

Widening the Participation in Cycling-A Case Study of the Grand Canal Cycle Route

Introduction

It is noticeable when cycling in Amsterdam and Copenhagen, how the participation in cycling includes all of its citizens, from the young to the old, male and female there is no typical cyclists. In these cities everyone cycles as part of their everyday activities in their ordinary clothes using ordinary bikes. In Britain however it is noticeable that the majority of the cyclists that you see are men, and significant proportions cycle on expensive sport bikes with matching clothing. These men are commonly known as MAMIL's (Middle Aged Men in Lyric).

National statistics confirm this with the National Travel Survey for 2012 revealing the gender split for cycling is 73% male and 27% female. Therefore one of the key challenges for cycling in Britain is to widen the participation in cycling to include more women, children and old age pensioners.

Cycle chic or bicycle chic refers to cycling in fashionable everyday clothes. While the term refers to well-dressed cyclists, perhaps more importantly the term is a pseudonym for the bicycle being used for its utility function rather than solely for a sports related function. In many ways cycle chic represents the polar opposite to the cycling culture that is symbolised by the MAMIL. It could be argued that the pace of the transition from MAMIL to cycle chic is representative of the health of the cycling culture. So how do we move from the MAMIL to Cycle Chic?

In London the ongoing concerns with cycle safety has increased the demand for more segregated cycle facilities and observations from Dublin indicates that this might have positive impacts on the diversity of cyclists that use the infrastructure provided.

This article examines how the type of cycling infrastructure impacts on the participation levels by gender, age profile and cyclist type in our cities. On road cycle lanes and segregated cycle tracks in Dublin will be used to assess if infrastructure has an influence on the cycle user type.

Figure 1- On-road cycle lane (on left) and segregated cycle track (on right) along the Grand Canal, Dublin



Case Study – Grand Canal Cycle Route, Dublin

The Grand Canal Cycle Route in Dublin presents a somewhat unique opportunity to undertake research into the use of cycling facilities. On the southern side of the canal on-road cycle lanes are provided whilst on the northern side of the Canal a segregated cycle track was opened in 2012. Both routes link some important cycle radial routes to the primary business district and thus follow a strong cycle desire line in a City which has seen a 70% increase in cycling over the last 10 years.

This 3.6km segregated cycle track is a two-way facility with signalised crossings at all junctions which it passes through. The route is thus completely segregated from motorised traffic and is a very pleasant atmosphere for cycling in. While the route is segregated from traffic the introduction of numerous signalised crossings does introduce a level of delay to cyclists during peak periods, which can significantly impact on the journey time by this route.

The on-road cycle lanes on the opposite bank of the Canal provides faster journey times but involves much greater interaction with other traffic. Cyclists can therefore choose to use the more comfortable, but slower segregated route, or the on-road facility which is faster but has little or no segregation from motor traffic.

Surveys

The '*revealed preference*' surveys were undertaken over a 4 week period in February 2014 and captured the following:

1. Volume of users (popularity of route);
2. Gender split (male/female);
3. Age profile of users (0-20, 20-40, 40-60, 60+);
4. Cyclist user types - sports riders, commuters, general utility riders, vulnerable users.

It was not possible to capture all the information during each survey undertaken. As a consequence the size of the datasets varies however all are sufficiently representative to be considered statistically significant at the 95% confidence level with an error margin of lower than 4%.

The four cyclist user types are categorised and illustrated below:

Sports rider

These cyclists are characterized by their racing bike, aerodynamic/lycra clothing, protective gear (helmet, glasses, gloves), cycling speeds are usually between 20-30 mph.



Commuters

This type of cyclists are characterized by high-visibility clothing, cyclist looks likely to change their clothing/shower in work, generally wearing helmets, cycling speeds are usually between 15-20 mph.



General utility riders

This type of cyclist is characterized by their everyday clothing, body position is generally more upright and relaxed, bike may contain basket, generally cycle at a leisurely pace of 10-15 mph.



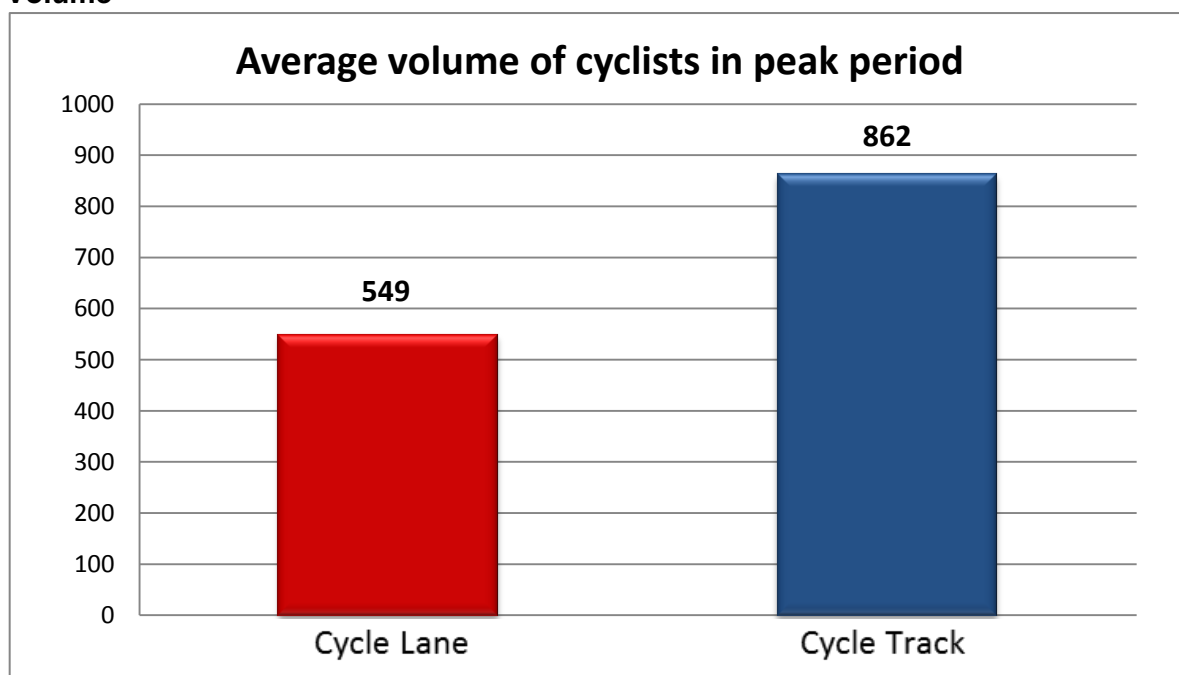
Vulnerable riders

This type of cyclist includes school children, older riders, children carried by bike, cyclist which generally don't overtake, and travel at slower speeds of less than 10 mph



Surveys were carried out on both cycle routes, during the midweek morning peak period (8-10am). This 2 hour morning period accounts for approximately 30% of the total volume of users throughout the day.

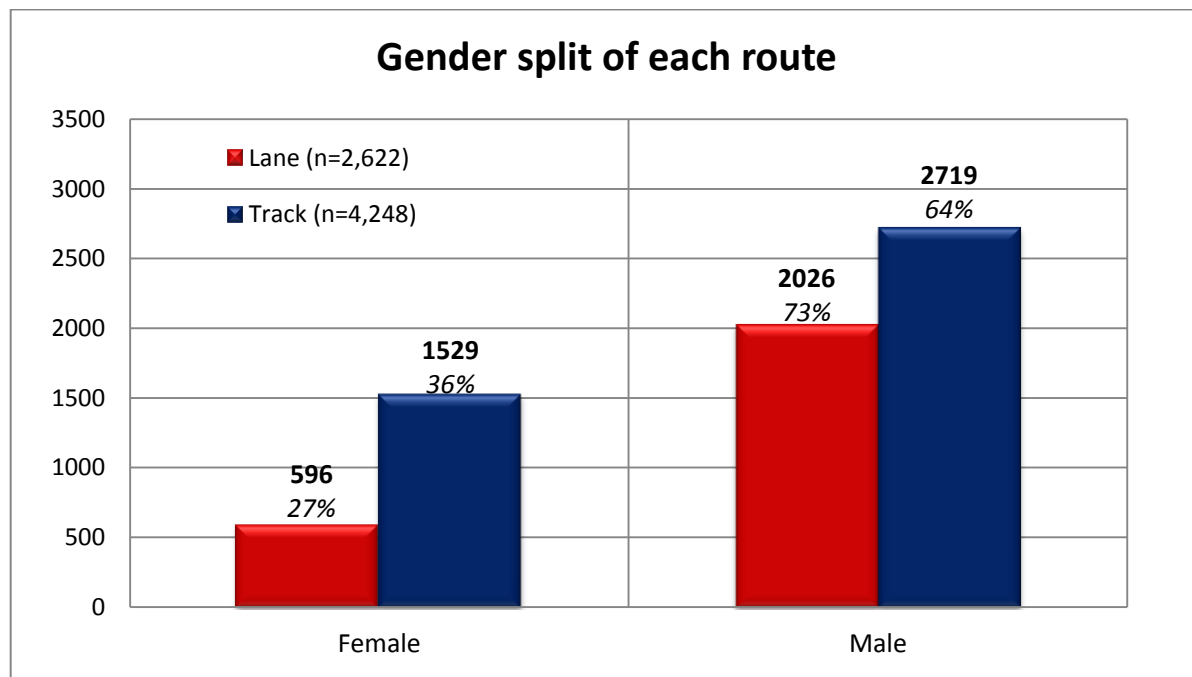
Volume



It was found that over the survey period the segregated cycle track was the preferred route for most cyclists. The volumes of users observed varied from 623 users during heavy rain

and windy conditions, to 1032 users during dry and calm conditions on the segregated cycle route. The percentage split between the cycle routes, however, remained largely unaffected by weather. The average volume of cyclists on the cycle lane (549 users) compared to the average on the cycle track (862 users) represents a 39% to 61% split along the Grand Canal routes. Therefore where cyclists have the option to choose a segregated facility over an on-road facility the majority will choose the segregated option.

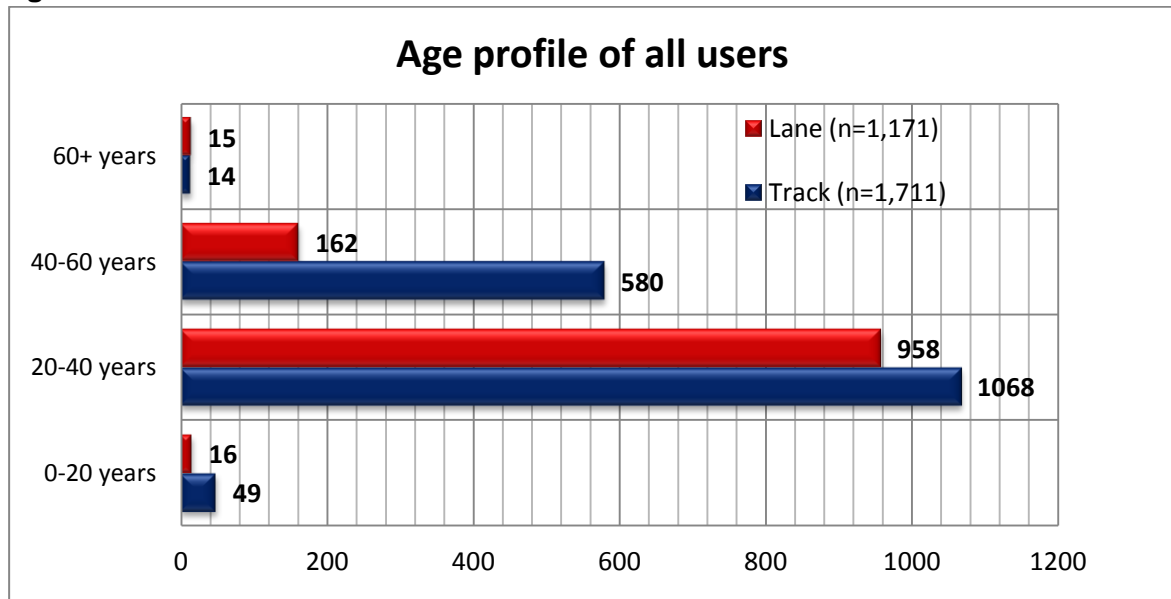
Gender



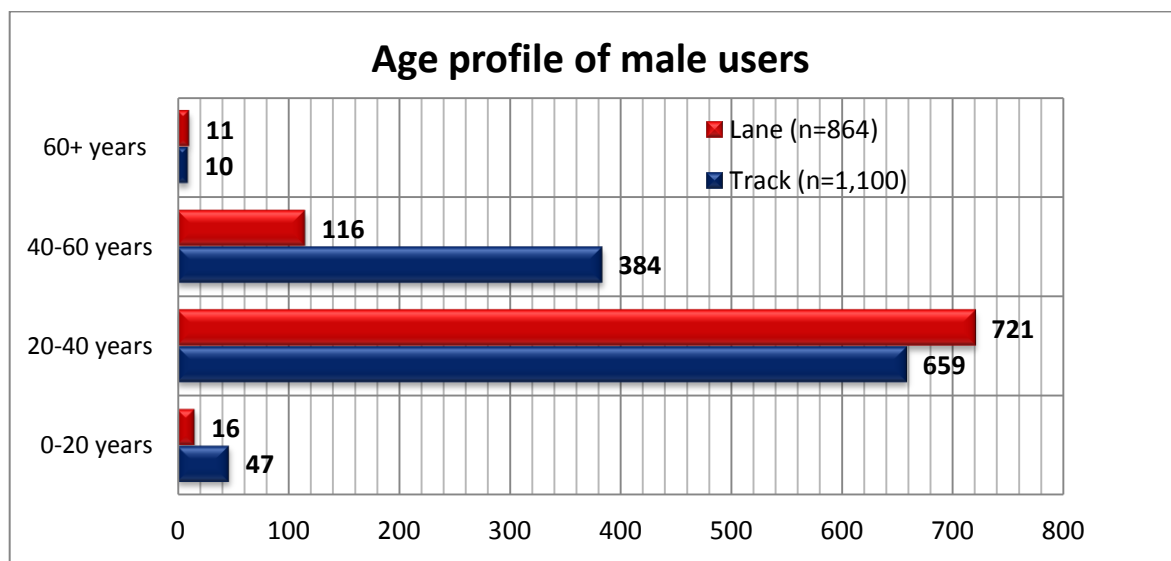
According to the Irish Central Statistics Office 2011 Census, the average gender split of cyclists in Dublin City is 72% male against 28% female which is very close to the UK split noted earlier. The survey results for the on-road cycle lane along the Grand Canal showed a gender split of female users within the 24-28% range and a 76-72% range for male users. Conversely, the cycle track results showed a female percentage within the 33-38% range with a male percentage within 67%-62%.

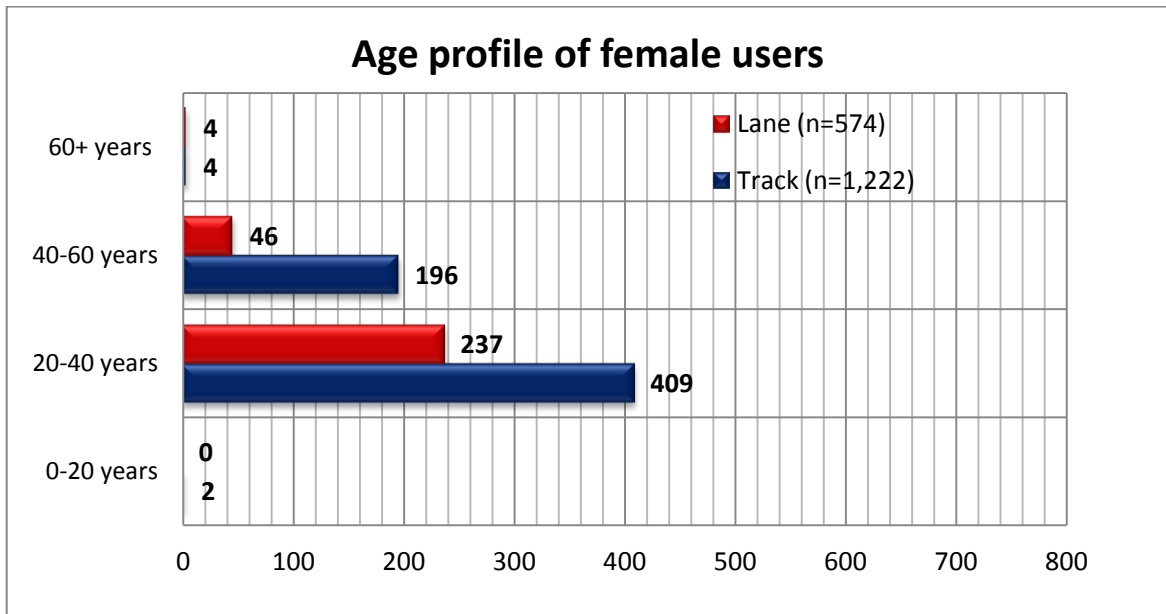
The graph above illustrates the gender split between the two routes from the entire sample set. There is therefore a statically significant preference for female cyclists to choose the off-road, segregated cycle route. Since the female percentage (36%) using the track is higher than the overall percentage female cyclists throughout the City (28%), this suggests that this type of infrastructure may assist in addressing the current gender bias.

Age Profile



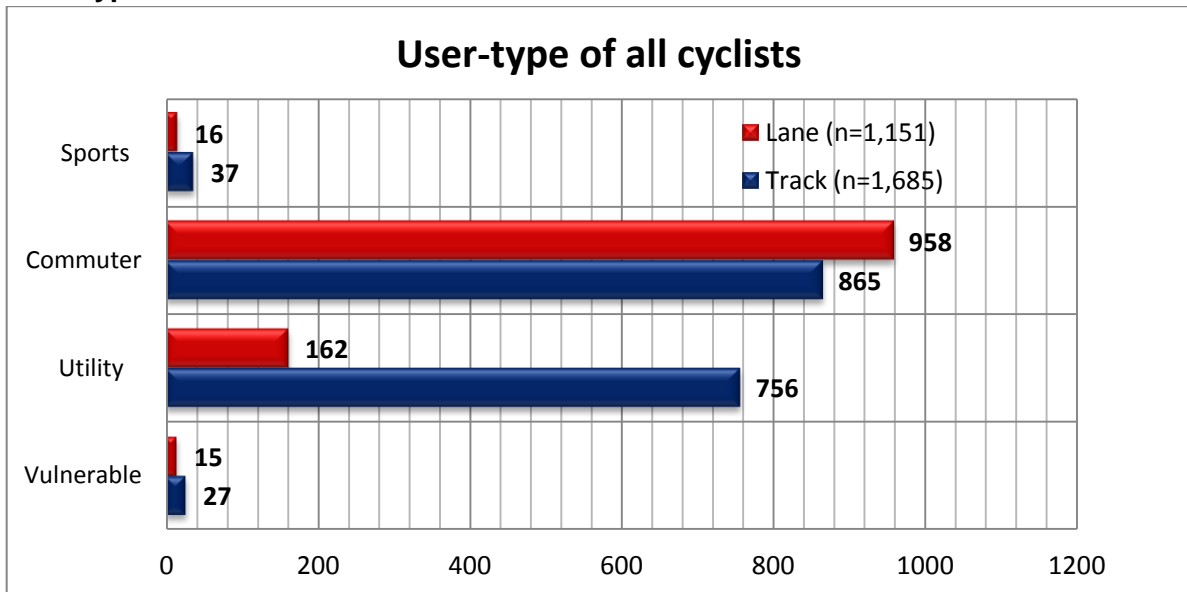
The above graph indicates a clear preference for those aged in the 40- 60 year group for the cycle track facility. Younger cyclists, in the 20-40 year group, are almost split evenly between the segregated and on road cycle facility, which is likely to be influenced by the delays experienced along the segregated route and the willingness of this age group to mix with traffic. When gender is included in this age assessment it can be seen that males in the 20 to 40 age bracket are the only group to choose the on-road facility over the segregated option.



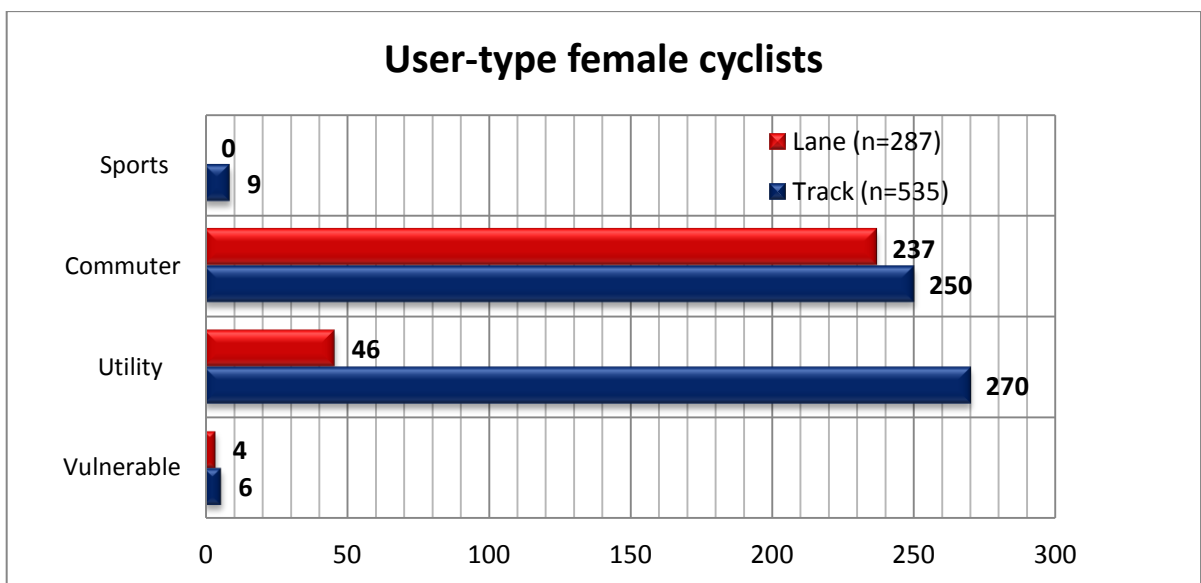
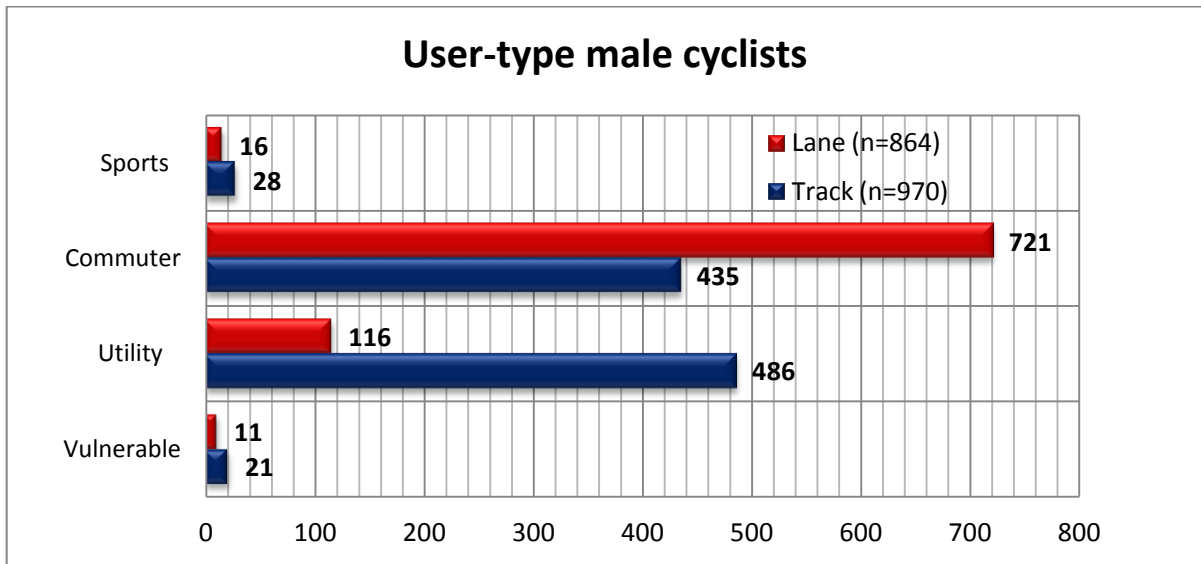


Whereas female users in the 20-40 year age group prefer the cycle track than the on-road cycle lane. Interestingly younger male cyclists in the 0-20 year age group have a much stronger preference for the track, while female cyclists in this age group do not feature to any significant level in the survey. This is consistent with observations and research elsewhere suggesting that younger females are much less likely to cycle than their male counterparts.

User Types



As would be expected commuters are the main type of cycle user along these routes during the morning peak period, making up 65% of all users. This user type does show a preference to use the on-road cycle facilities, however a very significant proportion do choose to use the segregated facility. Of particular relevance to this article is the very high proportion of utility cyclists that use the segregated facility over the on-road facility, suggesting that these users are more averse to mixing with other traffic.



When the gender of these user types is examined a very interesting divide between the sexes is observed, with females showing a preference for the segregated facility in all cases with male commuters more inclined to select the on-road cycle lane. This indicates that the male commuters are less responsive to risk and more sensitive to journey time variation.

Conclusions

The above demonstrates the provision of high quality segregated cycle infrastructure has the potential to widen the participation levels. It would appear that female cyclists and utility cyclists in particular have a strong preference for segregated facilities, even if the journey time is longer. This suggests that the type of infrastructure being provided can impact on participation levels. If there is an appetite to change the male (MAMIL) dominated cycling culture it is essential that the segregated infrastructure that is favoured by those that are not cycling currently is provided. This is supported by observation in many European Countries which have a strong mainstream cycling cultures.

About the Authors



Joe Seymour is a Chartered Engineer and Regional Director with AECOM. He is a Fellow of the Chartered Institute of Highways and Transportation and Engineers Ireland, and has over 19 years experience as a transportation professional. Joe has particular expertise in Traffic Engineering, having been responsible for the design of in the region of 400km of bus priority and cycle schemes and various urban improvement schemes.



Eoin O'Mahony is a Chartered Engineer and Associate Director with AECOM. His experience includes the design of cycling schemes, development of cycle networks, and research into the understanding of the critical success factors for cycling infrastructure. His recent project experience includes the Greater Dublin Area Cycle Network Plan, Liffey Cycle Route, and the Dublin to Galway Cycle Route.