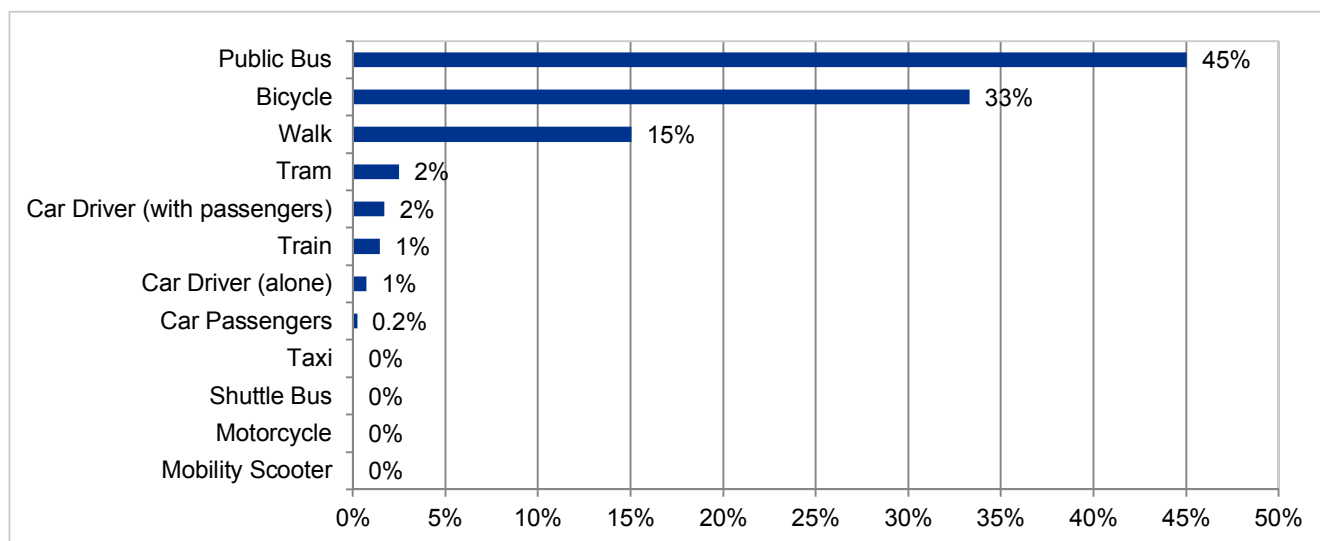


Figure 7-3: Western General Hospital - Student Mode Share 2017



7.3 Key Findings

The key findings of the 2017 survey are:

7.3.1 Overall

The main change since 2016 has been an 8% increase in the cycling share, now accounting for 28% of travel – significantly exceeding the 15% ITP cycle mode share target. Conversely, there has been a 5% drop in the number of people walking. Given the small number of respondents at this location, large changes in mode share should be treated with some caution.

7.3.2 Staff

- Public Bus remains the main mode of staff transport to the Western General Hospital, representing just over 24% of the total, a 3% reduction compared to 2016;
- Walking in comparison has seen an increase of approximately 6%, equating to almost 24% of staff travel - and exceeding the ITP target;
- Cycling has seen an increase of approximately 3% since 2016, representing a 23% share – also exceeding the ITP cycle mode share target;
- Car-based travel mode share has remained similar to 2016 levels at 23%, below the 29% maximum car driver mode share target in the ITP. The breakdown is as follows:
 - Single occupancy trips (19%) – no change;
 - Staff car drivers (with passengers) (3%) – 1% decrease;
 - Car Passengers (1%) – a 2% reduction
- Train travel has reduced by 1%, equating to 6% of staff mode share to Western General Hospital.

7.3.3 Students

- Public Bus remains the most used mode of transport by students to the Western General Hospital, representing 46% of the mode share. This is a 7% increase on the 2016 survey and may in part be due to the ceasing of the Shuttle Bus service between here and the BioQuarter;
- Cycling in 2017 was the second most used transport mode, representing 33% of the mode share. This is a 12% increase on the 2016 share and significantly exceeds the ITP target;

- Walking share has halved since 2016; it now accounts for 15% of the total 2017 share. Potential reasons for such a large change include a higher response from students a wider range of modes selected and an increase in the public bus share;
- Car-based mode share is similar to 2016 levels. There has been a small increase in student car sharing – with 2% less single occupancy car journeys and a 2% increase in car drivers with passengers;
- Tram usage amongst students accounts for 2% of the mode share.

7.3.4 Western General Hospital – Public Bus

Public Bus Hours of Operation

Staff and students were asked about the adequacy of public bus service hours of operation at Western General Hospital. As can be seen below, satisfaction levels are high and similar to Central Area, King’s Buildings and Western General Hospital levels.

Of those staff and student that answered that hours of operation were inadequate, almost 50% responded that services are not frequent enough, followed by services not operating late into the evening. It should be noted that given the high satisfaction levels, analysis is based on only 3 staff and 5 student responses; hence the results in Figures 7-4 and 7-5 should be treated with caution.

Table 7-1: Western General Hospital - Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

Staff / Student	Yes	No
Staff	94%	6%
Students	84%	14%

Figure 7-4: Western General Hospital - Staff: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?

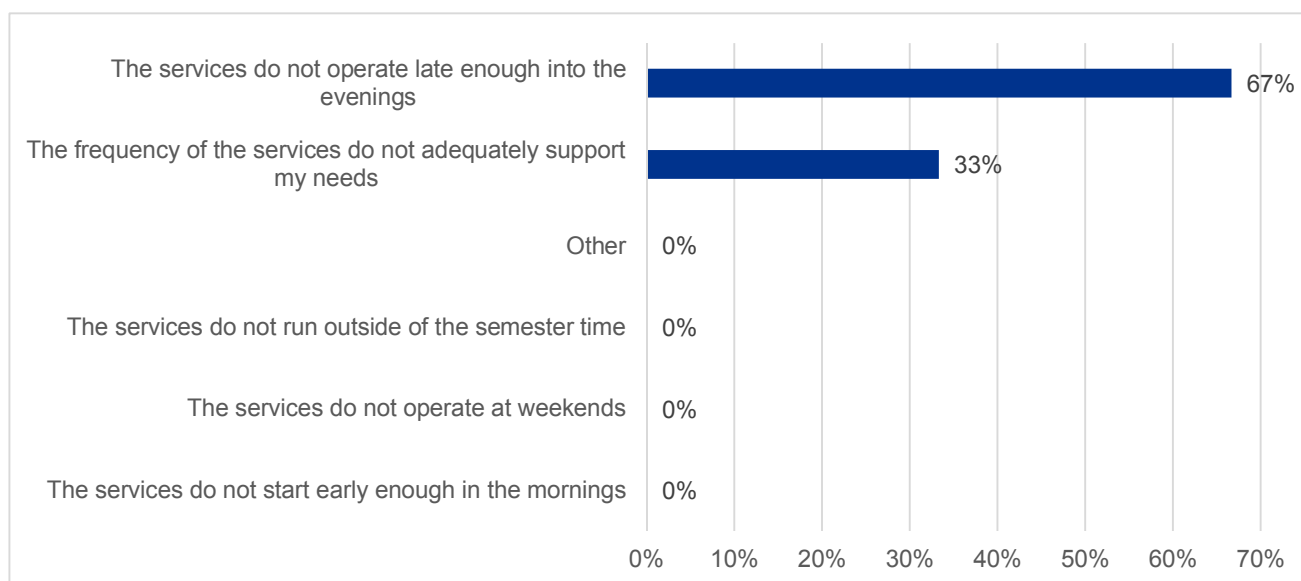
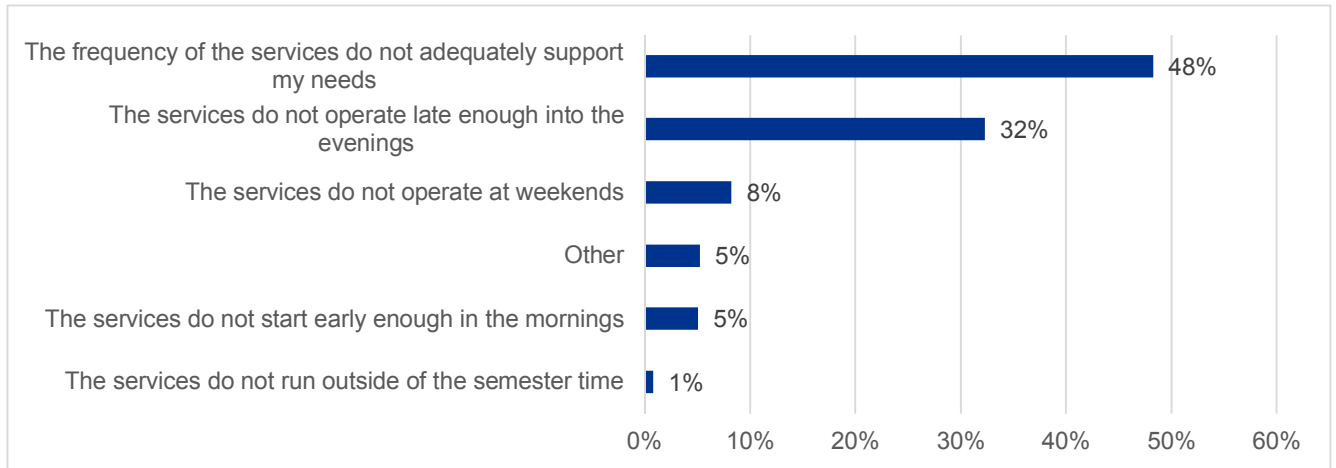


Figure 7-5: Western General Hospital - Students: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Public Bus Satisfaction

Staff survey responses illustrate that they were satisfied with Timetables, Hours of Operation and Routes with over 70% of responses scoring 'Good' or 'Very Good'. Approximately 35% of staff indicated that the Affordability of public bus services was 'Very Good'.

Students responses generally showed slightly higher satisfaction levels with public bus provision with 'Good' and 'Very Good' scores of 74% for Hours of Operation and 76% for Routes – the latter exceeding the 75% satisfaction target in the ITP.

Figure 7-6: Western General Hospital – Staff Public Bus Satisfaction

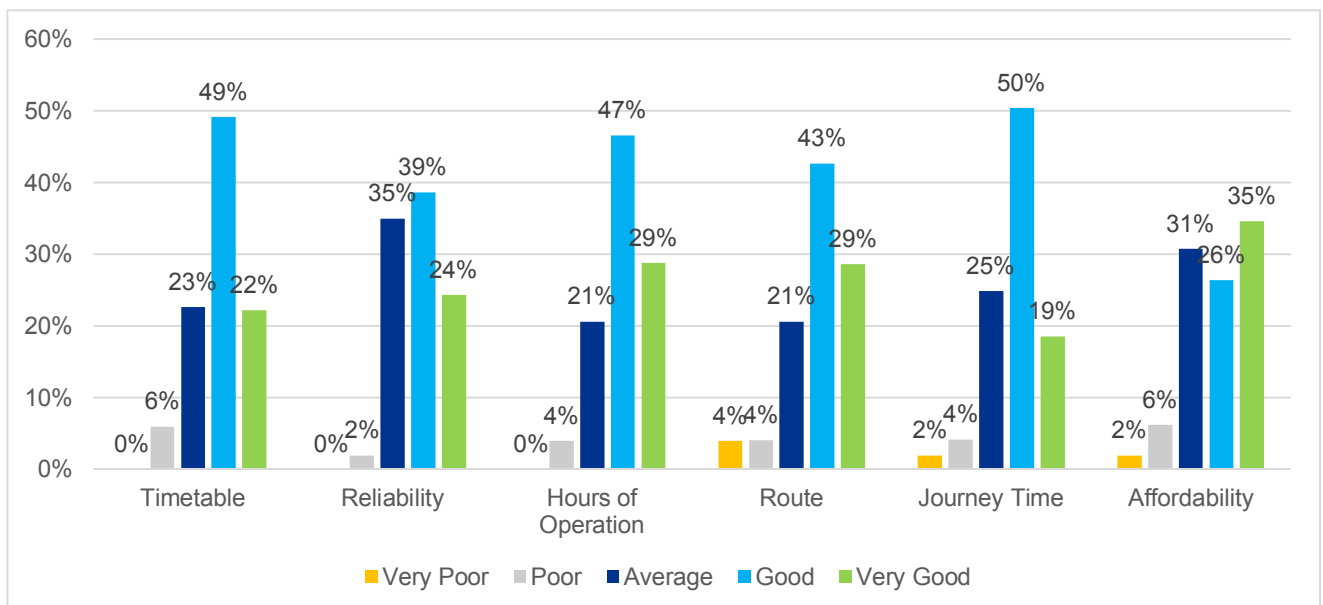
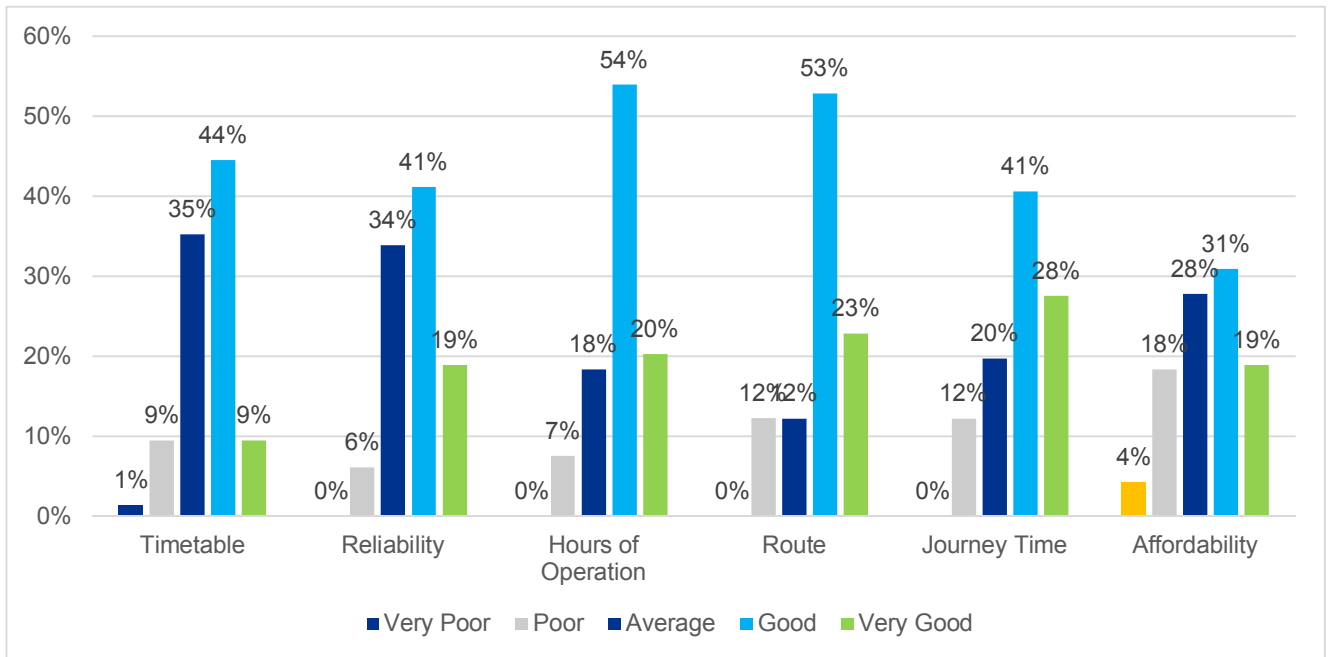


Figure 7-7: Western General Hospital – Student Public Bus Satisfaction



8. Royal Edinburgh Hospital

8.1 Introduction

34 staff and 123 students responded to the 2017 travel survey, a response rate of 67% and 17% respectively. In the 2016 survey, 31 staff and only 21 students responded. Given the large difference in student response numbers between surveys, comparison between the results should be treated with caution. Nevertheless, the 2017 survey provides a more robust sample size and therefore more accurately reflects how students travel to and from the Royal Edinburgh Hospital.

8.2 Mode Share

A summary of the 2017 overall, staff and student mode share results at the Edinburgh Royal Hospital is presented in Figure 8-1 to Figure 8-3 below.

Figure 8-1: Royal Edinburgh Hospital - Overall Mode Share

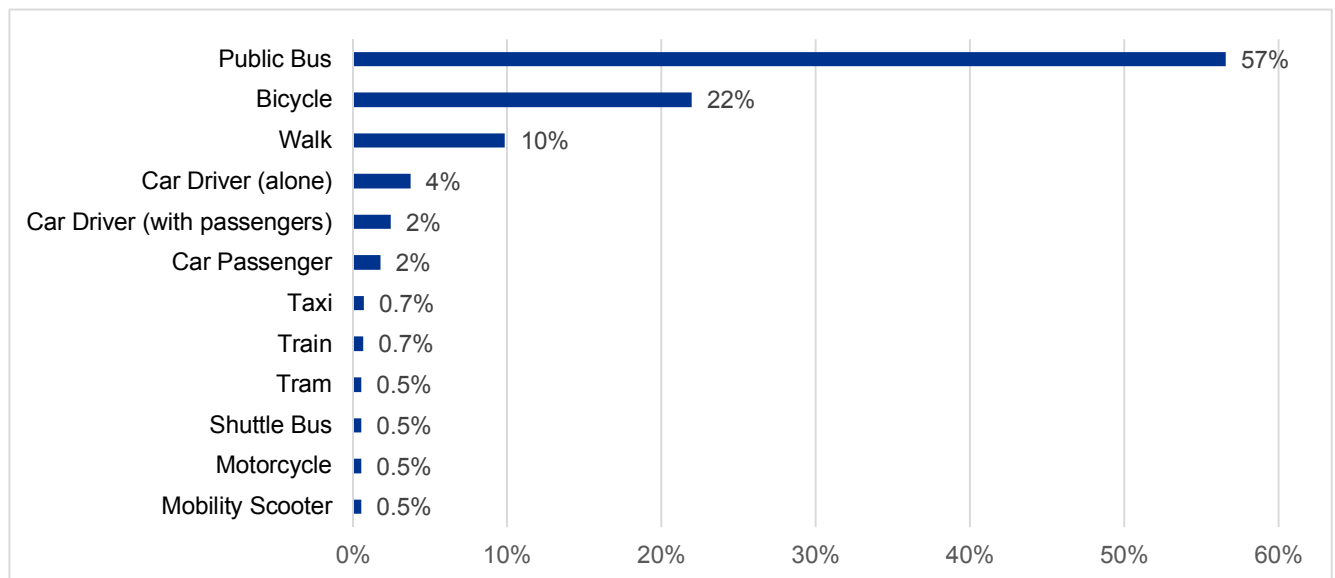


Figure 8-2: Royal Edinburgh Hospital - Staff Mode Share (2017)

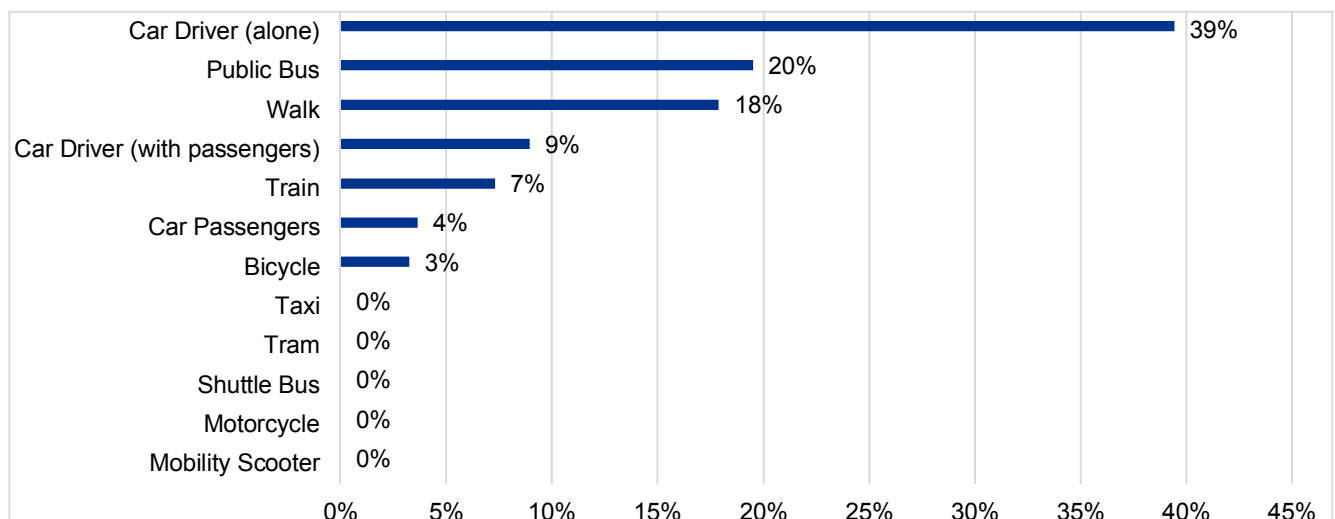
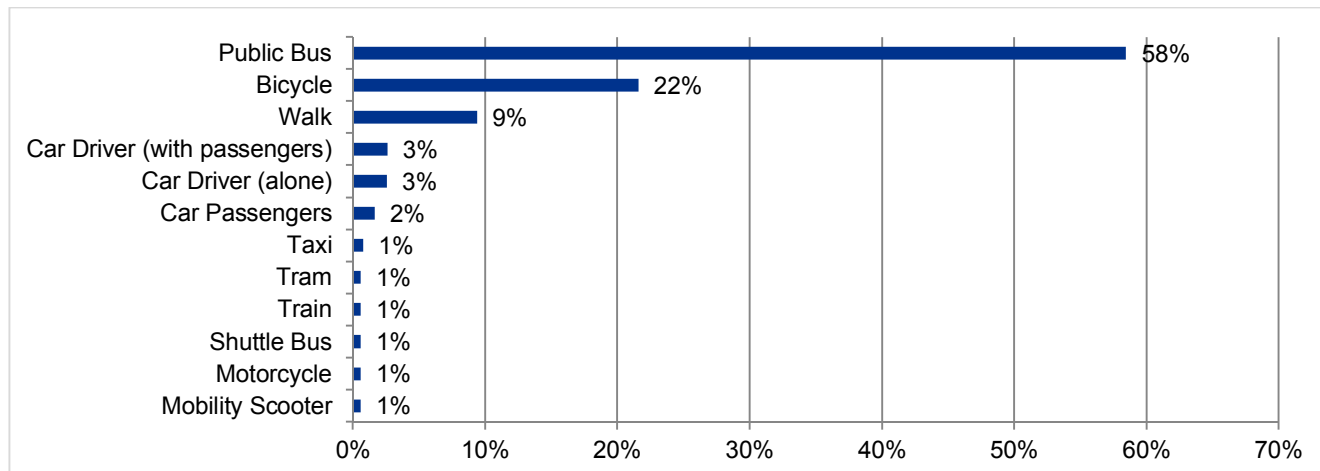


Figure 8-3: Royal Edinburgh Hospital - Student Mode Share (2017)



8.3 Key Findings

The key findings are as follows:

8.3.1 Overall

The mode share has changed significantly at the Royal Edinburgh Hospital, mainly influenced by a large increase in students taking the public bus. Staff results show a significant increase in car-based travel. As above, given the small number of respondents based at this location, comparison between surveys should be treated with caution.

8.3.2 Staff

- Car-based travel has increased significantly since 2016:
 - an 11% increase in the single occupancy car share to 39%, exceeding the 29% ITP car driver mode share maximum target;
 - car passengers have increased by 1% to 4%; and
 - car driver (with passengers) are 9% of the total 2017 share - compared with 0% previously;
- Public Bus usage has decreased 3% since 2016, representing a 20% share;
- Cycle usage has decreased by 5%, down to 3% - a fifth of the ITP cycling mode share target;
- Walking has reduced by 10%; and
- Train usage has decreased by 1%, now representing 7% of the mode share.

8.3.3 Students

The number of students responding to the 2017 survey is higher which may be a factor in the significant change in student and overall mode share composition at the Royal Edinburgh Hospital.

- Students travelling by public bus to the hospital has increased by 27%, representing 59% of the total share;
- Cycling by students has decreased by 7% to a 22% share; however, this still exceeds the 15% ITP cycling target;
- Walking represents 9% of the total share, in comparison with 35% in 2016; and
- Car-based mode share has changed, with a 2% decrease in the number of single occupancy trips to 3%.

8.3.4 Royal Edinburgh Hospital – Active Travel

Given the decrease in the percentage of students choosing to walk or cycle to the campus, Figure 8-4 and Figure 8-5 summarise responses to measures that might encourage students to take up these modes. The key findings are:

- 58% of students would be encouraged to cycle to University if the provision of more and better on and off road cycle lanes were introduced; and
- Students are less likely to be encouraged to walk; the highest response being ‘nothing would encourage me’ to walk to University. Despite this, 29% would be encouraged if the lighting on footways and around University areas was improved.

Figure 8-4: Royal Edinburgh Hospital - Students: What would encourage you to walk to the University?

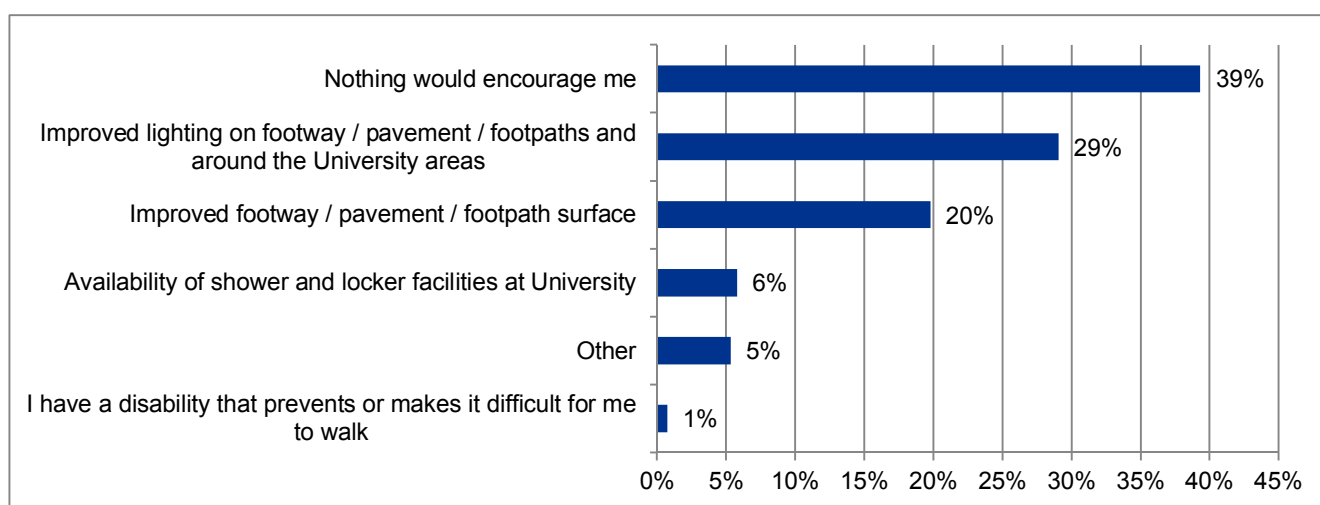
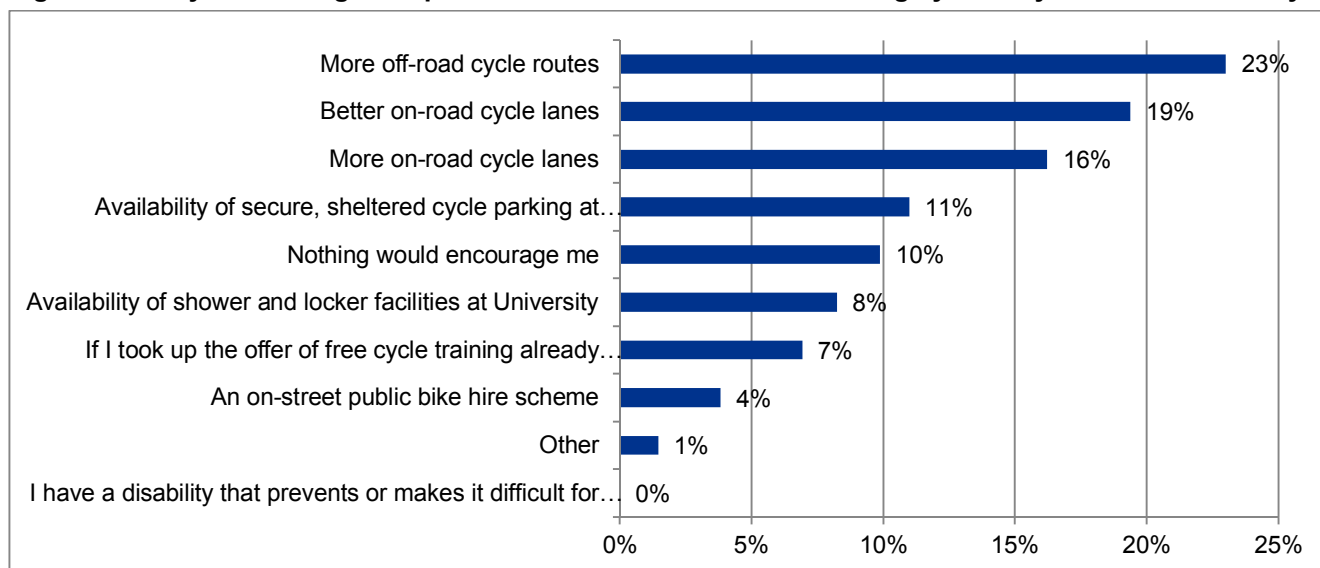


Figure 8-5: Royal Edinburgh Hospital - Students: What would encourage you to cycle to the University?



8.3.5 Royal Edinburgh Hospital - Staff Car-Based Travel

As car-based travel for staff increased at the Royal Edinburgh Hospital, it is important to understand why this is the case, given the sustainable travel initiatives on offer at the University. Figure 8-6 highlights the main reasons why staff drive to this location; and Figure 8-7 summarises which sustainable travel measures staff are aware of.

Figure 8-6: Royal Edinburgh Hospital - Staff: What are your reasons for driving to the University?

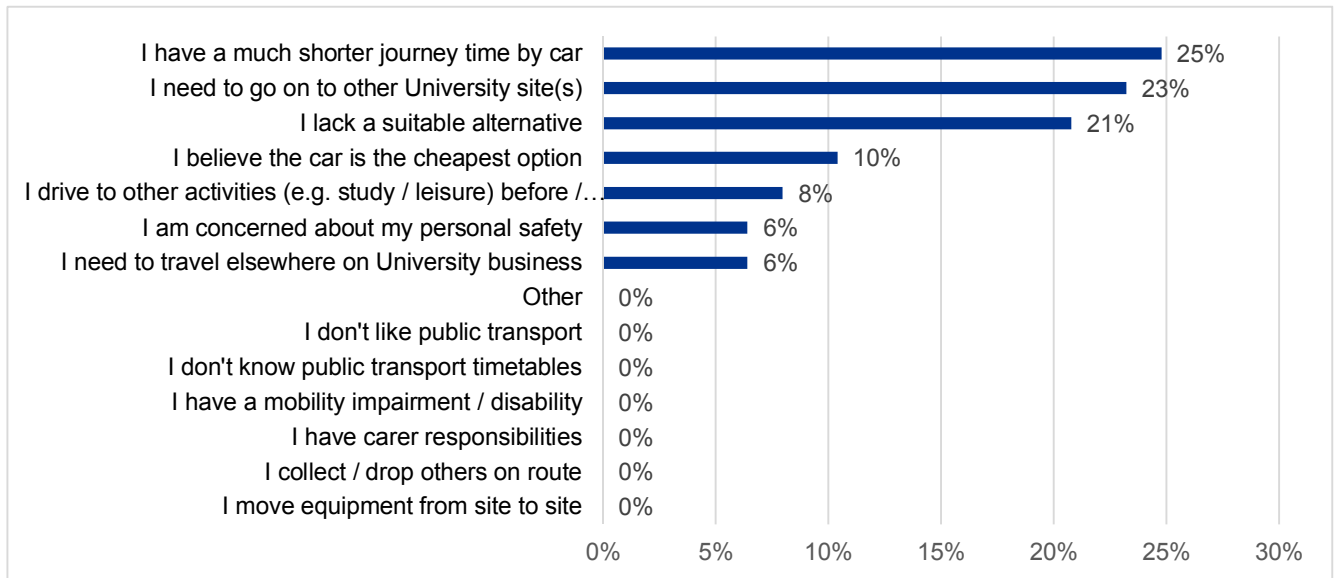
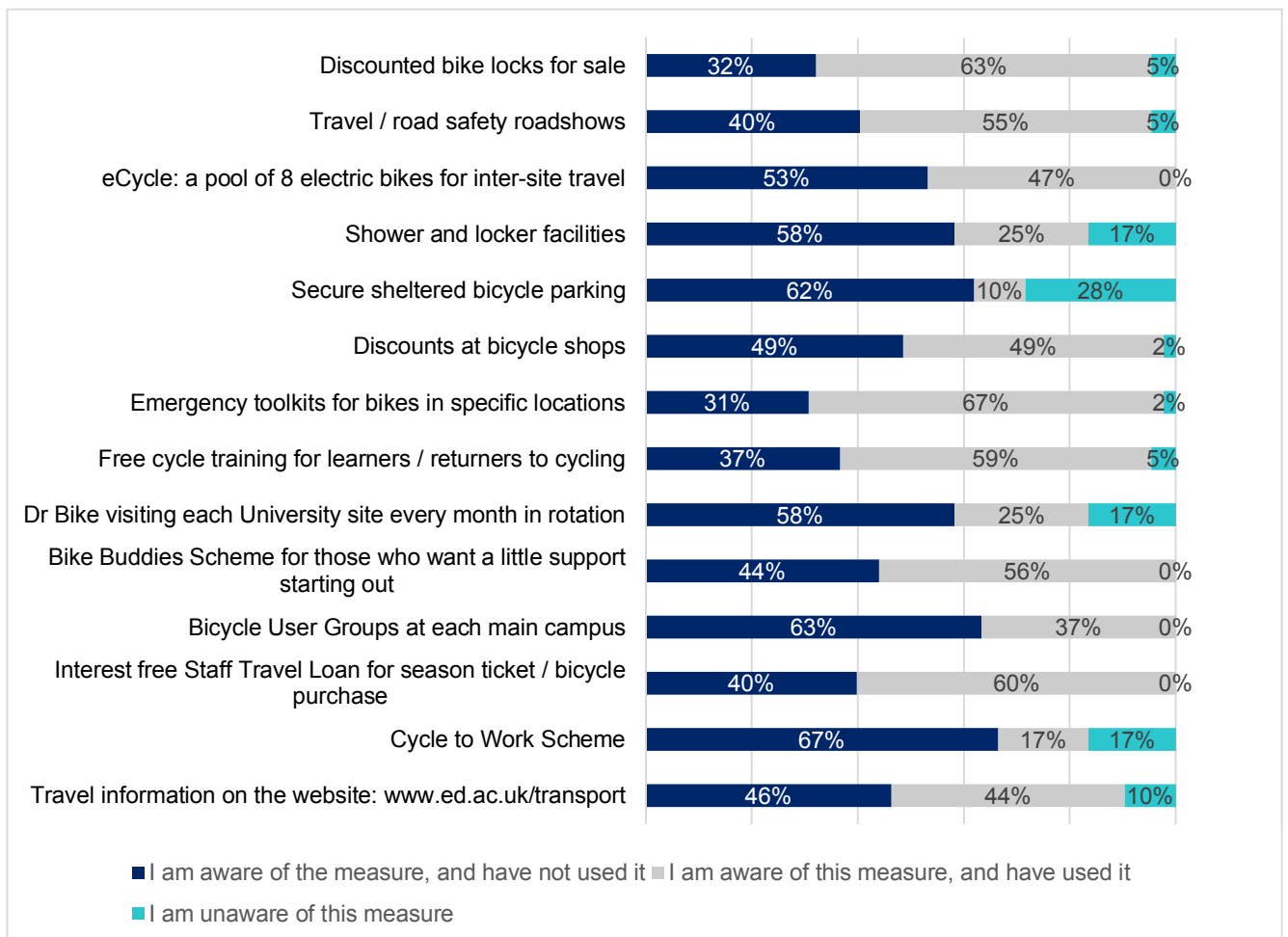


Figure 8-7: Royal Edinburgh Hospital - Staff: Are you aware of the following sustainable transport initiatives available from the University?



The key findings are as follows:

- The main reason for staff preferring to drive is because journey times are quickest (25%), with the second reason being the need to travel to other University sites; and
- It is clear that a significant number of staff are aware of the many transport initiatives, notably the cycle to work scheme and Dr Bike; however, they have not used them. The most used initiative is the Emergency Bike Toolkits in specific locations.

8.3.6 Royal Edinburgh Hospital – Public Bus

Public Bus Hours of Operation

Staff and students were asked about their satisfaction with public bus service hours of operation at the Royal Edinburgh Hospital. As can be seen below, satisfaction levels are again high.

Of those students who are dissatisfied, almost 50% responded that services are not frequent enough, followed by services not operating late enough into the evening. Note that only 2 staff responses were dissatisfied with the hours of bus operation and so the results should be treated with caution.

Table 8-1: Easter Bush - Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

Staff / Student	Yes	No
Staff	87%	13%
Students	86%	14%

Figure 8-8: Royal Edinburgh Hospital - Staff: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?

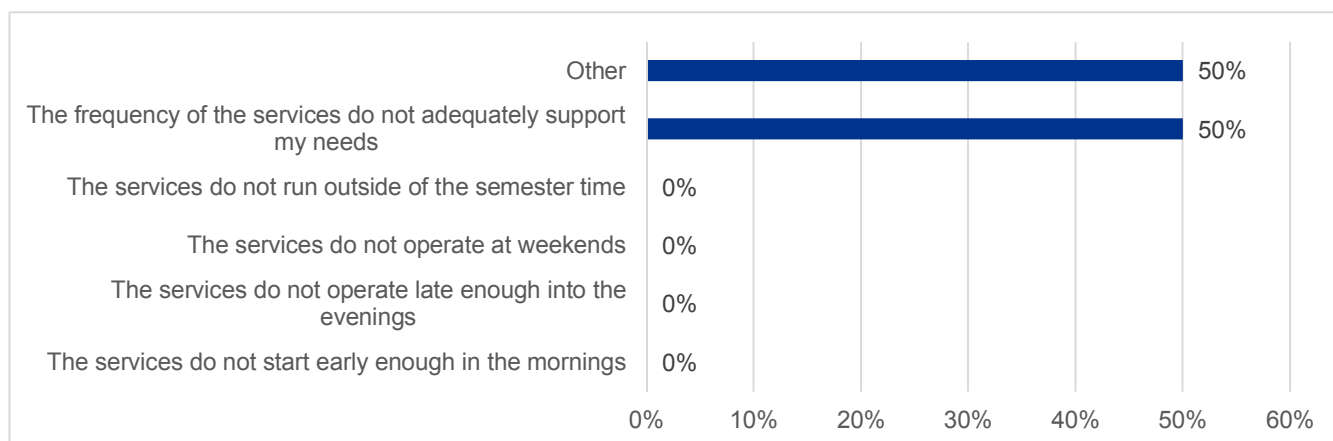
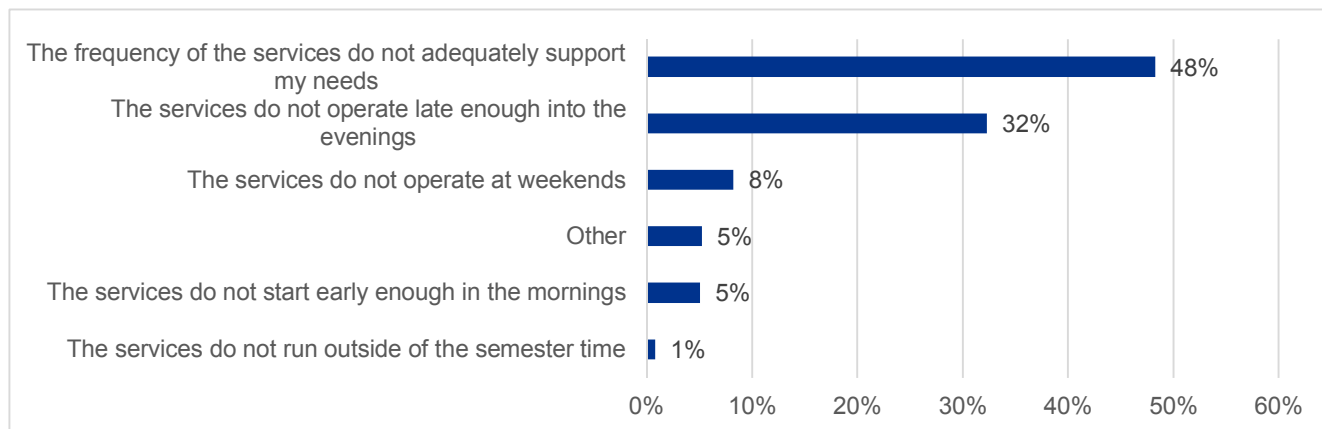


Figure 8-9: Royal Edinburgh Hospital - Students: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Public Bus Satisfaction

Public Bus service satisfaction for staff travelling to Royal Edinburgh Hospital is very high, with 4 of the 6 categories achieving high 'Very Good' scores. Similarly, to the Western General Hospital, staff find the affordability of services either 'Good' or 'Very Good', achieving a satisfaction level of 76% - this exceeds the ITP 75% target. Also exceeding the ITP target is Reliability; 80% of staff feel bus services have 'Good' or 'Very Good' reliability.

Students in general think that services are 'Good', though none of the categories exceed the 75% satisfaction ITP target. Affordability scores poorly (49% either 'Poor' or 'Very Poor'); however, Timetable, Reliability and Hours of Operation score 58%, 55% and 69% respectively across 'Good' or 'Very Good' satisfaction levels.

Figure 8-10: Royal Edinburgh Hospital – Staff Public Bus Satisfaction

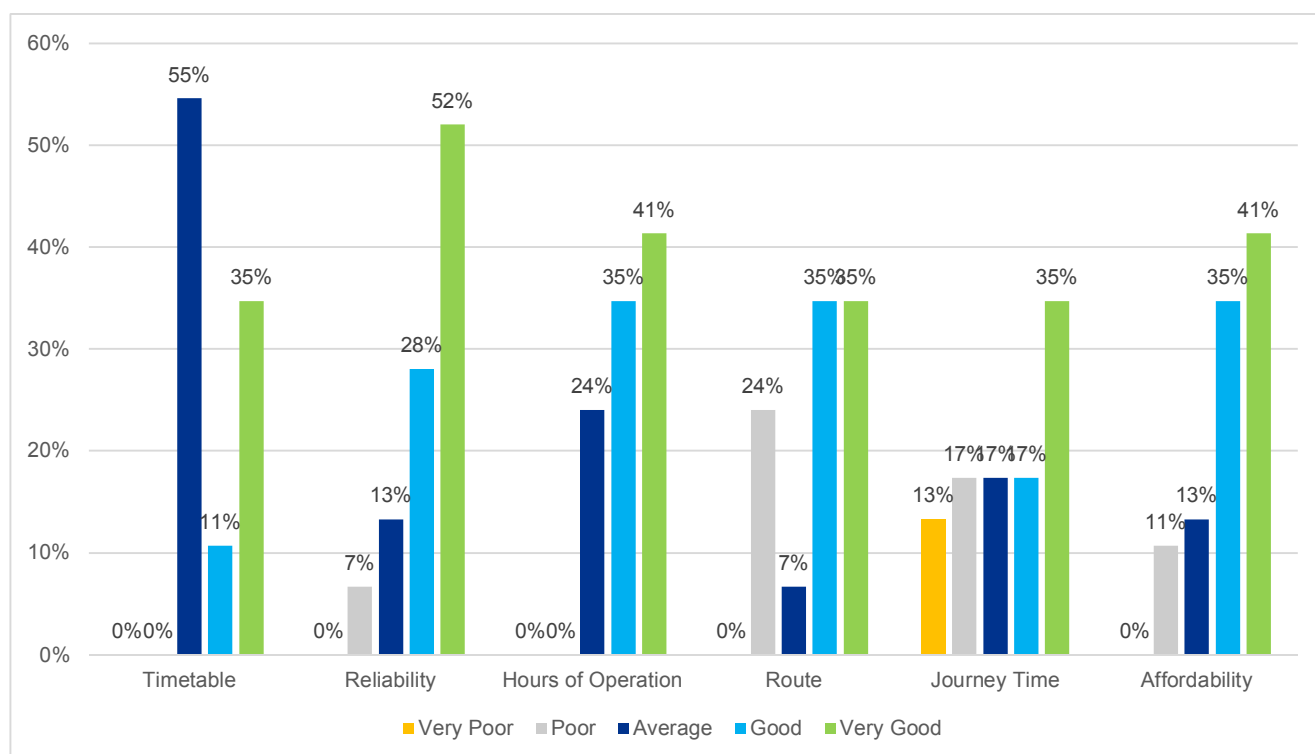
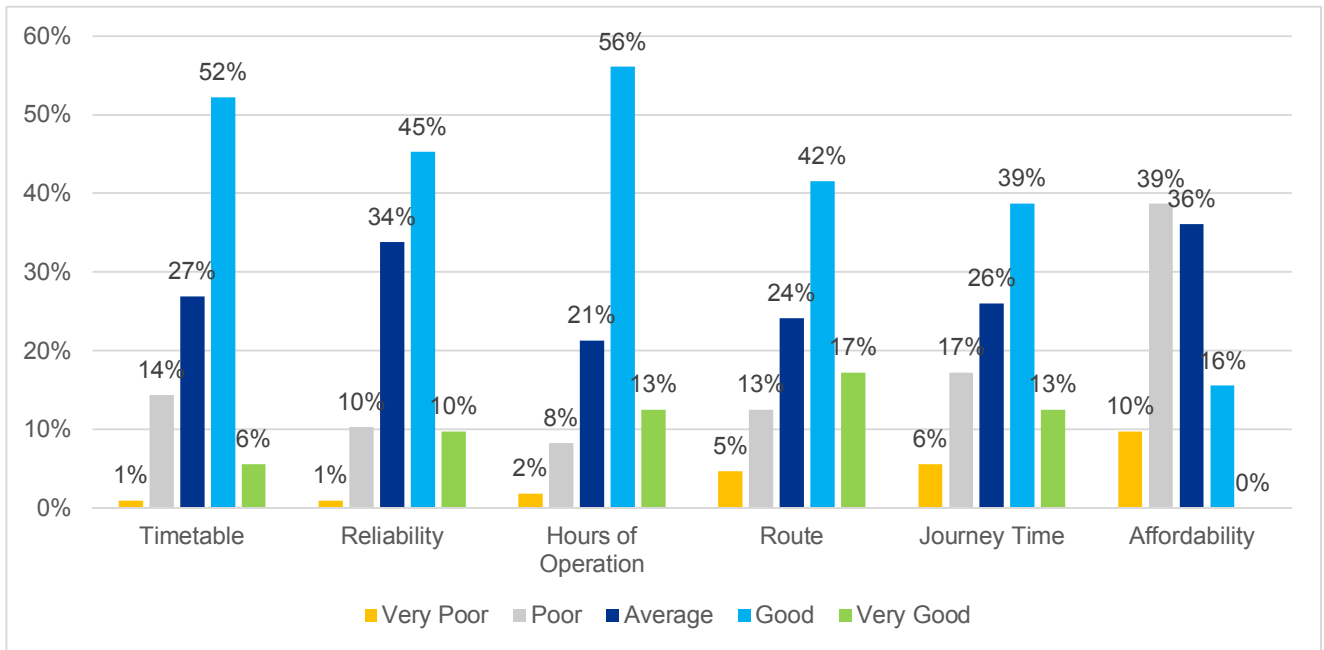


Figure 8-11: Royal Edinburgh Hospital – Student Public Bus Satisfaction



9. Edinburgh College of Art

9.1 Introduction

83 staff and 137 students responded to the 2017 travel survey, equating to a response rate of 65% and 10% respectively.

9.2 Mode Share

A summary of the overall, staff and student 2017 mode share at the College of Art is presented in Figure 9-1 to Figure 9-3 below.

Figure 9-1: Edinburgh College of Art - Overall Mode Share (2017)

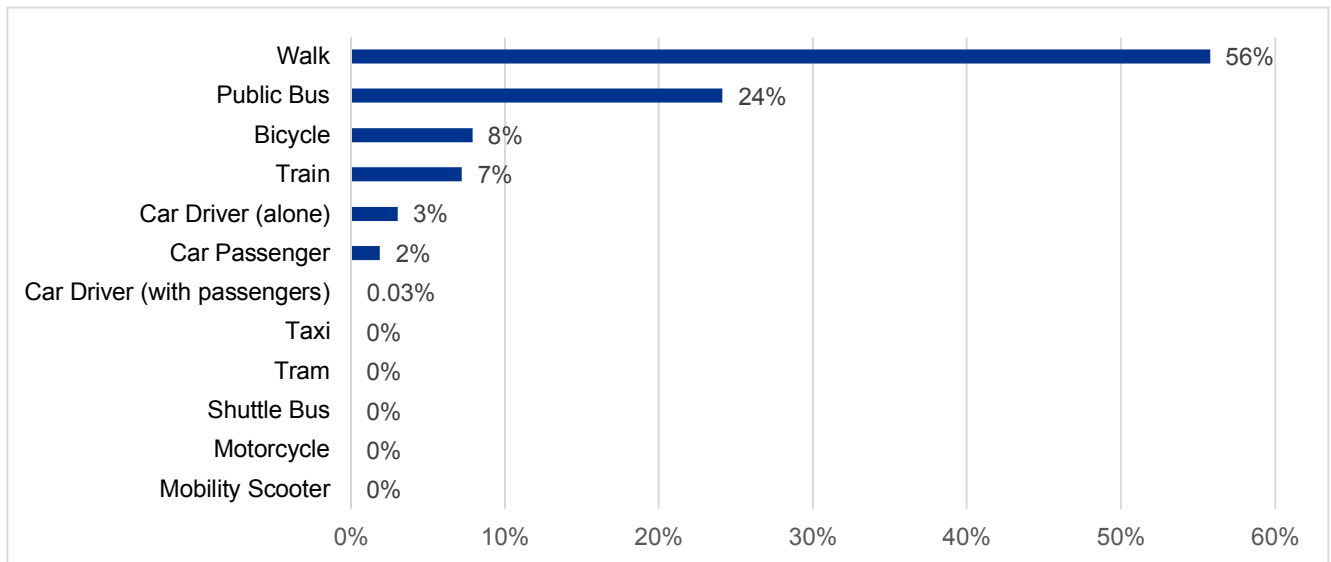


Figure 9-2: Edinburgh College of Art - Staff Mode Share (2017)

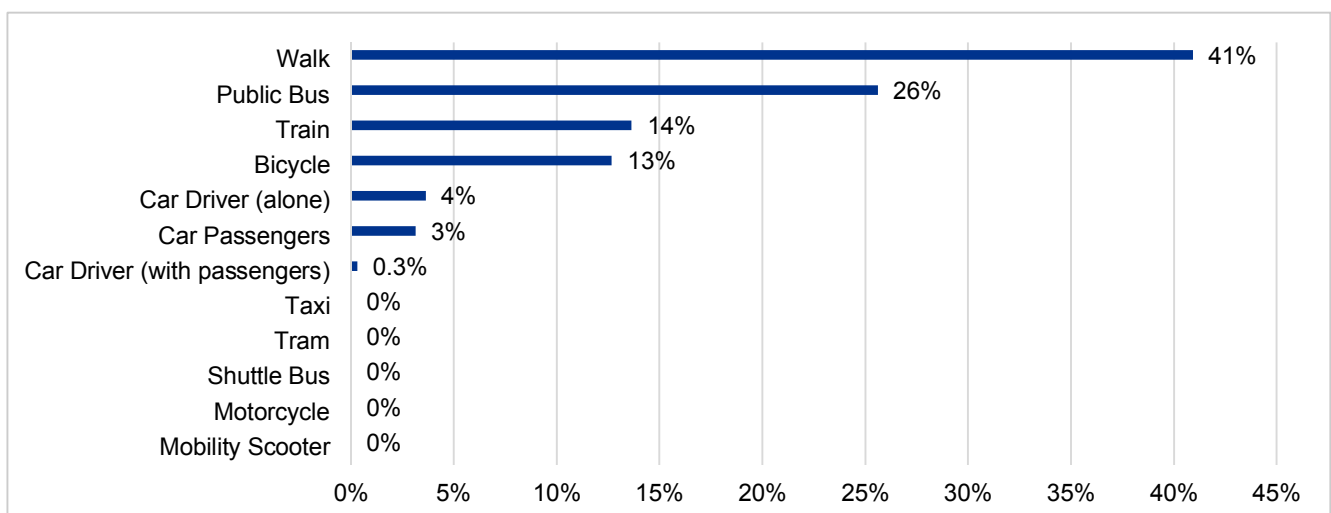
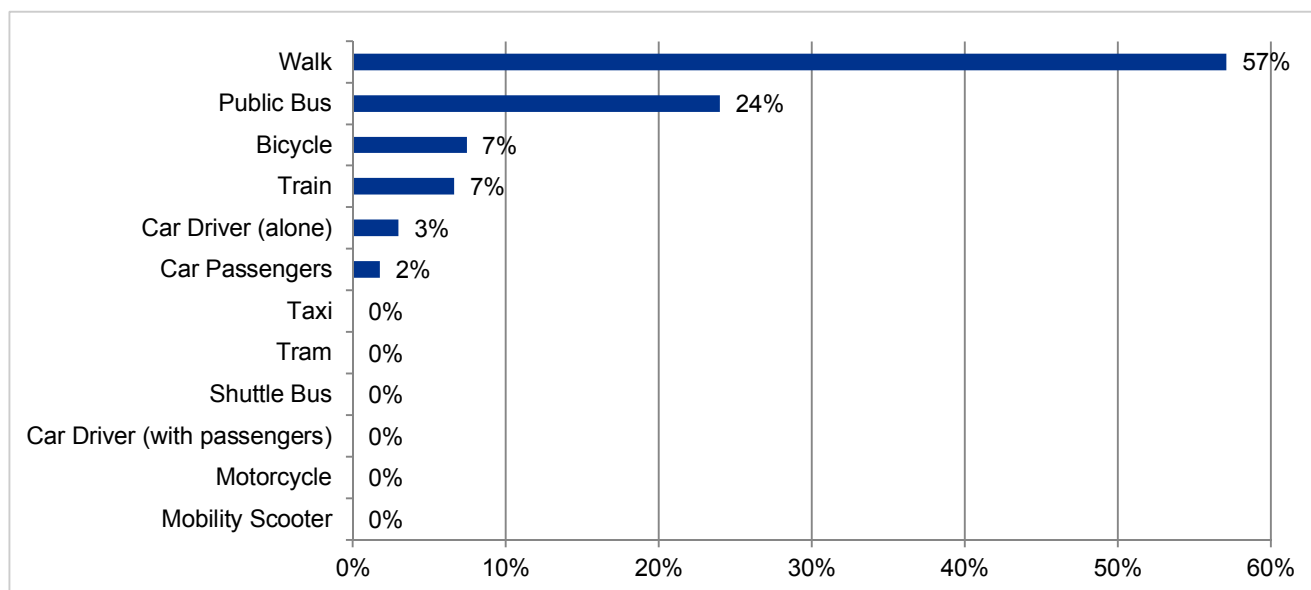


Figure 9-3: Edinburgh College of Art - Student Mode Share (2017)



9.3 Key Findings

9.3.1 Overall

There has been an increase in the number of staff and students travelling by public bus to the Edinburgh College of Art. Conversely, there have been slight decreases in the walking, cycling and train mode shares. ITP targets are achieved for walking and car driver mode shares; however, there is a 7% shortfall in achieving the cycling. There are a relatively small number of respondents from this location and so the result summarised below should be treated with caution.

9.3.2 Staff

- Walking remains the most popular mode of travel to the College of Art by staff, accounting for 41% of the total share. This has increased by approximately 3% since 2016 and significantly exceeds the ITP walking target for staff;
- Public Bus usage remains at similar levels to 2016, with a 26% share;
- Cycling mode share has decreased by 3% since 2016, accounting for 13% of the total. This is now below the 15% ITP cycle target for staff;
- Train has increased by 1% since 2016, representing a 14% share;
- At 7%, car-based travel is significantly within the 29% ITP maximum target; travel is composed as follows:
 - Single occupancy driver share has increased by 1%, representing 4% of usual journeys;
 - Car drivers (with passengers) has decreased slightly, representing less than 1% of all trips to the College of art; and
 - Car Passengers remain at 3% of the total mode share.

9.3.3 Students

- Walking is the most popular student mode of travel to the Edinburgh College of Art, accounting for a 50% share. Nevertheless, this is 4% lower compared to the 2016 survey results and 10% short of the ITP student mode share target;
- Public Bus travel has increased by 5% since 2016, now representing 24% of the total;

- Cycling accounts for 7% of all student travel, a decrease of 3% since 2016 and 8% below the ITP target;
- Train travel has also decreased by 1% to 7% compared to 2016 levels;
- Student car-based modes of travel to Edinburgh College of Art have increased slightly. Both single car occupancy and car drivers with passengers have increased by 1%, representing 3% and 2% travel shares, respectively. Car passengers remain at 0% of the total.

9.3.4 Edinburgh College of Art - Active Travel

There has been a reduction in the number of students walking and cycling to the Edinburgh College of Art. Students were therefore asked what might encourage increased take up of these active modes. Results are summarised in Figure 9-4 and Figure 9-5.

Figure 9-4: Edinburgh College of Art - Students: What would encourage you to walk to the University?

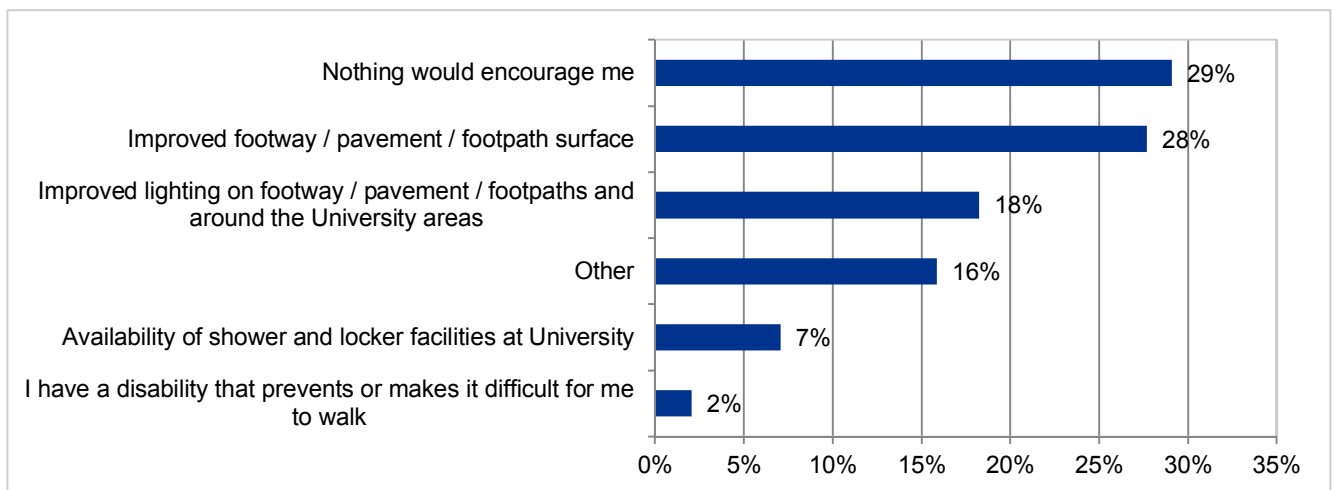
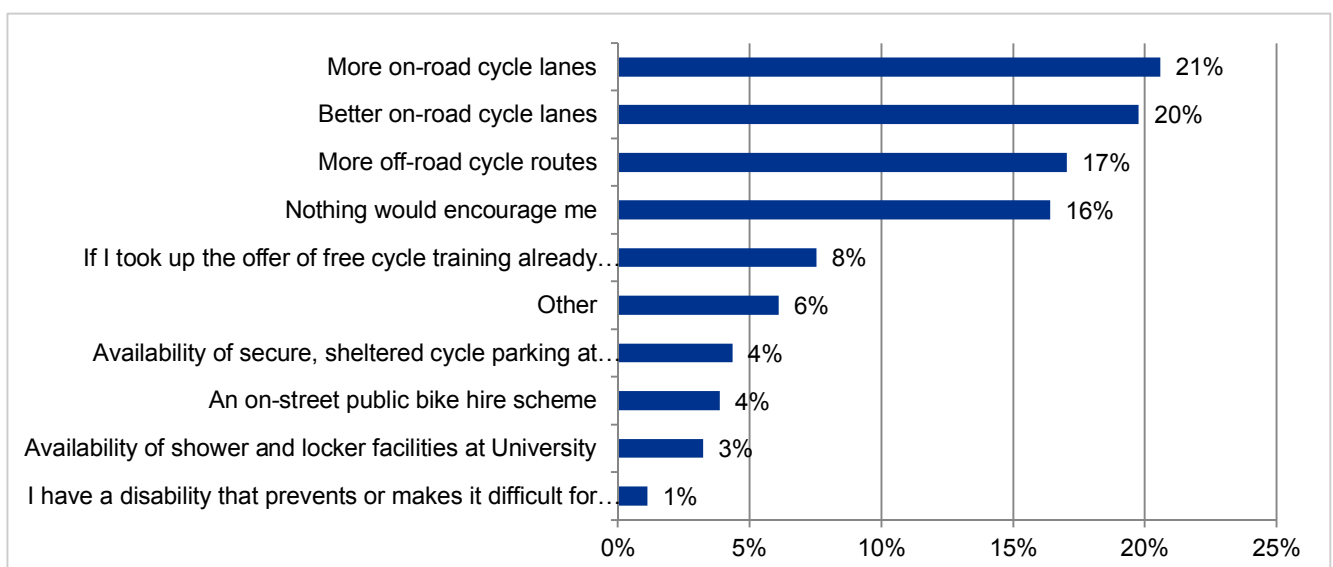


Figure 9-5: Edinburgh College of Art - Students: What would encourage you to cycle to the University?



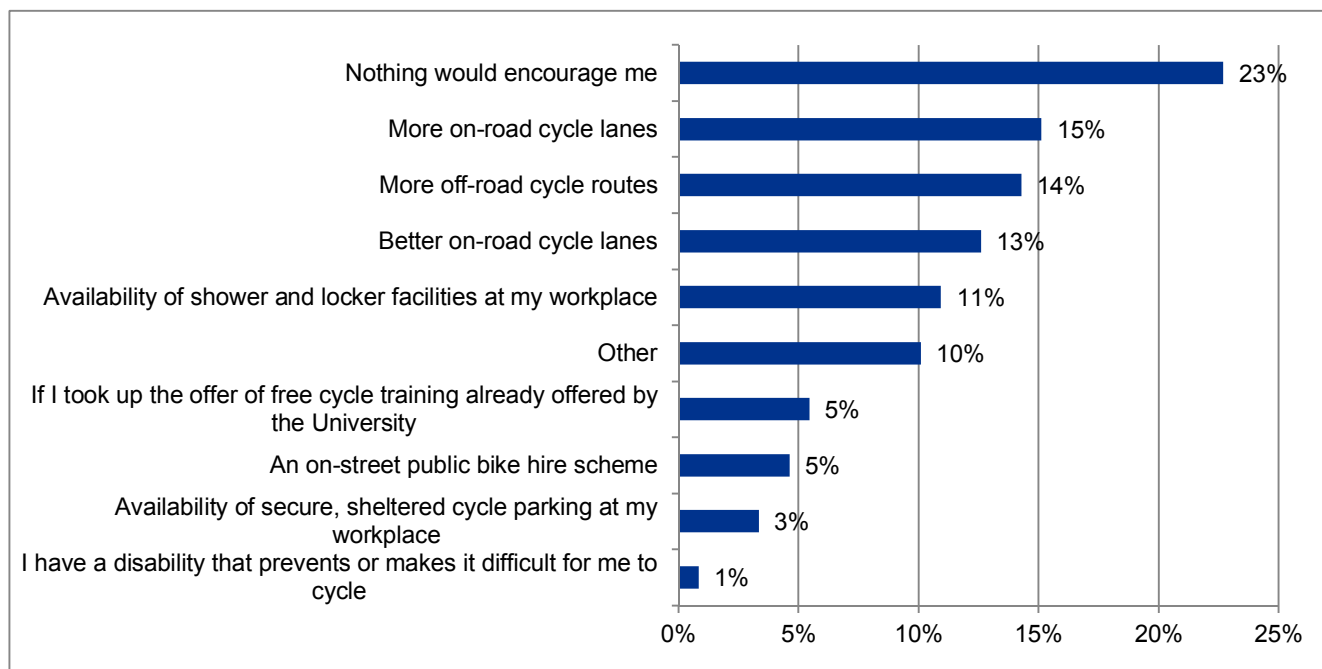
The key findings are:

- Students are more likely to ride a bike to the University if there were more on and off road cycle lanes, and if the quality of cycle lanes was improved; and

- Students are more likely to walk to the University with improved footway surfacing and better lighting on pavements, footways and around University buildings.

Staff were less likely to be encouraged to cycle more frequently to the University with 23% answering that nothing would encourage them. Of the remainder, the main way they could be encouraged is if there were more and improved on/off road cycle lanes.

Figure 9-6: Edinburgh College of Art - Staff: What would encourage you to cycle to the University?



9.3.5 Edinburgh College of Art – Public Bus

Public Bus Hours of Operation

Staff and students were asked about their satisfaction of public bus service hours of operation at Edinburgh College of Art. Satisfaction levels are high, particularly amongst staff.

Of those students who are dissatisfied, almost 50% responded that services are not frequent enough, followed by services not operating late into the evening. Only 3 staff responded as dissatisfied and so results must be treated with caution. Concerns were that the frequency does not support their needs and that services do not operate sufficiently late into the evening.

Table 9-1: Edinburgh College of Art - Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

Staff / Student	Yes	No
Staff	94%	6%
Students	83%	17%

Figure 9-7: Edinburgh College of Art - Staff: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?

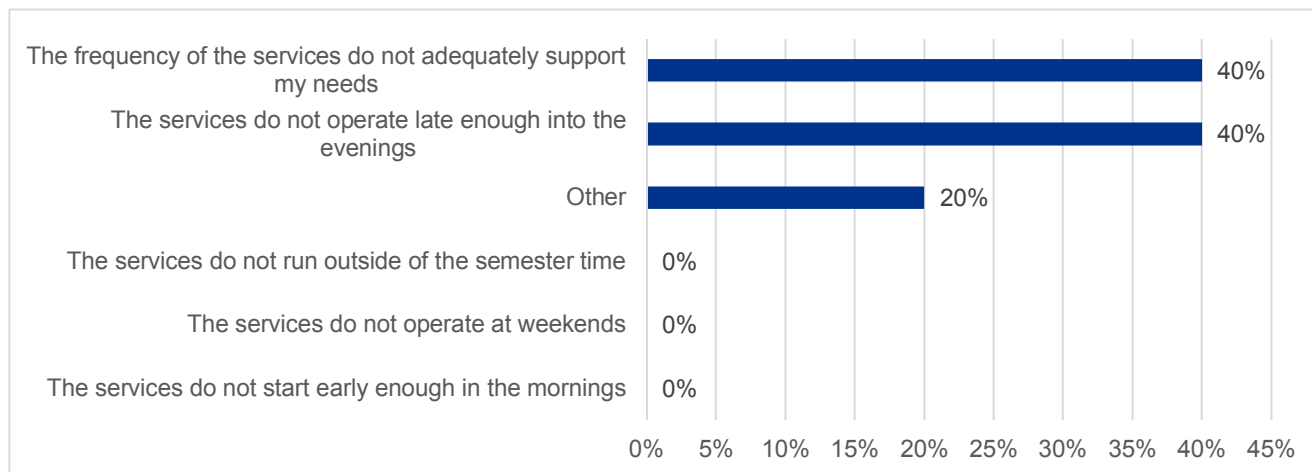
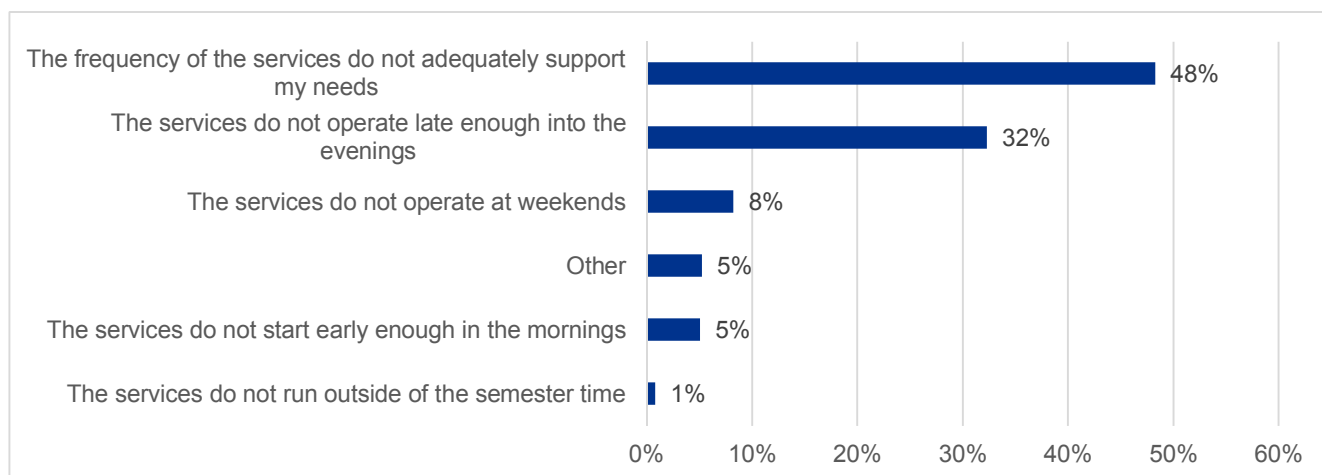


Figure 9-8: Edinburgh College of Art - Students: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Public Bus Satisfaction

Staff satisfaction levels at Edinburgh College of Art are particularly high, with 3 categories exceeding the ITP 75% 'Good' to 'excellent' target - Timetable, 80%; Reliability, 85%; Route, 77%. The number of 'Poor' or 'Very Poor' responses was extremely low, except for a 4% Poor / Very Poor score for Journey Time and a 10% Poor score for Affordability.

Students, did not score as highly as staff, with the highest satisfaction rate ('Good' and 'Very Good') attributable to the Routes provided, just short of the ITP 'Good' to 'excellent' public bus satisfaction target at 74%. Affordability was the lowest scoring category, with only 48% 'Good' or Very Good' satisfaction levels.

Figure 9-9: Edinburgh College of Art – Staff Public Bus Satisfaction

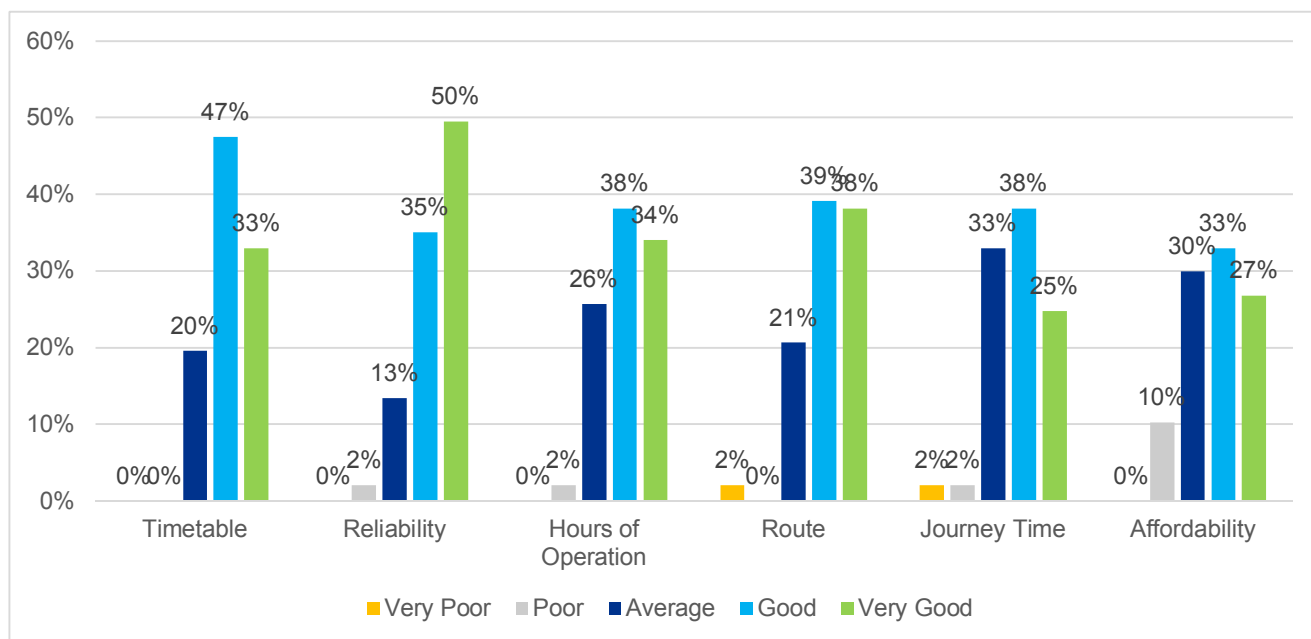
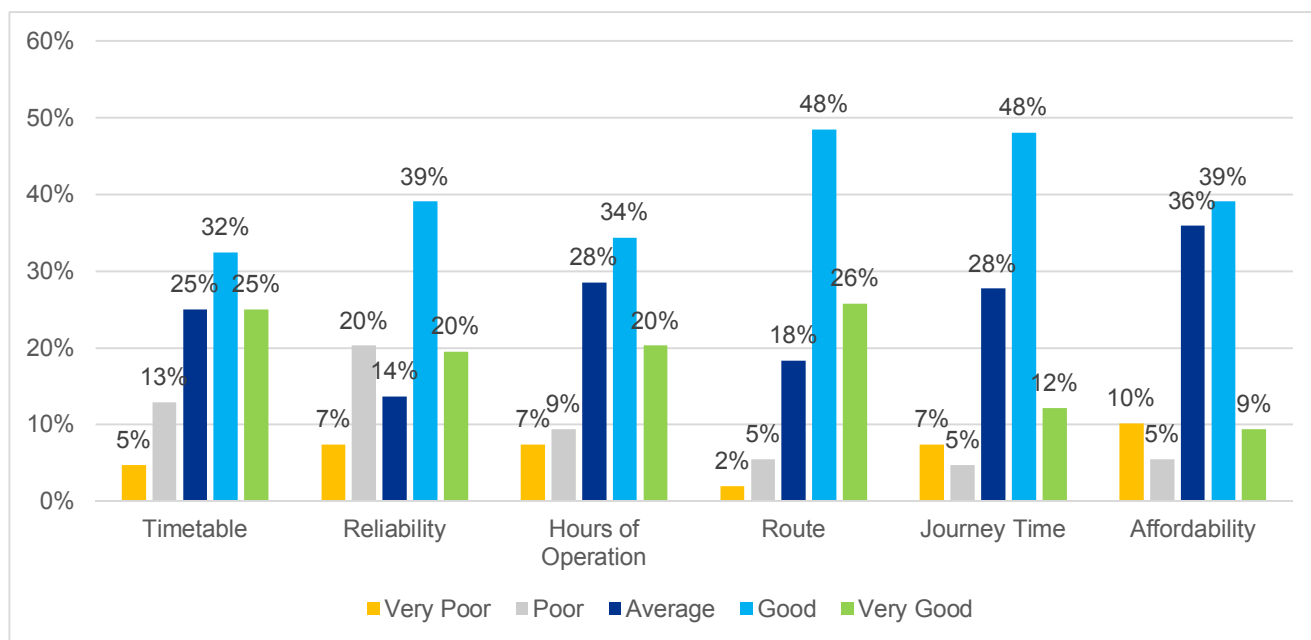


Figure 9-10: Edinburgh College of Art – Student Public Bus Satisfaction

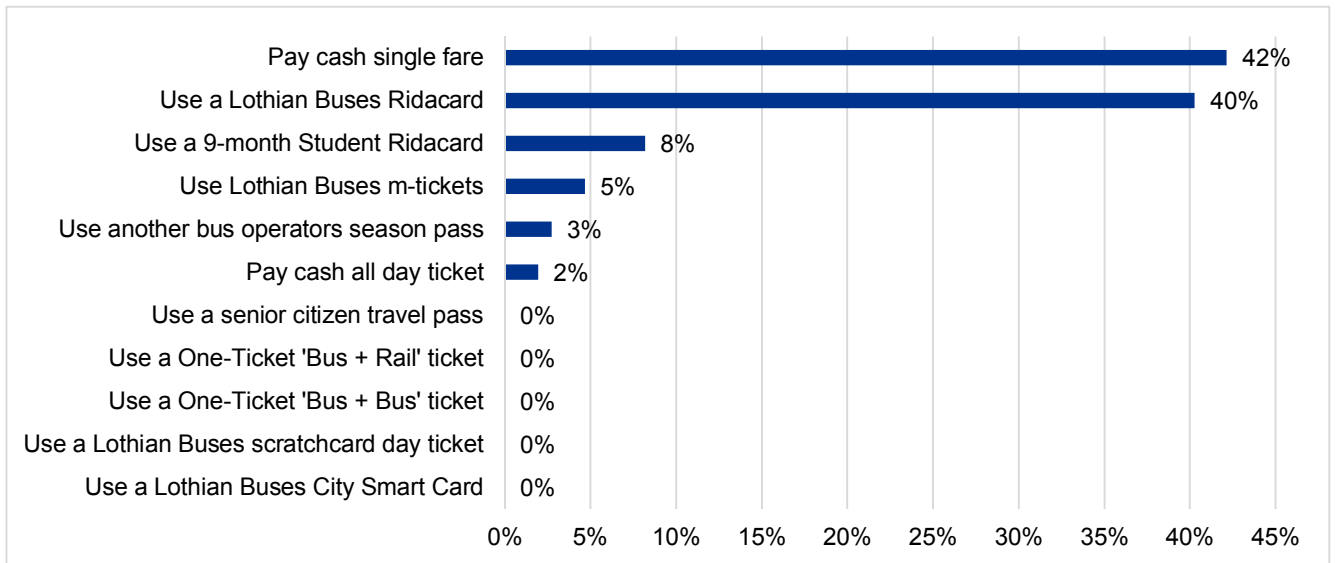


Ridacard

The proportion of students using Ridacard compared single cash fares is much closer in comparison with other campuses.

Approximately 44% of students purchase cash tickets, with 42% purchasing single fares and 2% purchasing all day tickets. Of Ridacard holders, 8% have purchased the student 9-month ticket, and 40% have purchased other types of Ridacard. Lothian Buses m-tickets account for 5% of the total; other operator passes account for 2%, as shown in Figure 9-1.

Figure 9-11: Edinburgh College of Art – Students: How do you pay for travel on public bus services?



10. Pollock Halls

10.1 Introduction

124 staff responded to the 2017 travel survey, equating to a response rate of 23%. In terms of students, 238 student respondents indicated they lived in Pollock Halls. No other student information, other than Mode Share, is presented in this section as their travel is captured in the survey results of the other main campus locations.

10.2 Mode Share

A summary of the 2017 mode share for staff and students at Pollock Halls is presented in Figure 10-1 and Figure 10-2 below.

Figure 10-1: Pollock Halls - Staff Mode Share (2017)

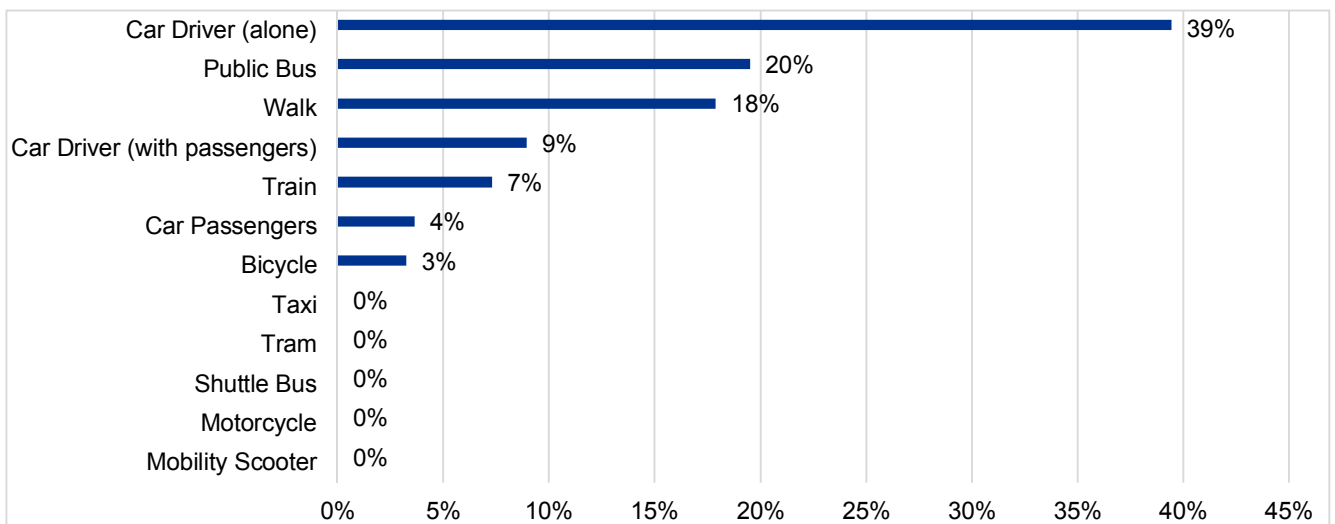
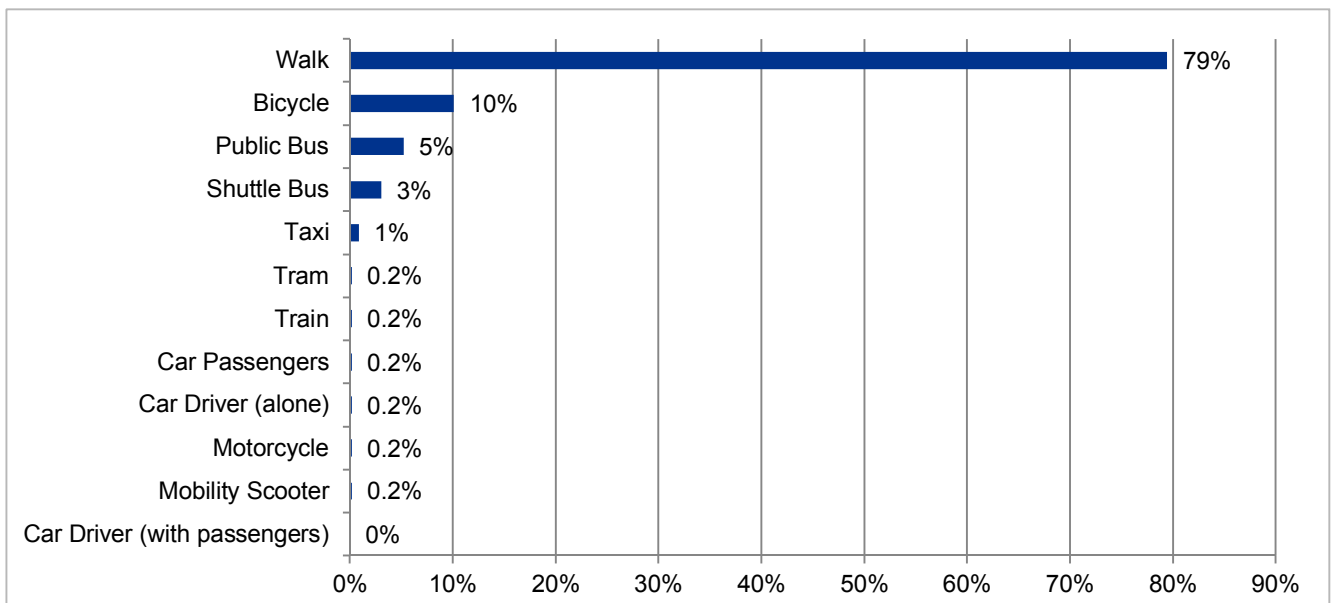


Figure 10-2: Pollock Halls - Student Mode Share (2017)



10.3 Key Findings

10.3.1 Staff

- Pollock Halls has seen an increase in car-based travel, as follows:
 - Single occupancy staff car travel has increased from a 33% share in 2016 to a 39% share in 2017;
 - There has been an increase in car journey sharing modes - car drivers with passengers now represent 9% of the mode share (up 1%); and while in 2016 there were no records of staff travelling as car passengers, in 2017 there are 4% of staff travelling to Pollock Halls as a car passenger;
 - Pollock Halls is the only University site which is not achieving the ITP maximum car mode share target of 29%.
- Public bus usage has declined by 9% since 2016 to 20% of the total share;
- Walking has decreased by 1% since 2016, and falls short of the ITP target;
- Cycling share has decreased by 5%, now representing 3%, well below the 15% ITP cycling target.

10.3.2 Students

- Students are still most likely to walk to University from Pollock Halls, with the mode share increasing by 9% to 79% in 2017; this significantly exceeds the ITP walking target;
- There has been a 1% decrease in cycling since 2016, now representing 10% of the student mode share – and short of the 15% ITP cycling target;
- Public Bus usage has also decreased from 13% in 2016 to 5% in 2017 – a reduction of 8%;
- Shuttle Bus usage has decreased by 2%.

10.3.3 Pollock Halls – Public Bus

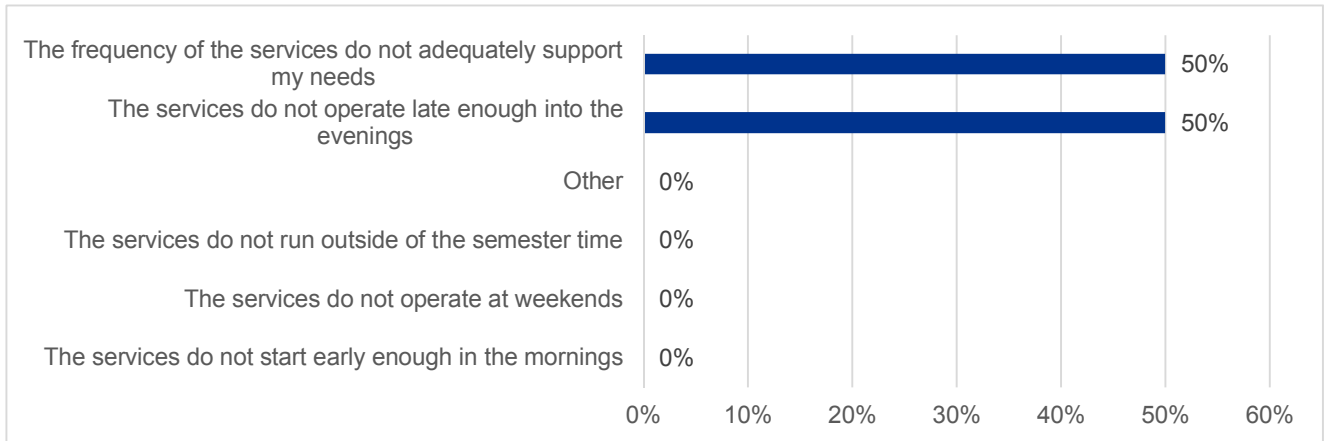
Public Bus Hours of Operation

Staff were asked about their satisfaction with public bus service hours of operation at Pollock Halls. Satisfaction levels are very high, with 94% agreeing that the hours of operation do support their needs. Only 2 staff responded that they were dissatisfied with services either not supporting their needs or not operating late enough into the evening.

Table 10-1: Edinburgh College of Art - Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

	Yes	No
Staff	94%	6%

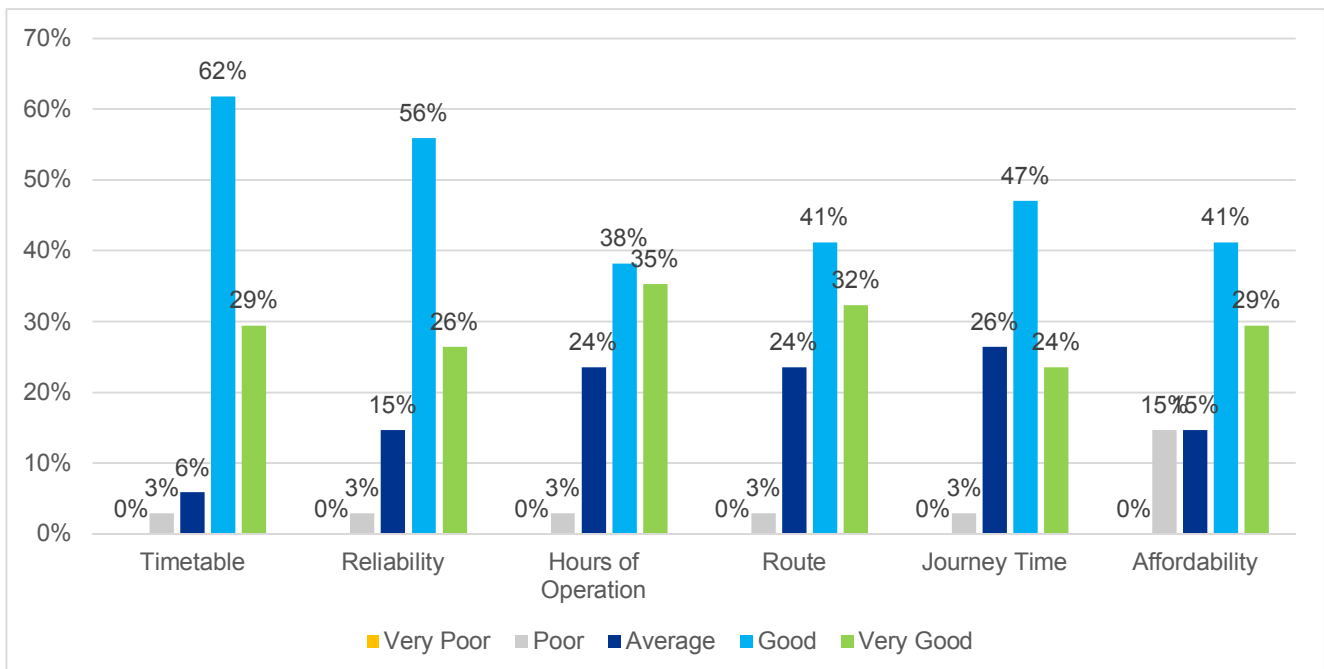
Figure 10-3: Edinburgh College of Art - Staff: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Public Bus Satisfaction

Staff satisfaction levels of public bus services are generally very high, with Timetable (91%) and Reliability (82%) above the 75% ITP satisfaction target. Hours of Operation, Route and Journey Time also scored well, however just below the ITP target. Affordability scored the highest 'Poor' rating, at 15%; no category scored as 'Very Poor'.

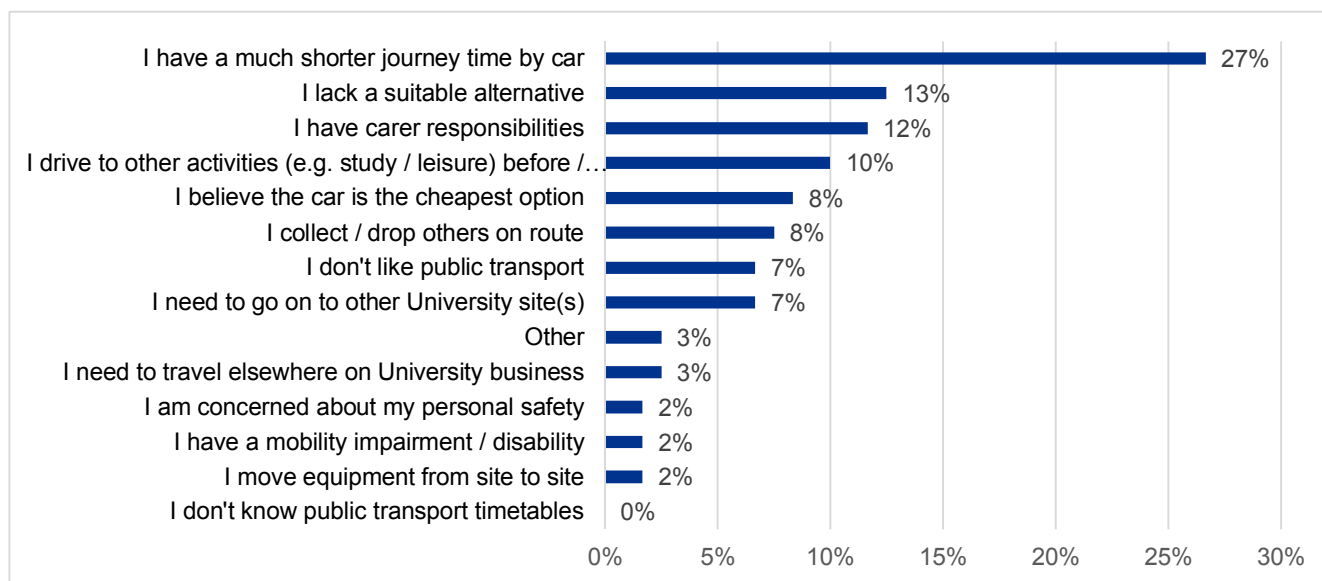
Figure 10-4: Pollock Halls – Staff Public Bus Satisfaction



10.3.4 Reasons for Driving & Awareness of Sustainable Travel Measures

This section provides results on the reasons why staff travel to Pollok Halls and what sustainable travel measures they are aware of. Figure 10-5 details the reasons why staff drive to work at Pollock Halls.

Figure 10-5: Staff - Reasons for driving to work at Pollock Halls



The main reasons why staff drive to Pollok Halls are because; it provides the quickest journey time, they lack a suitable alternative, they have caring responsibilities or are participating in other activities. It is also the most convenient mode of travel for those staff who need to travel to other university sites or collect or drop off others on route.

Pollock Halls staff were asked to identify the sustainable travel measures provided by the university that they were aware of. The key findings, summarised in Figure 10-6 are:

- **most aware of and used** are the Bike Buddies Scheme, eCycle Pool and Emergency Toolkits for Bikes.
- **most aware of and have not used** are the Cycle to Work scheme, secure sheltered bike parking, and Dr Bike visits.
- **not aware of** are the shower and locker facilities and travel information on the University's website.

Figures 10-7 and 10-8 summarise the measures that would encourage staff to walk and cycle to Pollok Halls:

- Approximately 3% to 5% would uptake walking or cycling if shower and locker facilities were provided
- Improved paths and infrastructure could also encourage staff; 21% staff would walk more if pavements and lighting were improved, 36% would cycle more if there were more cycle routes/paths and of a higher quality.

Figure 10-9 illustrates that 42% of staff would be encouraged to take public bus services if journey times were quicker (ideally, competitive or similar to the private car) and if services were more frequent.

Figure 10-10 highlights the limited use of the Tripshare Scheme. Only 3% of staff are members of the Tripshare Scheme; however, none not actively participate in it. A further 8% have considered joining the scheme. In contrast, 41% are aware of the scheme but do not wish to join it and a further 47% have not heard of the scheme.

Figure 10-11 shows that 39% of staff have heard of the Enterprise Car Club but only 1% of staff have used it. The majority of staff (60%) have not heard of the scheme.

Figure 10-6: Pollock Halls – Staff: Are you aware of the following sustainable transport initiatives available from the University?

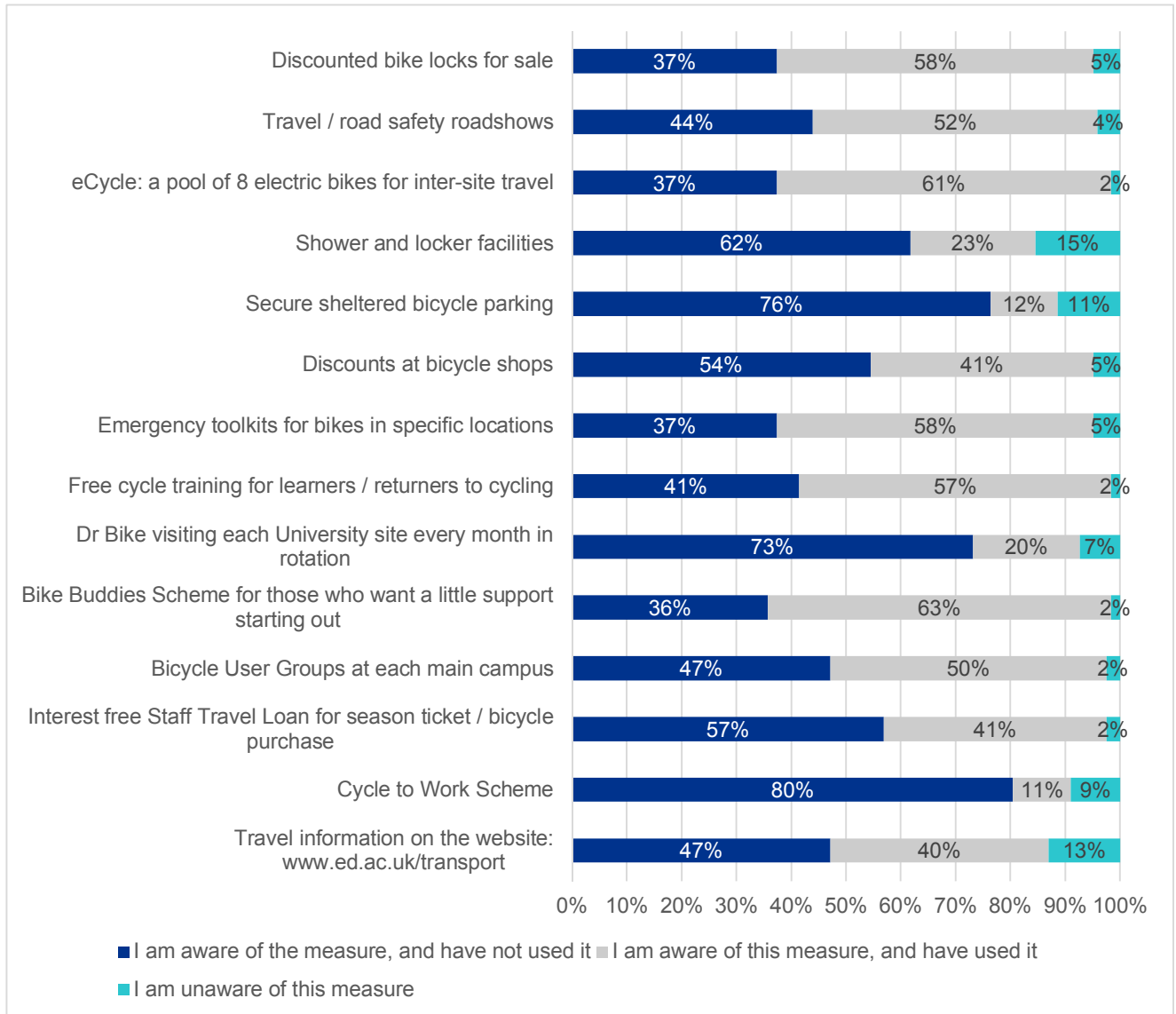


Figure 10-7: Pollock Halls - What would encourage staff to walk more regularly to Pollock Halls

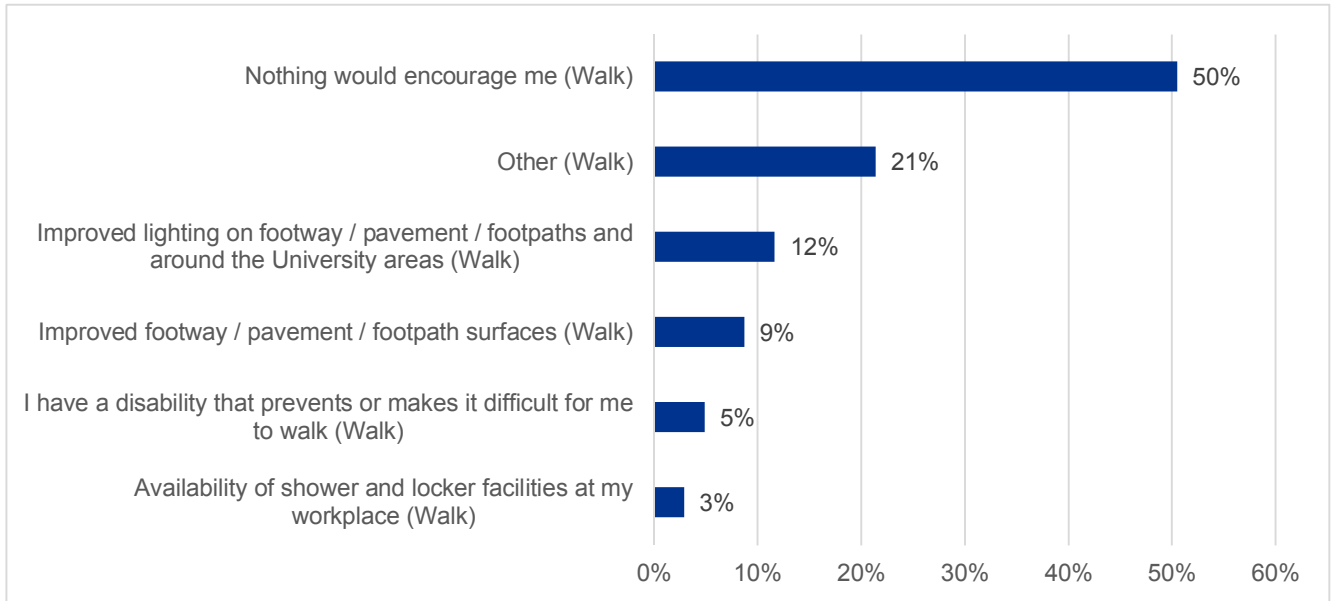


Figure 10-8: Pollock Halls - What would encourage staff to cycle more regularly to Pollock Halls

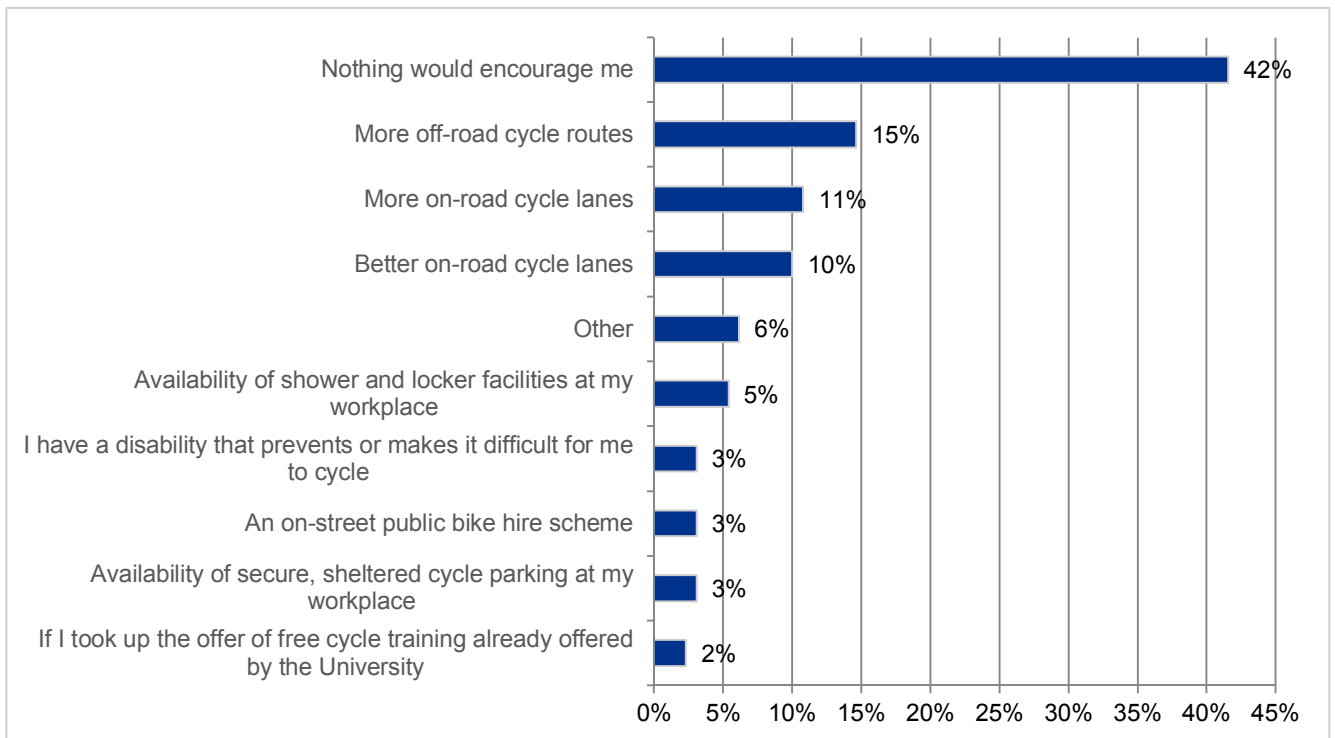


Figure 10-9: Pollock Halls - What would encourage staff to take public bus more regularly to Pollock Halls

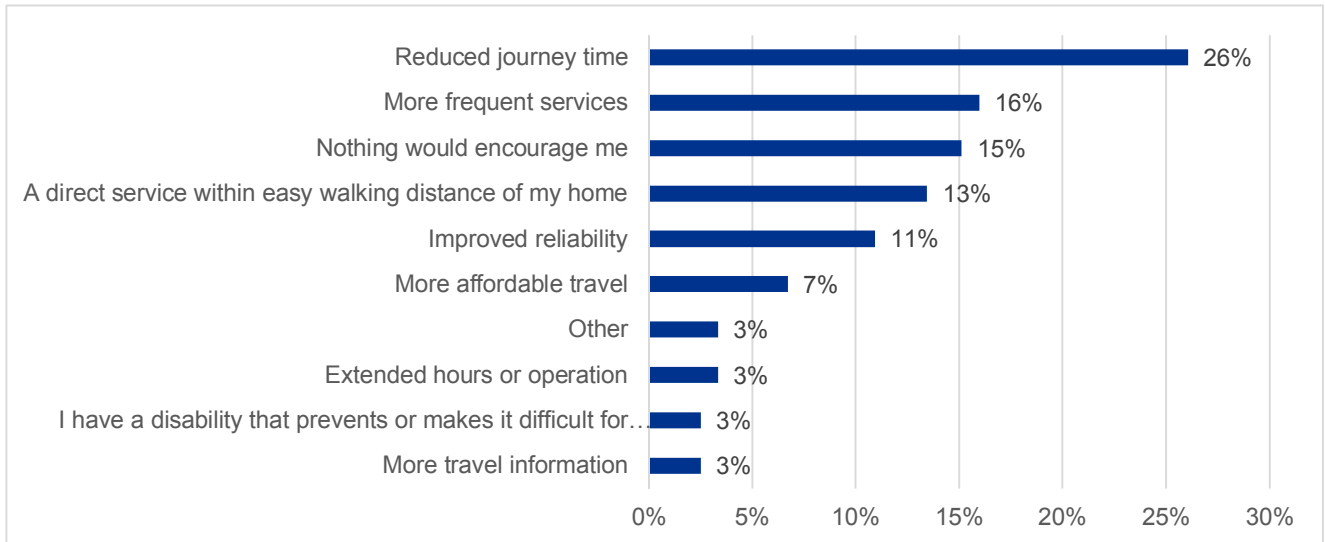


Figure 10-10: Pollock Halls - Staff Awareness of Tripshare Scheme

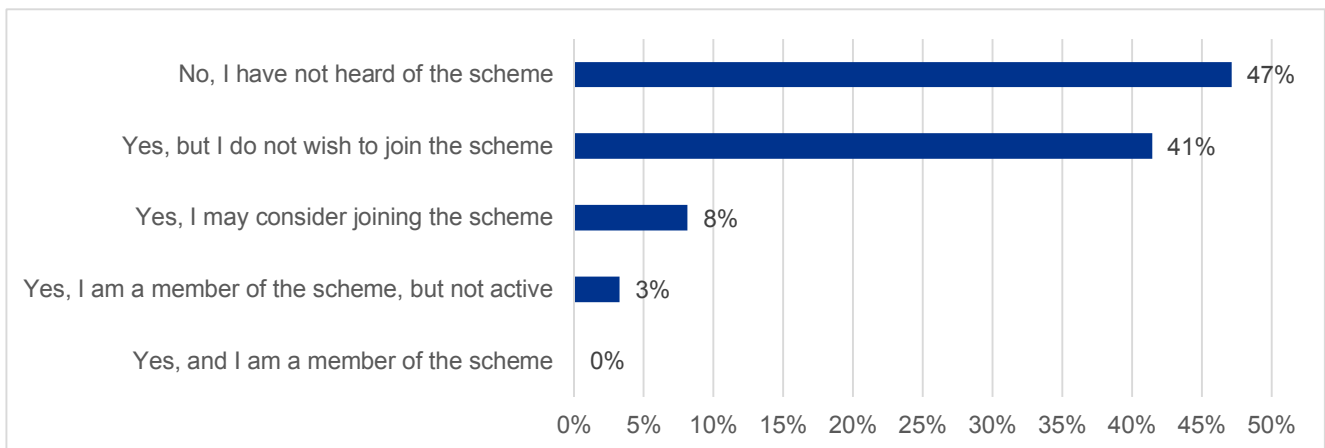
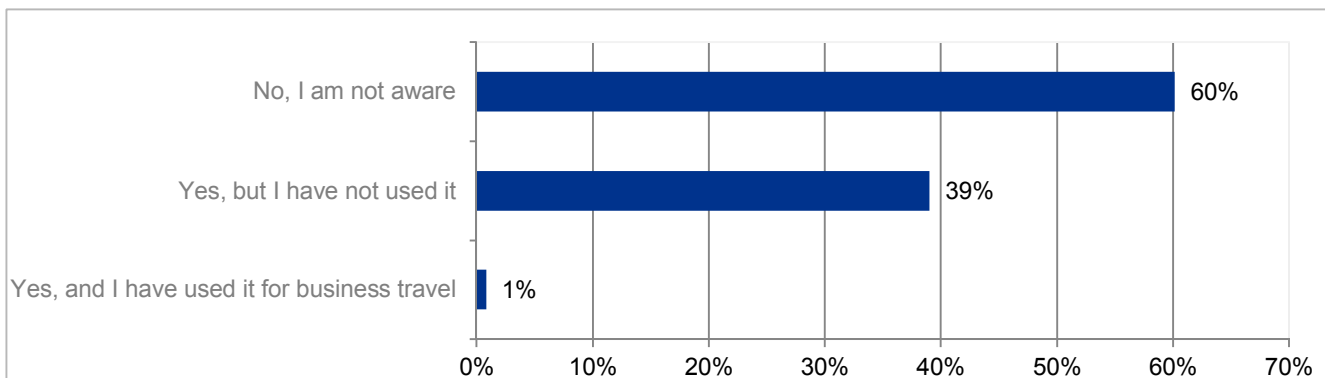


Figure 10-11: Pollock Halls - Staff Awareness of Enterprise Car Club



11. Other Sites

11.1 Introduction

This chapter summarises surveys responses from staff and students at the University's Other sites, including accommodation sites. The number of responses at these sites is low, therefore, only a high level commentary is provided.

139 staff and 84 students responded to the 2017 survey, equating to a response rate of 57% and 13% respectively. This compares with the 55 staff and 50 student responses in the 2016 survey. Again, some caution should be taken when comparing surveys, given the significant increase in staff responses in 2017.

11.2 Mode Share

The staff and student mode share in 2017 for Other sites is presented in Figure 11-1 to Figure 11-3.

Figure 11-1: Other Sites - Overall Mode Share 2017

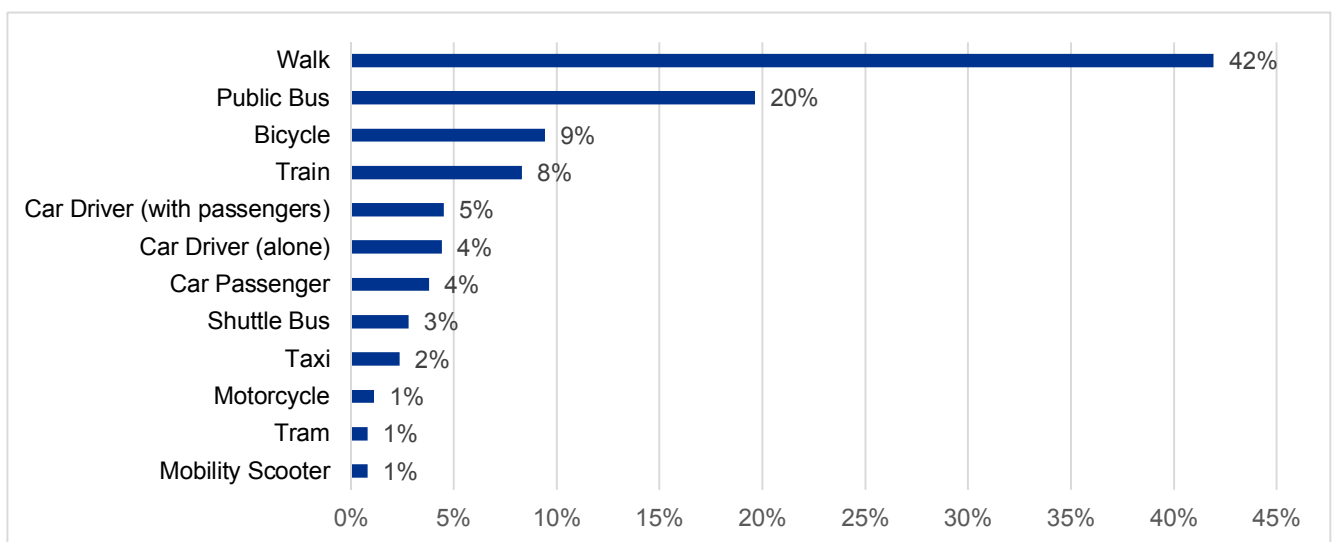


Figure 11-2: Other Sites - Staff Mode Share 2017

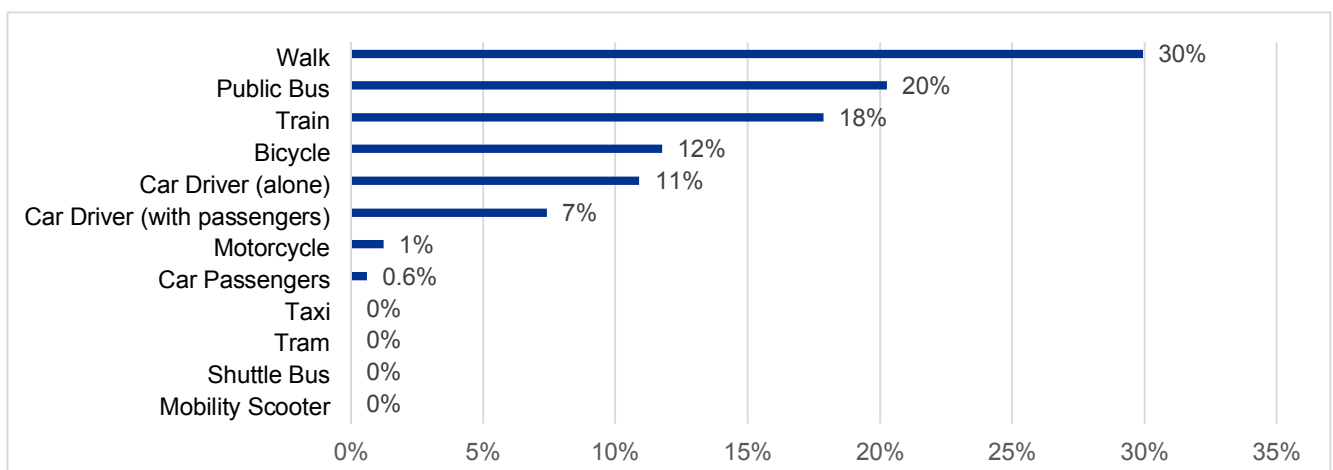
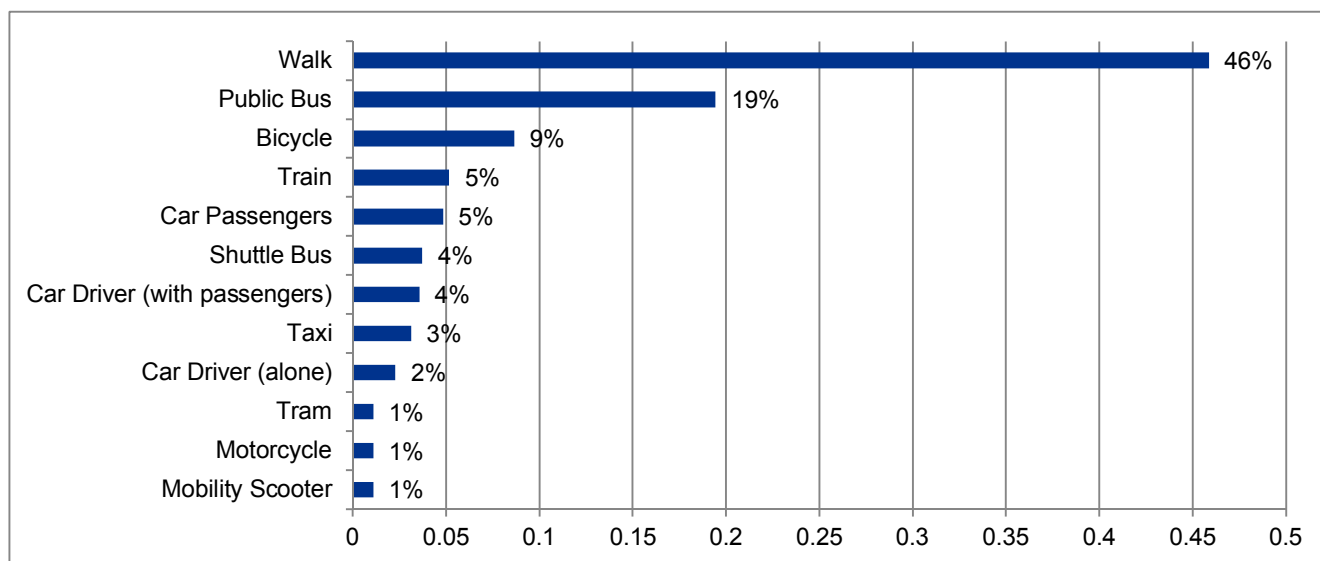


Figure 11-3: Other Sites - Student Mode Share 2017



11.3 Key Findings

11.3.1 Overall

The proportion of staff and students walking to other University sites has increased by 9%, now accounting for 46% of trips – scoring positively against the ITP walking mode share target. Public bus has decreased at the same rate (9%) since 2016. Cycling and travel by train have decreased; car-based travel and shuttle bus usage has increased.

11.3.2 Staff

There has been a significant change in the mode share composition for staff travelling to Other university sites, as follows:

- Most staff now walk to Other university sites; With a 13% increase, this represents 30% of the total share – and meets the ITP staff walking mode share target;
- Public bus usage has seen a decrease of 12%, now representing 20% of the total share;
- Staff going to Other sites by train has increased by 2%, accounting for an 18% share;
- Staff cycling to Other sites has increased by 3% since 2016, now representing 20% of the total and exceeding the ITP cycling mode share target;
- Car based travel is well within the 29% ITP car driver target, with the number of staff choosing to drive alone reducing by 3%.

11.3.3 Students

- Walking remains the highest mode share for students travelling to Other sites and has increased by 2% since 2016, now representing 46% of the total mode share;
- The public bus mode share has decreased by 8% since 2016, now accounting for a 20% share;
- The percentage of students cycling to other university sites remains at 9% - falling short of the 15% ITP cycling target;
- Shuttle bus usage has increased by 3%, now representing 4% of travel;
- Train travel to other sites has reduced by 4% since 2016, now representing a 5%;
- Car-based travel mode share since 2016 is now as follows:

- Car passengers has increased by 2%, representing 5% of the mode share;
- Car drivers (with passengers) has increased slightly by 1% to a total of 4%;
- Single occupancy car travel has also reduced slightly by 1% to a total of 2%.

11.3.4 Other Sites – Public Bus

Public Bus Hours of Operation

Staff and students were asked about their satisfaction of public bus service hours of operation. As given in Table 11-1, satisfaction levels are very high for students at 91%, and 75% for staff.

For students who are dissatisfied with provision, almost 50% responded that services are not frequent enough, followed by services not operating late into the evening. For staff, most chose ‘Other’ reasons; comments included a lack of direct bus routes, poor reliability, service frequency and services not starting early enough in the morning.

Table 11-1: BioQuarter - Do you feel that the hours of operation of the public bus services adequately support your access needs to the University?

Staff / Student	Yes	No
Staff	75%	25%
Students	91%	9%

Figure 11-4: Other Sites - Staff: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?

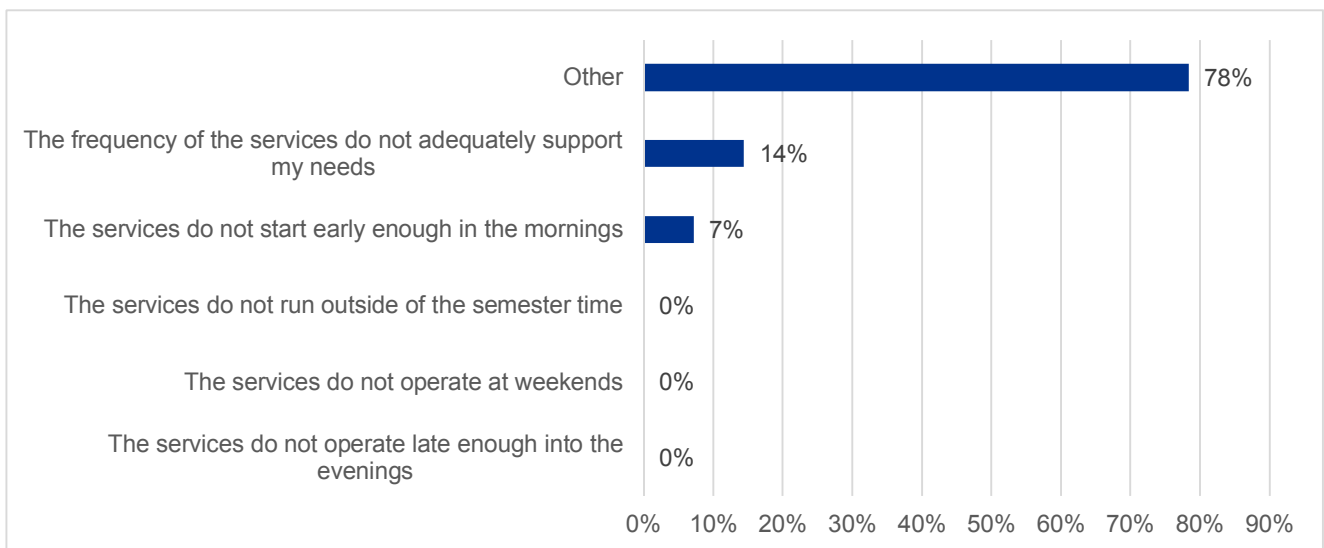
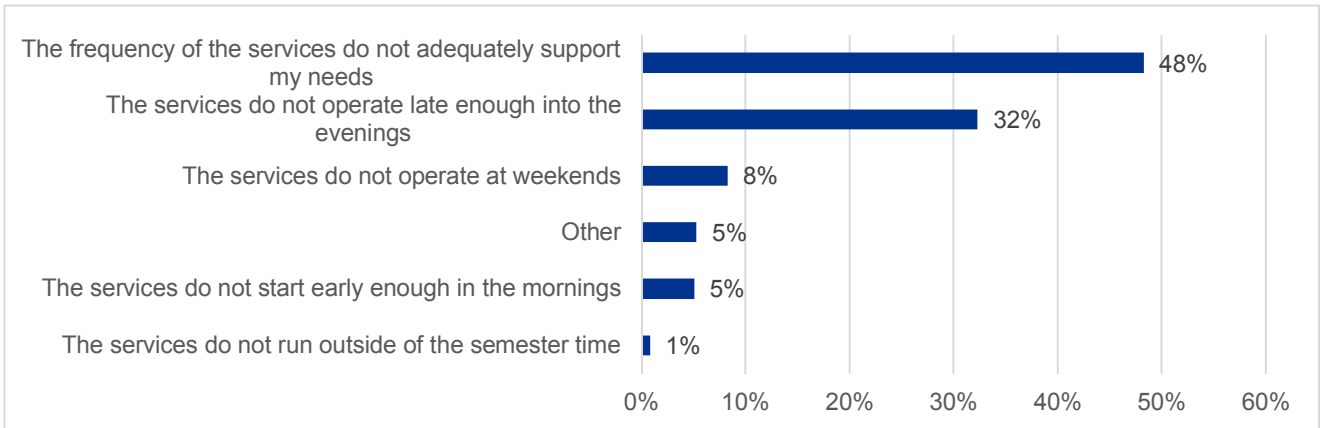


Figure 11-5: Other Sites - Student: Why do you feel that the hours of operation of the public bus services do not adequately support your access needs to the University?



Satisfaction of Public Buses

Overall, the highest scoring satisfaction category for staff is Hours of Operation, exceeding the ITP 75% 'Good' or better target with 82%. Staff find public bus services to be Affordable; students rated this criterion lower, with 32% scoring 'Poor' or 'Very Poor'.

Figure 11-6: Other Sites – Staff Public Bus Satisfaction

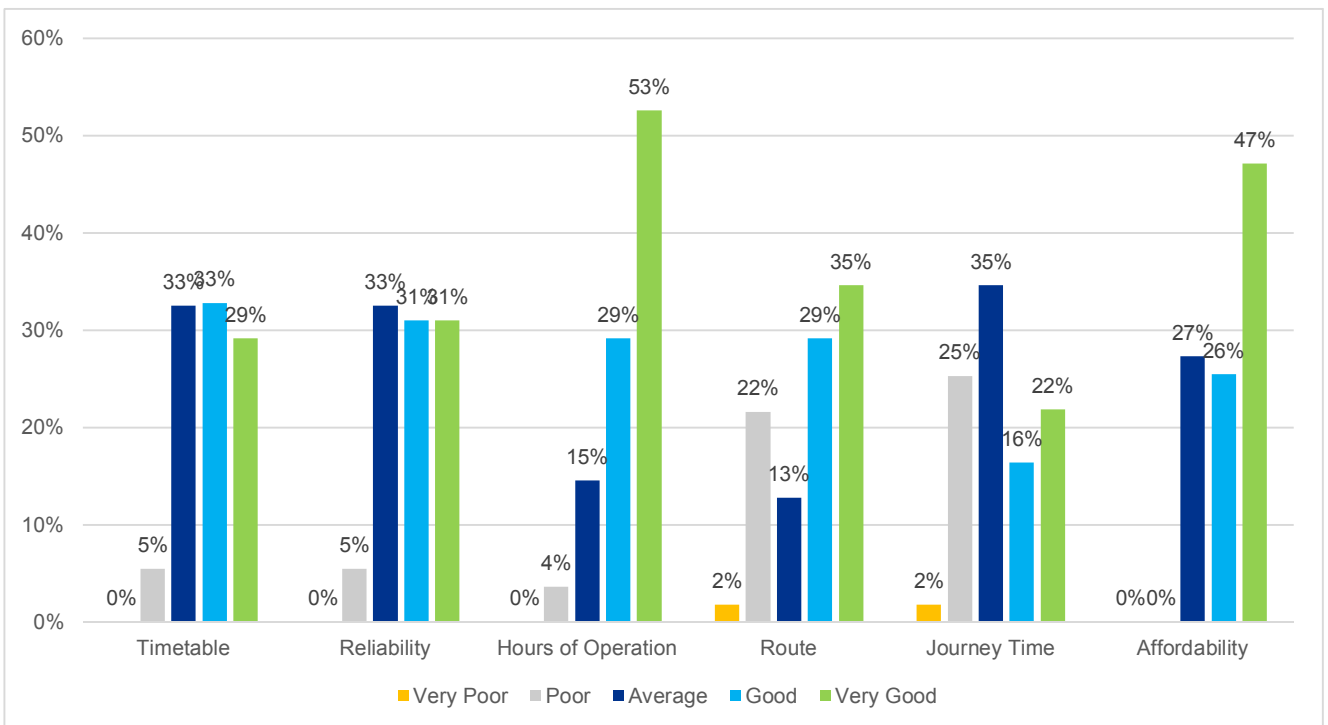
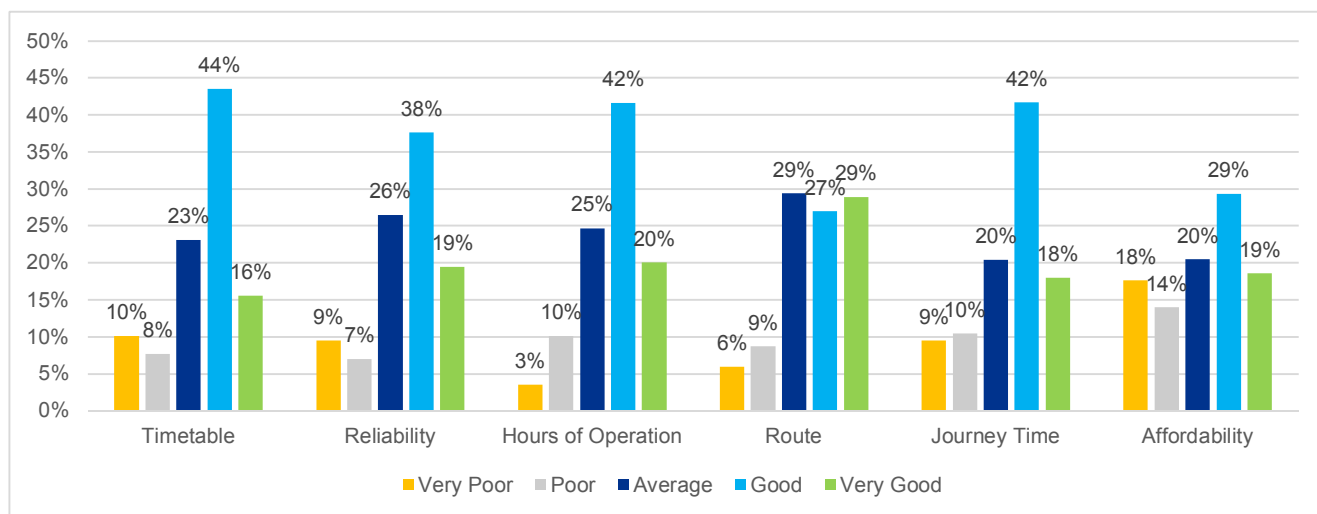


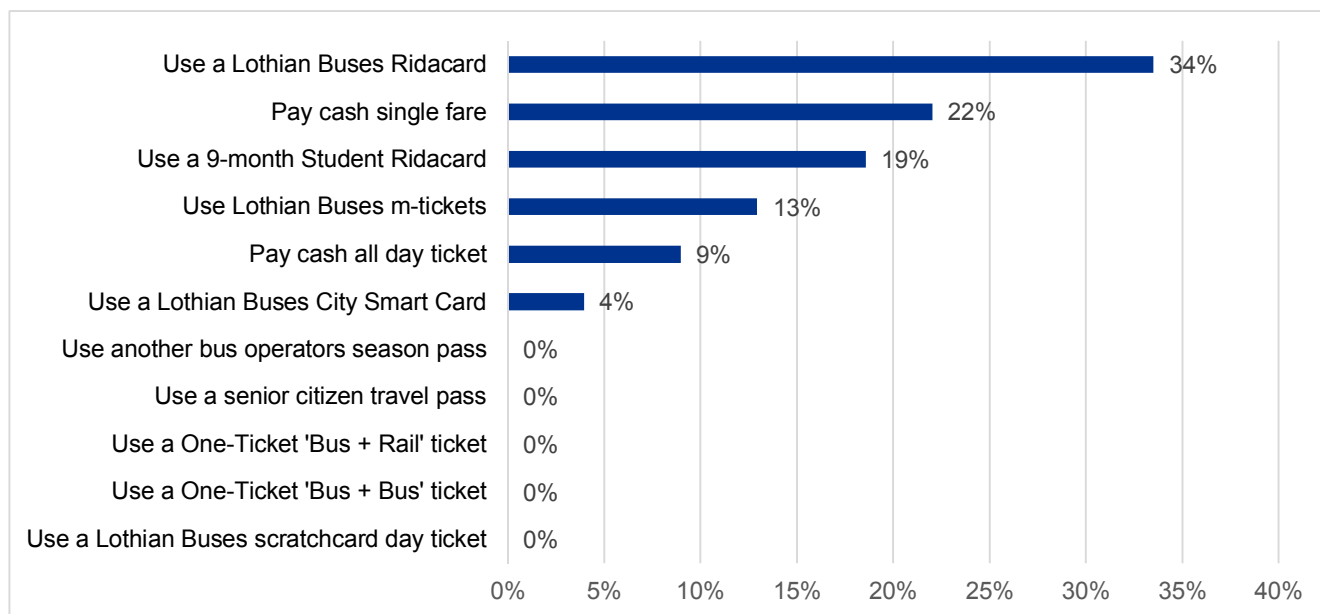
Figure 11-7: Other Sites – Student Public Bus Satisfaction



Ridacard

Most students travelling to Other university sites use the Lothian Buses Ridacard (53%), with 19% purchasing the 9-month student ticket and the remaining 34% purchasing other Ridacard tickets available. A further 31% of students pay with cash - 22% purchasing cash single tickets and 9% purchasing cash all day tickets.

Figure 11-8: Other Sites – Students: How do you pay for travel on public bus services?



12. Conclusions

12.1 Overall

The results of the 2017 University of Edinburgh Travel Survey demonstrate a continued high proportion of sustainable and active travel amongst both staff and students. The 2017 survey has shown slight changes in Overall mode share proportions, with a headline 3% increase in travel by public bus since the 2016 survey.

The Lothian Buses Ridacard is the main method used to travel by public bus for by both staff and students, accounting for 51% of ticket-purchases. In comparison, cash fares are only paid for by 21% of staff and students.

With regards to public bus satisfaction, none of the categories surveyed exceeded the 75% satisfaction level target in the ITP for staff and students combined. One Overall staff category did achieve the 75% target – Routes. Students scored no categories higher than 75%, lowest scores were for Affordability and Journey Times.

Staff and student interest in a cycle-hire type scheme across University campuses was also surveyed, with 65% of staff and students interested in such a scheme. There is a high awareness of current cycle schemes, particularly the UniCycles for students at Pollock Halls and eCycles pool for staff. This demonstrates a potential demand for a wider cycle-hire scheme.

Demand could be further strengthened through a drive to improve road safety for cyclists; interventions rated most highly by respondents were more and better quality on and off road cycle routes.

12.2 Central Area

Central Area mode shares remain similar to 2016 with the main changes being a 2% decrease in people walking and a 2% increase in public bus as their usual mode. Staff and student walking shares exceed the ITP 30% and 60% targets, respectively. While staff cycle share exceeds the 15% ITP target, student share is still below at 8%. Car driving accounts for less than 5% of total travel, easily below the ITP maximum target of 29%.

Public bus satisfaction targets of 75% are only achieved or exceeded for staff under the Timetable, Reliability, and Hours of Operation categories. The distribution of satisfaction levels for students is similar to that of staff, but the levels are lower and therefore do not meet ITP targets.

12.3 King's Buildings

The main mode share change at King's Buildings is bus travel, which has increased by 5% since 2016. The Service 41 £1 evening fare scheme may have helped contributed to increased bus use although only 8% of students are aware of and have used the scheme. Other factors influencing public bus demand include a 3% decrease in shuttle bus travel and a higher response rate from bus users compared to the 2016 survey.

In terms of the ITP targets, King's Buildings walking and cycling targets are exceeded by both staff and students. Student car mode share is lower than the 29% maximum target; the staff share is marginally above at 30%. Staff would be more encouraged to travel by active modes if there were improvements to walking and cycling infrastructure.

Public Bus satisfaction levels for staff are only above the 75% ITP for Routes; however, Timetables and Hours of Operation also scored well. None of the student categories achieved their target. Nevertheless, a higher proportion of students were satisfied with the affordability of bus compared with other campuses.

12.4 Easter Bush

The Easter Bush mode share has not changed significantly since 2016. It is encouraging that while there has been a slight drop in both public bus usage and cycling, there has been an uplift in the number of walking and students / staff travelling as car passengers.

Satisfaction with Public Bus Routes were scored highly by both staff (82%) and students (80%) – both exceeding the ITP target. Poorest satisfaction levels were recorded for Hours of Operation. Staff felt services did not run late enough into the evenings; students were concerned that services did not run on weekends, therefore falling short in supporting their needs.

12.5 BioQuarter

At the BioQuarter, there has been a significant increase in the proportion of trips being made by public bus, both by staff and students, and now representing nearly half the mode share. This may be related to the ending of the NHS shuttle bus and a corresponding switch to public bus services. A small increase in walking and cycling to the site has also been recorded.

In terms of the ITP targets, staff and students cycling shares both exceed the 15% recommendation. Walking falls very short of the 30% and 60% target although the campus location makes achieving this more difficult. More positively, car driving mode share is within the ITP 29% maximum.

Satisfaction surveys of public bus provision highlight that staff and students find the Hours of Operation and Reliability of Services 'Good', though no category exceeds the 75% ITP target. Satisfaction levels for Affordability and Journey Times were regarded as Poor by both staff and students.

12.6 Western General Hospital

There has been an evident shift between walking and cycling modes – especially amongst students. In comparison, there has been a notable uptake of walking amongst staff.

In terms of the ITP targets, staff walking greatly exceeds the 15% share; the student walking proportion is exactly 15%. Student cycle mode share accounts for 33% of the total, significantly exceeding the 15% ITP cycling target.

12.7 Royal Edinburgh Hospital

The 2017 survey highlights a very high uptake in public bus travel to the Royal Edinburgh Hospital by students. The share of staff travelling to the site by car-based modes has also increased since 2016.

While the overall car mode share achieves the ITP target, 39% of staff drive alone in their car to this site – 10% higher than the ITP aim. The main reason for staff driving to the campus is because they have a much shorter journey time by car and have to travel to other university sites. The proportion of staff and students walking and cycling is also below the ITP share.

Public Bus satisfaction levels amongst staff are highest for Affordability and Reliability – both exceeding the 75% ITP satisfaction target; Timetable and Hours of Operation for were rated highest amongst students. Journey Time was the poorest aspect of staff and student bus journeys at the Royal Edinburgh Hospital.

12.8 Edinburgh College of Art

There has been an increase in public bus usage amongst staff and students, with associated decreases in walking and cycling.

Walking levels for staff significantly exceed the 30% ITP guideline; student walking levels fall slightly short of their 60% target, at 57%. Staff mode share is 2% short of the 15% ITP value; students are 6% below the ITP target. Car-based and public bus travel have increased since 2016 for students and staff, although car travel remains well below the ITP 29% recommended maximum.

Public Bus service satisfaction levels are high for staff, with Timetable, Reliability and Route categories exceeding the 75% ITP target. Students did not score as highly, with Affordability being the lowest rated aspect of public bus services.

12.9 Pollock Halls

Pollock Halls has seen an increase in the number of car trips by staff who work there, with single occupancy car trips representing 39% of the total mode share. This exceeding the ITP target by 10%. Public bus usage has decreased since 2016; however, there remains a very high percentage of students who walk to the campus.

The main reasons for staff driving to and from Pollock Halls is because the journey time is much quicker than other modes; and lack a suitable alternative. Despite this, analysis shows that Pollock Halls staff are aware of travel planning measures and that there is scope for reducing car mode share by encouraging more sustainable travel.

12.10 Other Sites

The proportion of staff and students walking to Other university sites has increased by 9%, accounting for almost half all journeys made to Other sites. Public bus use has decreased at the same rate since 2016. The 2017 survey also indicates that cycling and train travel have decreased; car-based travel and shuttle bus usage has increased.

Public bus satisfaction levels for staff exceed the ITP 75% target for Hours of Operation and other criteria have generally been rated highly. Students are less satisfied with bus service provision; for example, Affordability scored 32% across 'Poor' or 'Very Poor' ratings.

Appendix A. Non-Weighted number of students and staff purchasing bus tickets

Table A.1: Number of staff and students by campus

How do you pay for travel on public bus services?	BioQuarter	Central Area	Easter Bush	Edinburgh College of Art	King's Buildings	Other	Pollock Halls of Residence	Royal Edinburgh Hospital	Western General Hospital	Total
Use a Lothian Buses Ridacard	111	559	138	26	201	32	19	34	47	1167
Pay cash single fare	46	220	9	26	93	15	4	30	11	454
Use Lothian Buses m-tickets	51	168	8	7	45	16	5	23	6	329
Use a 9-month Student Ridacard	9	78	24	3	29	5	0	5	2	155
Use a Lothian Buses City Smart Card	6	72	4	2	5	5	0	2	3	99
Use another bus operators season pass	2	27	1	3	6	1	1	0	5	46
Pay cash all day ticket	1	23	5	3	4	2	2	1	2	43
Use a senior citizen travel pass	2	27	0	1	2	4	4	0	1	41
Use a One-Ticket 'Bus + Bus' ticket	1	4	1	0	1	0	0	0	0	7
Use a One-Ticket 'Bus + Rail' ticket	0	0	1	0	1	0	0	0	0	2
Use a Lothian Buses scratchcard day ticket	0	0	0	0	0	0	0	0	1	1
Total	229	1,178	191	71	387	80	35	95	78	2,344

Table A.2: Number of staff by campus

How do you pay for travel on public bus services?	BioQuarter	Central Area	Easter Bush	Edinburgh College of Art	King's Buildings	Other	Pollock Halls of Residence	Royal Edinburgh Hospital	Western General Hospital	Total
Use a Lothian Buses Ridacard	64	290	31	9	67	22	19	9	30	541
Pay cash single fare	18	97	3	10	9	6	4	2	5	154
Use Lothian Buses m-tickets	18	89	2	5	10	10	5	0	2	141
Use a Lothian Buses City Smart Card	5	48	2	2	2	4	0	1	3	67
Use a senior citizen travel pass	2	22	0	1	2	4	4	0	1	36
Use another bus operators season pass	2	16	1	2	4	1	1	0	5	32
Pay cash all day ticket	1	10	4	2	2	0	2	0	2	23
Use a One-Ticket 'Bus + Bus' ticket	1	3	0	0	0	0	0	0	0	4
Use a One-Ticket 'Bus + Rail' ticket	0	0	0	0	1	0	0	0	0	1
Total	111	575	43	31	97	47	35	12	48	999

Table A.3: Number of students by campus

How do you pay for travel on public bus services?	BioQuarter	Central Area	Easter Bush	Edinburgh College of Art	King's Buildings	Other	Pollock Halls of Residence	Royal Edinburgh Hospital	Western General Hospital	Total
Use a Lothian Buses Ridacard	47	269	107	17	134	10	0	25	17	626
Pay cash single fare	28	123	6	16	84	9	0	28	6	300
Use Lothian Buses m-tickets	33	79	6	2	35	6	0	23	4	188
Use a 9-month Student Ridacard	9	78	24	3	29	5	0	5	2	155
Use a Lothian Buses City Smart Card	1	24	2	0	3	1	0	1	0	32
Pay cash all day ticket	0	13	1	1	2	2	0	1	0	20
Use another bus operators season pass	0	11	0	1	2	0	0	0	0	14
Use a senior citizen travel pass	0	5	0	0	0	0	0	0	0	5
Use a One-Ticket 'Bus + Bus' ticket	0	1	1	0	1	0	0	0	0	3
Use a Lothian Buses scratchcard day ticket	0	0	0	0	0	0	0	0	1	1
Use a One-Ticket 'Bus + Rail' ticket	0	0	1	0	0	0	0	0	0	1
Total	118	603	148	40	290	33	0	83	30	1,345

Appendix B. Carbon Footprint Calculation Methodology

Summary of the approach taken in the calculation of carbon footprint

If a person answered that they travelled exactly the same distance for two or more modes we have assumed that they have misunderstood the question and they use those different modes on different days. For example, a person might take the bus on Monday, Wednesday, Friday but cycle on Tuesday and Thursday. They would have inputted Bus and Cycle as their main modes each with 5km distance. To include these entries into the calculation we have given them a joint main mode, and calculated the carbon footprint for half the distance by each mode. In the example above, carbon footprint will be calculated using 2.5km Cycling and 2.5km Bus, which provides a good indication of the carbon footprint of each person. If a person stated that they walk 0.2km then get the bus 5km and the train 5km again we have assumed that they get the train and bus on different days so a single journey would be walking 0.2km then bus 5km OR walking 0.2km then train 5km. The carbon footprint halves the two main modes as before but includes the walk section. So the calculation consists of 0.2km walking, 2.5km bus and 2.5km train. If a person has selected three main modes, 5km bus, 5km train and 5km cycling then the carbon footprint would consist of 5/3km bus, 5/3km train and 5/3km cycle etc. While the same approach was undertaken for the 2013 assessment, it wasn't carried through for all entries, hence why we have repeated the calculation for the 2013 survey in order to ensure that an accurate comparison can be undertaken.

There were a number of entries where the respondents had given a very large distance of travel to get to the University. All entries were reviewed and if the distance was deemed to be too large for the mode, the results were excluded from the Carbon Footprint Calculation. These cut off were 5 miles for Walking, 40 miles for Cycling and 60 miles for all other modes.

Each staff member and student was asked about their mode of transport on their "Usual Journey" to work. For each mode they were asked the distance that they travelled. Using this information and the DEFRA Carbon Conversion factors 2017 from the Gov.UK website provided in Table B.1, the carbon footprint for each mode was calculated and then summed to give an overall daily carbon footprint per respondent.

$$(CCF \text{ of mode } a \times \text{distance} \times 2) + (CCF \text{ of mode } b \times \text{distance} \times 2) + \dots = \text{Daily CF}$$

To annualise the carbon footprint for staff, the daily carbon footprint was multiplied by the number of days each staff member works and by 47 weeks. To annualise the student daily carbon footprint, it was multiplied by the number of days each student attends the University and then by 44 weeks for Postgraduates and 30 weeks for Undergraduates. This is the same method as applied to the 2016 survey data.

$$\text{Daily CF} \times \text{number of days per week at work} \times [47]^{*} \text{ or } [30]^{**} \text{ or } [44]^{***} = \text{Annual CF}$$

Where:

*Total number of weeks per year staff work, assuming 5 weeks annual leave

**Total number of weeks per year undergraduate study

**Total number of weeks per year postgraduate study

Table B.1: DEFRA Carbon Conversion Factors

Mode	Category	Kg CO2e/mile
Car (Petrol)	Small car	0.25184
	Medium car	0.31365
	Large Car	0.45928
	Average Car	0.29881
Car (Diesel)	Small car	0.23409
	Medium car	0.27972
	Large Car	0.35139
	Average Car	0.28787
Electric Vehicle		0.12917
Hybrid	Medium	0.18095
	Large	0.21006
Unknown		0.29357
Motorcycle	Up to 125cc	0.13636
	125cc to 500cc	0.16615
	Over 500cc	0.21793
Public Bus		0.19729
Shuttle Bus		0.19729
Rail		0.07529
Taxi		0.25133
Tram		0.07155
LPG		0.32354