Glasgow Caledonian University

University for the Common Good

2017 Cycling Report

31 March 2017

Contents

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Introduction & background

Glasgow Caledonian University (GCU) acknowledges active travel or 'smart travel' as an important contributor to its wider sustainability and carbon management strategies.

As a fundamental component of active travel, GCU has taken a committed approach to cycling development on campus since October 2012 and through a series of strategic evidence-based behaviour change interventions has seen a positive modal shift towards cycling.

GCU has evaluated the travel behaviour of staff and students through travel surveys (2009, 2012, 2015[1]) and captured cycling rates on campus through monitoring since October 2013. Thus, evidencing a steady rise to 5.9% of staff and students combined travelling to university by bicycle.

This cycling survey has been developed as a response to build on the evidence base of previous surveys which did not distinguish gender within the context of attitudes to cycling. The purpose of the survey was to offer insight into the experience of those choosing to cycle to GCU, the potential barriers for those who currently do not cycle and to capture emerging themes within the findings that may offer behaviour change indicators to evidence potential interventions toward further modal shift.

Aims & objectives

The survey was developed to capture data which represents the experience of cyclists and non-cyclists at GCU to inform evaluation and focus potential intervention outcomes as measurable deliverables.

The aims are accomplished by:

- Capturing staff and student access to bicycles and their cycling behaviours
- Understanding staff and student rationale toward cycling and their observations relating to others propensity to cycle
- Assimilation of awareness, appropriation and use of GCU's existing cycling facilities
- Articulating the perceived barriers to cycling within the data set and identifying perceived facilitators to cycling

[1] GCU's Travel Survey reports are available from: : www.gcu.ac.uk/sustainability/reporting/

Methodology

The GCU Cycling Survey 2017 was designed to capture a qualitative dataset (Appendix 1) which offered a deeper insight into the experience of people cycling and their attitudes and perceptions surrounding cycling as a travel mode into campus. The survey design (Appendix 2) was semi-structured offering respondents the opportunity to express more holistic, thus more focused answers which have the potential to inform a more representative view. Several questions were closed-ended; multiple-choice and multiple-answer enabled. Additionally many questions were open-ended; exploratory questions which offered valuable unbiased access to representative insights and thus the opportunity for contextually relevant themes to emerge. A further opportunity to comment featured at the end of the survey to encourage responses, elaboration, identification of new themes, and contribute to the rigour of the survey.

The survey was presented as a Google form and was accessible online, with a promotion and survey recruitment campaign accompanying it through online social media channels and internal staff and student communications channels. This recruitment method targeted both cyclists and non-cyclists. Additionally, the survey recruited within the same sample parameters by participant interception to address potential non-coverage within the sample. The survey opened on the last day of October 2016 and was closed on the first day of January 2017. The final sample size was 90 respondents. Only one response was excluded from analysis as it was incomplete.

Analysis & results

Survey responses were aggregated for data analysis using Google Forms Summary of Responses analytics option in the first instance. The data was transferred to spreadsheet where responses were coded using emergent codes to organise the data and codes were further refined for analysis, evaluation and visualisation.

The data was classified throughout analysis in to *type* classifications:

- Bicycle access by gender
- Position (Staff or student) & Classification if a student (Home/international)
- Position aggregation of student sample (Postgraduate / undergraduate, and year of study)

Bicycle access by gender	Number of respondents	Proportion of respondents
Female	34	38.2 %
Male	54	60.7%
Non-binary	1	1.1%
	Total: 89	100%

Table 1: Bicycle access by gender

Response by position	Number of respondents	Proportion of respondents
Staff	11	12.3%
Postgraduate	18	20.2%
Undergraduate: Year 1	11	12.4%
Undergraduate: Year 2	12	13.5%
Undergraduate: Year 3	14	15.7%
Undergraduate: Year 4	6	6.7%
Opted not to answer	17	19.1%
	Total: 89	100%

Table2: Response by position aggregation

Response by student Classification	Number of respondents who are students	Proportion of respondents who are students
Home student	41	53.2%
International student	36	46.8%
	Total: 77	100%

Table3: Response by student classification

The response rate for staff and students classified by position aggregation (Table 3) represents approximately 0.6% of the total student population and 6% of the total staff population. Staff and student rates of having access to a bicycle have been represented in 'gender & position' and 'gender & student classification' visualisations (Figure 1, figure 2), offering a valuable snapshot of staff and student experiences of cycling on campus at GCU. Furthermore, offering the potential to contribute positively to behaviour change and modal shift uptake within the context of cycling at GCU

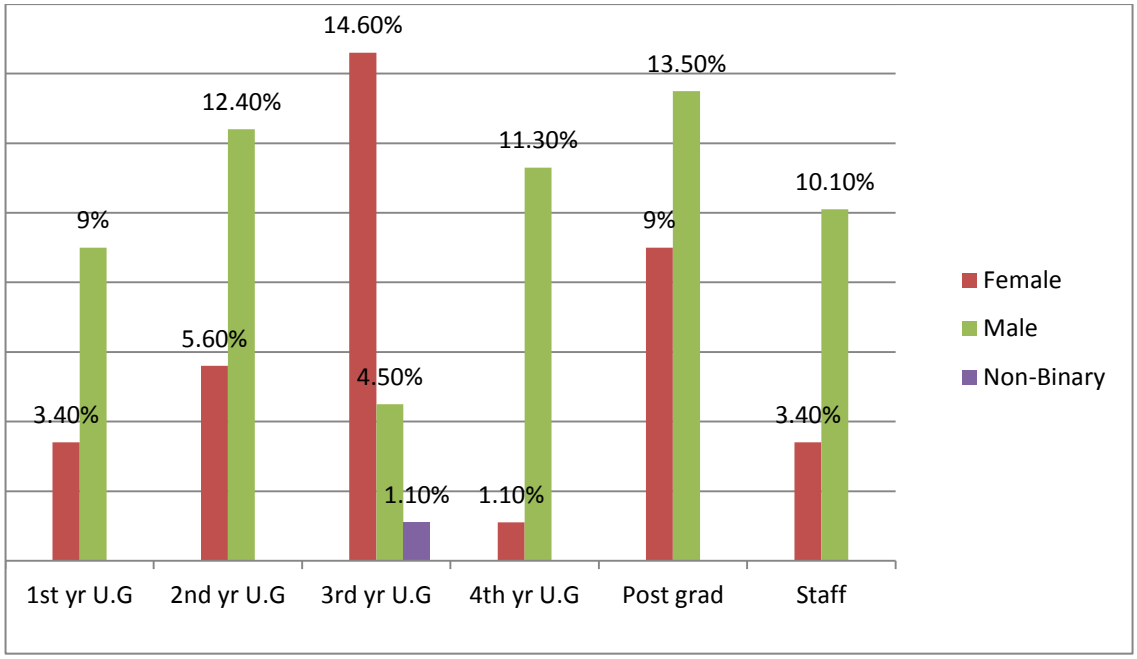

Figure 1: Bicycle access by gender split & position at GCU

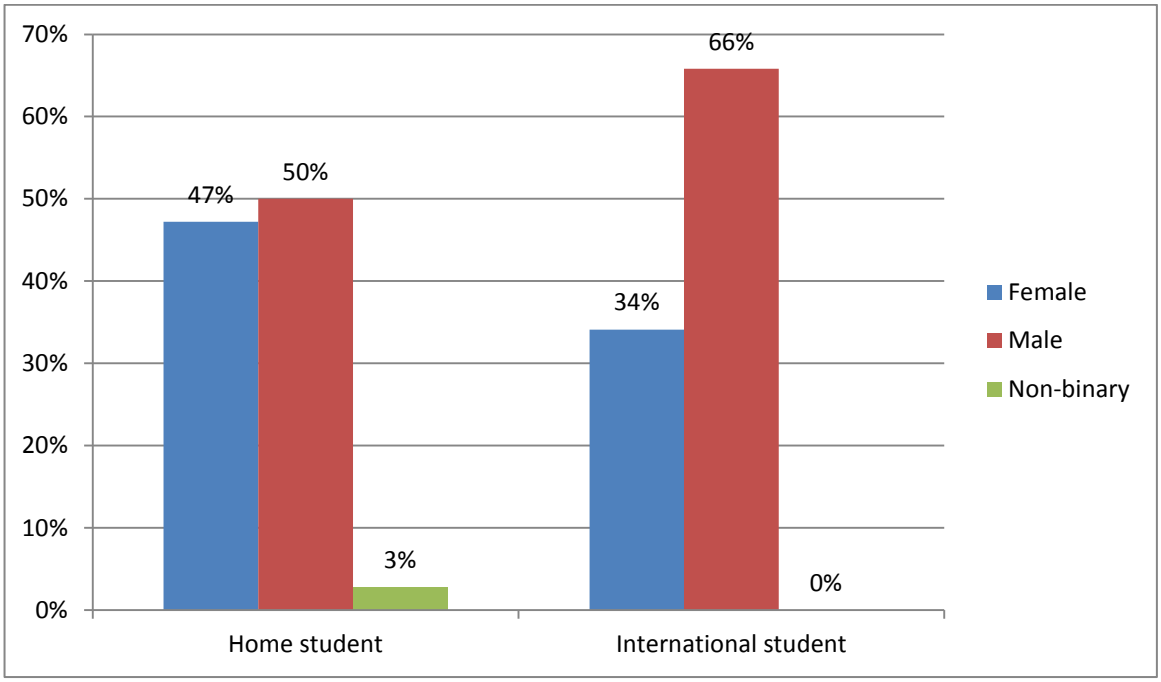

Figure 2: Bicycle access by gender split & student classification

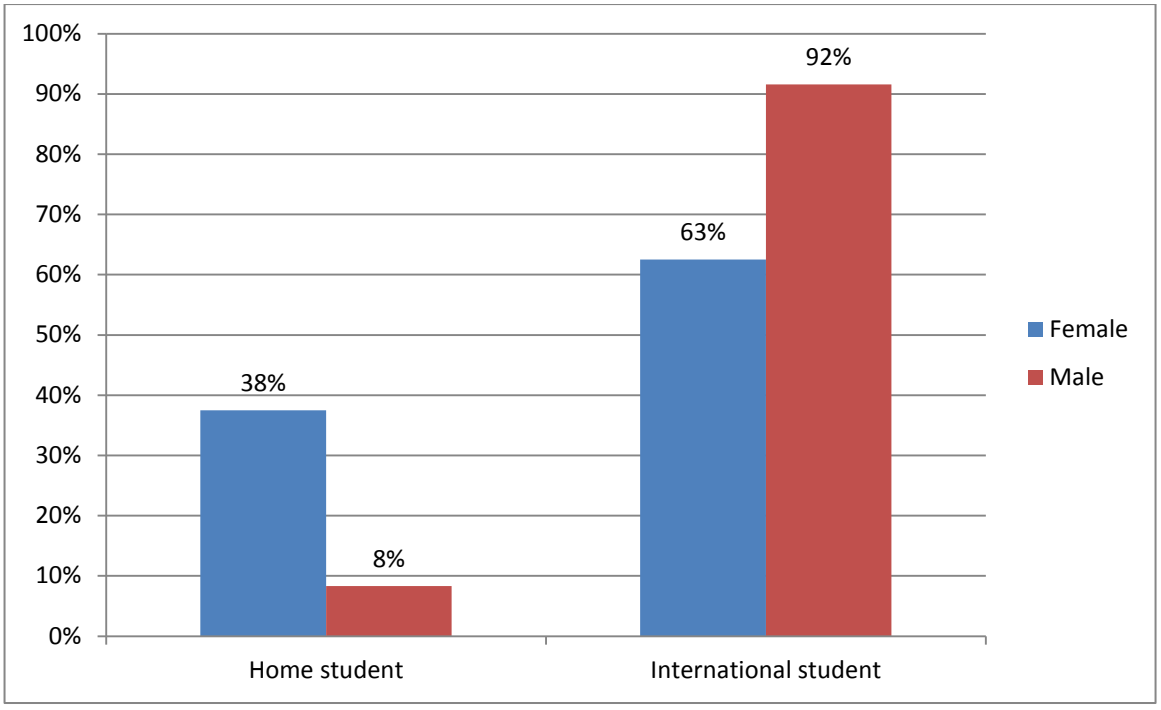

Figure 3: Postgraduate student bicycle access by gender split & student classification

Key Findings

Bicycle access

- The data indicates that postgraduates offered the highest response rate in line with reporting an equally high level of bicycle access and use at 22.7% of the sample total. (Table 3 & Figure 1) The data indicates that a high proportion of respondents within this category were international post graduate students. Speculative evidence to explain cycling rates within this cohort could be socio-economic and cultural distinctions within the international demographic across genders. (Figure 3)
- Undergraduates in 1st & 4th year respectively offered the lowest response rates in line with reporting the lowest levels of bicycle access and use at 12.4%. It is hypothesised based on the raw data that bicycle access is not a priority for this cohort sample and it is suggested that this correlates with entry and exit years to university when travel behaviour patterns have either not been established or they have been firmly established in these year groups (Table 3 & Figure 1)
- The data indicates that a significantly higher proportion of males than females across all position categories report having access to a bicycle with the exception of 3rd year undergraduate respondents, where the data indicates that a markedly higher proportion of females have bicycle access (Figure 2). The data does not reveal a clear evidence base for why this is the case.

Cycling behaviours and Comprehension of benefits

Respondents offered multiple and well elaborated answers to why they chose to cycle as a travel mode to university. The key rationales for cycling among those who cycled that emerged in order of most communicated, as illustrated below as a percentage total among those who cycled to university and then indicated as a proportion percentage of total sample surveyed (Table 4) were;

- **Cost and time-saving**
- **Health benefits**
- **Convenience and enjoyment**

These answers were congruent with answers given when both cycling and non-cycling respondents were asked to also identify why they thought others cycled. These findings demonstrate that the whole survey sample were able to identify a balanced comprehension of the acknowledged benefits of cycling as an active travel mode.

Rationale for cycling: respondents who cycle	Female	Male	Representative % of total sample surveyed
Cheaper	34.2%	65.8%	**45.5%**
Quicker	25%	75%	**22.2%**
Good exercise	10.5%	89.5%	**21.1%**
Convenience	66.6%	33.4%	**20%**
Enjoyment	41.7%	58.3%	**13.3%**

Table 4: Key rationales for cycling

Non-cycling respondents within the sample identified 4 reasons for **not** cycling in order of most communicated as;

- **Perceived danger of cycling on the roads**
- **Bike access**
- **Weather**
- **Distance**

These answers aligned with emergent themes when respondents were asked to also identify why they thought others did not cycle, as illustrated below. The 'other' reasons category included; 'impact on personal appearance' cited by female respondents and 'storage issues at home' cited by male respondents (Table 5).

Rationale for not cycling	Female	Male	Non Binary	Representative % of total sample surveyed
Perceived danger	60%	40%		**49.4%**
Unmotivated	60%	40%		**48.3%**
Bike access	83.3%	16.7%		**32.5%**
Weather	25%	75%		**19.1%**
Unsatisfactory infrastructure	12.5%	75%	12.5%	**8.9%**
Other	75%	25%		**4.5%**

*Table 5: Key rationales for **not** cycling*

It is important to note that the responses given were multiple answer responses so answer distribution is represented to reflect this.

Evaluation of cycling facilities at GCU

To evaluate usage and awareness of facilities respondents who cycled were asked to identify from a multiple choice and multiple answer question, what cycling facilities they had benefited from at GCU. The data revealed that;

- **sheltered cycle parking was markedly the most used facility**, with
- **Dr.Bike also a popular facility within the user group sample** (figure 2), with the caveat that among the respondents, a proportion who identified themselves as non-cyclists selected none of the options within the question frame.
- **Furthermore, data on usage of cycling facilities by gender within this sample (figure 5) evidenced a gender imbalance with markedly more males than other genders reporting use of these facilities.** This is congruent with the marked gender split in bicycle access however other genders reported the following factors as having an impact on their decisions regarding using cycling facilities;

- **Visibility of facility** – Bicycle maintenance stand, showers for cyclists and led rides
- **How complicated use of the facility appeared to be** – Two-tiered cycle racks
- **How confident they were in using the facility** - Dr.Bike and FYOB

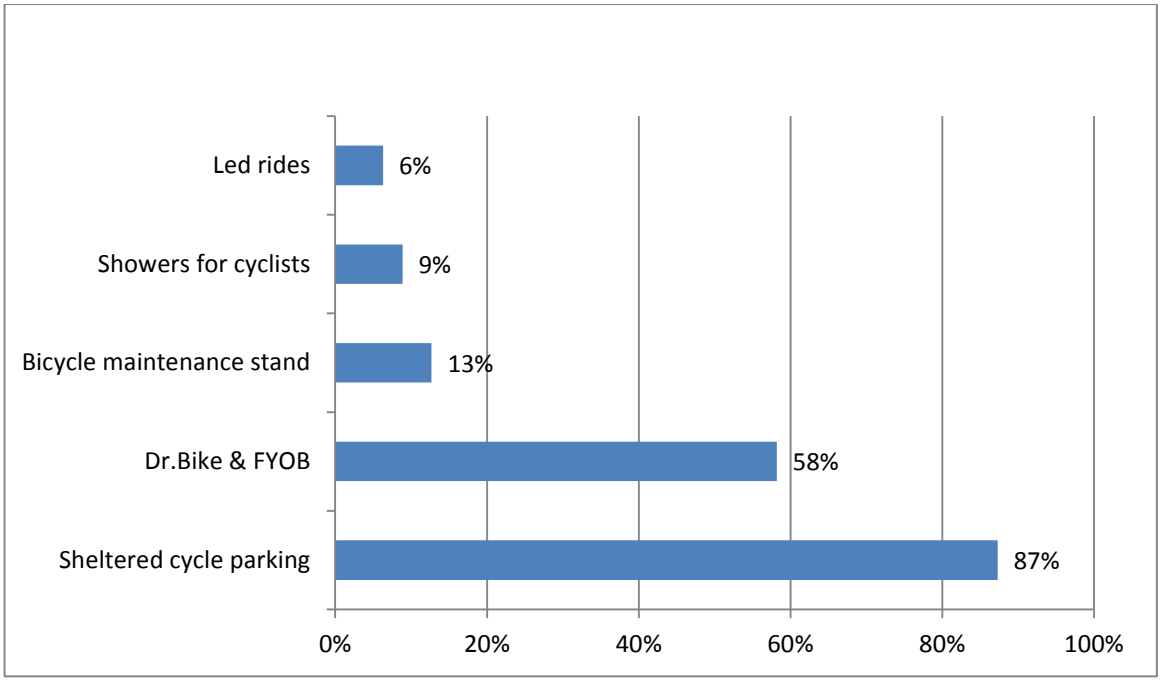

Figure 4: Cycling facilities used by sample who cycle (at GCU)

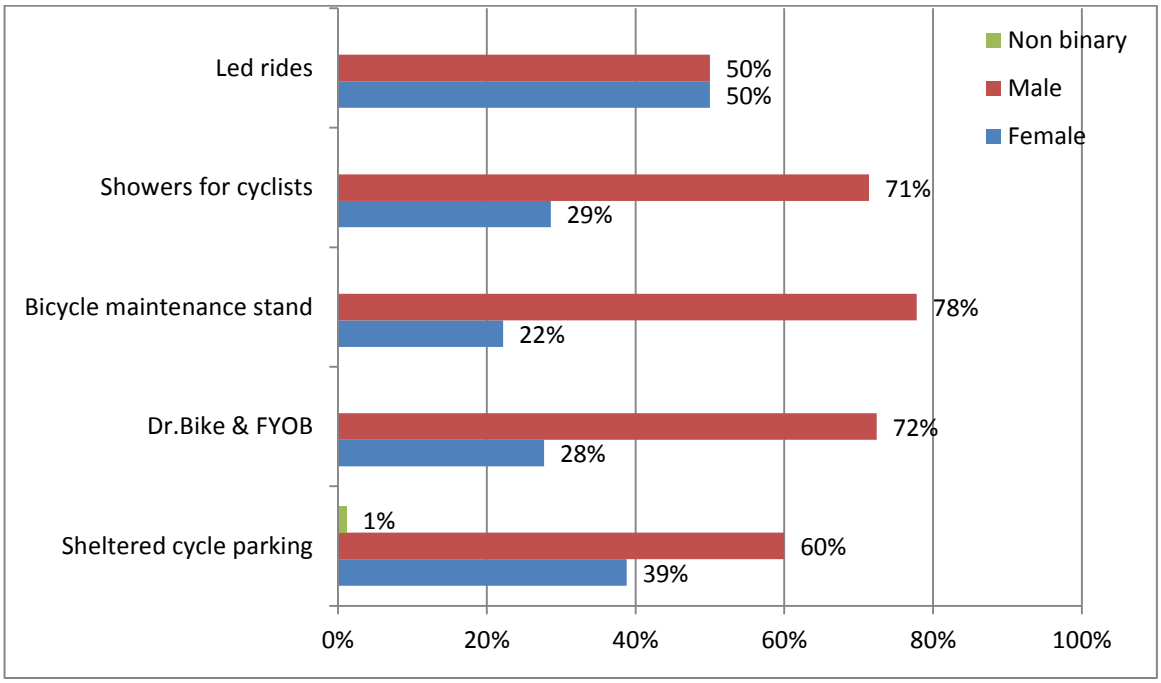

Figure 5: Cycling facilities used by gender split (at GCU)

Conversely, respondents also indicated that;

- **Bicycle Maintenance Stand and Showers For Cyclists were least used among the facilities within the question frame**, with the caveat that among the respondents, all who identified themselves as non-cyclists selected all of the options within the question frame. The sample were asked to identify why they had not used those facilities within the question frame and respondents identified core reasons as multiple answers in each category. In order of answer priority reported within each category the following themes emerged;
- **Unaware that the facility existed**
- **Did not need the facility**
- **They did not cycle**

The data further evidenced that a large proportion of those who did **not** cycle were able to identify an awareness of the following cycling facilities on account of how visible they were:

- **Sheltered cycle parking**
- **Dr.Bike sessions**

This data indicates an evidence base of user-awareness and usage behaviours regarding cycling facilities which can be used to inform and evaluate future strategic development within this context at GCU.

Perceived barriers to cycling as a mode of transport to GCU

Respondents were asked as an open ended question to identify what the barriers to cycling for them were and what they perceived the barriers to be for others if different.

The data evidences (Figure 6);

- **Perceived danger as both the primary barrier and perceived barrier to cycling for people**
- **Bike access as a common barrier or perceived barrier to cycling for people**
- **Unfavourable weather conditions as a significant barrier**
- **Unsatisfactory infrastructure, motivation, distance, confidence and fitness also emerged as barrier themes.**
- **Fitness a gender-specific barrier for females since no other genders reported it as a barrier**

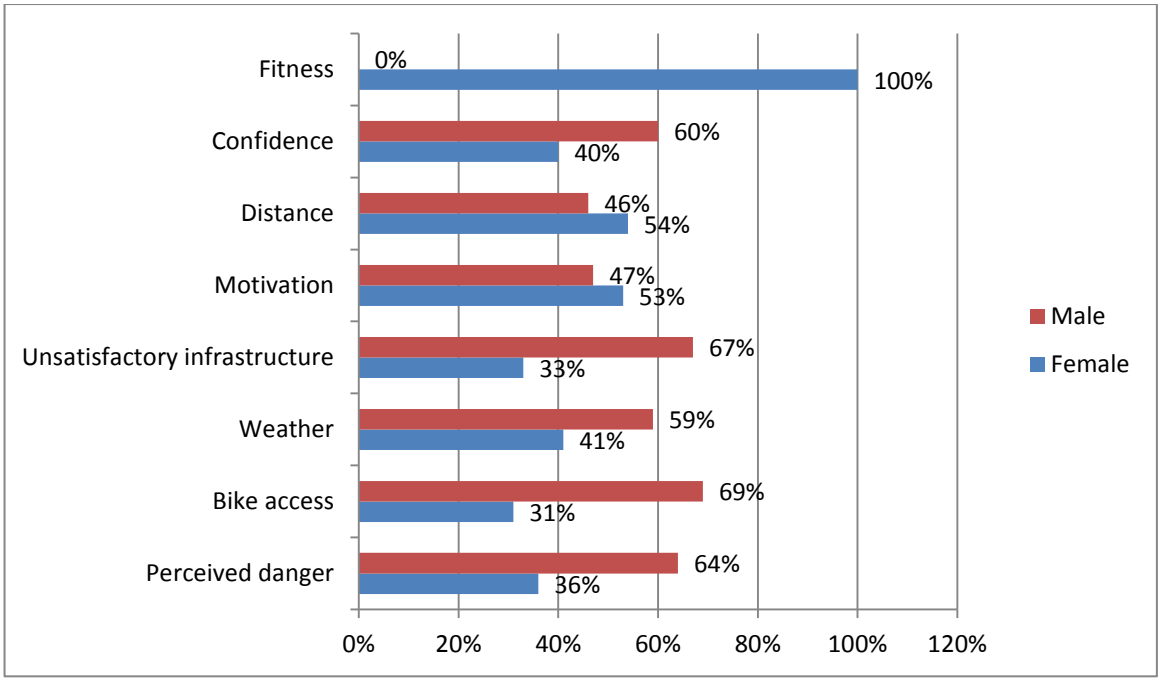

Figure 6: Barriers and perceived barriers to cycling at GCU by gender split

The answers within the perceived danger category revealed a plethora of rationale ranging from sustained injuries and bad experiences of cycling on the road to perceived intimidation by other road users. Respondents also described a sense of road user vulnerability associated with their experience of cycling. Much of this rationale was iterated within the unsatisfactory infrastructure theme where the only deviation of rationale within that theme referred to the road surface and street furniture quality and the risk involved in negotiating these factors in practice whilst cycling.

Whilst meteorological and hard infrastructure factors dominated the barriers to cycling category, many of the other emergent themes reported, present reasonable target themes for potential behaviour change interventions. Particularly;

- **Bike access**
- **Distance**
- **Confidence**
- **Fitness**

Engagement and information on cycling at GCU

Respondents were asked to identify from a multiple choice and multiple answer question what sources that they used to garner information on cycling at GCU. The data indicates social media as the most used or preferred point of information for participants; reported as preferential due to convenience and preferred engagement methods. **The social media category included the following communication channels:**

- **Facebook GCU Cycle forum**
- **Cycle Forum E-Mail subscriptions**
- **Twitter**

This was followed by information sought via the GCU website which included;

- **GCU sustainability page - Cycling/smart travel link**

Respondents identified **'word of mouth', security office, Arc gym and 'Google search'** among the 'Other' sources category as illustrated below (Figure 4).

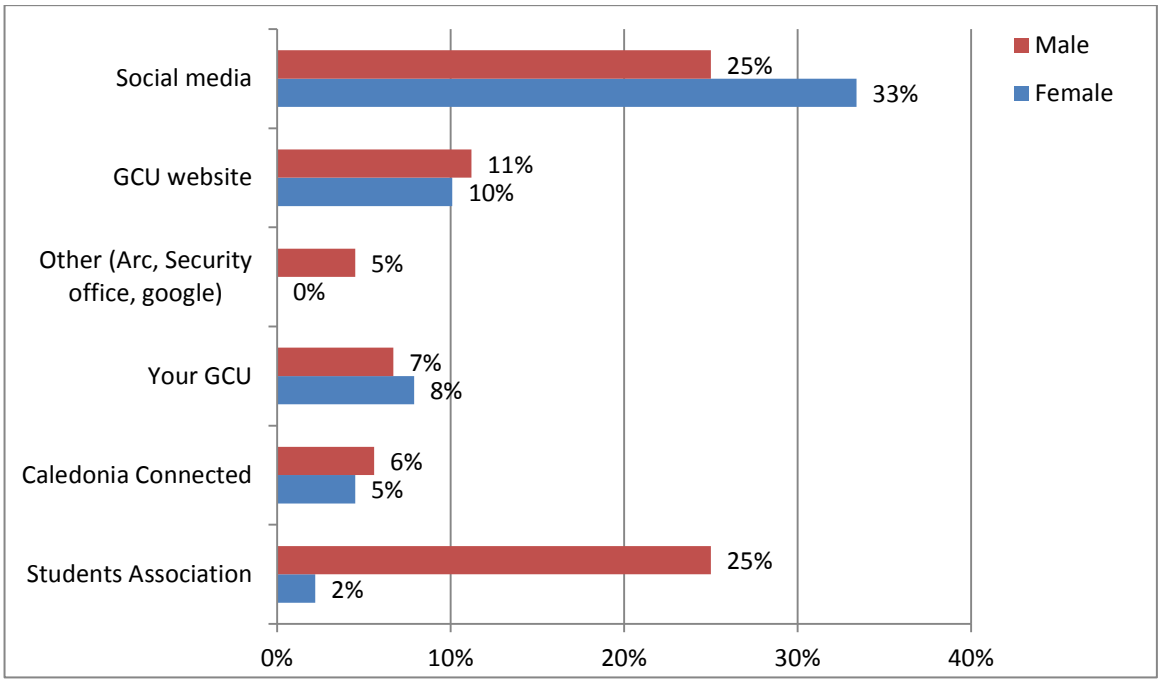

Figure 7: Preferred sources of information on cycling by gender split (at GCU)

It is important to note that the distribution indicated (figure 7) illustrates data reported by **those who cycle as a multiple answer response to the question.** There was distribution of 10.1 percent of 'I don't' reported within the answer frame and also the answer field was left blank for this question from the proportion that did not cycle.

Propensity to cycle to GCU and user feedback

The whole sample of respondents were asked to identify via open ended question what would make them or others (if they cycled already) decide to cycle to GCU.

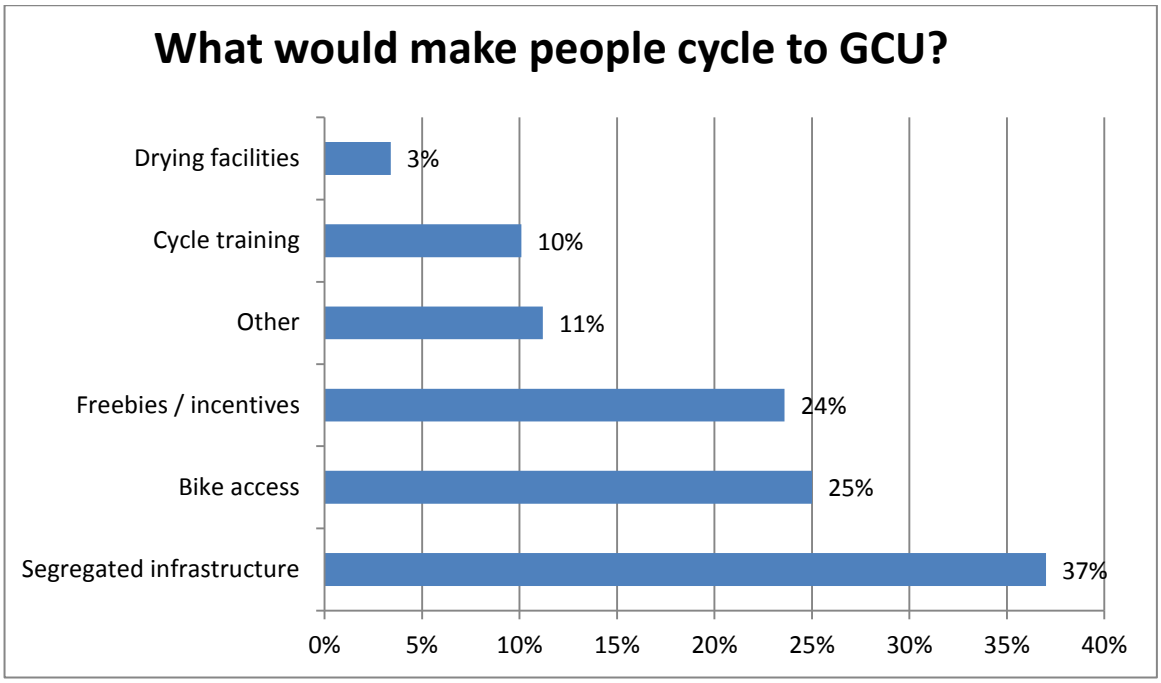

Figure 8: Propensity to cycle: what would make people cycle to GCU.

The data yielded thematic responses (figure 8) which offered that;

- **Segregated infrastructure – specifically segregated cycle lanes within Glasgow was perceived to give impetus to cycling propensity.**
- **Bike access in the context of student bike loans, perceived affordable or accessible bike ownership and rental also featured as significant focus of perceived propensity to cycle.**
- **Incentives for those who cycle featured as a popular perceived enabling theme and respondents identified through their answers specific cycle-related equipment; Locks, good quality lights, repair kits, bicycle tyre tubes and other 'loyalty scheme' or 'cyclist reward' suggestions as highly motivational.**
- **In the thematic category of 'Other' answers included either non-controlled variables such as weather or were situational such as dependant / care-giving responsibilities or significant distance in combination with irregular travel schedules.**
- **Cycle training through university channels and cyclist specific facilities such as drying units for cyclist apparel also featured as perceived measures that may capture further modal share.**

The survey offered respondents the chance to further comment on cycling provision at GCU. The comments section further yielded thematic responses which correlated with and reinforced the themes which emerged within the 'Propensity to cycle' findings. Comments largely outlined a positive perception of cycling experience at GCU and facilitated the opportunity for respondents to convey suggestions and requests for provisions that they perceived as constructive or valuable within the frame of cycling at GCU. Presented below is an outline of the main themes which emerged from that data set (Figure 9):

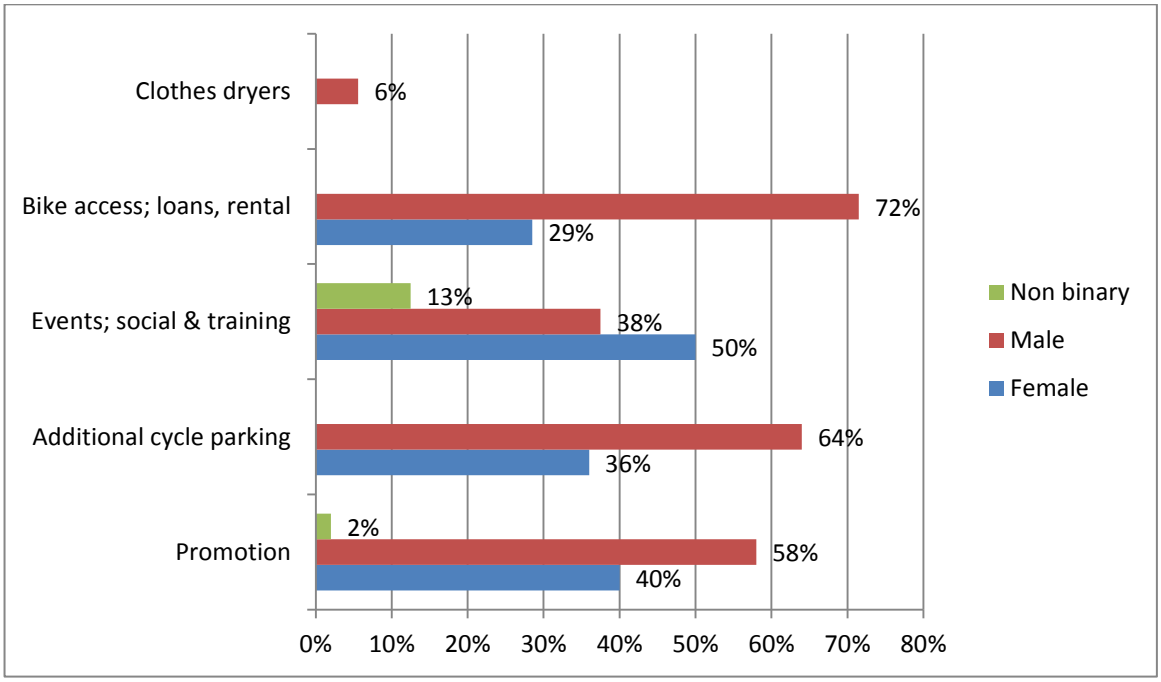

Figure 9: User feedback on cycling at GCU.

- Respondents communicated in the data that, promotional activities such as 'high visibility campaigns and fun, 'gimmicky' engagement activities were a desirable theme for respondents. This also included incentives and freebies as 'rewards' for those who chose to cycle
- Additional cycle parking was communicated by respondents as a desirable addition
- Events where cycle-training and social interactions within the frame of cycling were communicated as desirable by respondents; particularly opportunities for learning a cycle-related skill
- It was also commented by respondents that the opportunity to access a bike via rental, loans or from the donated bikes of others was a thematic focal point for those cycling or those thinking about cycling at GCU

Conclusions

The overall data sample indicates that;

- **More males than females cycle at GCU**
  It is hypothesised that this is a result of a number of factors illustrated in the data set, not the result of one definitive factor
- **More males than females engage with cycling activities at GCU**
  This is congruent with the higher proportion of males cycling at GCU. Additionally other genders reported barriers to cycling engagement such as; being unaware of what was available, not being confident to access them or to cycle
- **Females have a specific set of barriers to cycling which if understood may address propensity to cycle rates within that category**
  These barriers include but are not limited to; lack of confidence cycling on the road with other motorised vehicles, knowledge of cycling and cycling maintenance
- **Student and staff barriers differ** Students report different barriers than staff; Bike access, perceived danger on roads and confidence are the central barriers for students. Unsatisfactory infrastructure in Glasgow and weather are the central barriers for staff with the exception of female staff also citing perceived danger on the roads and confidence
- **Awareness of cycling facilities is significant with the exception of the maintenance stand;** where the majority of respondents reported being unaware that it existed and had they been aware that they would have sought to use that facility
- **A requirement for further cycle parking facilities at the rear of the campus emerged as a strong theme**
- **A requirement for more engagement via diverse and high visibility events and campaigns emerged as a strong theme**
- **A requirement for opportunities for staff and students to obtain 'rewards' and facilitative equipment emerged as a strong theme from a motivational and logistical perspective.** This includes facilitative things such as locks, lights, and other cycling enablement kit
- **Strong leadership with regards to cycling at GCU was reported as a recognised positive, supportive and motivational theme.** The continuation of this is hypothesised as crucial for development and modal shift to cycling to continue to rise at GCU.

Appendix 1- Dataset

The raw survey data, redacted to remove personal information, is available from gcu.ac.uk/sustainability/data

Appendix 2 - Survey design: List of survey questions

1. Gender. Are you; male, female, other?
2. Are you; Staff, 1st year student, 2nd year student, 3rd year student, 4th year student, Post graduate?
3. Are you a; Home student, International student?
4. Do you own or have access to a bicycle; Yes, no, sometimes?
5. Do you cycle; Yes, no, sometimes?
6. Why do you cycle / not cycle (answer as appropriate)?
7. Why do you think people cycle?
8. Why do you think people don't cycle?
9. What cycling facilities at GCU have you benefited from? (Multiple choice answer/tick all that apply); Sheltered cycle parking, bicycle maintenance stand, showers for cyclists, Dr.Bike & FYOB sessions, led rides / Glasgow bike tours
10. What cycling facilities haven't you used? ? (Multiple choice answer/tick all that apply); Sheltered cycle parking, bicycle maintenance stand, showers for cyclists, Dr.Bike & FYOB sessions, led rides / Glasgow bike tours
11. Why haven't you used those cycling facilities? (Please indicate the number of the one your referring to)
12. What could we do better?
13. Where do you go for information on cycling at GCU? (Multiple choice answer); GCU Website, social media, students association, Caledonian connected, YourGCU, Other?
14. What could we do to promote more cycling?
15. What are the barriers to cycling for you?
16. What do you think the barriers are for others?
17. What would make you or more people cycle to uni? (Answer as appropriate)

Do you have any comments or suggestions about cycling at GCU ?

Glasgow Caledonian University

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