

Investigating the feasibility of estimating the Population of Scotland by Ethnic Group

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The purpose of this paper is to report on my research into the feasibility of producing ethnic group population estimates for Scotland using the same or similar methodology as used by the Office of National Statistics (ONS) to estimate the ethnic group population of England and its Local Authority Districts

(http://www.statistics.gov.uk/downloads/theme_population/MethodologyforPEEG.pdf).

ONS use the Cohort Component Method:

“Summary of the cohort component method

Take the previous mid-year resident population and age-on by one year;

Then estimate the population change between 1 July and 30 June by;

Adding births occurring during the year;

Removing deaths occurring during the year;

Allowing for migration to and from the area;

In addition to the process summarised above, adjustments are also made for some special population groups that are not captured by the internal or international migration estimates: members of the armed forces, prisoners and pupils in boarding schools. These populations have specific age structures, which remain fairly constant over time. Therefore these groups are not aged-on with the rest of the population.”

“The adoption of the cohort component approach requires the development of a variety of demographic rates and propensities specific to each ethnic group. The approach places great reliance on using the results of the 2001 Census to identify differences between ethnic groups.”

This method can be adopted for Scotland with the possibility of producing estimates for Scottish Council areas also; however, there are limitations as discussed below.

- This base population for Scotland would be the 2001 Census population broken-down by ethnic group (for which there are 2 classifications – a 5 category and a 14 category), age, sex and Council area. At the Scottish Council level the base population is available but small numbers may lead to nonsense distributions, particularly when disaggregating ethnic groups by sex and single year of age (SYOA). It would therefore be more sensible to use a 5 category classification at the Council level and the 14 category at the Scotland level. See [Table 1](#).
- In terms of data on Armed Forces (AF), there is no specific question in the 2001 Census questionnaire related to AFs and the data gathered through the occupation question is deemed unsuitable due to the huge undercounts. Thus, 2001 Census data on AFs is limited to returns from Communal Establishments (specifically army barracks). This is the best available information but also underestimates the number of AFs personnel (~5,000 in the 2001 Census compared to ~13,000 in the 2008 MYEs). This is because many choose to live in married quarters or private housing rather than barracks. The ethnic composition of AF personnel may therefore be a poor representation at both the Scotland and Council level.
- The 2001 Census ethnic composition of prisoners (required to calculate distributions to apply to the MYE prisoner count) is available. The numbers are small but the ethnic composition should be a reasonable representation. MYE counts of prisoners are supplied to GROS by Justice Statistics for use in the MYEs and so would be available for this purpose.

- Information on School Boarders is not collected for or used in the Scottish MYEs, so would not be included as a special group.
- In terms of migration, data on ethnic group migration patterns is available from the 2001 Census for within Scotland and Rest of UK migration. Again though, numbers are very small particularly when broken down by age, sex and Council area.
- Calculation, using 2001 Census data, of ethnic differentials in propensities to migrate to other parts of the UK is complicated by the use of different ethnic classifications in the English, Welsh and Northern Ireland censuses.
- International Passenger Survey data can be used to calculate the composition of overseas migrants by country of birth for any given year. This composition will be combined with 2001 Census data on country of birth cross-tabulated against ethnicity. The end result will be an ethnic group (rather than county of birth) distribution of overseas migrants, by age, sex and Council Area for any given year. But these numbers will be very small.
- Data on Asylum Seekers is available, however various assumptions are made that, together with small numbers, will decrease the precision of the estimated ethnic composition of Asylum Seekers, particularly at the Council level. For example, one assumption is that 2001 Census data on country of birth is a fair proxy for nationality of asylum seekers; another is that the ethnic distribution of asylum seekers in Scotland (as a whole) also applies for each Council area.
- Calculation of the ethnic composition of in and out migrants from/to Ireland is based on 2001 Census data on inflows from Ireland. The assumption being that the ethnic composition for both inflows and outflows is similar to that of inflows from Ireland recorded in the Census. Again, small numbers will decrease the precision of this component, particularly at the council level.

As mentioned above, the base population (known as the starting population) is taken to be the 2001 Census population. The Census Dissemination team provided me with a table of Census counts by ethnic group, sex and single year of age. This is summarised in Table 1 below.

Table 1: Population by ethnic group: Scotland, 2001

	Total	% of total	median age	% of Population female and aged 15-44
All People	5,062,011	100	39	21
White	4,960,334	98.0%		
White Scottish	4,459,071	88.1%	39	21
Other White British	373,685	7.4%	42	23
White Irish	49,428	1.0%	46	21
Other White	78,150	1.5%	33	30
Indian	15,037	0.3%		
Indian	15,037	0.3%	28	26
Pakistani and Other South Asian	39,970	0.8%		
Pakistani	31,793	0.6%	24	27
Bangladeshi	1,981	0.0%	26	24
Other South Asian	6,196	0.1%	28	24
Chinese	16,310	0.3%		
Chinese	16,310	0.3%	28	29
Other	30,360	0.6%		
Caribbean	1,778	0.0%	34	28
African	5,118	0.1%	29	29
Black Scottish or Other Black	1,129	0.0%	29	24
Any Mixed Background	12,764	0.3%	19	24
Other Ethnic Group	9,571	0.2%	30	33

Source: 2001 Census

Over the next couple of months I plan to collect and analyse further Census 2001 data on ethnicity, for example, the ethnic composition of the armed forces by age and sex and migration patterns of ethnic groups across Scotland and their age/sex profiles. After exploring the data I plan to write a full paper into the feasibility of reproducing ethnic group population estimates for Scotland and its Council areas.