

london analytics research journal

issue 1

gender and critical mass: do high cycle flows correlate with a high proportion of female cyclists?

abstract

In this paper, I examine the evidence for the proposition that places with high cycling tend to have a higher proportion of female cyclists. Positive correlations supporting this are found within two separate data sets: the 2001 Census, and the London Area Travel Survey 2001. Comparisons are made to results from the Dutch annual national travel survey, which shows high cycling figures nationally and by individual province, sustained high modal share across all ages, including the over-75s, and a consistent balance between the numbers of male and female cyclists. Recent increases in the amount of cycling in Greater London (40% growth on the main road network, the TLRN, between 2001 and 2004), have been accompanied by an increase in the proportion of women within the cycling population, from 27% in 2001 to 40% in 2005.

telephone: [+44] (0)20 7627 8924

email: journal@LondonAnalytics.info

London Analytics Limited is registered in England and Wales. Company registration number: 0545 1065
Registered Office: 3 Queens House, 176 South Lambeth Road, London SW8 1QS, England.

editorial

Welcome to the first edition of the London Analytics Research Journal. Periodical reports will be published based on recent work by our staff and affiliates. A paper on the demographics of cycling begins proceedings, having been prompted by a recent discussion among cycle planners in Britain: thanks to them for prompting this research, and to Transport for London's Cycling Centre of Excellence for guidance during the writing of this paper. This journal is published online at www.LondonAnalytics.info/research-journal and comments are welcome: email.journal@LondonAnalytics.info

gender and critical mass:

do high cycle flows correlate with a high proportion of female cyclists?

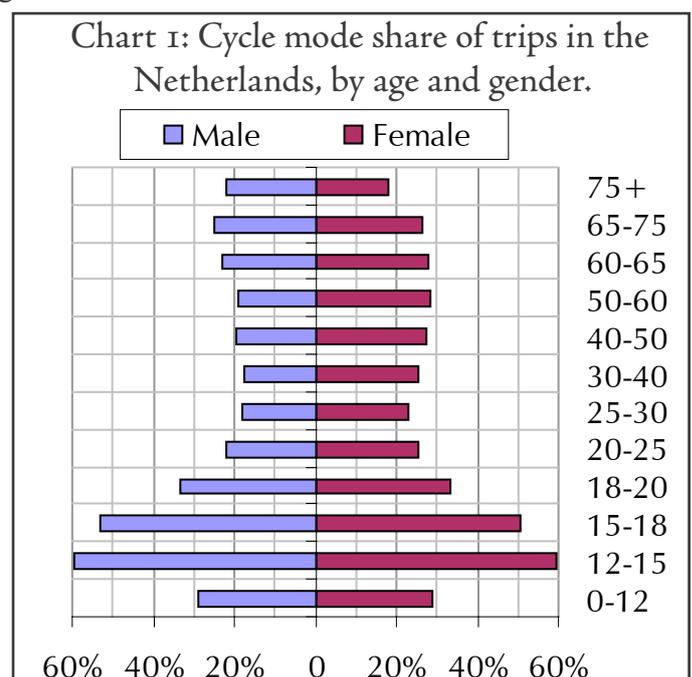
Andrew Smith, London Analytics Ltd. <Andrew@LondonAnalytics.info>

summary

Comparisons made at the international, inter-regional, and intra-London level, and of the London-wide figures for 2001 and 2005, show a recurring pattern: where cycling is uncommon, it is mostly done by males; larger cycling populations are more evenly balanced between the genders. As cycle flows approach critical mass, as they have in Central London recently, sharp growth may be observed in the proportion of cyclists who are female.

the netherlands

In countries such as the Netherlands where cycling is common, the casual observer will see a fairly even balance of men and women amongst the many cyclists. The figures⁽¹⁾ bear this out: in the province with the least cycling, the hilly (by Dutch standards) Limburg, cycling has a modal share of 19%; and 50% of all cycling trips are made by women and girls. In the other provinces, cycling modal share varies between 21% and 31%, and the female share of cycling varies between 53% and 57%: the national average is 55%. Furthermore, cycling is common across all age bands (Chart 1): 20% of trips made by those aged over 75 are by cycle; the equivalent figure for the total population is 27%.



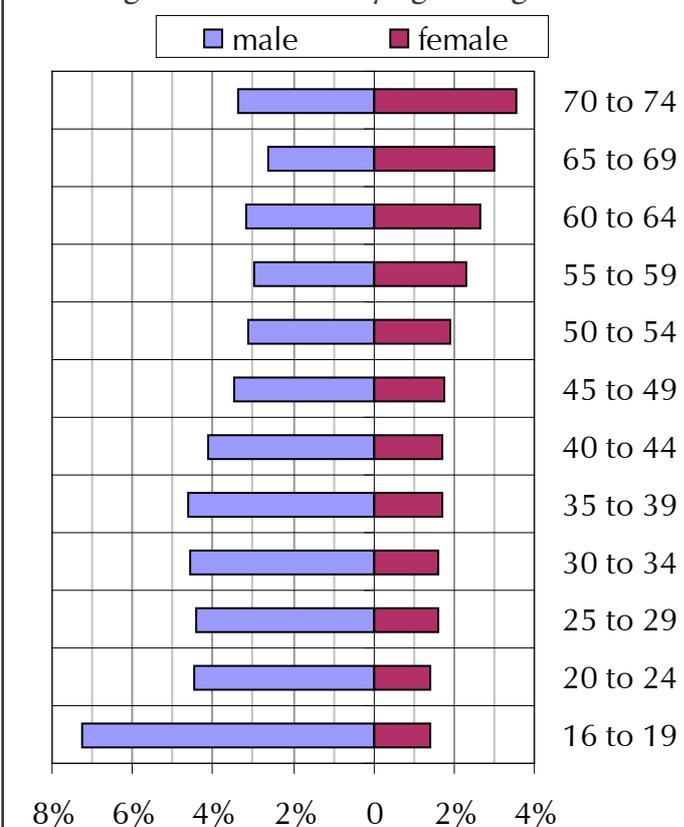
(1) OVG 2003, CBS Statline: <http://statline.cbs.nl/>

england & wales

The 2001 Census⁽²⁾ recorded the main-mode of the journey-to-work for all of the population who were in work in the week prior to Census day. As a comparison with the Dutch all-trip data shown earlier, Chart 2 shows the modal share for bicycle, specifically for commuting trips in England & Wales, disaggregated by gender and age. The age profile amongst cycling males is not too dissimilar to that seen in the Netherlands, though the modal share is substantially lower. However, proportionally few women cycle to work, with the over-70s showing the highest mode share for cycling. As a whole, England & Wales has a much lower modal share for cycling than the Netherlands (3% and 27% respectively), and a far lower proportion of its cyclists are female (27% and 55% respectively).

The geographic disaggregation of modal split for journeys to work within England & Wales is shown in Chart 3. Overall the pattern is of a positive correlation between the proportion of commuter cyclists that are female (x-axis), and proportion of journeys to work that are made by cycle (y-axis). Each point represents a Census

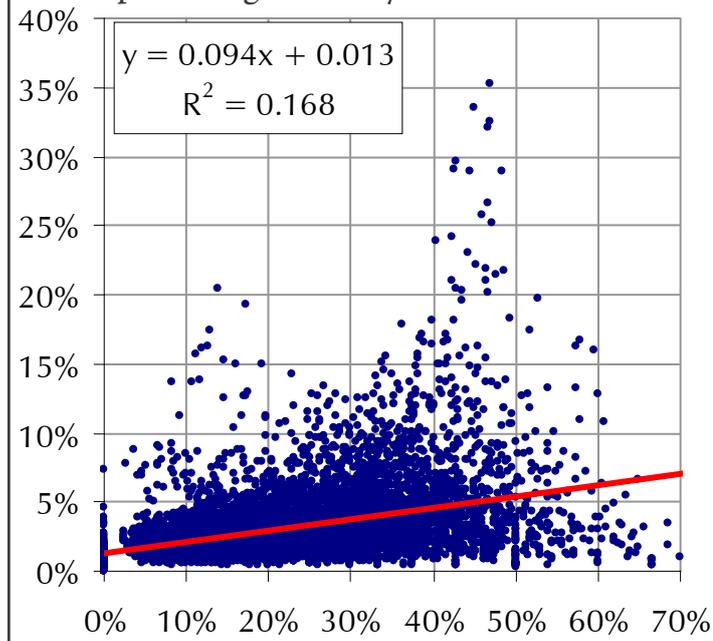
Chart 2: Cycle mode share, commuting trips in England & Wales, by age and gender.



Area, and areas with fewer than 20 commuter cyclists have been suppressed, due to the wide confidence interval that would be associated with the x-axis value.

In only one census area was a cycling mode share of over 20% observed together with a low proportion (less than 20%) of female cyclists: Shrivenham, near Swindon. The explanation for this anomaly may be related to the main employer there, the Royal Military College of Science. Of the other 23 areas with a cycle mode share over 20%, all have a female share of cycling in the range 40-48%: 14 of these areas are in and around Cambridge, 7 are in Oxford, and 2 are in Heworth, York.

Chart 3: % of cycle commuters who are female, plotted against % cycle mode share

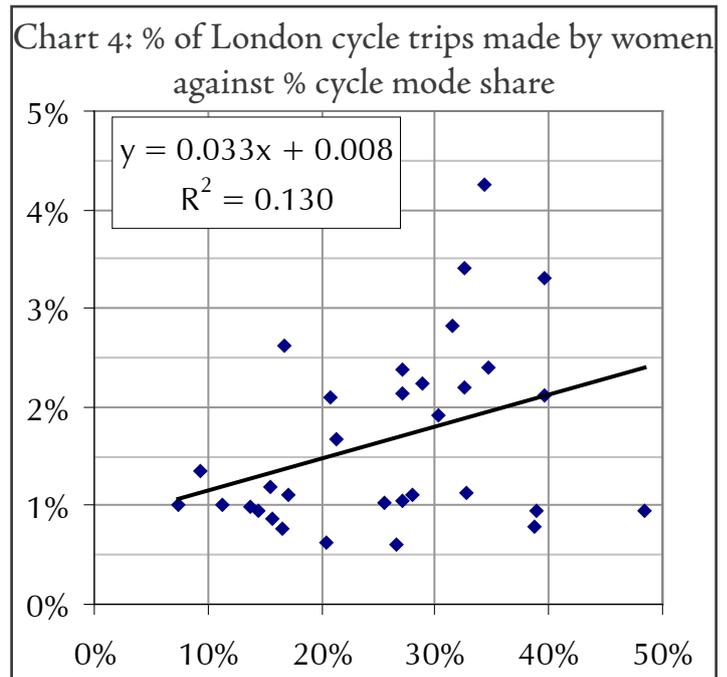


(2) Census 2001, Office for National Statistics: <http://www.nomisweb.ac.uk/>

greater london

The London Area Travel Survey, LATS 2001, included a one-week travel diary covering all trips (not just commuting) made by around 60,000 people across the Greater London area. Chart 4 shows the proportion of cycling trips made by women (x-axis), plotted against total cycling mode share. Each point represents the figures for the residents of one London borough.

Although the borough with the highest proportion (48%) of female cyclists, Merton, has a very low cycling modal share, of just 1.0%, overall the national trend is repeated locally: boroughs with more cycling residents tend to have a more even balance of male and female cyclists.



In 2001, the overall balance of cycling trips between males and females was 73% : 27% - an identical ratio to the national figures for commuting, from the census; and in London cycling had a trip mode-share of 1.4% (for all trip purposes). In the four years since those surveys, total cycling in London has grown significantly: including a 40% increase on Transport for London's road network (the TLRN) between 2001 and the end of 2004⁽³⁾. A survey⁽⁴⁾ done in early Spring 2005 of 1000 Londoners showed that the proportion of cycling done by females had grown in four years from 27% to 40%: the growth in cycling has correlated with substantial shift towards an even balance of male and female cyclists.

conclusions

A more even balance of male-female cycling tends to be correlated with more cycling, reflecting a more mature, well-developed cycling market. As cycling retakes market share, it expands from early adopters⁽⁵⁾ (typically young males), to the wider population. Furthermore, based on observations from the Netherlands, a large cycling population broadly reflects the age composition, as well as the gender split, of the total population. For planners seeking to create a large, sustained cycling culture, the cycling population must include both genders and all age groups. The build-up towards a critical mass of cycling may be detectable by monitoring the demographics of cyclists: as that level approaches (as it has in London in the past few years), the proportion of cyclists that are female quickly increases to 40% and more.

- (3) TLRN Cycling Performance Indicator, Transport for London, April 2005
- (4) TfL Omnibus survey, Transport for London, April 2005.
- (5) TRL 266: Attitudes to cycling - a qualitative study and conceptual framework