Secularization and migration in Scotland:

A test of the modernization hypothesis

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Abstract

This paper analyzes the influence of individual religion on internal migration in Scotland. Two aspects of religion are studied: denomination and secularization. Drawing on data from the Scottish Longitudinal Study, a 5.3% population sample linking the 1991 and 2001 censuses, this paper uses the location-specific capital theory to argue that religious individuals are less likely to migrate than non-religious individuals and that Catholics are less likely to migrate than Protestants. It also uses the modernization theory to argue that individuals who moved from a rural to an urban area are more likely to have become secular. The findings corroborate the hypotheses and thus confirm that individual religion is still an important factor in explaining contemporary internal migration.

Introduction

Classic migration theory predicts that individuals will only move if they expect that the gains of a move will outweigh its costs (Brown & Moore 1970; De Jong & Fawcett 1981). In particular, if the economic gains in the place of destination are expected to be higher than in the current location, a move is likely to be made (Sjaastad 1962). On the other side of the equation there are mechanisms that impede migration. One of the most important is location specific capital (DaVanzo 1981a; 1981b). Location specific capital comes in many forms, such as knowing the local infrastructure; a local network of friends and acquaintances; and the more psychological version called 'place attachment' (Feldman, 1996; Low & Altman, 1992). Another particular form, that has received surprisingly little attention in the literature, is religion and church membership. It is 'surprising' because religion can be expected to be a very strong form of location-specific capital, as it constitutes a central pivot around which the lives or religious people evolves (see also Myers 2000). Of course, declining church attendance rates have reduced the share of the population to whom religion is an important part of daily life, but it still is a significant share. Religious individuals can be expected to have lower migration rates, because moving away from the place of residence means giving up church attendance, social contacts through the church, and other elements that come with being part of a local religious community.

Some researchers have studied the association between religion and migration, but these are mainly from the US, for example Myers (2000), Frieze et al. (2006) and Smith

et al. (1998). For the United Kingdom, ours seems to be among the first micro-level studies on the relationship between religion and internal migration. Findings are not necessarily comparable to findings for the US, because religion plays a different role in British society than it does in American society. The US has always been and still is a country with a strongly religious population and high church attendance, whereas religion in the UK has declined over the last few decades (for example: Brierley, 1995; Bruce, 1992, 2001; Bruce & Glendinning, 2002; Brown 1997, 2001; Davie 1994; Bourque et al., 2005).

This paper will look into the contemporary situation of internal migration and religion in Scotland. The case of Scotland is particularly interesting where religion is concerned. Not only does Scotland have a history of religious conflict between the native Protestant Scottish people and the Irish Catholic immigrants (particularly in the cities), but there are also marked geographical differences between the East and the West part of the country in religiousness of the population.

This paper will test a number of hypotheses concerning the association between religion and migration. The overarching research question is: *What are the differences in migration behaviour between religious individuals and non-religious individuals, and between individuals from different denominations in Scotland?* The hypotheses will be derived from theories on migration and secularization, taking into account the existing literature on religion and migration. Longitudinal population data with personal characteristics, information on migration and religion, and regional characteristics will be used to answer the research questions. All of this is available in the Scottish Longitudinal Study (SLS). The SLS links individual migration information to personal characteristics and spatial characteristics of individuals in Scotland in the decade 1991-2001. With the outcomes of this analysis it is hoped to provide more insight in how the migration behaviour of Scottish people is associated with their religion.

THEORY AND BACKGROUND

Migration & religion

As stated earlier, the influence of religion on migration is expected to run mainly through the mechanism of location-specific capital (DaVanzo 1981a; 1981b). This consists of

bonds, social ties and investments that are present in the place where the individual lives, and only have value where the individual lives. Examples of location-specific capital are friendships and homeownership. They have required a large of amount of time and effort to form and are not transferable to another place. Migration will prompt the loss of the location-specific capital, making it an extra cost that will influence the decision to migrate. The location-specific capital that arises from religion can be seen as a particular form of location-specific capital. It is named "location-specific religious capital" by Myers (2000), who argues that it requires a bigger investment than most other forms of location-specific capital, especially for the stricter and more conservative churches. Location-specific religious capital consists firstly of social contacts, ranging from friendships to functional contacts in voluntary church work. This part is religious social capital (Putnam, 2000; Bruce, 2001). Then there is an element of cultural capital: knowledge of the norms and customs in the local church and local religious community. Thirdly, there is a feeling of personal belonging to the local religious community, which can be captured by the term place attachment (Low & Altman 1992). Leaving the settlement or community where individuals have strong ties may result in fragmentation of their spatial and group identity (Feldman, 1990, 1996). The longer one has lived in one place, the more location-specific capital one has built up, and the stronger the 'seniority' of one's status in that place is. These elements all tie someone to their place of residence.

In addition, the destination where one considers moving to may play a role in the decision whether or not to migrate. The prospect of moving to a new place may feel like a threat to someone's religious practice. They may be afraid that their religion will be opposed in the new place, and that they will not be free in how they choose to worship. This can be summarized as the 'fear of non-conformity'. This argument works the other way around too: if someone feels non-conform in the place where they currently live, and expect that they will fit in better in the religious community of a destination place, the effect on migration will be positive.

The only recent study that analyzes the relationship between religion and migration on a individual level using national data is Myers (2000). He drew on migration decision-making theory and examined how religious involvement and church membership affected the odds of migration in the United States. He found that involvement in social religious activities deterred migration, but that church attendance did not. In his study, he used

different measures of religious involvement. It is widely recognized that adhering to a religion is not the same as church attendance, and that among church goers, there is a wide spectrum of involvement with the church and the religious community. Members of conservative churches usually have the biggest location-specific religious capital, and therefore could be expected to have the lowest moving propensities. But Myers (2000) argued that on the other hand, being a member of a conservative church may make it relatively easy to integrate into a new place, because the church in the new community will quickly and totally absorb newcomers, and the transition to a new place may actually not be such a big transition at all because practices of worship in such conservative religious communities are in a way place-independent.

Frieze *et al.* (2006) asked a sample of undergraduates about their intentions to leave the area after graduation. Those with higher levels of church attendance had lower mobility propensities than those with low church attendance levels. Welch & Baltzell (1984) have shown that migration is linked with a decline in religiosity and church attendance. They claim that religious individuals are more likely to change their religion or to become secular in order to fit into the new community, when that community is hostile towards the individual's beliefs. Migration is therefore viewed as a potential threat to religiosity and religious behaviour.

Smith et al. (1998) report an American study into church attendance and importance of religion between life-long Southeners and migrants from elsewhere to the South, and found these to be remarkably similar. Migrants out of the South to elsewhere were found to report much lower church attendance rates and importance of religion. The authors mention the possibility that this association may be due to self-selection of less religion-oriented individuals out of the South and more religion-oriented individuals into the South. Whatever the direction of causality, these studies indicate that stayers are more religious than movers. Thus it is expected that:

H1. Religious individuals[1] are less likely to migrate to different communities in Scotland than non-religious individuals.

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[1] It must be noted that in this paper when the term 'religious' is used it refers to adherence to a Christian religion (Protestant, Catholic and other Christian denominations).

In Scotland, Catholicism is not as geographically widespread as Protestantism. Catholics are concentrated in and around Glasgow, a few areas in Dundee and a few isolated pockets in the central belt of Scotland. The choice of destinations with many religious peers is therefore smaller for Catholics than for Protestants. This is also illustrated by the findings of Pacione (2005), who, in a spatial factor analysis of religion, found no factor that loaded high on Protestantism but he did find a high-loading factor for Catholicism, which illustrates once more the even spread of Protestants over Scotland and the spatial concentration of Catholics. While Protestants will find a high percentage of adherents to their denomination in nearly every community in Scotland, Catholics do not. Thus, when Protestants migrate, the loss of location-specific capital is partially compensated by the high percentage of adherents of their denomination in nearly every potential destination. The costs for Catholics will less likely be compensated, or might even be higher if they move to a community with a lower percentage of Catholics. Therefore it is hypothesized that:

H2. Catholics are less likely to migrate to different communities in Scotland than Protestants.

In any case, the loss of location-specific capital may be cushioned by the presence of a strong base of religious adherents of the same denomination at the destination. Religions have the tendency to engage in increasingly homogenized forms of worship creating a community that reaches outward (Levitt, 2003), which should make it easy for people to join a new religious community. When weighing the costs and benefits of migrating, the presence of a large proportion of religious people of the same denomination in the place of destination could take away part of the costs incurred by migrating. The loss of location-specific capital in these instances will partly compensated by an easier and quicker build-up of new location-specific capital compared to places where there is no community of adherents to the same religion. Religious individuals will be more likely to migrate to a region which corresponds with their religious beliefs and behaviour. Thus it is expected that:

H3a. Protestant migrants move to more Protestant regions than migrants of other denominations.

H3b. Catholic migrants move to more Catholic regions than migrants of other denominations.

In this paper only migrations are analyzed, that is, long-distance moves. For short distance moves, the loss of location-specific capital can be expected to be limited and in some instances there is even no loss of location-specific capital at all, and therefore focusing on long-distance moves seems to correspond better to the theoretical framework. The models will control for a number of well-known predictors of long-distance moves. Firstly, the reasons for moving over a long distances are mostly work-related (Rogers & Castro, 1981; Owen and Green, 1992; Mulder, 1993). Therefore a control for economic activity is included. The unemployed are more likely to move than the employed (Boheim & Taylor, 2002), because they migrate to areas with a higher chance of employment (Simon, 1989). And there are various other factors that influence migration on an individual level. Younger people tend to be more mobile than older people (DaVanzo, 1981a; Oh, 2003). High educated people, in particular graduates, move more often than lower educated people (Gregg, Machin & Manning, 2004). Demographic life events can also trigger a long-distance move. Moving in with a new partner, the birth of a child and union dissolution can all lead to a migration (Mulder, 1993; Fischer & Malmberg, 2001). In terms of household composition, families with children are known to be less mobile than childless households (Feijten & Mulder 2002; Clark & Dieleman 1996).

Secularization

Many Western societies have faced a trend towards secularization over much of the twentieth century. Christian church attendance, religious adherence, and participation in religious organizations all decreased considerably in most countries in Europe (though remarkably, not in the USA) (Bruce, 2001; Voas 2006) .

Macro-influences in society such as industrialization, urbanization, and rationalization have lead to changes in the social aspect of society, such as social

differentiation and social pluralism (Finke, 1992; Wallis & Bruce, 1992). They lead to changes in the attitudes and behaviours of individuals. Not only has modernization led to an overall increase in wealth, but also to an increase in mobility, an increase in ways of communicating and it has profoundly changed people's view on life. People were better able to take care of themselves. Also, advancement in science and technology has led to de-mystification and an increased emphasis on logic and rationalism. These trends led to a new lifestyle mainly based on self-sufficiency and self-reliance. Individuals in society became less dependent on other people and institutions. The communal bonds which tied people to the church dissolved (Brown, 1997). The new adherence to independent liberal thought that has progressed over the twentieth century seems to have a particular effect on the Christian church. The newly developed intellectual structures created a mentality in which the magical and supernatural elements, that are an essential part of religion, were no longer accepted (Graham, 1992). Values such as freedom, democracy, choice and self-actualization slowly took precedence over the traditional life-lessons of the church (Inglehart, 1971). This secularization trend on society level means that many individuals abandon the religion that they were brought up in at some point in their life. Often this happens during adolescence, because this is the formative period in the human life.

Scotland has seen a steady decline in religious adherence between generations throughout the twentieth century, with every following generation reporting less affiliation with religion than the previous generation (Voas 2006). Also, many people who were brought up in a Christian religion, no longer adhere to that religion (or any religion) as adults. This shift towards no religion came mainly at the cost of Protestant religions, while Catholic adherence was affected to a much lesser extent (Pacione 2005).

The secularization trend has a distinctive spatial pattern, as it is closely connected to processes of modernization. Traditionally, cities are centers of liberal thought, and are the first to adopt new ideas. Modernization processes are known to first permeate in cities, later followed by more remote areas. Thus, rural areas lag behind urban areas in the process of modernization, and therefore also of secularization. Pacione (2005), carrying out a spatial principal component analysis, found the first component, accounting for 33% of the variation in the data, to have high factor loadings on 'no religion' as well as other non-Christian religions, and on professional employment; university education;

high concentration of non-Scottish white young people; and privately rented accommodation. This factor was highly concentrated in the four biggest cities, in particular Edinburgh and Aberdeen. It is a strong indicator of a relationship between secularization and urbanization. Voas (2006) has found for Scotland that the highest rates of transition between religion (in childhood) and no religion (in adulthood) were in urban wards, mostly in Edinburgh. He looked at an older age group though (35-59), and did not analyze where people lived as a child. He speculates that a cosmopolitan environment could be a reason behind his finding. In this paper, this speculation will be put to a more rigorous test.

Combining the notions of prevalence of secularization in cities and abandoning childhood religion, it is expected that individuals who migrate from rural areas of Scotland to more urban areas are more likely to have become secular. The causality of this connection can run in two possible ways: either someone's becoming secular causes them to move to a city, or someone's move to a city causes them to become secular. Either way, the hypothesis is that:

H4. Religious individuals who migrate from a rural area to an urban area are more likely to have become secular.

The Scottish context

There is a decline of religious adherence in Scotland (Brown, 1997, 2001: Brierley, 2003), that accelerated in the 1960s (Brown 2001), and has continued until the present (Brierley 2003; Bourque et al., 2005). Church membership is not the most accurate measurement for the purpose of this study, because not all church members are actively involved in their church or religious community. Actual participation numbers are more clarifying (Sommerville, 1998), because people who actually participate in their religious community are more likely to be affected by this in their migration behaviour than non-active religious people. Therefore, Figure 1 shows Sunday religious attendance by age in Scotland in the years 1984, 1994 and 2002.

Figure 1: Sunday church attendance by age agroup; Scotland; 1984, 1994 and 2002
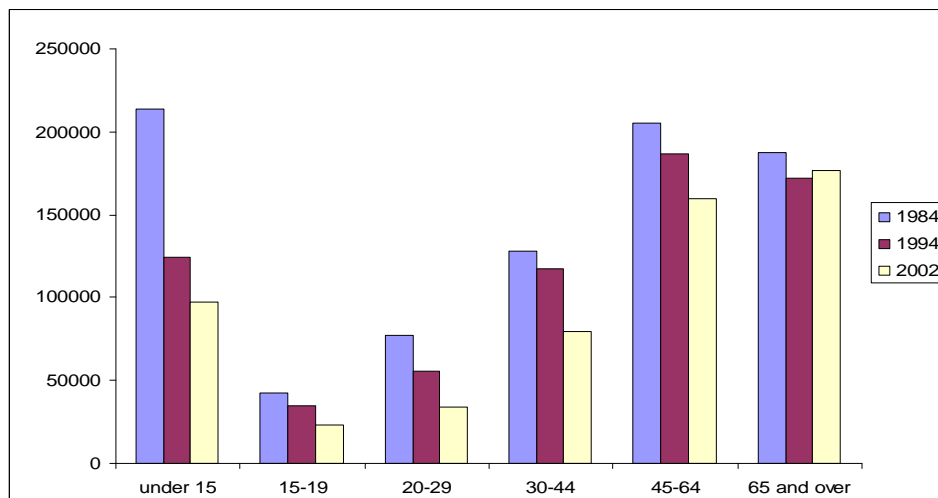
Source: April 2001 Census, Office for National Statistics, calculated from P. Brierley, UK Christian Handbook Religious Trends 4, 2003/2004, 12.3.

These figures confirm once more the process of church decline in Scotland. It can be seen that the decline takes place in all age groups over time, which points at a decline among all cohorts. Because older people are more often religious than younger people, the trends of population ageing and dropping fertility make the total effect slightly less dramatic than this graph suggests, but the decline is nevertheless undeniable.

Regional differences in religion in Scotland

Scotland has a particular religious geographical pattern (Pacione 2005). In the West, religion is strong and church attendance is high, and it is low in the East. The Highlands and islands in the North-West of Scotland are strongly dominated by the Church of Scotland. To the South, Glasgow is a centre of Catholicism. In the East, with the cities of Edinburgh and Aberdeen, much less people see themselves as religious. Although religion is researched on an individual level here, it will be interesting to see if, net of individual religion, the religious make-up of the area where one lives also has an influence on people's migration behaviour.

The religious pattern partly overlaps with the urbanization pattern. All major Scottish cities are located in the South and East. As a result of younger people moving to concentrations of work –cities–, the North-West has a relatively old population (Brock, 1992). Partly for this reason is church attendance in the North-West high. Figures by

Brierley (2003: Table 2.5) show that Sunday church attendance as a percentage of the population has gone down in all the regions over Scotland over time, but more so in urban areas than in rural areas. The urban South and East regions of Scotland had a lower percentage of church going population in both 1984 and 2002 than the rural North and West. The temporal decline in church attendance and adherence is much lower for Catholicism than for Protestantism. This is largely thanks to one exceptional region, namely Glasgow.

Apart from a marked geographical difference in religious adherence rates, there is also a strong geographical divide by Christian denomination. The Catholic minority is concentrated in (certain parts of) Glasgow (Gallagher, 1987; Devine, 1991), and some small areas in Dundee and central Scotland. The rest of Scotland is dominated by Protestantism. The strong geographical concentration of Catholics has historic roots. In the 19th century, large numbers of Irish immigrants came to Scotland to look for work. The religion they brought with them, Roman Catholicism, was refuted by most of the Scottish people. The response of the Irish to the hostility of the Scottish was to set up (religious) enclaves of their own that sheltered them from the ethnocentrism they were exposed to in society. When people seek to confirm their identity, religion and nationality tend to reinforce each other (Levitt, 2003). This 'double segregation' in turn made it even harder for the Irish Catholics to integrate into Scottish society (Devine, 1991). The clash of religions culminated in the city of Glasgow, which had the largest population of Irish immigrants, both in absolute and relative numbers. The Catholic-Protestant contrast is still standing strong today, with the fierce rivalry between the Catholic football club 'Celtic' and the Protestant football club 'Glasgow Rangers' being the most notorious example (Bradley 1997).

Brierley (2003: 2.5) shows that even though the Sunday church attendance has dropped in all of Scotland over the period of 1984-2002, still a considerable part of the population in Glasgow and the surrounding regions (13-16%) goes to church on Sunday. The larger part of the church going population in Glasgow and the surroundings regions is Catholic (Brierley, 2.12). Thus, Glasgow is an outlier when it comes to secularization. The Roman Catholic Sunday church attendance for Glasgow and the regions around Glasgow are more stable and higher than for the rest of the country. The religious divide

in Glasgow makes most people who live there identify themselves stronger with their religious group than elsewhere in Scotland.

Data and Variables

Data: the Scottish Longitudinal Study

The data used in this paper is the Scottish Longitudinal Study (SLS). It is a large linkage study which has been created using administrative and statistical datasets including Census data (1991 and 2001), Vitals Events data, and National Health Service Central Register (NHSCR) data (Hattersley & Boyle, 2007). The SLS has been set up as a longitudinal study, covering the period 1991 up to the present, for which the records from these administrative sources have been linked together. The sample size in 1991 is 270,385, representing 5.3% of the Scottish population. The quality of the tracing is extremely good, the overall tracing rate is 98%. Not only is it large compared to other longitudinal datasets, there is also considerably less attrition in the sample. In certain categories the tracing rates were lower than in the overall sample, mainly in certain age groups (elderly) and certain non-Western ethnicities. (Hattersley et al., 2007).

The sub sample used in this paper was defined as the Scottish population who was present in both Censuses, aged 16 or older in 2001, whose religion was known for 2001 and in childhood, and who are non-religious or Christian in either 2001 or childhood. The age threshold was set at 16 because from that age, people can act independently (move house, change religion) from their parents. For this paper only used the Census part of the SLS data is used, because only the Census data contains information on individual-level religion. This implies that data is used from two points in time, 1991 and 2001.

Variables

The main variables of interest in this paper concern migration and religion. Migration is a dichotomous dependent variable, derived from a comparison of the place of residence in the 1991 and the 2001 Census. Anyone who moved over 35 kilometers (circa 20 miles) is defined as a migrant. The 35 km distance is used as a threshold because moves over shorter distances are considered to be residential mobility rather than migration. Moving

less than 35 km means that one remains relatively close to the origin community and that thus the loss of location-specific capital is limited[2].

Information on religion was available from two Census variables from 2001, one about childhood religion ('What religion were you brought up in?') and one about current religion ('What religion do you belong to?'). The religion questions were not compulsory, yet the vast majority (almost 95%) of SLS members have a valid response. The categories distinguished in this study are 'Roman Catholics', 'Church of Scotland Protestants', 'other Christians', and 'no religion' for both the childhood religion and the current religion variable. People with a non-Christian religion were left out of the sub sample, as they form a very small proportion of the sample, and make up a very mixed category. Descriptive statistics of the two sub samples can be found in Appendices A and B.

Method

The first part of the analysis consists of cross tabulations of migration by religion by age group. The second part consists of multivariate regression models (logistic regression models for binary dependent variables (to test hypotheses 1 and 2) and an OLS regression model for the analysis of proportion of own religion at destination (to test hypotheses 3a and 3b)).

Analysis

Bivariate analysis

Table 2 shows the cross tabulation of religion and migration per age group. The 'total' column shows that religious people are less likely to move than non-religious people. The percentage of Catholics who moved over 35 km is not even half as big (3.3%) as of the non-religious (7.8%), and almost one third smaller than of the Protestants (4.8%). Partly, this is due to the fact that the religious groups contain more elderly people, and older people are less mobile in general. But even within age groups, Catholics and Protestants are consistently less mobile than non-religious people. Only 'other Christians' are more

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[2] Other regression models were also tried out with different distance thresholds of the dependent migration variable (25 km (circa 15 miles) and 10 km (circa 6 miles), but it made little difference to the effects of religion on migration. The 35 km threshold was maintained to be consistent with other studies.

mobile than non-religious groups (in the three youngest age groups). Of all groups, Catholics are the least mobile, which provides preliminary evidence for the (second) hypothesis that Catholics are less mobile than Protestants. The Pearson Chi Square test results show that within each age group, and overall, the correlation between religion and migration is significant.

Table 2. Percentage people who migrated over more than 35 kilometer between 1991 and 2001, by religion (2001) and age group (Total N = 162,070).

	Age group				
Religion	16-24	25-44	45-64	65 and older	Total
Catholic	7.1	5.4	2.3	1.4	3.9
Protestant	10.1	8.7	3.6	2.8	5.5
Other Christian	18.0	13.5	6.5	4.3	8.9
Not religious	13.8	10.7	5.3	3.9	9.3
Chi-square test	0.000	0.000	0.000	0.000	0.000

Migration Analysis

Table 3 shows the effects of the different denominations on the probability of migration. The effects of denomination show that both Protestants and Catholics, but not other Christians, are less likely to migrate than non-religious people. Hypothesis one, which stated that religious individuals are less likely to migrate than non-religious individuals is therefore largely supported by the results. The 'other Christian' group contains various Christian denominations, also including the Church of England. Therefore this group is quite likely to contain many English, whom are known to be more mobile than Scots (Battu et al., 2005). This is one possible explanation for the strong effect of 'other Christian' on mobility rates.

Model 1 also shows that Catholics are less likely to migrate than Protestants are. Non-religious and other Christians are more likely to migrate than Protestants. This corresponds to the bivariate result from Table 2. Model 2 controls for a range of variables that may underlie these effects. Interestingly, the effects of denomination stay strong and significant. Although Catholics are on average poorer, controlling for work status and social class has not at all decreased the effect of 'Catholic', but made it even stronger.

Apparently, denomination has an effect on the likelihood of migrating that is independent of individual background characteristics such as age and socio-economic status.

The control variables that are added in Model 2 show effects that were expected based on the migration literature. People with a higher education and a higher social class are more likely to migrate than people with a lower education and lower social class. The older an individual is, the less likely he/she is to migrate. Because moves over long distance are known to be related to labour market events, change in economic activity was controlled for. Compared to people who were employed in 1991 and 2001 (the reference category), people who experienced a change in economic activity were more likely to migrate, and so were people who were inactive in both years. The effects for change in marital status show that continually unmarried people, people whose marriage dissolved and people who got married are all more likely to migrate then people who were continually married between 1991 and 2001.

Table 3. Logistic regression of migration over more than 35 kilometre on religion and control variables

	Model 1			Model 2		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Denomination 2001 (ref = Protestant)						
Catholic	-0.344	0.035 ***	0.709	-0.484	0.036 ***	0.616
Other Christian	0.519	0.038 ***	1.680	0.421	0.040 ***	1.523
No religion	0.570	0.023 ***	1.768	0.223	0.024 ***	1.250
Gender (ref = female)				0.022	0.022	
Level of education 2001 (ref = no higher qualifications)						
Has higher qualifications				0.783	0.027 ***	2.188
Unknown				-0.270	0.063 ***	0.763
Dependent children in household 2001 (ref = no)				-0.508	0.026 ***	0.602
Age group 2001 (ref = 16-24)						
25-44				-0.152	0.039 ***	0.859
45-64				-1.003	0.050 ***	0.367
65 and older				-1.340	0.061 ***	0.262
Social class 2001 (ref = professional/managerial)						
Skilled				-0.442	0.028 ***	0.643
Unskilled/partly skilled				-0.381	0.048 ***	0.683
Armed forces and unknown				-0.381	0.048 ***	0.683
Change in economic activity 1991-2001 (ref = stable employed)						
Stable unemployed				-0.046	0.167	0.955
Stable inactive				0.178	0.049 ***	1.195
From employed to unemployed				0.191	0.098 *	1.210
From employed to inactive				0.298	0.039 ***	1.347
From unemployed to employed				0.220	0.075 ***	1.246
From unemployed to inactive				0.181	0.086 **	1.198
From inactive to employed				0.412	0.059 ***	1.510
From inactive to unemployed				0.529	0.174 ***	1.697
Unknown				0.537	0.036 ***	1.711
Change in marital status 1991-2001 (ref = stable married)						
Stable unmarried				0.096	0.033 ***	1.101
From married to unmarried				0.309	0.047 ***	1.362
From unmarried to married				0.515	0.036 ***	1.674
Unknown				0.504	0.172 ***	1.655
Constant	-2.848	0.015 ***	0.058	-2.300	0.057 ***	0.100
N	162070			162070		
-2 Log likelihood (df)	76398.760 (3)			70725.365 (26)		

Source: Scottish Longitudinal Study (own calculations)

* = p<0.10; ** = p<0..05; *** = p<0.01

In order to test hypotheses 3a en 3b the percentages of Protestants, Catholics and non-religious people in each postcode sector in Scotland in 2001 were calculated. Table 4 shows the average percentage of each denomination in a postcode sector, by individual denomination. The bold printed percentages highlight the cells where denomination on postcode sector level and individual level correspond.

It can be seen from the diagonal that the percentage of each denomination on postcode sector level (columns) is on average the highest for sample members with a

corresponding denomination (rows). Comparing across the whole table, it is clear that whatever the sample member's individual denomination, Protestants dominate the postcode sector-level distribution. This is simply an artefact of Protestantism being the dominant religion in Scotland. Even for Catholics, who are known to be concentrated in certain neighbourhoods, the percentage of Protestants is higher than the percentage of Catholics in their postcode sector (it is worth keeping in mind, though, that averages tend to iron out concentrations of minority groups).

Table 4. Average percentages of denominations per postcode sector by individual religion, 2001 (N = 162,070).

Individual denomination	Average % denomination in area			
	Protestant	Catholic	Other Christian	Non-religious
Protestant	**44.6**	14.3	6.9	27.3
Catholic	39.1	**24.2**	5.3	23.5
Other Christian	43.8	12.6	**8.7**	28.0
Non-religious	42.3	13.7	7.1	**29.8**

Source: Scottish Longitudinal Study (own calculations)

In order to test hypotheses 3a and 3b in a multivariate model, a variable was used that expresses the postcode sector percentage of denominations. The dependent variable is percentage Protestants (3a) or percentage Catholics (3b) in the postcode sector of destination for people who migrated between 1991 and 2001[3]. Model 1 of Table 5a shows that compared to Catholics, Protestants move to areas with on average 4% more Protestants. This is significantly more than for people of other denominations. Controlled for background variables (Model 2), the effects of denomination on % Protestants decrease, but remain significant. *Ceteris paribus*, Protestants move to areas with on average almost 2% more Protestants than Catholics. The effects for other Christians and non-religious people have become very small. This result provides support for hypothesis

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[3] An alternative approach is to combine these two analyses in one model with dependent variable '% of own denomination in postcode sector' (which has the value of the % of Protestants in the postcode sector for Protestant sample members, the value of the % of Catholics in the postcode sector for Catholic sample members, etc.). This was tried, but the dominance of Protestantism in almost all postcode sectors wiped out the effects for Catholics completely. Therefore the two separate models were maintained.

3a. Even though all migrants move to areas with a lot of Protestants –because it is the main religion in Scotland–, Protestants do so to an even large extent than people of other religions, and in particular more so than Catholics. Other elements also affect the percentage of Protestants in destination areas for movers, either positively, such as having dependent children, age and being married, or negatively, such as having higher qualifications, being economically inactive or living in a town or city (compared to living in the countryside).

TABLE 5a. OLS Regression of percentage Protestants in postcode sector on individual denomination and control variables 2001; movers only

	Model 1			Model 2		
	B	S.E.		B	S.E.	
Denomination 2001 (ref = Catholic)						
Protestant	4.194	0.255	***	1.980	0.194	***
Other Christian	3.091	0.411	***	0.767	0.311	***
No religion	1.406	0.257	***	0.794	0.195	***
Gender (ref = female)				-0.485	0.132	
Level of education 2001 (ref = no higher qualifications)						
Has higher qualifications				-0.698	0.183	***
Unknown				0.584	0.390	
Dependent children in household 2001 (ref = no)				1.445	0.158	***
Age group 2001 (ref = 16-24)						
25-44				1.161	0.185	***
45-64				2.243	0.263	***
65 and older				3.825	0.372	***
Social class 2001 (ref = professional/managerial)						
Skilled				0.083	0.176	
Unskilled/partly skilled				0.034	0.207	
Armed forces and unknown				-0.053	0.300	
Economic activity 2001 (ref = employed)						
Unemployed				0.426	0.306	
Inactive				-1.795	0.173	***
Unknown				-2.566	0.267	***
Marital status 2001 (ref = never married)						
Married				1.035	0.193	***
Separated/divorced/widow				0.855	0.216	***

	Model 1			Model 2		
	B	S.E.		B	S.E.	
Unknown				0.376	1.100	
Area type (ref = countryside)						
Town				-3.930	0.181	***
City				-14.584	0.182	***
Constant	-2.848	0.015	***	-2.300	0.057	***
N	13431			13431		
Adj. R2 (df)	0.025 (3)			0.454 (21)		

Table 5b contains a similar analysis to Table 5a, but here the percentage Catholics in the postcode sector is the dependent variable, and the reference category for individual denomination is Protestant. Compared to Protestants, Catholics move to areas with on average 8.3% more Catholics. This effect is much bigger than it was for Protestants in Table 5a. Even when controlled for background variables (Model 2), the effect remains large (6.5%) and significant. This result suggests that when selecting a destination area, Catholics tend to select areas with many other Catholics. This may indicate a preference to live among religious peers, or a preference to move to areas where there are likely to be Catholic organizations and institutions such as Catholic churches and Catholic schools.

Other variables that increase the percentage of Catholics in destination areas for movers are: having dependent children; increasing age; lower social class; lower level of education; being unemployed; and living in a town or city (compared to living in the countryside). The effects of lower social class, lower level of education and unemployment reflect the general disadvantaged socio-economic position of Catholics in Scottish society.

TABLE 5b. OLS Regression of percentage Catholics in postcode sector on individual denomination and control variables 2001; movers only

	Model 1			Model 2		
	B	S.E.		B	S.E.	
Denomination 2001 (ref = Protestant)						
Catholic	8.338	0.261	***	6.571	0.239	***
Other Christian	-1.615	0.384	***	-1.060	0.347	***
No religion	-0.857	0.200	***	-1.409	0.187	***
Gender (ref = female)				0.172	0.163	

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Level of education 2001 (ref = no higher qualifications)						
Has higher qualifications				-1.637	0.226	***
Unknown				1.061	0.481	**
Dependent children in household 2001 (ref = no)				1.217	0.194	***
Age group 2001 (ref = 16-24)						
25-44				1.621	0.228	***
45-64				1.828	0.324	***
65 and older				1.018	0.459	**
Social class 2001 (ref = professional/managerial)						
Skilled				0.541	0.217	***
Unskilled/partly skilled				0.843	0.255	***
Armed forces and unknown				1.693	0.370	***
Economic activity 2001 (ref = employed)						
Unemployed				0.693	0.377	*
Inactive				0.229	0.213	
Unknown				-1.363	0.329	***
Marital status 2001 (ref = never married)						
Married				-0.310	0.238	
Separated/divorced/widow				-0.735	0.266	***
Unknown				2.834	1.355	**
Area type (ref = countryside)						
Town				5.161	0.223	***
City				11.530	0.224	***
Constant	14.306	0.139	***	6.295	0.335	***
N	13431			13431		
Adj. R2 (df)	0.093 (3)			0.262 (21)		

Secularization Analysis

For the analysis on secularization, respondents' childhood religion and current religion had to be known, as well as their place of residence in childhood and in 2001. Because the only other time point than 2001 is 1991, respondents needed to be selected who were a child in 1991. Thus a selection was made of respondents who were aged 6 – 15 in 1991. This selection makes that their answer to the question 'what religion were you raised in?' corresponds with their religion in 1991. Comparing their childhood religion (in 1991) with their practising religion (in 2001), it could be determined whether they had become secular. Respondents who reported they were not raised religiously were excluded,

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because they do not run the risk of becoming secular. Because place of residence in both 1991 and 2001 was known, it could be determined who had moved[4], and the origin and destination of moves. Individual background characteristics for 2001 were used as control variables (childhood denomination, gender, highest completed level of education, age, social class, economic activity and marital status). After leaving out respondents who did not move, individuals who moved from a rural to an urban area were compared with people who moved in other directions. A further selection was made of respondents who lived independently (i.e., not with their parents) in 2001, to make it more likely that the destination of their latest move was chosen by themselves, rather than by their parents. The total number of cases for this analysis is 6,912.

Table 6. Logistic regression of becoming secular on migration direction (risk population: SLS members, 6-15 years old in 1991, who adhered to a Christian religion in childhood, and who moved between 1991 and 2001)

	Model 1				Model 2			
	B	S.E.		Exp(B)	B	S.E.		Exp(B)
Migration direction (ref = urban to urban)								
Urban to rural	0.176	0.134		1.193	0.123	0.137		1.131
Rural to urban	0.474	0.082	***	1.606	0.253	0.087	***	1.288
Rural to rural	0.039	0.081		1.040	-0.117	0.084		0.889
Childhood denomination (ref = Protestant)								
Catholic					-0.954	0.087	***	0.385
Other Christian					0.353	0.104	***	1.423
Gender (ref = female)					0.128	0.064	**	1.137
Level of education 2001 (ref = no higher qualifications)								
Has higher qualifications					0.484	0.292	*	1.623
Unknown					0.547	0.303	*	1.729
Age 2001					0.075	0.015	***	1.078
Social class 2001 (ref = professional/managerial)								
Skilled					-0.094	0.088		0.911
Unskilled/partly skilled					-0.120	0.101		0.887
Armed forces and unknown					-0.317	0.148	**	0.728
Economic activity 2001 (ref = employed)								

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[4] For the secularization analysis, everyone was selected who moved – no matter over which distance. It only mattered whether a move involved crossing a non-urban / urban border (this is different than the migration-over-more-than-35-kilometre variable in the previous tables).

	Model 1				Model 2			
Unemployed					0.239	0.129	*	1.271
Inactive					0.160	0.092	*	1.174
Unknown					0.154	0.101		1.167
Marital status 2001 (ref = never married)								
Married					-0.530	0.135	***	0.589
Separated/divorced/widow					-0.141	0.362		0.868
Unknown					-0.098	0.784		0.906
Constant	-1.562	0.041	***	0.210	-3.417	0.447	***	0.033
N	6912				6912			
-2 Log likelihood (df)	6644.104 (3)				6415.089 (18)			

Source: Scottish Longitudinal Study (own calculations)

* = p<0.10; ** = p<0..05; *** = p<0.01

Model 1 in Table 6 shows that compared to moving from a rural place to another rural place between 1991 and 2001, only moving from a rural to an urban place is associated with an increased likelihood of becoming secular. After the addition of several control variables in Model 2, the positive relation between moving from a rural to an urban place and becoming secular is still significant. This supports hypothesis four, which stated that religious individuals who move from a rural area to an urban area are more likely to have become secular.

Other factors that increase the likelihood of becoming secular are being raised as an 'other Christian' (compared to being raised as a Church of Scotland Protestant); being male; being older; and having a higher education. Being married and being raised as a Catholic lower the likelihood of becoming secular.

Conclusion and discussion

Being religious reduces mobility. the empirical analysis showed that people who belong to the Church of Scotland or the Roman Catholic church move less often than non-religious people. This is attributed to the bigger location-specific capital that religious people have through their religion, compared to non-religious people. Probably not all people who count themselves as religious in the Census are active church goers, and thus they probably do not all have religious location-specific capital. Nevertheless it was found that self-declared religious people move significantly less often than people who

do not count themselves as religious. One exception to this finding were people who were classified as 'other Christian'. This is a heterogeneous group, most likely consisting for a large part of Church of England adherents. It is known that English are more mobile than Scots (Battu et al. 2005), and this is a likely explanation for this finding (thus it is not religion, but nationality, or rather other unmeasured characteristics of the English population in Scotland, that makes this group more mobile).

Based on the same location-specific capital theory, it was argued that Catholics would have a geographically less widespread network of religious social capital than Protestants do, and that this would make the costs of migrating for Catholics higher than for Protestants, reducing their likelihood of migrating. The findings indicated that, even when controlling for other influences, Catholics are indeed less likely to migrate than Protestants. These findings provide support for the location-specific capital theory. Thus, having fewer destination alternatives with religious peers makes Catholics less likely to migrate than Protestants.

The second part of this paper focused on the relationship between moving behaviour and becoming secular. Using the modernization theory it was argued that people who move from a rural area to an urban are more likely to have become secular because of the stronger individualism and moral plurality in cities as opposed to the more tight-knit communities in rural areas. After controlling for several other influences it was found that people between the age 16 – 26 who have moved from a rural to an urban area between 1991 and 2001 are more likely to have become secular than people who have migrated in other directions. This finding corroborates the modernization theory.

As said previously, the relationship between rural-to-urban migration and becoming secular has no clear causal direction. Either someone who moves from a rural area to a city may become secular after having been exposed to the urban environment for a while, or someone who looses his/her faith no longer feels in place in their rural community, and therefore moves to the city. Alternatively, both becoming secular and moving to an urban environment may be part of the same underlying process of maturing, whereby people detach from their parents both literally (by moving away) and symbolically (by taking distance from their parents' beliefs and by gradually developing their own identity). Only data with several repeated measures of religion and place of residence (such as panel data), including measures of personal development, would allow to shed more light on

the causal process behind secularization and moving direction. However, the additional condition that sample members had to live on their own in 2001 (and therefore chose their destination independently of their parents) makes it slightly more likely that secularization is the cause, not the effect of a move.

Another interesting extension would be to take into account international migration. Especially for Catholics, many of whom have Irish roots, Northern Ireland and the Republic of Ireland may be realistic destination contenders. If this migration flow were taken into account as well, the difference in moving propensity between Protestants and Catholics may decrease, but the relationship between individual religion and density of the own religion in the place of destination will stay strong. The SLS does not contain information on international migration destinations, and therefore is not suitable to do such an analysis, but other (cross-sectional) studies could perhaps be analyzed to get a first impression of this phenomenon.

All in all this paper has shown that there is indeed an association between individual religion and internal migration behaviour in the contemporary Scottish society. It was have shown that among the variety of migration triggers that has been demonstrated in migration research, religion can be listed as a factor of some significance. In a society with a general trend towards secularization and dwindling community cohesion, religion may seem to have lost its significance, but the study at hand shows that for the religious part of the population –which is still substantial– religion still plays a role in their migration behaviour.

References

Battu, H., Gerova, V and Phimister, E. (2005). Residential mobility. In: *Changing Scotland: Evidence from the British Household Panel*. Edited by J.F. Ermisch and R.E. Wright. London: Policy Press.

Boheim. R. & Taylor. M. (2002). Tied Down or Room to Move? Investigating the Relationships and Housing Tenure. Employment Status and Residential Mobility in Britain. *Scottish Journal of Political Economy*. 49(4). 369-392.

Bradley J.M. (1997) Political, Religious and Cultural Identities: The Undercurrents of Scottish Football. *Politics* 17(1): 25-32.

Brierley. P. (1995). *Prospects for Scotland 2000: Trends and Tables from the English Church Census*. London: MARC

Brierley. P. (2003). *United Kingdom Christian Handbook: Religious Trends No. 4*.

Brock. J.M. (1992). The Importance of Emigration. In: *Irish Immigrants and Scottish Society in the Nineteenth and Twentieth Centuries*. Edited by Devine. T.M. Edinburgh: John Donald Publishers Ltd.

Brown, L. A. and E. G. Moore (1970). "The intra-urban migration process: A perspective." Geografiska Annaler B 52(1): 1-13.

Brown. C.G. (1997). *Religion and Society in Scotland since 1707.* Edinburgh: Edinburgh University Press

Brown. C.G. (2001). *The Death of Christian Britain: Understanding Secularization 1800-2000*. London: Routledge.

Bruce. S. (1992). *Religion and Modernization*. Oxford: Clarendon.

Bruce. S. (1995). *Religion in modern Britain*. Oxford: Oxford University Press

Bruce. S. & Glendinning. T. (2002). Scotland is no longer a Christian Country. *Life and Work: The magazine of the Church of Scotland¸* 6. 12-15.

Bruce. S. (2001). Christianity in Britain. R.I.P.. *Sociology of Religion*. 62(2). 191-203.

Bourque, N., Gayle, V. and Wright, R.E. (2005) Decline of religion. In: *Changing Scotland: Evidence from the British Household Panel*. Edited by J.F. Ermisch and R.E. Wright. London: Policy Press.

Clark, W. A. V. and F. M. Dieleman (1996). *Households and Housing*. New Brunswick, Center for Urban Policy Research.

DaVanzo. J.S. (1981a). Microeconomic approaches to studying migration decisions. In: *Migration decision making: Multidisciplinary approaches to microlevel studies in developed and developing countries*. Edited by G.F. de Jong & R.W. Gardner. Pergamon Press.

DaVanzo. J.S. (1981b). Repeat migration. information costs. and location-specific capital. *Population and Environment*. 4(1). 45-73.

Davie. G. (1994). *Religion in Britain since 1945: Believing without Belonging*. Oxford: Blackwell Publishers.

De Jong, G. F. and J. T. Fawcett (1981). Motivations for migration: An assessment and a value-expectancy research model. Pp. 13-58 in: *Migration Decision Making: Multidisciplinary Approaches to Microlevel Studies in Developed and Developing Countries.* Edited by G. F. De Jong and R. W. Gardner. New York, Pergamon Press.

Devine. T.M. (1991). *Irish Immigrants and Scottish Society in the Nineteenth and Twentieth Centuries*. Edinburgh: John Donald Publishers Ltd.

Feijten, P. and C. H. Mulder (2002). "The Timing of Household Events and Housing Events in the Netherlands: A Longitudinal Perspective." Housing Studies 17(5): 773-792.

Feldman, R. M. (1990). "Settlement-identity: Psychological Bonds with Home Places in a Mobile Society." Environment and Behavior 22(2): 183-229.

Feldman, R. M. (1996). "Constancy and Change in Attachments to Types of Settlements." Environment and Behavior 28(4): 419-445.

Finke. R. (1992). An Unsecular America. In: *Religion and Modernization*. edited by S. Bruce. 145-169. Oxford: Clarendon.

Fischer, P. A. and G. Malmberg (2001). "Settled People Don't Move: On Life Course and (Im-)Mobility in Sweden." International Journal of Population Geography 7(5): 357-371.

Frieze, I., Hansen, S. and Boneva, B. (2006). The migrant personality and college students' plans for geographic mobility. *Journal of Environmental Psychology* 26 (2):170-177.

Gallagher. T. (1987). *Glasgow. The uneasy Peace.* Manchester: Manchester University Press.

Graham. G. (1992). Religion. Secularization and Modernity. *Philosophy*. 67(260). 183-197.

Gregg. P.. Machin. S. & Manning. A. (2004). Mobility and Joblessness. In: *Seeking a premier league economy* by Card. D.. Blundell. R. & Freeman R. (eds). Chicago. IL: National Bureau of Economic Research. University of Chicago Press.

Hattersley, L. and Boyle, P. (2007). *The Scottish Longitudinal Study: An Introduction.* LSCS Working Paper 1.0. Edinburgh/St Andrews: Longitudinal Studies Centre Scotland.

Hattersley, L., Raab, G. and Boyle, P. (2007). *The Scottish Longitudinal Study: Tracing rates and sample quality for the 1991 Census SLS Sample*. LSCS Working Paper 2.0. Edinburgh/St Andrews: Longitudinal Studies Centre Scotland.

Inglehart. R. (1971). The Silent Revolution: Changing Values and Political Styles Among Western Publics. Princeton: Princeton University Press.

Levitt. P. (2003). "You Know. Abraham Was Really the First Immigrant": Religion and Transnational Migration. *International Migration Review*. 37(3). 847-873.

Low, S. M. and I. Altman (1992). Place Attachment: A Conceptual Inquiry. Place Attachment. I. Altman and S. M. Low. New York, Plenum Press. 12: 1-12.

Mulder, C. H. (1993). *Migration Dynamics: A Life Course Approach*. Amsterdam, Thesis Publishers.

Myers. S.M. (2000). The Impact of Religious Involvement on Migration. *Social Forces*. 79(2). 755-783.

Oh. J.W. (2003). Social Bonds and the Migration Intentions of Elderly Urban Residents: The Mediating Effect of Residential Satisfaction. *Population Research and Policy Review*. 22(2). 127-146.

Owen. D. & Green. A. (1992). Migration Patterns and Trends. In: A. Champion & A. Fielding (eds). *Migration Processes and Patterns. Volume 2: Research Progress and prospects*. London: Belhaven Press. 17-38.

Pacione, M. (2005). "The Geography of Religious Affiliation in Scotland." The Professional Geographer 57(2): 235-255.

Putnam. R.D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.

Rogers, A. & Castro, L.J. (1981) *Model migration schedules*. Laxenburg, Austria: IIASA (RR-81-30).

Simon. J. (1989). *The Economic Consequences of Immigration.* Oxford: Basil Blackwell.

Sjaastad. L.A. (1962). The costs and returns of human migration. *Journal of Political Economy*. 70(5). 80-93.

Smith, C., D. Sikkink, et al. (1998). "Devotion in Dixie and beyond: A Test of the "Shibley Thesis" on the Effects of Regional Origin and Migration on Individual Religiosity." Journal for the Scientific Study of Religion 37(3): 494-506.

Sommerville. C.J. (1998). Secular Society/Religious Population: Our Tacit Rules of Using the Term 'Secularization'. *Journal for the Scientific Study of Religion*. 37(2). 249-253.

Voas. D. (2006). Intermarriage and the demography of secularization. *British Journal of Sociology*. 54(1). 83-108.

Wallis. R.. Bruce. S. (1992). Secularization: The Orthodox Model. In: *Religion and Modernization*. edited by S. Bruce. 8-31. Oxford: Clarendon.

Welch, M. R. and J. Baltzell (1984). "Geographic Mobility, Social Integration, and Church Attendance." Journal for the Scientific Study of Religion 23(1): 75-91.

APPENDIX A. Frequencies and means for variables in migration analysis

Variable name	N	%
Migration over more than 35 km between 1991 and 2001		
No	10575	78.7
Yes	2857	21.3
% CoS Protestants in postcode sector (mean / s.d.)	41.0	10.1
% Catholics in postcode sector (mean / s.d.)	15.2	10.7
Denomination 2001		
Protestant	5375	40
Catholic	2139	15.9
Other Christian	816	6.1
No religion	5102	38
Gender		
Male	6161	45.9
Female	7271	54.1
Level of education 2001		
No higher qualifications	9624	71.6
Has higher qualifications	2870	21.4
Unknown	938	7
Dependent children in household 2001		
No	9153	68.1
Yes	4279	31.9
Age group 2001		
16-24	3857	28.7
25-44	6462	48.1
45-64	2019	15
65 and older	1094	8.1
Social class 2001		
Professional/managerial	3999	29.8
Skilled	4948	36.8
Unskilled/partly skilled	2931	21.8
Armed forces and unknown	1554	11.6
Economic activity 2001		
Employed	7694	57.3
Unemployed	679	5.1
Inactive	3490	26
Unknown	1569	11.7
Marital status 2001		
Never married	6696	49.9
Married	4140	30.8
Separated/divorced/widow	2549	19
Unknown	47	0.3
Area type		
Countryside	2620	19.5
Town	5127	38.2
City	5685	42.3

APPENDIX B. Frequencies and means for variables in secularization analysis

Variable name	N	%
Became secular		
No	5614	81.2
Yes	1298	18.8
Migration direction		
Urban to urban	4097	59.3
Urban to rural	385	5.6
Rural to urban	1044	15.1
Rural to rural	1386	20.1
Childhood denomination		
Protestant	4446	64.3
Catholic	1928	27.9
Other Christian	538	7.8
Gender		
Male	3242	46.9
Female	3670	53.1
Level of education 2001		
No higher qualifications		
Has higher qualifications		
Unknown		
Age 2001 (mean / s.d.)	21.5	2.5
Social class 2001		
Professional/managerial	1350	19.5
Skilled	3129	45.3
Unskilled/partly skilled	1780	25.8
Armed forces and unknown	653	9.4
Economic activity 2001		
Employed	4280	61.9
Unemployed	514	7.4
Inactive	1285	18.6
Unknown	833	12.1
Marital status 2001		
Never married	6331	91.6
Married	516	7.5
Separated/divorced/widow	52	0.8
Unknown	13	0.2