Glasgow population demographics

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October 20, 2015

Abstract

This document contains additional notes, to define and illustrate the variables shown in the an associated Google map. A summary of the presentation within the Google map is given. Each of the demographic distributions are presented as a function of the Glasgow electoral wards. Correlations between these variables and the distribution of broadly evangelical churches are discussed. The number of broadly evangelical churches is found to be anti-correlated with indicators of deprivation.

1 Glasgow and evangelical churches

Demographics and church survey information was summarised and included in a Google map [1]. This map contains data collected by telephoning broadly evangelical churches across Glasgow, data taken from the 2012 Scottish Index of Multiple Deprivation (SIMD) rank, and data summarised from the 2011 Scottish Census. The boundary lines for the Glasgow electoral wards were extracted from the 2014 wards defined in the boundary line package supplied by the Ordnance Survey (OS). The postcode to electoral ward mapping was taken from the 2014 code point OS package. This mapping was used to associated the SIMD postcodes with electoral wards.

Churches are shown in purple and marked as "Estimated" where no data was directly available from the church in question. These estimations represent a best estimate and can be replaced as soon as data become available. While great care has been taken to survey all broadly evangelical churches within the Glasgow wards, it is possible that some churches might have been missed. Please get in touch to highlight any missing church groups.

2 Demographic distributions

These variables are shown in the Google map and are illustrated in Figures 1 to 14 for each electoral ward, to enable easy comparisons between all electoral wards. The brown dashed line is the mean of each distribution, whereas the yellow area is the sample standard deviation around the mean. Each point is shown with its associated statistical uncertainty. (No systematic uncertainties are shown, since the 2011 Scottish census does not provide them. No correlations between the different observables are shown, since correlation information is not available from the 2011 Scottish census.)

2.1 General population distributions

The total number of people living in each of the 21 Glasgow electoral wards is shown in Figure 1. The population per ward is within the range 2.3–3.3 thousand people, where the North East ward contains the highest population. Figures 2 to 6 are with respect to these populations.

Figure 2 and 3 show the number of people under 18 years old and 65 years or older. These two Figures show similar features, in that Hillhead and Anderston / City have a population that does not include many children or older people. This is expected due to the population densities of students around these areas. Greater Pollok and the North East wards have the highest number of children, whereas Craigton and Shettleston have the oldest populations.

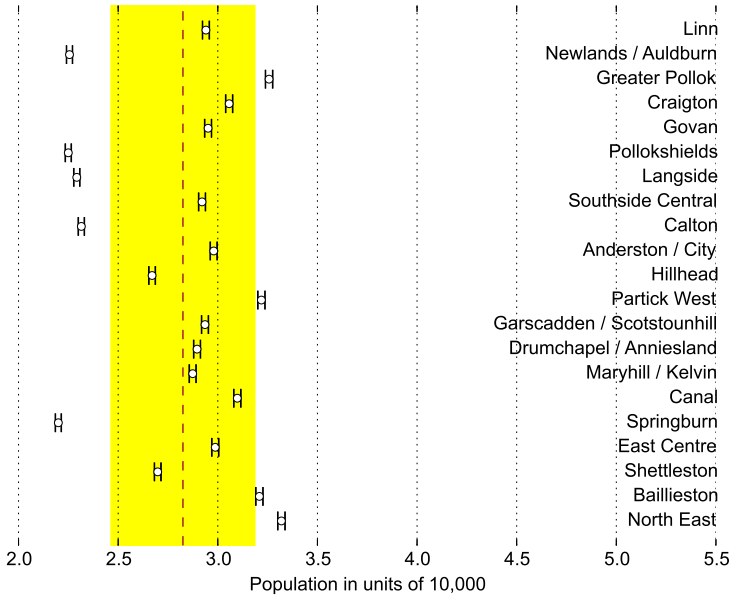

Figure 1: The total population of each Glasgow electoral ward. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

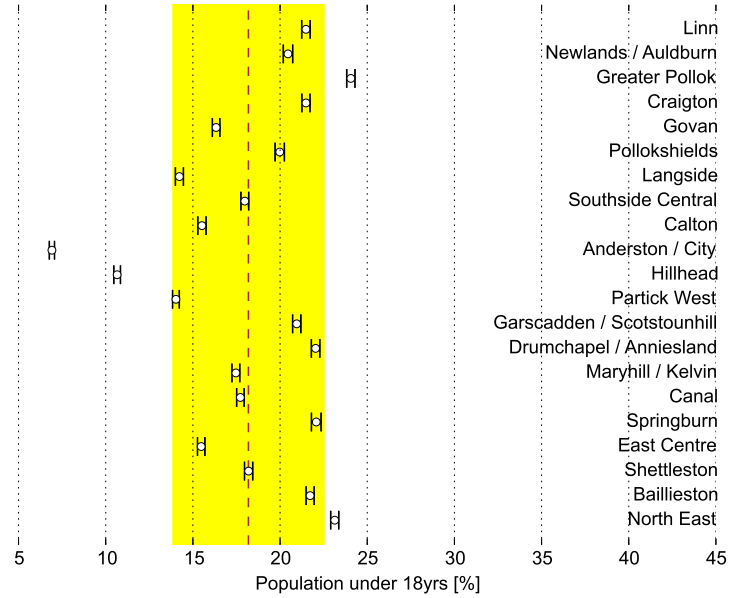

Figure 2: The fraction of people under the age of 18 in each Glasgow electoral ward. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

The ethnicity information for each electoral ward is shown to aid those seeking to reach out to surrounding communities. The largest grouping is used to illustrate the population mix, where finer details of the ethnic make up of the wards are available within the census data. The ethnicity of the

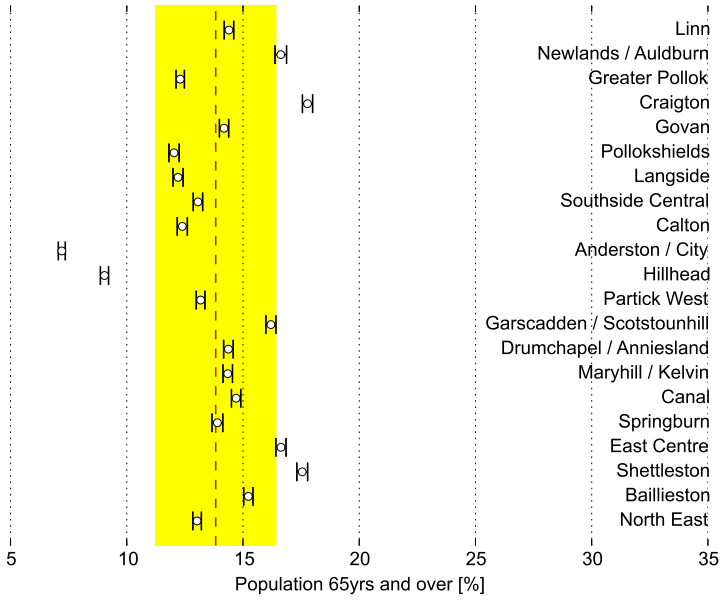

Figure 3: The fraction of people aged 65 or older in each Glasgow electoral ward. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

population is illustrated in Figure 4, whereas Figure 5 shows the fraction of people that were born within Britain or Ireland. No correlation information is available in the census data.

Pollokshields has the most diverse population. However, this ward has a higher fraction of people that were born in Britain or Ireland. This can be compared to Anderston / City, which has a highly diverse population and also has a high fraction of people that were born outside Scotland and Ireland. In the case of Anderston / City, this may be caused by student and working populations that surround the colleges and universities. White British+Irish

The proportion of people that reported themselves as having good health is illustrated in Figure 6. Since these data come from a survey, rather than from a medical report, the reported fractions are expected to be subject to systematic biases. For example, a person living in a relatively healthy environment may report themselves as being more unhealthy than someone that lives in a less healthy environment. However, the data still show clear trends that are expected from the population age spectrum and working environments. The most healthy populations are found in the Hillhead and Anderston / City electoral wards, where there are a large number of university students and a low number of retired people and children. Good Health

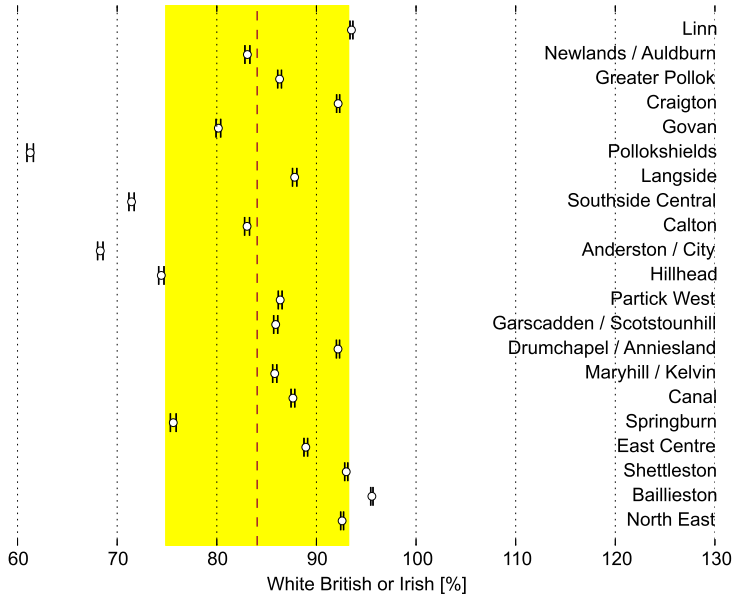

Figure 4: The fraction of white British or Irish people within each Glasgow electoral ward. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

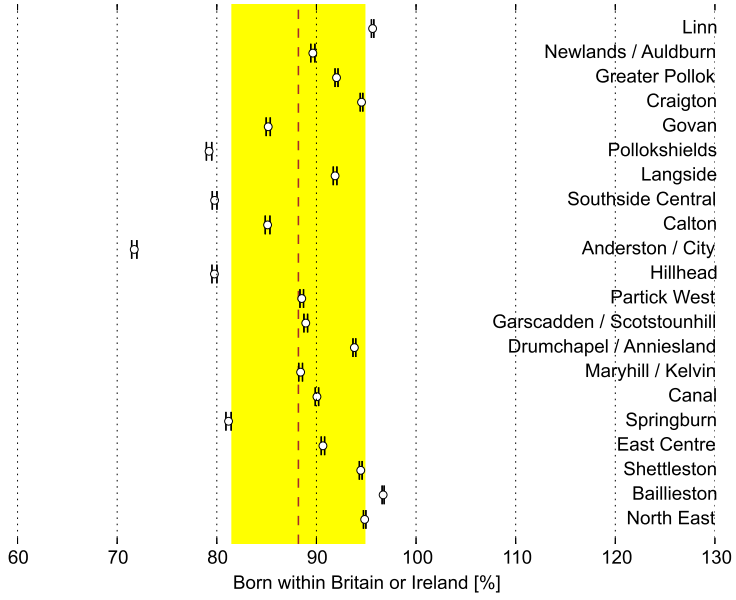

Figure 5: The fraction of people that were born within Britain or Ireland for each Glasgow electoral ward. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

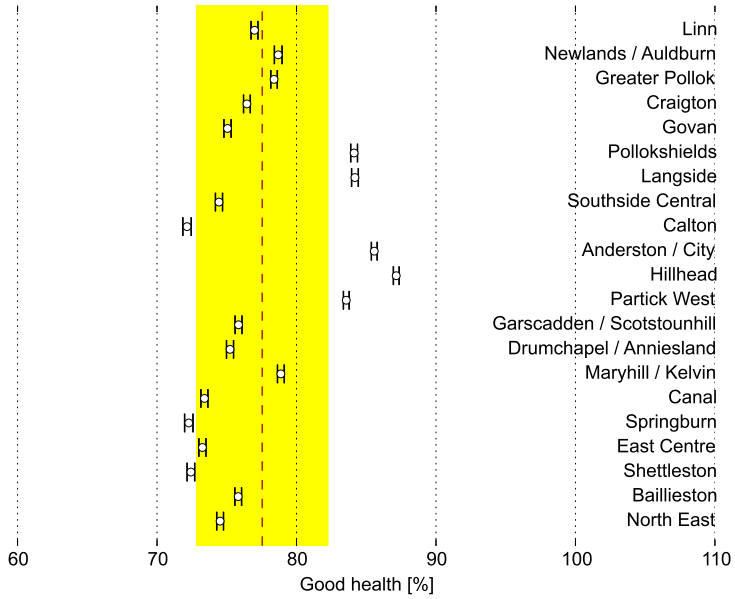

Figure 6: The fraction of people that identified themselves as having good health for each Glasgow ward. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

2.2 Working population distributions

The fraction of economically active people within the working age range (16-74yrs) is shown in Figure 7 for each Glasgow ward. This fraction includes all those in employment, those actively seeking employment and full-time students. It does not include parents staying at home with children, the long term unemployed and those that have never worked. It is a sign of disposable income within each ward. The Calton ward has the lowest fraction of economically active people, whereas the Langside ward is significantly above the rest of the distribution. The Langside fraction implies that a significant number of parents may be both working, rather than caring for children.

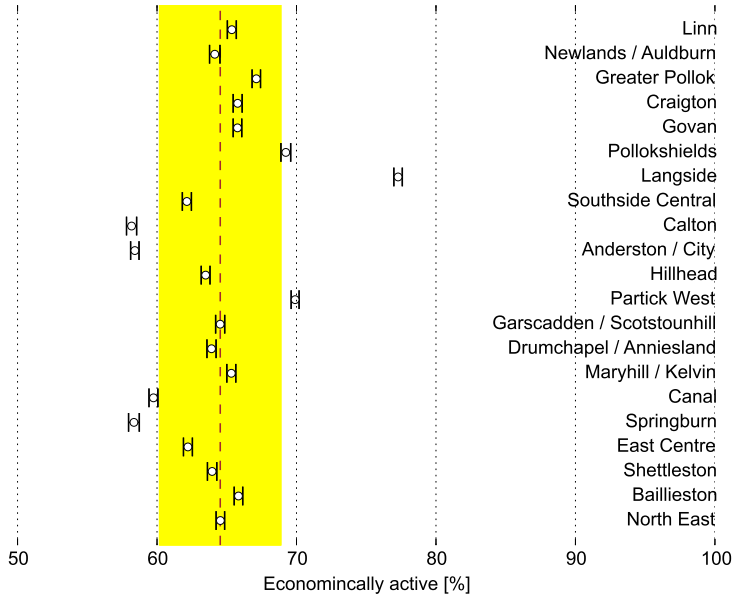

Figure 7: The fraction of economically active people for each Glasgow ward and within the age range 16-74 yrs. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

The fraction of long-term unemployed people, where this implies people classified as long-term unemployed or who have never worked is illustrated in Figure 8. This distribution can be compared with Figure 7, to conclude that the Springburn ward has both a lower number of economically active people and a high number of long term unemployed. Long term unemployed

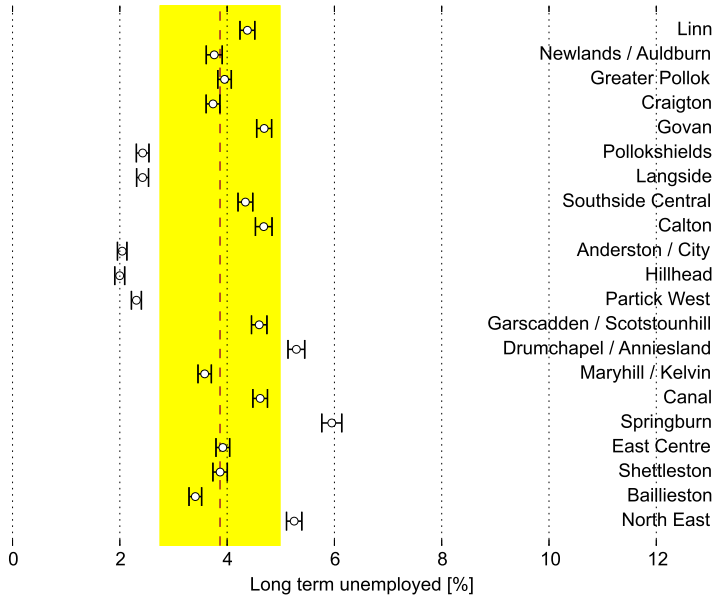

Figure 8: The fraction of long term unemployed people for each Glasgow ward and within the age range 16-74 yrs. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

2.3 Household distributions

The fraction of households that are either owned outright or owned and mortgaged is shown in Figure 9. The highest number of privately owned properties is found within the Langside ward, which is also the ward with the highest fraction of economically active people. In contrast with this, the Calton ward has the lowest fraction of privately owned households and the lowest fraction of economically active people.

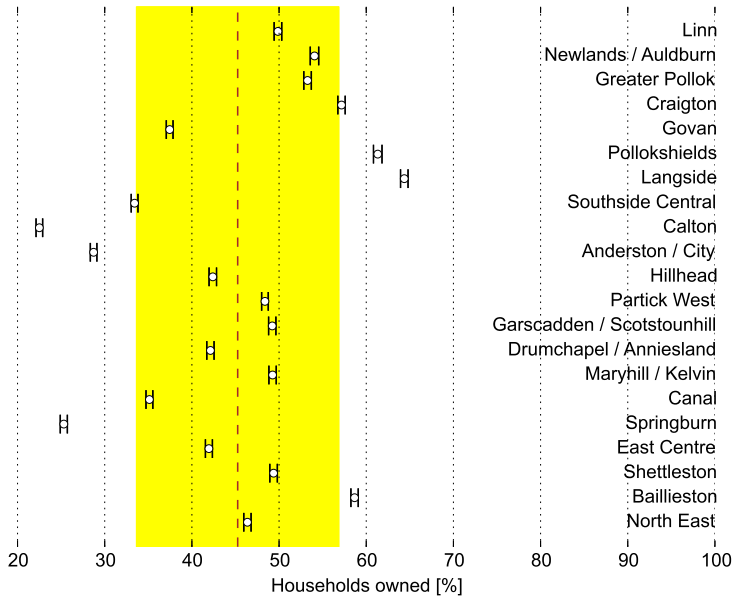

Figure 9: The fraction of households in private ownership, either outright or via a mortgage. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

The fractions of properties that are rented from social or private landlords are illustrated in Figures 10 and 11. Springburn has the highest fraction of properties rented from social landlords. Springburn also has the highest long term unemployment. The high number of privately rented properties in the Anderston / City and Hillhead wards is expected due to the large number of students resident in these areas.

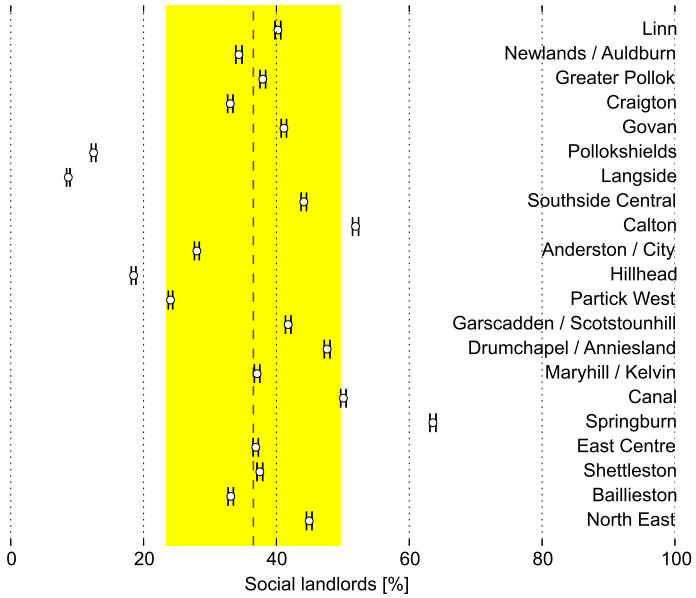

Figure 10: The fraction of households rented from a social landlord. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

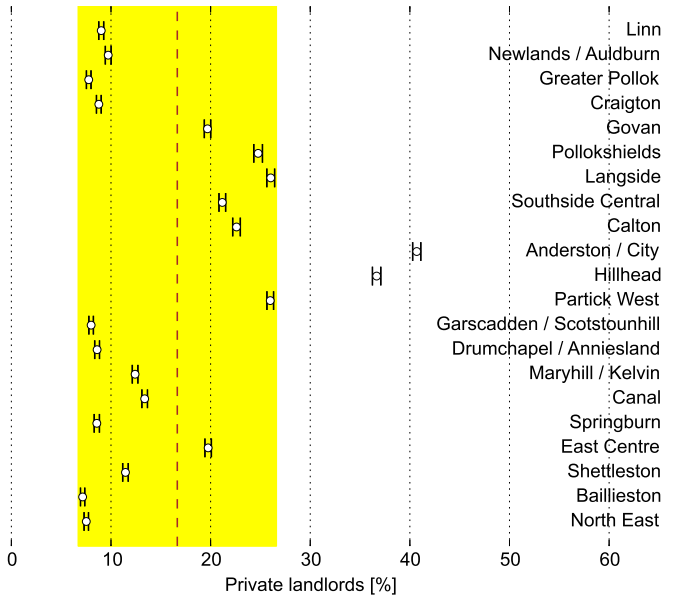

Figure 11: The fraction of households rented from a private landlord. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

2.4 Scottish Index of Multiple Deprivation

The Scottish Index of Multiple Deprivation (SIMD) is available for areas that do not map to electoral wards. However, the mapping between 2012 postcodes and the SIMD survey areas is available. To compare the SIMD ranking information at the level of electoral wards, the number of postcodes that had an SIMD rank in the lowest 15% was counted for each electoral ward. Then this number was divided by the toal number of postcodes for the given electoral ward. For most electoral wards the number of postcodes within the ward is similar, with the exception of Anderston / City which has a much higher number of postcodes. Therefore, the bias from using the number of postcodes is likely to be small. Around 250 postcodes that were present in the 2012 listing have been reassigned other postcodes. These postcodes are not within the OS code point system and therefore cannot be used to correlate the SIMD ranking with the electoral wards. These postcodes were excluded from the numerator and denominator. On the scale of the number of Glasgow postcodes, this represents a correction that is less than 1%.

The fraction of postcodes with SIMD rank less than 15% is given in Figure 12. The SIMD rank suggests that the Calton ward is the most deprived.

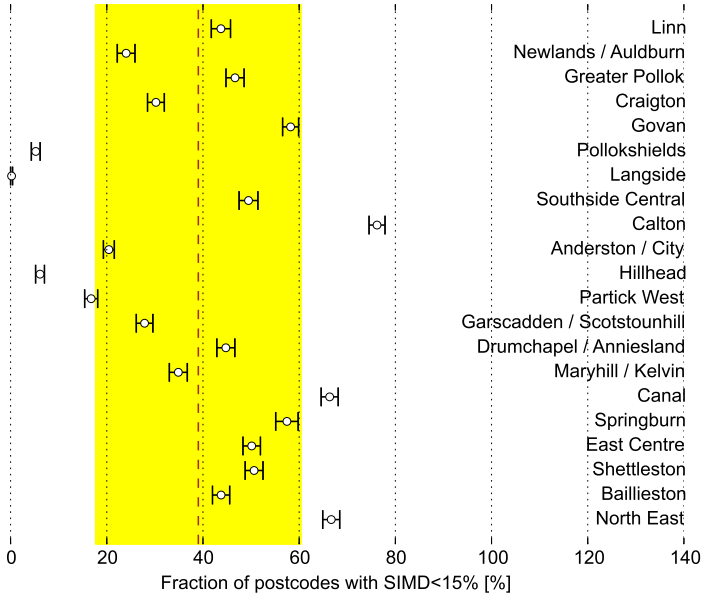

Figure 12: The fraction of postcodes that have an associated SIMD value that is in the lowest 15%. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

The number of broadly evangelical churches per 10,000 people is shown for each Glasgow electoral ward in Figure 13. Similar to Figures 1 to 12, the points are shown with their associated statistical uncertainties. As also shown in the Google map, the highest number of broadly evangelical churches is found in the Partick West ward. Many Glasgow wards have a very low number of broadly evangelical churches per 10,000 people.

The fraction of people attending a broadly evangelical church per 10,000 people in each Glasgow electoral ward is shown in Figure 14. Even if every church attendee was actively involved in sharing the gospel, many wards may not hear the message. In particular, some of the most deprived areas have the lowest number of churches and the lowest number of church attendees.

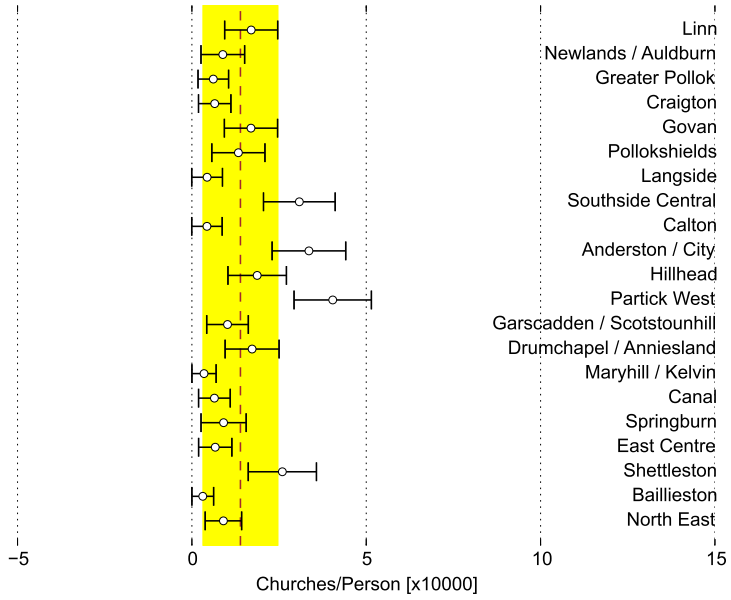

Figure 13: The number of broadly evangelical churches per 10,000 people in each Glasgow electoral ward. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

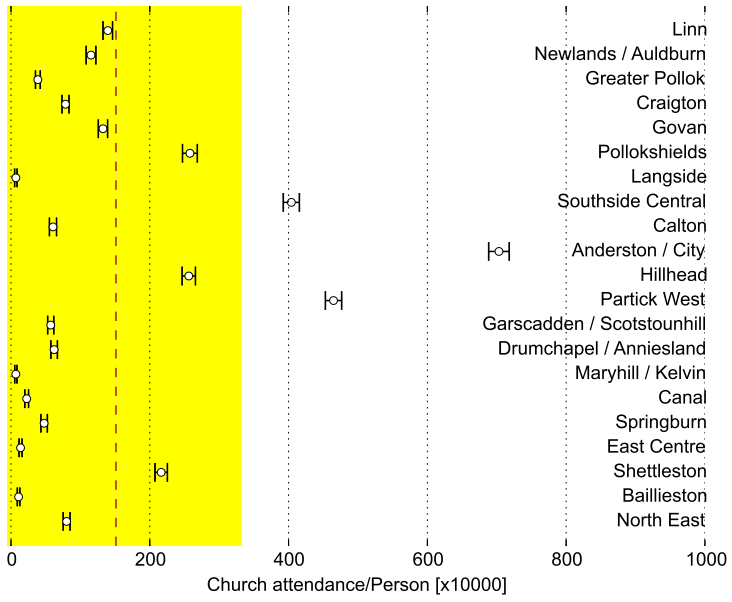

Figure 14: The number of people attending broadly evangelical churches per 10,000 people in each Glasgow electoral ward. The mean and the sample standard deviation of the distribution are shown as a brown dashed line and yellow area respectively.

3 Usage of Scottish Census data

The 2011 Scottish Census [2] standard data sets 2a (`2astd`) and 2b (`2bstd`) were used to define the categories shown in the Google map [1] and within Figures 1 to 14.

- The total population and the population as a function of the age group was read from:
  `2astd/Multi member Electoral Ward/KS102SC.csv`
  - The number of people under 18 was calculated by combining the '`0 to 4`', '`5 to 7`', '`8 to 9`', '`10 to 14`', '`15`' and '`16 to 17`' columns for each electoral ward.
  - The number of people 65 or older was calculated by combining the '`65 to 74`', '`75 to 84`', '`85 to 89`' and '`90 and over`' columns for each ward.
- Ethnic group information was read from:
  `2astd/Multi member Electoral Ward/KS201SC.csv`
  - The number of people classified as white British or Irish was calculated by summing the columns '`White: Scottish`', '`White: Other British`' and '`White: Irish`'
- The country of birth information was read from:
  `2astd/Multi member Electoral Ward/KS204SC.csv`
  - The number of people born in Britain or Ireland was calculated by summing the '`England`', '`Northern Ireland`', '`Scotland`', '`Wales`' and '`Republic of Ireland`' columns for each electoral ward.
- Information on the health of the population was read from:
  `2astd/Multi member Electoral Ward/QS302SC.csv`
  - Good health was defined by summing the columns 'Very good health' and 'Good health'.
- Information on economic activity was read from:
  `2bstd/Multi member Electoral Ward/KS601SC.csv`
  - Economically active was defined by summing the columns '`Economically active: Employee: Part-time`', '`Economically active: Employee: Full-time`', '`Economically active: Self-employed`', '`Economically active: Unemployed`' and '`Economically active: Full-time student`' for each electoral ward.
  - Long term unemployed was defined by summing the columns 'Unemployed people aged 16 to 74: Never worked' and 'Unemployed people aged 16 to 74: Long-term unemployed'.
- Information on the tenure of properties was read from:
  `2astd/Multi member Electoral Ward/KS402SC.csv`
  - Home owner was defined by summing the columns '`Owned: Owned outright`' and '`Owned: Owned with a mortgage or loan`'.
  - Social landlord was defined by summing the columns '`Rented: Council (Local authority)`' and '`Rented: Other social rented`'.
  - Privately rented was defined by summing the columns '`Rented: Private landlord or letting agency`' and '`Rented: Other`'

References

[1] W. H. Bell et al. Glasgow churches and demographics. https://www.google.com/maps/d/viewer?mid=zziOfldVzB8k.kqUTCusxFDdE&hl=en.

[2] National Records of Scotland. 2011 Census: Aggregate data (Scotland). http://www.scotlandscensus.gov.uk/.