

## **Understanding recent internal migration of small cultural groups in England and Wales**

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### **Abstract**

Taking advantage of the availability of 2011 England and Wales census microdata, and recognising the importance of internal migration in shaping the size and nature of communities, this paper seeks to identify and quantify the underlying determinants of internal migration of small cultural groups. The Jewish group is one of the longest present minority groups in Britain. Three other groups (Arab, Chinese, and Sikh), which have been present in significant numbers for a much shorter period, are also examined. Multivariate binary logistic regression has been applied to data extracted from the 2011 safeguarded microdata files, to understand whether, having controlled for the variables identified, there remain residual unexplained differences between Jewish, other smaller group, and general migration levels. The study shows that the initial wide variation in migration propensity between these cultural groups is partly explained by compositional differences between groups, but that even after controlling for individual-level socio-demographic characteristics, regional location and distance of migration, cultural differences in migration behaviour remain. Overall, the study shows that there are fewer differences between Jewish and white British migration levels than for the other three groups, for whom a small but significant ‘cultural group penalty’, inhibiting migration propensity, remains.

*Keywords: internal migration, census, religion, ethnic group, England and Wales*

### **Introduction**

‘It is a simple fact that in an average year more than 10 times as many people move home in the UK than migrate into it’; so state Champion and Fielding (2015). Internal migration, defined as ‘permanent residential relocation that involves a change of usual residence within a country’ (Smith et al, 2015, p2), is thus an important element in shaping the population mix and size at a local level. The release of 2011 England and Wales census microdata has provided an opportunity to uncover and analyse the factors underpinning internal migration using broadly based up-to-date data on individuals. Unless otherwise stated, within this paper ‘migration’ and ‘movers’ refers to the act of, or the participants in,

changing residential location within England and Wales and, in the analysis section, specifically in the twelve months prior to the 2011 England and Wales census.

The focus of this paper is in exploring the underlying determinants of internal migration of Anglo-Jewry and, to provide context, other similarly sized groups (0.5% of the population) – Arabs, Chinese, and Sikhs – and the white British dominant community. Groups of this size are sufficiently large to warrant and be capable of investigation but, to date, have largely fallen below the research radar which has focused on larger minority groups. This paper thus seeks to broaden the knowledge base regarding small group internal migration. As the groups have been identified through either ethnic grouping or religion, which may be regarded as two important elements of cultural identity (see, for example, Jacobson, 1997), these sub-populations are referred to in this paper as smaller cultural groups. The groups included represent the totality of within-range positively identified and coherent groups (that is, excluding residual ‘other’ and mixed categories) based on religion or ethnic group, except for Buddhists. Buddhists were originally included in the scope, but were found to fall into two distinct groups (both spatially and culturally) – Asian (hereditary) Buddhists and white (primarily recent convert) Buddhists. The size of each group fell well below the other groups under examination, and there was a clear overlap between the Asian Buddhist group and the Chinese group, hence the exclusion of a separate Buddhist group from the analysis.

The benefit in focusing on the Jewish group, the majority of whose members are fourth or fifth generation UK-born (Alderman, 1998), is that it may provide an insight into what might influence migratory behaviour in other, more recently arrived, groups in future generations.

The key questions which the paper seeks to address are as follows:

- Q1: Does the propensity to migrate vary between the white British majority/host group and the smaller cultural groups?
- Q2: Do the drivers of migration vary between the groups?
- Q3: Once quantifiable differences have been accounted for, is there a residual ‘cultural group factor’ which acts either positively or negatively on migration propensity?
- Q4: Do the answers to the above questions change when distance of migration is taken into account?
- Q5: Is there evidence of a distinction in behaviour between the Jewish and other groups which might reflect that group’s longer established status?

The approach adopted in this study has been the development of multivariate logistic regression models. Prior to presenting the analysis, our understanding of the drivers of internal migration is briefly summarised, noting that no existing quantified analyses of the specific topic of Jewish migration within the UK have been identified. Availability of suitable data for this specific study is also addressed.

## **Background**

Migration (both internal and international) has a long history of study (Boyle et al, 1998; Castles and Miller, 2009). Such is the range of theories that have evolved, it is clear that (internal) migration is ‘a highly important, yet frustratingly complex, phenomenon’ ODPM (2002, p25), a viewpoint mirrored by Smith et al (2015). Certainly, there is a significant body of research focusing on drivers of internal migration on both sides of the Atlantic (see, for example, Greenwood, 1985; Molloy et al, 2011, for the USA; Champion and Fielding, 1992; Champion et al, 1998; Fielding, 2012; and Smith et al, 2015 for the UK).

The clearest message that arises from this body of work is the strong relationship between age and the propensity to migrate, with rates peaking in young adulthood. Bailey and Livingston (2005, p ii) concluded that ‘age is strongly associated with certain life-course transitions which are in turn associated with moving home’. In overall terms, migration is linked to: economics and the labour market – both at a personal/household level (employment opportunities) and the wider state of the national/regional economy (Fielding, 2012); the housing market and aspirations for improved housing tenure or quality (Smith and Finney, 2015); the distribution of places in education (Smith and Jöns, 2015); and it also varies by social and cultural attributes (Champion et al, 1998), and the overall level of internal migration is on the decline (Champion and Shuttleworth, 2015; see Molloy et al, 2011, for equivalent USA experience).

Much is already known about the underlying personal and household characteristics that have most influence on the propensity to migrate. For example, ‘the presence of certain factors appears to act as a tie to an area, reducing migration rates. Such factors include: ownership of a home, rather than renting; having a job, but particularly being self-employed; having children in the household; and having caring responsibilities’ (Bailey and Livingston, 2005, p ii).

The resulting geographic patterns of migration in Britain have been found to demonstrate two strong, but possibly conflicting, patterns. Firstly, there is a London and south-east England effect; the strong economic performance of the region acts as an attractor, particularly for young adults, whereby the region acts as a ‘social escalator’, allowing people

to make socio-economic progress (Fielding, 1992; 2007). More recent work has identified a subsequent 'regional return' effect (Champion, 2012). The second major trend is counter-urbanisation and the 'counter-urbanisation cascade' (Champion and Atkins, 1996) – net migration flows from Inner London to Outer London; from principal metropolitan cities to other cities; and from these areas progressively to smaller urban areas through various gradings to the most remote rural areas. More recent research has found a continuation of the process, though possibly with reducing intensity (Champion, 2005; Simpson and Finney, 2009; Lomax et al, 2014).

Of most relevance to the current study is work that has been carried out in connection with minority group migration in the UK. Here, attention is given to the understanding of underlying determinants, rather than locational aspects (for example, Stillwell and Hussain, 2008; Simpson and Finney, 2009), or more qualitative issues (see Phillips and Robinson, 2015, for an overview).

Given that data on migration information grouped by religion has been available from the 2001 census (albeit in the form of specially commissioned tables), it is a little surprising that almost all published research focuses on ethnic groups. Gale's (2013) study of Birmingham includes an extensive examination of internal migration of groups by religion in and to/from the city. Whilst the focus is on the Muslim group, for which he found a 'net outward movement ... from areas of high community concentration' (p888), all the census-named religions are presented in the analysis. That work appears to be the only accessible publication making use of these data.

Finney and Simpson (2008) examined the impact of some socio-economic characteristics of ethnic groups concurrently. Prior to taking these characteristics into account, the migration propensity for most non-white groups appears higher than for white Britons. However, once these variables are accounted for, the majority of groups are found to have a lower than or similar likelihood of moving as the host community. Examining the economic aspects in more detail, Catney and Simpson found a social gradient 'favouring professional and managerial classes for residential mobility in general, and for longer distance movement across district boundaries and away from districts of past immigration' (2010, p582). The conclusion did not apply to the Chinese group, and there were a number of variations in respect of London. At an international level, Bernard et al (2014) found that different cultural backgrounds led to a variation in the age at which life-course changes occurred (and thus the age/migration profile); this might be relevant in examining migration differences between cultural groups within a single country.

In addition to a closer examination of these differences, there are a number of gaps in the knowledge base which the current study seeks to fill. Firstly, there might be intrinsic behavioural differences for religion-based group such as Jews, who have not previously been investigated in this way; or Sikhs, often considered only as a sub-set of the Indian ethnic group; or for under-studied ethnic groups such as Arabs. Secondly, following a more than doubling in its student numbers since the 2001 census, the Chinese group's migration behaviour warrants further examination. Indeed, more generally, this study provides an opportunity to re-visit the relationship between population characteristics and propensity to migrate based on 2011 census microdata, rather than 2001 data utilised in many of the published works, particularly in the light of the apparent downward trend over time in overall migration rates.

Finally, we should not lose sight of the view expressed by Everett Lee fifty years ago that 'the decision to migrate is never completely rational, and for some persons the rational component is much less than the irrational' (Lee, 1966, p51).

### **Sources of Data for this Study**

The majority of projects researching internal migration in the UK have used either census data or data from the National Health Service Central Register (NHSCR)/Patient survey. However, for this study, data sources are more limited, as the NHSCR does not record religion or ethnic group, and this limitation applies to most of the other specialist sources. Some sources, such as the British Household Panel Survey, its successor Understanding Society, and the Office for National Statistics (ONS) Longitudinal Study do include such information, but the sample size (for Jews and similarly sized minority groups) is too small for use in this study.

Two 5% sample individual microdata files (the Local Authority and Regional files) from the 2011 census have been made available by ONS to approved researchers; they include records for over 26,000 Jews, of whom more than 3,000 moved home between 2010 and 2011 (and similar numbers for the other small groups). Both files provide access to a wide range of characteristics, allow migration to be examined in considerable detail, and are the primary source used in this study. The population for this study includes all usual residents of England and Wales, aged over 1 year of age (that is, excluding those who did not have a 12 months prior-to-the-census address in England and Wales), including students recorded at their term time address, captured in either file – 5.46 million persons. Of these, about 0.61 million (11%) are 'movers' – their address 12 months prior to the census was somewhere else within England and Wales.

Table 1 provides a basic summary of information about the relevant groups contained within the overall dataset. It should be noted that Arabs can only be identified in the regional file (they are grouped with ‘other ethnic groups’ in the local authority file); thus there is only a 5% sample available for Arabs, compared with 10% for the other groups.

The table summarises the proportions moving home in the 12 months prior to the census, and indicates that more than twice the proportion of Chinese residents of England and Wales moved in the 12 months prior to the census than did the white British group. Figure 1 presents migration-by-age information, and Figure 2 illustrates the age profile for each group as a whole (not just migrants). Both figures show a peak for the Chinese group in the 19-24 year age range – suggesting that the high overall migration rate for the Chinese group arises from a combination of a high likelihood of those in that age group migrating, with a large proportion of the Chinese population falling into that age group. The Chinese group also has the highest proportion making longer distance moves.

Whilst the microdata provide information on a wide range of characteristics it is important to recognise some short-comings in relation to investigating migration (Champion et al, 1998; Bailey and Livingston, 2005). Most particularly, socio-economic characteristics applying prior to the move (and potentially ‘explaining’ the decision to move) cannot be ascertained<sup>1</sup> – so, for example, if an unemployed person moved home to take up employment this cannot be ascertained as only the employment status on census day is recorded. So, to what extent does this possible weakness impact on use of this data source?

This study is not, of course, the first to use UK census data to examine drivers of migration (see, for example, Bailey and Livingston, 2005; Finney and Simpson, 2008; and Manley and Catney, 2012; none of whom comment on the potential impact of this potential drawback on the analysis and results presented). It is, therefore, worth considering whether there might be other sources of data that could shed some light on the issue.

Three major high-quality sources were examined. The ONS Longitudinal Study was ruled out as its prior-to-move characteristics relate to the previous census, at least nine years prior to the move. Understanding Society had to be ruled out due to severe attrition of respondents becoming untraceable because they have moved home (Knies, 2014). The longitudinal version of the Labour Force Survey (LFS) was also ruled out as movers are

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<sup>1</sup> Though for some types of move, the post-event characteristics are more pertinent – for example, although the intention to become a student might be known well in advance of a person moving from the parental home to study elsewhere, the change in personal characteristic relating to the move – becoming a student – only occurs as or after the move takes place, and is only recorded then.

automatically replaced by new occupants, making that output irrelevant to this study (ONS, 2015).

The main (non-longitudinal) output from the LFS does include a variable which indicates whether the respondent was living at the same address 12 months previously, so it is possible to identify migrants (ONS, 2011). The April to June 2011 quarterly survey (ie a period close to the 2011 census) includes 9,700 individuals who had been at their current address for less than 12 months; 9.7% of the total of 100,200 persons (all of whom live in private households and are aged 16 or more) who responded to the question – a proportion not materially different to the census figure. Specific questions compare employment status 12 months prior to the survey with current employment status; thus it is possible to produce a broad comparison of economic activity status at the time of the survey, and 12 months prior, split between those present at their current address for less than 12 months (movers) and those resident for longer (non-movers), for the 66,200 (of the 100,200 individuals mentioned above) who have these data recorded, using a data file accessed via the UK Data Service.

Table 2 summarises the split between movers and non-movers based on looking back 12 months from the survey date and, which might be thought to be preferable, looking forward from 12 months prior to the survey date. This table shows very little difference in the propensity to migrate based on economic status after the event, and before the event; indeed, none of the differences is significant at the 5% level. The analysis of the LFS shows that the overall propensity to move is unaffected by measuring economic status<sup>2</sup> prior to or after the event, and thus supports the use of (post-event) census data in the examination of migration.

### **Study Approach and Methodology**

Previous researchers, for example Bailey and Livingston (2005), Champion (2001), and Simpson and Finney (2009), have investigated census data in order to identify the primary characteristics which appear to be the determinants of migration, and there is no intention to ‘reinvent the wheel’ here. However, identification of key characteristics is undertaken with the intention of determining whether it is differences in the distribution of these characteristics between the minority groups that explains overall difference in migration rates for these groups, or whether some unexplained residual ‘cultural group factor’ remains in play.

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<sup>2</sup> Neither the LFS nor any other data source examined permitted a 12-months prior comparison to be made for any other characteristics found to be relevant in this study.

The variables initially under examination are those listed in column 1 of Table 3 (plus ‘Age of Individual’ and ‘Formal Marital Status’ mentioned in the table footnote). In addition, a cultural group variable was defined, with ‘white British’ as the reference category, and Arab, Chinese, Jewish, Sikh, and other background as the other categories. The ‘other background’ category was not used for analysis purposes – it simply represents the residents of England and Wales who did not fall into the white British or smaller cultural group categories, and permitted the same dataset to be used for analysis of ‘All Usual Residents’ and (suitably filtered) for analysis of individual groups of interest.

Previous studies have focussed on persons aged 16 and older, or excluded persons not living in households (for example, Bailey and Livingston, 2005). Exclusion of parts of the population appears to be based on simplicity of data preparation – standard economic activity categories tend to omit those aged under 16, and housing tenure categories usually omit communal institution residents. However, the range of these variables can be extended to cover all residents by increasing the number of categories. In addition, the current study uses an ‘age of household reference person (HRP)’ variable<sup>3</sup> in parallel with an ‘age of individual’ variable to overcome any issue of whose decision determines the migration of young children. The current analysis is thus more comprehensive than previous studies as it includes all usual residents of England and Wales irrespective of age<sup>4</sup> or abode.

Initial modelling examined the extent to which each variable, acting alone, ‘explains’ the propensity to migrate. This found that three of the variables – tenure, age, and age of HRP – are major determinants of migration; living arrangement, marital status, family mix, and economic activity are moderate contributors; highest qualification and year of arrival have a minor impact; and health, care provision and in particular gender, have only a very small impact. It is, however, very important to avoid a material level of collinearity between variables if a statistically robust regression model is to be produced. Analysis of collinearity led to the exclusion of individual age and marital status from the variables being used; age of HRP and living arrangement having been found to produce superior model performance. The regression analysis was carried out using IBM SPSS software (v21 and v22). In determining

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<sup>3</sup> Represented by the age of the individual for those living in communal establishments.

<sup>4</sup> The analysis has additionally been carried out with persons under the age of 16 excluded, to determine whether there is a material penalty involved in including the full age range in the model. All trends and conclusions described in this document would also apply to an adult only model. As omitting 20% of the population from the analysis would provide only a marginal improvement in model fit (Nagelkerke  $R^2$  increases from 0.27 only to 0.29), the full age range has been retained in the modelling.



the variables to include, analysis was carried out making use of automated stepwise analyses but mainly manually selected combinations and sequences of variables. The final selection of variables was based on a combination of quantitative assessment (Akaike information criterion (AIC), minus 2 log likelihood (-2LL) improvement, and R values) and a qualitative consideration of the balance of model complexity and extent of model fit improvement. This approach led to the inclusion of age of HRP, tenure, family mix, living arrangement, highest qualification, economic activity, and, because of its significance for some of the cultural groups, year of arrival, in the final model (see Table 3).

### **Regression Analysis for All Usual Residents**

Logistic regression has been carried out to derive a relationship between the seven identified variables and the propensity to migrate in the 12 months preceding the 2011 census for all usual residents of England and Wales. The analysis has been carried out in three stages. In the first stage the two variables (age of HRP and tenure) found to have materially more explanatory power than the other variables are introduced to the model. A second stage introduces four 'middle order' variables, and the final stage adds in year of arrival, due to its minimal role for some groups. Only the results for the complete model are described here, though it is worth noting that the first stage model (two variables) produces 19% of the 21% improvement in -2LL goodness of fit compared with the null (constant only) model. The results of the analysis are presented in Table 4. All the coefficients and odds are significant at the 1% level (hence the absence of any differentiating annotation within the table).

Each of the variables used is, overall, statistically independent of the others (significance levels all below 1%), and the odds of being a migrant for the reference case (a full time employee living in a married couple family, which has two or more dependent children, of whom the youngest is aged 0-9, living in a house with mortgage, in which HRP is aged 40-49) is 0.050 – that is, for every 50 reference persons who moved in the 12 months prior to the census there were 1000 who did not.

The odds of moving are three to four times higher than the reference age of HRP (40-49) for those living with an HRP aged under 24, and only about two-thirds for the oldest HRP groups, and there is no overlap between the 95% confidence intervals of the odds ratios for any of the age groups. As regards the impact of dependent children, the lowest odds are for persons who live in households where the youngest (or sole) dependent child is aged 10-18 (that is, secondary school children); families without dependent children have higher odds of moving. Other results reflect those found in many previous studies - for example, the odds of moving are four times as much for those who rent from a private landlord than for home

owners; those living as cohabiting couples have almost twice the odds of moving as married couples; degree holders are the group most likely to migrate, and those with no qualifications least likely; and the odds of being a migrant for unemployed persons are greater than those in work. The final section demonstrates that non-UK born individuals who arrived prior to 2001 are less likely to migrate than UK-born persons, whereas more recent arrivals are more likely to have moved within England and Wales in the 12 months prior to the census, having controlled for the other variables.

As regards the overall ‘quality’ of the model, each of the included variables has an impact that is statistically significant (at the 1% level) and each category in each variable has odds significantly different to the reference category. We can thus conclude that the model meets the aim of determining which variables are statistically significant predictors, and how changes in those variables relate to changes in migration propensity. However, as is often the case with logistic regression models in the field of human behaviour, the coefficient of determination  $R^2$ , is relatively low (Nagelkerke  $R^2 = 0.27$ ) indicating that, although the model is good from an *explanatory* perspective, caution should be applied in attempting to use this type of model for *predicting* the level of migration.

### **Cultural Group Differences**

Differences between the overall migration propensities of the smaller cultural groups have already been summarised in Table 1. These differences can be presented in terms of odds relative to the white British group by re-running the logistic regression with *only* the cultural group variable, giving relative odds of Arab 2.02, Chinese 2.60, Jewish 1.13, and Sikh 0.82; all these odds are significantly different to the white British at the 1% level. Based on the raw data, therefore, there is (except for the Sikh group) an apparently wide range of *higher* migration propensity, with odds for Chinese and Arab groups more than twice that for the white British group (see Finney and Simpson, 2008, for a similar conclusion for the Chinese group, the only group common to the two studies, based on 2001 data).

However, if the seven-variable model is re-run with the addition of a cultural group variable, the relative odds (having controlled for the seven variables) become: Arab 0.87, Chinese 0.91, Jewish 1.00, and Sikh 0.91 (in each case the 95% confidence interval is approximately +/- 0.04 around the given odds). These seven variables have thus accounted for the whole of the apparent difference between white British and Jewish migration propensity, and have left the other groups with small (but statistically significant) *lower* odds of migration than the host group.

This result directly addresses study question Q1 (are there differences in propensity to migrate between various groups); but can additional analysis provide a clearer understanding of those differences (Q2)? As the majority of the apparent differences between the smaller groups and the dominant white British group can be resolved through controlling for certain individual or household characteristics, it follows that these differences must consist of differences in:

- the balance of the population falling into different categories, and/or
- behaviour for given combinations of characteristics.

An indication of the first element can be ascertained by examining the content of the dataset and the Stage 3 model relative odds in the final column of Table 4. Table 5 provides a summary of which groups are over-represented in categories that exhibit low odds or under-represented in categories that have high migration odds, and also the reverse situation. The modelling has established that age of HRP and tenure are the two most influential of the explanatory variables (both for all usual residents and each of the cultural groups separately), and these characteristics feature extensively for the Chinese and Arab groups in Table 5 (and see also Figure 2). Indeed, the Chinese and Arab groups each have eight entries in the top part of the table (and just one in the lower part), indicating that the mix of characteristics provides a major element in explaining their high odds of migration in the raw data.

To investigate the second element, the logistic regression analysis undertaken for all usual residents has been repeated separately for white British, Arab, Chinese, Jewish, and Sikh groups. Although the same three stage analysis was carried out, for reasons of space only the results for the models with all seven variables are summarised in Table 6. The purpose of the table is to draw attention to any differences in behaviour between the various groups. The relative odds of migration of the various categories within each variable are shown in the first column for the white British host/dominant group. The odds produced by the other models are included in the other columns of the table. In addition, where the 95% confidence interval for the relative odds for any of the other groups lies wholly above or below the interval for the white British group, an ‘H’ (higher) or ‘L’ (lower) annotation has been added, highlighting differences in behaviour from equivalent members of other cultural groups. This is a cautious approach to the interpretation of confidence intervals (see Cumming and Finch, 2005).

A number of differences in behaviour for the small cultural groups can be ascertained from Table 6, having controlled for the other variables. These include:

- A greater suppression of migratory activity in Jewish households with an HRP aged 50 or more, than seen in the white British group; and a lower increase in migration in Arab households with an HRP aged 19 to 39 than seen in equivalent white British households.
- The material increase in migration propensity of individuals living in rented accommodation (including halls of residence) compared with home owners seen in the white British group is much more muted in the Chinese group and, for the privately rented sector, for Jews and Sikhs. Indeed, migration propensity for Jews in halls of residence is far below that of home owners, whereas for the white British group it is much higher.
- Whilst the impact of different family types is broadly similar for white British, Arab, and Sikh groups, there is noticeably less variation for Chinese families.
- Similarly, there is much less variation between different living arrangements in the minority groups than for white Britons; indeed for the majority of categories and groups the odds are not significantly different to the reference married couple group, whereas for the white British group some categories display twice the odds of the married couple category.
- White British adults without degree qualifications demonstrate noticeably lower migration rates than degree holders; however, such reductions are generally absent for non-degree holding Arabs and Chinese.
- Although the spike in student migration levels is reduced to only a 40% increase for the white British group when other variables are controlled, no significant increase at all is shown for students in any of the small groups.
- For those groups with a material proportion not born in the UK (Arabs, Chinese, and Sikh) there is a consistent pattern of the earliest arrivals demonstrating a lower propensity to migrate than those born in the UK, and the latest arrivals a higher likelihood of moving; the variation is much less for the white British and Jewish groups whose members are largely UK born.

Responding to Q3, therefore, there are subtle variations in migration propensity between many of the cultural groups across a number of the variables, after controlling for the other variables.

### **Contextual/Locational Issues**

Might the remaining small Q3 residual differences, which have not been explained by individual/household information gleaned from the census, relate to contextual issues or some specific (unquantifiable?) factor associated with the cultural group?

Given the nature of the data used in the analysis, the lowest level of residential geography that can be applied to the whole dataset is regional<sup>5</sup>. Re-running the logistic regression with the addition of a simple categorical region variable, although ‘improving’ the overall model in terms of -2LL goodness of fit by less than 0.1% does, however, bring the relative odds of migration for all the small cultural groups to within 5% or 6% of the white British value (Arab 0.94, Chinese 0.95, Jewish 1.06, Sikh 0.95) – that is, after allowing for the different regional distributions of the minority groups. These values are significantly different to the white British at the 5% level (the 95% confidence intervals just fail to include 1.00 by a margin of 0.004 to 0.02); the regional variable effectively explains about half of the residual differences between the groups. This simple variable, which indicates that the odds of moving are highest for south west and south east England, and lowest for outer London, does not provide any *explanation* for the regional differences. However, examination of other data sources has allowed regional values of four parameters, relevant to migration decisions, to be calculated: unemployment levels; disposable income; house prices; and a deprivation indicator<sup>6</sup> (Fielding, 2012; Boyle et al, 1998; Bailey and Livingston, 2008; Helliwell, 1996). Further application of the logistic regression model indicates that, when applied together, these parameters capture over 90% of the variation revealed by the ‘catch all’ categorical regional variable. When applied individually, unemployment levels and general deprivation each account for 50% to 60% of the impact (increases in their values leading to a reduction in migration), whilst house price and household income account for a minimal 5% and 1%, respectively.

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<sup>5</sup> That is, the nine formal NUTS level 1/former government office regions in England, plus Wales. Additionally, as the small cultural groups have a strong London focus to their spatial distribution, and there are recognised socio-economic differences between inner and outer London, the London Region has been split into inner and outer parts (as defined by ONS) to spatially disaggregate their area of highest concentration.

<sup>6</sup> Unemployment figures are the rate for those aged 16-64 for the September to November quarter of 2010 sourced from the Labour Force Survey Regional Labour Market: HI00 - Headline LFS Indicators for All Regions, May 2013 (<http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-265428>). Income figures used are gross disposable household income per head for 2010, sourced from ONS Regional Household Income, Spring 2013 Table 1.1 (<http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-298694>). The house price index was obtained by averaging the monthly index values from April 2010 to March 2011 from the Land Registry website (<https://www.gov.uk/government/organisations/land-registry>). Due to incompatibilities between the official English and Welsh indices of multiple deprivation, regional averages were calculated from the ‘deprivation indicators of a household’ variable already included in the census microdata files; it includes education, health, employment, and housing deprivation markers.

## Distance of Moves

One final piece of analysis was carried to understand how these differences in behaviour patterns might be reflected in, or explain, differences in migration distances between the groups (Q4) – longer distance moves being more likely to be associated with changes in employment, whereas shorter distance moves may have a stronger housing market element (Nivalainen, 2004). The microdata were examined, using 20km as a cut-off between shorter and longer distance moves, based on only one person in eight commuting further than that distance (Champion et al, 2009) and to ensure that the longer-distance sample size for the cultural groups remained robust. The raw data indicated that 30% of Chinese moves fell into the longer distance bracket, significantly more (at the 5% level) than the 23% to 26% proportion applicable to the white British and other small groups (see Table 1). The logistic regression for all residents was re-run with the records split into shorter and longer distance datasets, and this identified certain characteristics with markedly different odds of migration between the two models. Characteristics which led to much higher odds of migrating a longer distance were: persons not living in a household in general, and in halls of residence in particular, and being qualified at degree level. Much lower odds of making a longer distance move applied to: public sector home renters; living in households with a dependent child or children; having no academic qualifications; living in Outer London; or having arrived in the UK since 2007. As with migration levels as a whole, once individual characteristics and regional context are controlled for, differences in behaviour found in the raw data are largely accounted for (see Table 7). Indeed, the odds of making a longer distance move for the Chinese group are the lowest of all the groups at only 0.81 of the odds for the white British group (the other groups report values of 0.85 to 0.92). Thus, despite the high proportion of longer distance moves found for the Chinese group, based on the group's characteristics an even higher proportion would be expected. Conversely, for moves of less than 20km the migration propensity for the Chinese and Sikh groups is not significantly different to the white British group, whereas the Jewish group has higher odds (1.12) and the Arab group lower odds (0.93) of making such moves.

The important message from this section of the analysis is that, certainly for the Chinese and Sikh groups, the cultural group penalty manifests itself in dampening the level of longer distance moves, with shorter distance moves unaffected, though for the Arab group the effect has both longer and shorter distance elements. One explanation, particularly for the Chinese, is the group's proportion who are international students. The microdata show that 12% of the Chinese group are students who have arrived in the UK in the 2007-2011 period

(indeed over 40% of 2007-2011 Chinese arrivers are students). The population for this study is individuals with a residential address in England and Wales both on the date of the 2011 census and also 12 months prior to that date. Thus the sample excludes the (international) pre-university to university move of overseas-based students, but includes the equivalent (mainly over 20km) move for UK-based students. This is borne out by an examination of the distance of move of occupants of halls of residence; the proportion making a long-distance move is 88% for white Britons and Jews, whereas it is only 56% for Chinese and Arabs. This difference is sufficient to explain a major proportion of the difference in odds for longer distance moves between the Chinese and the white British groups.

## **Conclusions**

This paper has offered two methodological innovations. Analysis has been undertaken using the whole age range of the population, and including individuals not resident in households. In part this has been possible through the use of an age of HRP variable (represented by age of individual for communal establishment residents), rather than the age of the individual as used in most studies. Results from this analysis are in line with those taking a more conventional approach, but more statistically robust due to the retention of the full sample. In addition, through an analysis of Labour Force Survey data, this study has legitimated the normally implicit assumption that, when studying migration, (post event) census characteristics provide a good proxy for pre-move characteristics.

In more substantive terms, this paper set out to answer five previously unanswered questions regarding the migration behaviour of Jews and other smaller cultural groups. The study has confirmed that there are differences in the propensity to migrate between the host group and the smaller cultural groups (Q1). As has been found in studies of other groups (for example, Finney and Simpson, 2008), a major proportion of the apparent difference in migration propensity between groups can be explained by materially different age profiles of the groups, although there are a number of combinations of individual characteristics where migration propensity varies noticeably between the groups (Q2). However, notwithstanding the explanation for a large element of the variation between groups through compositional and contextual/locational factors (regional levels of deprivation and unemployment), there are differing migration responses between the groups to particular individual characteristics and a residual 5% unexplained 'suppression' of migration activity found in three of the groups that can be regarded as a 'cultural group factor' (Q3). It is the explanation of these latter elements that lies at the heart of a true understanding of the small cultural group dimension of internal migration.

Finney, Catney, and Phillips suggest that all groups have the same underlying motivations for migration, and similar overall aspirations, but ask ‘what is it about ethnic identity and experience that may influence migration’ (2015, p42). Indeed, they suggest a number of issues which may come in to play, including: inequalities in housing, employment, and education; discrimination and exclusion; and community cohesion and a sense of belonging. Life course differences, and more particularly, different home leaving strategies between groups may also be important (Finney, 2011; Bernard et al, 2014).

Some of the differences already noted constitute reduced migratory behaviour for the smaller groups – such as in the Arab group where the HRP is aged less than 40; Chinese and Sikhs in rented accommodation; and students in all smaller groups. All of these variations may be a consequence of a positive sense of belonging to a particular neighbourhood and the presence of culturally important institutions in specific places, or negative concerns (or housing market constraints) about moving to another area. This was explored further through consideration of migration distance (Q4). For all of the smaller groups, having controlled for other variables, the likelihood of a move being more than 20km in distance is much below that for the white British group, particularly so for the Chinese, though much of that shortfall can be explained by the large number of international students in that group. Differences may also be a consequence of differing culturally-based home-leaving patterns, which may involve a longer presence in the parental home, or extended families living together, than the white British majority demonstrates (Bernard et al, 2014). This would explain the absence of increased migration levels for cultural group students, and a flatter response to differing living arrangements, though the former is likely also to reflect educational disadvantage in the achievement of places at ‘elite universities’ (Smith and Jöns, 2015, p57; see also Finney, 2012), which may have consequences for graduate level migration rates in later life.

Indeed, there is only one area where there appears to be a higher propensity to migrate amongst the smaller groups than the host community – and that is that non-degree holders have a higher propensity to migrate than equivalent members of the white British group. Or rather, the reduction compared with graduate migration levels seen in the white British group is largely absent from the smaller groups. An inference of this is that the socio-economic, employment, and financial benefits of being a degree holder in the white British community are not present as extensively elsewhere.

We can thus conclude that, once the differences in the balance between the distribution of age, housing tenure, international students, and other measurable characteristics between the groups are accounted for, together with differences in the overall



levels of unemployment and deprivation in the regions in which the groups are distributed, the differing migration response rates of three of the cultural groups compared with the white British majority result in a statistically measurable ‘cultural group penalty’ of around 5% in the odds of moving. Whilst the penalty may appear small, it applies per annum, and thus can be expected to materially affect the number of moves made by members of the three groups over a lifetime. The penalty is likely to arise from a qualitative combination of the positive attraction of living in the vicinity of other group members and culturally relevant facilities, and some negative (discriminatory) elements.

Question Q5 asks whether a penalty exists for the Jewish group. Migration levels for Jewish residents of England and Wales are (both before and after age distribution is accounted for) much closer to the white British situation – there is no cultural penalty for that group, notwithstanding its observed high levels of congregation in particular areas (Newman, 1985). The inference of this is that, today, Jews are culturally closer to the white British group than are other groups under study here, but to what extent might this be attributable to the group’s longstanding presence? Although Christianity and Judaism (and indeed Islam) are Mosaic faiths, in the early decades of significant Jewish presence in Britain, few members of the host (overwhelmingly Christian) community would have considered themselves to have much in common with the visually distinct Jewish community. Widespread anti-Semitism and barriers to entering ‘the professions’ in the first half of the twentieth century also bear witness to this (Alderman, 1998). Indeed over time, the Jewish group has, according to Ballard (1996, p7), ‘quite deliberately sought to underemphasise both the existence and the extent of their distinctiveness, most especially in public arenas’. The passage of time, and the consequent evolution in cultural habits of majority and minority groups, and of inter-group attitudes therefore has a strong bearing on twenty-first century migration patterns. Thus the limited extent of individual visibility, and established connections between centres of Anglo-Jewry facilitating a greater degree of interchange between existing group localities, may explain the absence of a group penalty, and link it to the group’s long-standing status. This group may therefore provide a ‘pointer’ for the future behaviour of more-recently established groups.

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End User Licence. Land Registry house price index, ONS Regional Household Income, and ONS Regional Labour Market data are all Crown Copyright.

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**Tables***Table 1 Source data sample size*

	Arab	Chinese	Jewish	Sikh	White British	All Usual Residents
England and Wales (E&W) Usual Residents 2011	10,419	34,518	25,552	40,824	4,444,115	5,469,962
Of whom, within E&W migrants 2010-2011	1947	7902	2915	3497	455,408	610,072
Migrant proportion	19%	23%	11%	9%	10%	11%
Of whom, proportion moving 20km or further	23%	30%	24%	26%	26%	25%

*Source: Calculated from 2011 Census Safeguarded Microdata*

*Table 2 Proportion of movers based on timing of status measurement*

Economic activity	Based on survey day economic status		Based on 12 months prior economic status	
	Sample size	Mover proportion	Sample size	Mover proportion
Employed	38,020	9%	37,455	9%
Unemployed	3010	16%	2169	14%
Full time student	2759	17%	4278	16%
Looking after family or home	3286	13%	4073	11%
Sick	3863	7%	3836	7%
Retired	14,049	2%	13,509	2%
None of these	1227	11%	894	22%
All categories	66,214	8%	66,214	8%

*Source: Calculated from Apr-Jun 2011 Labour Force Survey*

*Table 3 Order of inclusion of variables*

Variable	Model	All Usual Residents	Arab	Chinese	Jewish	Sikh	White British
Age of HRP		1	1	1	1	2	2
Tenure		2	2	2	2	1	1
Family mix		3	3	4	3	5	5
Living arrangement		4	x	6*	6	6	3
Qualifications		5	x	5	5	3	4
Economic activity		6*	5*	7*	4	7	6*
Year of arrival		X	4	3	x	4	x
Health		X	x	x	x	x	x
Care provider		X	x	x	x	x	x
Gender		X	x	x	x	x	x

Note: 'Age of Individual' and 'Formal Marital Status' removed due to collinearity issues

\* inclusion of variable improved -2LL by less than 0.25% of null model

x inclusion of variable would improve -2LL by less than 0.1%

Table 4 Migration propensity logistic regression analysis for All Usual Residents

Variable / category	Odds relative to reference category		Odds relative to reference category		Odds relative to reference category	
	Regression coefficient	Regression coefficient	Regression coefficient	Regression coefficient	Regression coefficient	Regression coefficient
	Stage 1 model		Stage 2 model		Stage 3 model	
<b>Age of HRP (reference: 40-49)</b>						
18 or below	1.62	5.06	1.28	3.58	1.28	3.59
19 to 24	1.89	6.61	1.43	4.16	1.42	4.16
25 to 29	1.07	2.90	0.75	2.11	0.74	2.09
30 to 39	0.50	1.64	0.38	1.47	0.37	1.45
50 to 59	-0.17	0.85	-0.27	0.77	-0.26	0.77
60 to 74	-0.49	0.61	-0.42	0.65	-0.41	0.66
75 and over	-0.80	0.45	-0.55	0.58	-0.54	0.58
<b>Tenure (reference: owned with mortgage)</b>						
owned outright	-0.04	0.96	-0.02	0.99	-0.02	0.98
council tenant	0.31	1.37	0.42	1.53	0.42	1.53
RSL, shared ownership, or free	0.55	1.73	0.59	1.81	0.59	1.80
private landlord	1.61	5.01	1.49	4.45	1.47	4.35
other household tenures	1.21	3.36	1.13	3.08	1.11	3.05
hall of residence	1.99	7.32	1.23	3.42	1.23	3.42
other communal establishment	2.01	7.45	1.45	4.25	1.45	4.28
<b>Family mix (reference: 2+ dependent children, youngest aged 0-9)</b>						
no dependent children			0.33	1.38	0.32	1.37
1 dependent child age 0-9			0.29	1.33	0.28	1.33
1 dependent child age 10-18			-0.08	0.93	-0.08	0.93
2+ dep children youngest 10-18			-0.28	0.76	-0.28	0.76
not living in a family			0.60	1.82	0.59	1.80
not living in a household			1.19	3.28	1.17	3.23
<b>Living arrangement (reference: in couple: married)</b>						
in couple: cohabiting			0.68	1.97	0.68	1.98
not in couple: single			0.26	1.30	0.27	1.30
not in couple: married			0.42	1.52	0.41	1.50
not in couple: separated			0.75	2.12	0.77	2.16
not in couple: divorced			0.14	1.15	0.16	1.17
not in couple; widowed			-0.16	0.85	-0.15	0.86
<b>Highest qualification (reference: level 4 degree)</b>						
pre-school age			-0.14	0.87	-0.14	0.87
primary school age			-0.21	0.81	-0.22	0.81
secondary school age			-0.13	0.88	-0.14	0.87
no qualifications			-0.47	0.63	-0.47	0.63
level 1, 2 , apprentice, other			-0.32	0.73	-0.32	0.72
level 3 A levels			-0.04	0.96	-0.03	0.97
<b>Economic activity (reference: full time employee)</b>						
part time employee			-0.17	0.84	-0.17	0.85
self employed			-0.10	0.91	-0.09	0.91
unemployed			0.16	1.18	0.17	1.18
retired			-0.37	0.69	-0.36	0.70
student post 16			0.25	1.29	0.23	1.26
looking after home / other inactive			0.07	1.07	0.07	1.07
permanently sick			-0.24	0.79	-0.23	0.80
child at school			-0.20	0.82	-0.20	0.82
<b>Year of Arrival (reference: UK born)</b>						
arrived before 1991					-0.24	0.78
arrived 1991-2000					-0.08	0.92
arrived 2001-2006					0.04	1.04
arrived 2007-2011					0.19	1.21
Constant / Reference Case Odds	-2.89	0.055	-3.00	0.050	-2.99	0.050
Null Model -2LL	3,825,746		3,825,746		3,825,746	
Stage Model -2LL	3,113,209		3,040,873		3,039,211	
Stage Improvement	712,537		72,336		1,662	
Stage improvement (cf Null -2LL)	19%		2%		0%	
Cox & Snell R <sup>2</sup>	0.12		0.13		0.13	
Nagelkerke R <sup>2</sup>	0.24		0.27		0.27	

Note: ALL relative odds are significant at the 0.01 level

Population (N)

5,469,962

*Table 5 Bias in composition of population*

	Arab	Chinese	Jewish	Sikh
under-representation in low-odds categories	HRP aged 60 or more owned tenure no qualifications retired	HRP aged 60 or more  retired		HRP aged 75 or more  retired
over-representation in high-odds categories	HRP aged 25 to 39 private renting  student arrived 2001-11	HRP aged 19 to 29 private renting not in a family or household degree qualified student arrived 2001-11	degree qualified	
over-representation in low-odds categories		arrived before 1991	married couple	married couple arrived before 1991
under-representation in high odds categories	no dependent children			cohabiting couple



Table 6 Migration propensity logistic regression analysis for Cultural Groups

	White British Relative odds	Arab Relative odds	95% CI	Chinese Relative odds	95% CI	Jewish Relative odds	95% CI	Sikh Relative odds	95% CI
Age of HRP (reference: 40-49)									
18 or below	3.87	2.75		1.05	L	3.51		8.02	H
19 to 24	4.27	2.33	L	3.89		5.10		4.34	
25 to 29	2.18	1.54	L	2.38		2.46		2.44	
30 to 39	1.48	1.14	L	1.48		1.52		1.59	
50 to 59	0.78	0.80		0.73		0.66		0.86	
60 to 74	0.66	0.55		0.67		0.54		0.80	
75 and over	0.57	0.80		0.65		0.36	L	0.58	
Tenure (reference: owned with mortgage)									
owned outright	1.02	0.96		0.76	L	0.92		0.67	L
council tenant	1.50	1.32		1.25	L	1.17		1.65	
RSL, shared ownership, or free	1.83	1.53		1.34	L	1.95		1.80	
private landlord	4.88	2.59	L	1.90	L	3.29	L	3.64	L
other household tenures	3.25	2.21		1.33	L	2.31	L	2.07	L
hall of residence	3.63	not		1.22	L	0.42	L	2.55	
other communal establishment	4.12	calculated		2.15		1.03		2.51	
Family mix (reference: 2+ dependent children, youngest aged 0-9)									
no dependent children	1.45	1.34		1.08	L	1.68		1.50	
1 dependent child age 0-9	1.33	1.40		1.10	L	1.52		1.34	
1 dependent child age 10-18	0.93	0.85		0.82		1.22		0.99	
2+ dep children youngest 10-18	0.75	0.78		0.65		1.04	H	0.77	
not living in a family	1.84	2.17		1.57		1.96		2.01	
not living in a household	4.13	not calculated		1.49	L	13.28		3.39	
Living arrangement (reference: in couple: married)									
in couple: cohabiting	2.16	1.31	L	1.50	L	1.84		1.18	L
not in couple: single	1.45	0.89	L	1.07	L	1.33		0.69	L
not in couple: married	2.23	0.82	L	0.96	L	1.11	L	0.84	L
not in couple: separated	2.58	1.09	L	1.25	L	2.10		1.68	L
not in couple: divorced	1.26	0.81	L	0.87	L	1.18		1.03	
not in couple; widowed	0.92	1.01		0.55	L	1.07		0.69	
Highest qualification (reference: Level 4 degree)									
pre-school age	0.86	0.95		1.22	H	0.66		1.14	H
primary school age	0.83	0.83		0.96		0.60		0.97	
secondary school age	0.90	0.76		1.02		0.58		1.02	
no qualifications	0.59	0.96	H	0.88	H	0.64		0.62	
level 1, 2, apprentice, other	0.70	0.93	H	0.85	H	0.69		0.67	
level 3 A levels	0.91	1.12		1.27	H	1.11	H	0.97	
Economic activity (reference: full time employee)									
part time employee	0.85	0.83		0.84		0.70	L	0.83	
self employed	0.92	1.00		0.84		0.84		0.88	
unemployed	1.22	0.86	L	1.16		0.93		0.82	L
retired	0.73	0.46		0.61		0.84		0.74	
student post 16	1.44	0.91	L	0.96	L	1.03	L	1.10	L
looking after home / other inactive	1.09	0.74	L	0.95		0.77	L	0.88	L
permanently sick	0.81	0.86		0.46	L	0.37	L	0.69	
child at school	0.79	0.92		0.67		0.80		0.79	
Year of arrival (reference: UK born)									
arrived before 1991	1.02	0.59	L	0.67	L	0.69	L	0.45	L
arrived 1991-2000	1.09	0.84	L	1.03		0.93		0.89	
arrived 2001-2006	1.02	1.10		1.37	H	0.99		1.12	
arrived 2007-2011	1.31	1.58		1.62	H	0.86	L	1.18	
Constant / Reference Case Odds	0.04	0.10		0.12		0.07		0.08	
Population (N)	4,423,727	10,217		34,403		25,552		40,824	
Null Model -2LL	2,923,384	9,702		37,021		18,140		23,872	
Final Model -2LL	2,282,711	8,484		29,162		14,298		19,249	
Improvement (cf Null -2LL)	22%	13%		21%		21%		19%	
Cox & Snell R <sup>2</sup>	0.14	0.11		0.20		0.14		0.11	
Nagelkerke R <sup>2</sup>	0.28	0.18		0.31		0.28		0.24	

*Table 7 Summary of odds of migration relative to the white British group*

	Arab	Chinese	Jewish	Sikh
Raw data	2.02	2.60	1.13	0.82
After controlling for seven characteristics	0.87	0.91	1.00 <sup>n</sup>	0.91
And (additionally) a regional variable	0.94	0.95	1.06	0.95
In respect of moves of less than 20km	0.93	1.02 <sup>n</sup>	1.12	0.97 <sup>n</sup>
In respect of moves of 20km or more	0.92	0.81	0.86	0.85

Except for those marked <sup>n</sup> all odds are significantly different to the white British group at the 5% level

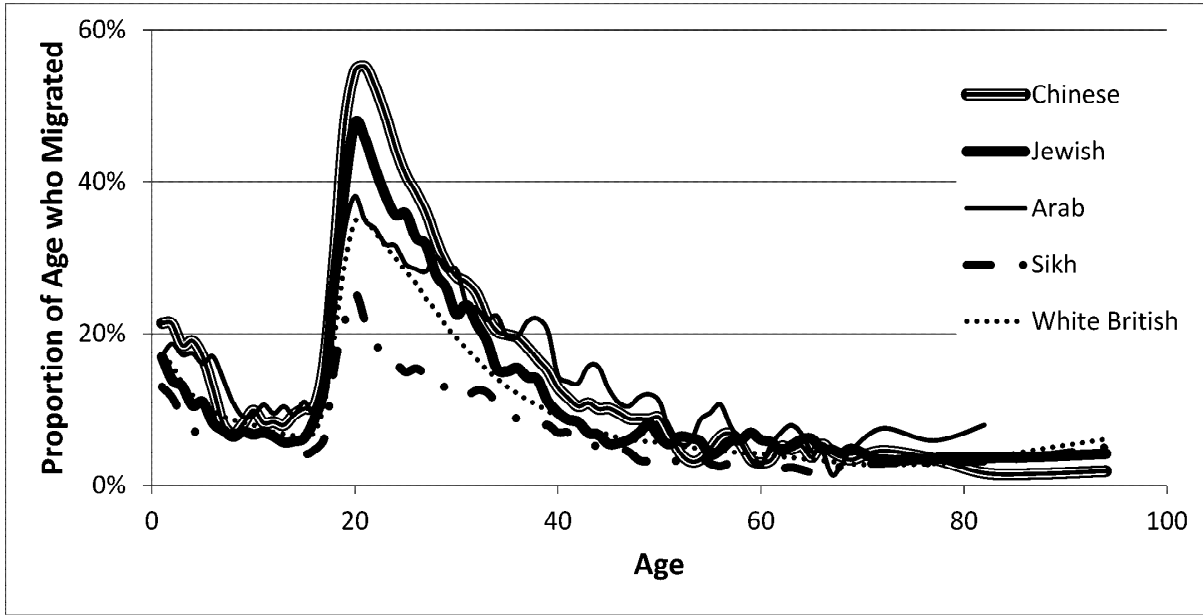


Figure 1 Proportion of each age who migrate

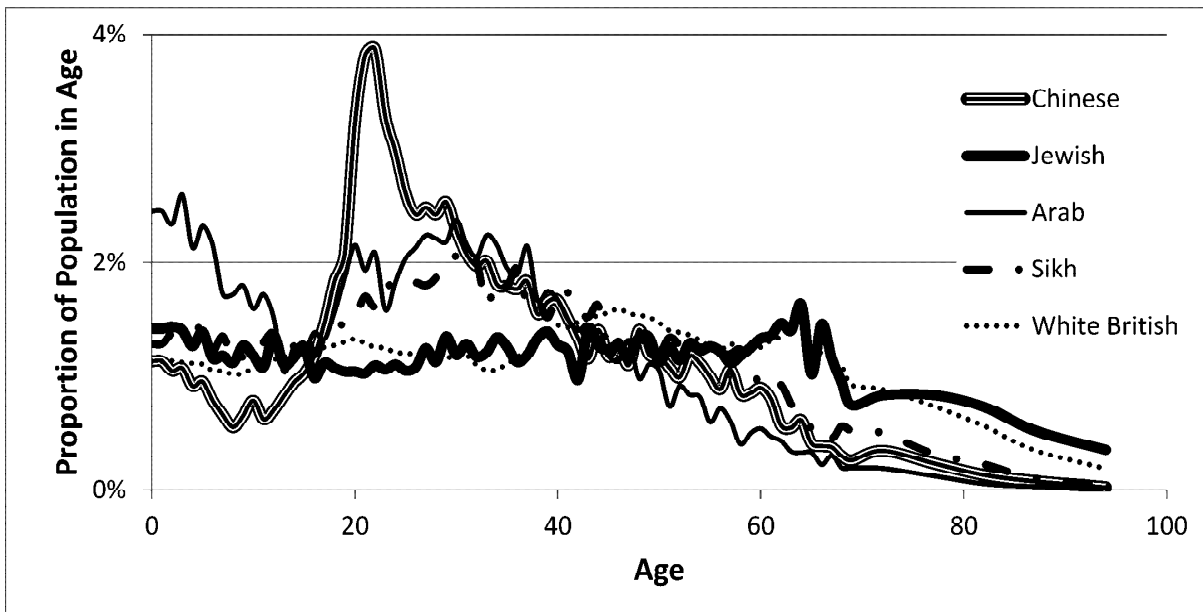


Figure 2 Proportion of population falling into each year of age