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# The Spatial Mobility of Two Generations of Young Adults in Norway

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ABSTRACT

**This article presents results from a longitudinal study using data from the Norwegian population register, combined with data from the 1970 and 1980 censuses. For two generations, those born in 1948 and 1958, successive migrations are considered and the effects of various sociodemographic characteristics on migratory behaviour are explored. Attention focuses on individuals who had moved (changed municipal district) at the age of 22 (that is, in a census year) and who therefore form a specific sub-population whose sociodemographic structure differs from that of the whole generation. Event-history analysis is used to examine the duration of stay at the place reached at age 22, and the effects of individual characteristics on this duration. Since a distinction is made between intra- and inter-regional migration, it has been possible to show that these effects vary significantly depending on whether we are dealing with short- or long-distance migration. © 1997 by John Wiley & Sons, Ltd.**

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## INTRODUCTION

In common with the other countries of northern Europe, Norway has possessed local population registers recording the demographic events of its inhabitants for over 200 years. Since 1949, records have also been kept of changes in residence. A central computerised population register was established in 1964 for all the individuals living in Norway at the time of the census of 1 November 1960. This register provides central and local administrations with information about citizens for such matters as family allowances, the social security system and the fiscal services. Data from this register have been combined with data collected in the 1960, 1970 and 1980 censuses to form a rich statistical database covering, among other things, the history of successive migrations and births, plus a variety of information relative to educational level, occupation, marital status and income at the time of the censuses.[1]

Migratory behaviour can be studied using such a data set with models developed at two different levels of aggregation (Courgeau, 1995a). Aggregate-level models relate migration flows to objectively determined macro-variables, such as unemployment rates, income levels or environmental conditions. The central questions here have concerned the role of migration in the labour or housing markets (Stillwell and Congdon, 1991). Individual-level models, by contrast, relate the decision to migrate to a wide variety of subject characteristics, such as family-life status (marital status, birth of one or more children), educational level and economic activity (type of activity, income). It is this second type of model which will be used to study the

process underlying the decision to move and the choice of destination. As we have shown elsewhere, the factors affecting migration behaviour at the micro-level cannot be inferred from aggregate studies (Courgeau, 1995b), and these models can use only individual characteristics. The effect of the different kinds of variables mentioned above on the distribution of migrations over time are assessed using event-history analysis. A discussion of these methods is followed by a presentation of the data set on which the study is based.

The mobility of two generations born at an interval of ten years, in 1948 and 1958, is compared using a longitudinal perspective, focusing on the individuals who had moved (changed municipal district) in the year of the 1970 census for the first generation, and in that of the 1980 census for the second. The subpopulations of migrants on which the work is based comprise respectively 10,610 individuals (generation born in 1948), accounting for 18.7% of the members of this generation living in Norway in 1991, and 7142 individuals (generation born in 1958), accounting for 12.8% of the members of this generation living in Norway in 1991.[2] From this 'starting time', when the individuals being studied all had the same age (22 years) and had all made a migration, the duration of stay at the new address is examined according to the various characteristics supplied by the two censuses. A distinction is also made between moves to a new address within the same region (intra-regional migrations) and moves to another region (inter-regional migrations). Since the reasons for short-distance migrations are often very different from those for long-distance migrations, it is interesting to compare the effect of the different characteristics on these two types of spatial mobility.

For the purposes of this study Norway is divided into five large regions (Fig. 1): Oslo, East, South, West and Centre-North. At the time of the last census in 1990, the populations of these regions were respectively: 879,758 in the Oslo region (20.7% of the population of Norway),

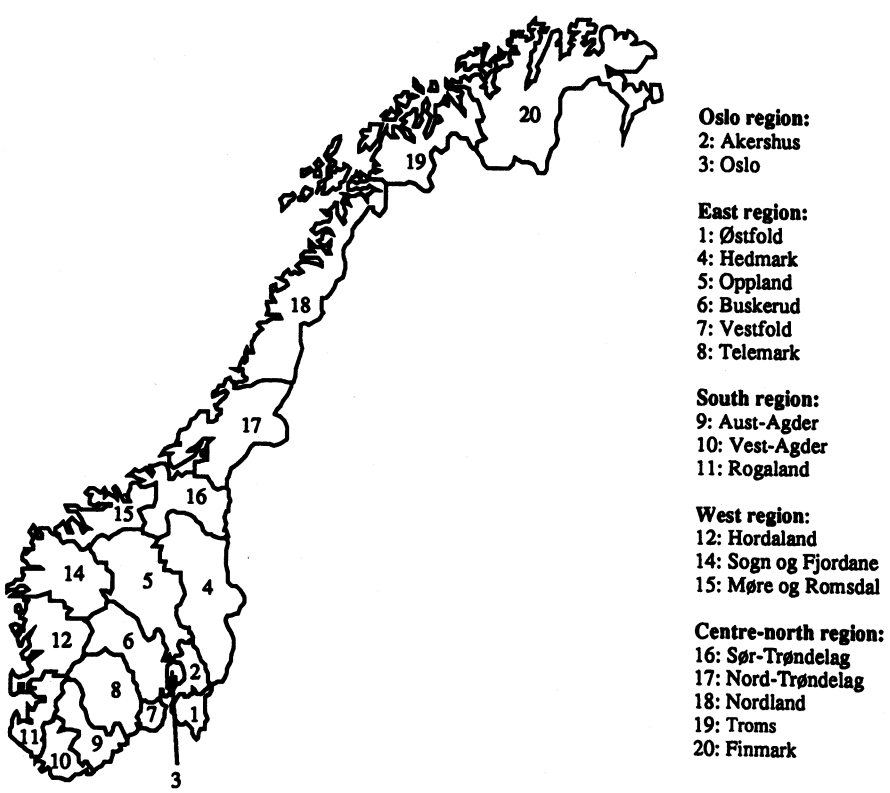


Figure 1. The regional divisions of Norway.

 

1,194,736 in the East (28.1%), 580,311 in the South (13.6%), 755,914 in the West (17.8%), and 839,111 in the Centre-North (19.7%).

## EVENT-HISTORY ANALYSIS

The methods of event-history analysis used to conduct this study are presented briefly below. The reader wishing for a more detailed account of these techniques should consult the following comprehensive studies: Courgeau and Lelièvre (1992); Cox and Oakes (1984); Kalbfleish and Prentice (1979).

An individual event-history appears as the product of a complex process: one which develops over the life-course yet is situated within given historical, economic, political and social conditions. Social structures influence this process but may in turn be influenced by them (Courgeau, 1996). It is to study such processes that event-history analysis has been developed in the social sciences, using probability theories and statistical methods.

These models focus on a single event, in this case the occurrence of a new migration, and study it from a dynamic temporal perspective. They model the events' probability functions, and are able to take into account data that are incomplete as a result of different censoring mechanisms, and which in this study are right-censored. Nonparametric methods of analysis can be used to estimate a migration hazard rate, defined as the instantaneous rate of failure, conditional upon survival to time $t$, by:

$$h(t)=\lim_{\Delta t\to 0} P(T<t+\Delta t \mid T\geqslant t) \mid \Delta t \qquad (1)$$

where $T$ is a positive random variable, measuring the time until the next migration.

It is useful to represent these hazard rates graphically in a cumulated form, particularly in order to compare the different regions or the two generations.

However, because individuals experience events in different spheres of life (migration, family and other histories), the study of such parallel and interacting histories requires far more complex multistate models. With these it becomes possible to examine the interaction between two or more processes and to extend the analysis to more intricate situations. At the same time it is necessary to deal with heterogeneity in populations and to investigate the impact of certain individual characteristics on the occurrence of events. The semi-parametric methods of analysis developed by Cox (1972) prove particularly useful. While retaining a baseline hazard rate estimated by non-parametric means, these methods can be used to measure the effect on this hazard rate of various characteristics considered to be multiplicative. The model can be written as follows:

$$h(t; z)=h_0(t)\exp(\beta z) \qquad (2)$$

where $h(t; z)$ is the hazard rate at time $t$ for the individuals with the characteristics $z$, represented in the form of a column vector, $h_0(t)$ being the baseline hazard rate, which is the same for everyone, and $\beta$ a row vector of parameters to be estimated using a partial likelihood (Cox, 1972).

The characteristics are often measured by binary variables, taking a value of 1 if the individual has the characteristic and 0 if not, to represent the various states in which the individual may be: married or not, having a particular educational level, and so on. However, these characteristics can also be introduced in a more complex form: number of years of study, income, etc. Time-dependent variables can also be introduced, which amounts to analysing the effect of a modifying event (the change from one state to another) on the event being studied.

When the characteristics are measured by binary variables, their multiplicative effect on the baseline hazard rate is measured directly by the value of $\exp(\beta_i)$) that is used here.

The validity of the multiplicative model can be tested on each of the characteristics taken individually. All this requires is to plot the logarithm of the cumulative hazard rate against the logarithm of the duration for the subpopulation which has this characteristic and for the subpopulation which does not. If the curves are approximately parallel, the Cox model is applicable for this characteristic. Of course, the model is subsequently estimated by introducing all the characteristics simultaneously, with the possibility of introducing an interaction between certain combinations of them.

These models have the advantage of not using a restrictive parametric form to estimate the baseline hazard rate, the form of its evolution over time being unspecified. Finally, it may be

 

Table 2. Effect of the different characteristics of individuals on their probability of changing residence at age 22 (result of logistic regressions).

| | 1948 generation | | 1958 generation | |
|---|---|---|---|---|
| Characteristic | Parameter | Odds-ratio | Parameter | Odds-ratio |
| *Region of residence* | | | | |
| Oslo | 0.0 | 1.0 | 0.2 | 1.3 |
| East | −0.1 | 0.9 | 0.0 | 1.0 |
| South | −0.2 | 0.8 | −0.1 | 0.9 |
| West | 0.1 | 1.1 | −0.1 | 0.9 |
| Centre-north | 0.1 | 1.1 | 0.1 | 1.1 |
| *Overall effect* | *** | | *** | |
| *Sex* | | | | |
| Male | −0.2 | 0.8 | −0.3 | 0.8 |
| Female | 0.2 | 1.2 | 0.3 | 1.3 |
| *Overall effect* | *** | | *** | |
| *Marital status* | | | | |
| Unmarried | −0.3 | 0.7 | −0.4 | 0.7 |
| Married | 0.3 | 1.3 | 0.2 | 1.2 |
| Other | 0.0 | 1.0 | 0.2 | 1.3 |
| *Overall effect* | *** | | *** | |
| *Occupational status* | | | | |
| Active | 0.0 | 1.0 | −0.2 | 0.9 |
| Inactive | 0.0 | 1.0 | 0.2 | 1.2 |
| *Overall effect* | | | *** | |
| *Educational level* (years of studies) | | | | |
| Less than 10 years | −0.4 | 0.7 | −0.3 | 0.8 |
| 10 to 12 years | −0.1 | 0.9 | 0.0 | 1.0 |
| More than 12 years | 0.5 | 1.6 | 0.3 | 1.3 |
| *Overall effect* | *** | | *** | |
| *Income* (krone) | | | | |
| None or unknown | −0.4 | 0.7 | −0.5 | 0.6 |
| 1–3999 | −0.1 | 0.9 | −0.3 | 0.7 |
| 4000–19,999 | 0.3 | 1.4 | −0.2 | 0.8 |
| 20,000–49,999 | 0.1 | 1.1 | 0.5 | 1.6 |
| 50,000–99,999 | 0.1 | 1.1 | 0.4 | 1.5 |
| 100,000 or more | | | 0.2 | 1.2 |
| *Overall effect* | *** | | *** | |

*** significant at 1%; ** significant at 5%; * significant at 10%.
The estimated parameters are the $\beta_i$ of the following expression:
logit $P(Y=1)=\alpha+\Sigma\beta_i.x_i$
let: $P(Y=1)=1/[1+\exp-(\alpha+\Sigma\ \beta_i.x_i)]$
where $P(Y=1)$ is the probability of changing residence at age 22 (Y being a binary variable which takes the value 1 if the individual migrates) and the $x_i$ are the various characteristics of the individuals (expressed in binary form).

The odds-ratios are the exponentials of these parameters and measure the relative risk, in relation to the 'average' individual, of migrating or not migrating.
*Source*: Norwegian Population Register, Central Bureau of Statistics, Oslo

 

observed concerning the effect of educational level and income. Thus it can be seen that the individuals who changed municipal district at age 22 form a very specific sub-population, whose sociodemographic structure differs significantly from that of the population as a whole. The aim is to study the probability of making a new migration for these individuals.

## REGIONAL VARIATIONS IN LEVELS OF MOBILITY

The analyses that follow are based on the non-parametric model presented above and compare the migration hazard rates of individuals after the age of 22 according to their region of origin and year of birth. The individuals considered belong to the very specific subpopulation of those who had migrated at the age of 22, for a reason other than education (this type of migration not being recorded). What is being studied, therefore, is the propensity to migrate after 22, in the knowledge that a migration had been made at the age of 22.

### The 1970s: the Particularity of the Oslo Region

We begin by considering the behaviour of the individuals born in 1948 and who are thus observed from 1970 (the date at which they had all made a migration). When all migrations are considered, regardless of destination (intra- or inter-regional), the individuals living in Oslo at age 22 are clearly differentiated from the others by their high mobility (Fig. 2a). They are distinct from individuals originating from the regions of the South, West and East, who are much less mobile. The inhabitants of the Centre-North region occupy an intermediate position.

The situation is different when attention is limited to intra-regional migrations. Up to the age of 26–28, individuals from the Oslo region have a lower local mobility than those living in the other regions. After this age, however, local mobility becomes greater in the Oslo region than elsewhere (Fig. 2b). The contrast between the inhabitants of Oslo and the other regions of Norway is even sharper when just inter-regional migrations are considered (Fig. 2c). From the age of 25, the cumulated migration hazard rate of individuals from Oslo is twice as high as for individuals from other regions, and the same ratio is found at age 40. In the 1970s, then, the Oslo region was a region which young adults were very likely to leave.

### The Evolution between the 1948 Generation and the 1958 Generation

We consider successively the individuals according to their region of residence at the end of the migration made when aged 22.

In the Oslo region, the 1958 generation is generally less mobile than the 1948 generation, although there are differences depending on whether intra- or inter-regional mobility is being considered. Short-distance mobility increased from one cohort to the next, whereas inter-regional mobility (leaving the region) declined sharply (Figs 3a, 3b). Between the 1970s and the 1980s, an increase in local mobility combined with a large decline in long-distance mobility to other regions was observed among young adults of the Oslo region.

In the East region, the 1958 generation is generally a little more mobile than the 1948 generation, but this greater mobility is only observed for intra-regional mobility, the inter-regional migration hazard rates having declined (Figs 3c, 3d). As in the case of the individuals from the Oslo region, then, an increase in short-distance mobility is combined with a fall in long-distance mobility; but whereas for Oslo the result is a fall in overall mobility, in the East region the overall mobility of young adults instead increased slightly between the 1970s and the 1980s.

In the regions of the South and West, the 1958 generation is slightly less mobile than the 1948 generation. This decline is due mainly to a fall in inter-regional mobility, local mobility having remained stable from one cohort to the next (Figs 3e, 3f).

In the Centre-North region, the evolution between the two cohorts is different from that observed in the other regions. Overall, the mobility of young adults has declined slightly between the 1970s and 1980s, but this fall involves primarily intra-regional mobility, inter-regional mobility having remained more or less stable (Figs 3g, 3h). So, whereas a fall in long-distance mobility (combined with a rise or stability in local mobility) is observed in most regions, the opposite situation prevails in the

 

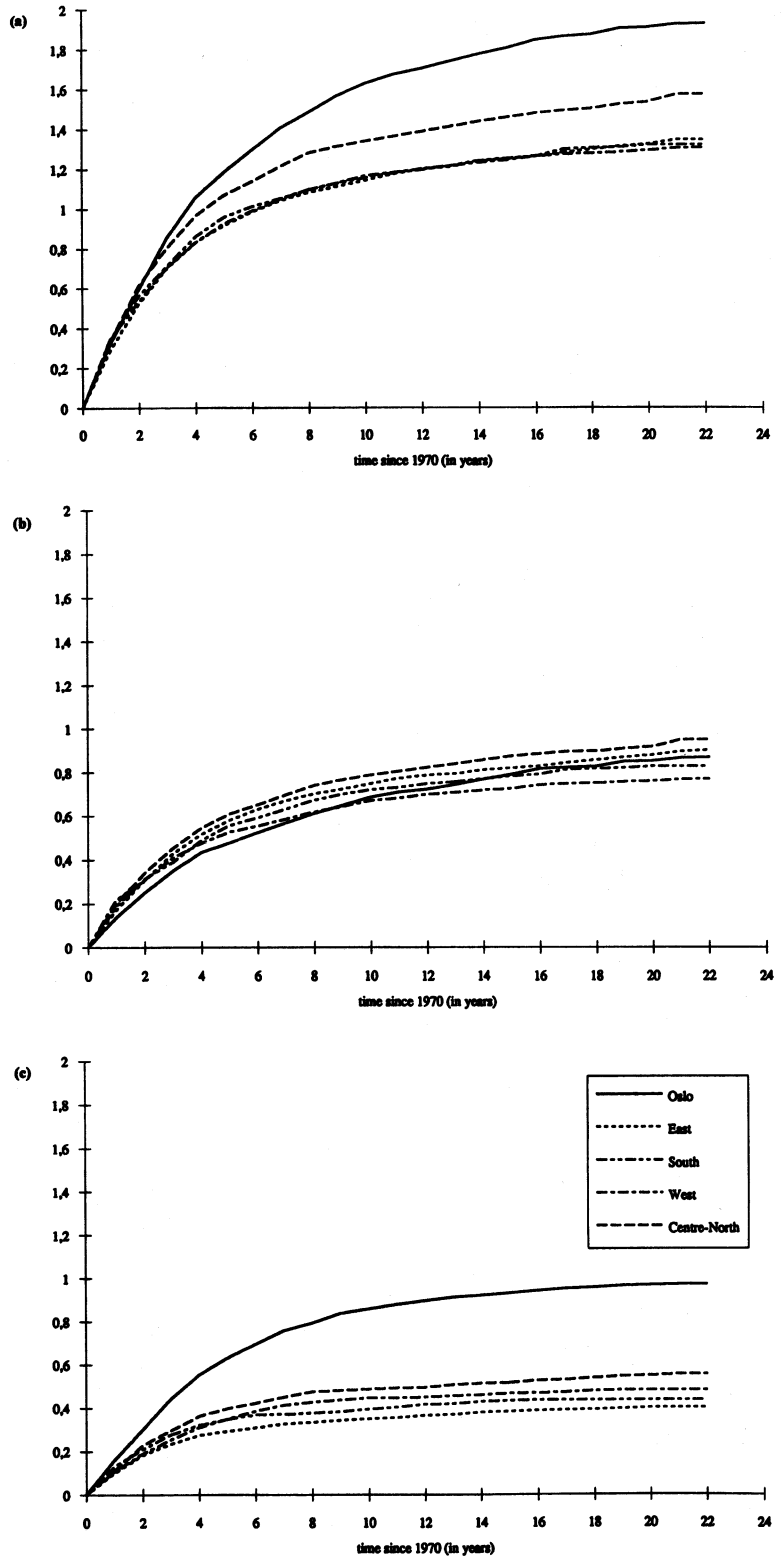


Figure 2. Cumulated migration hazard rates after age 22 (individuals born in 1948 and having made their initial migration in 1970): (a) total migrations; (b) intra-regional migrations; (c) inter-regional migrations.

 

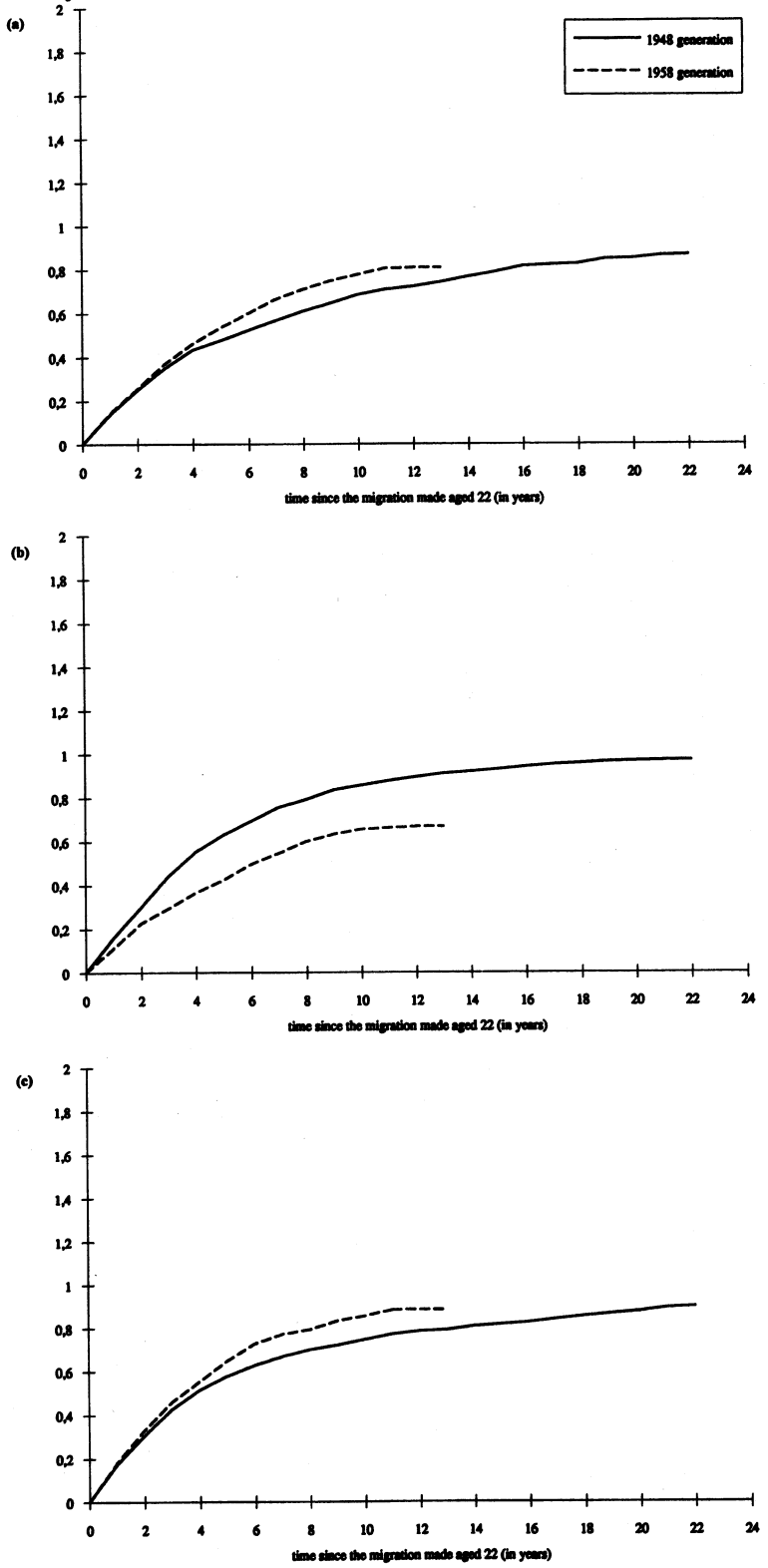


Figure 3. Cumulated migration hazard rates after age 22 (individuals living in a particular region since their initial migration): (a) Oslo region, intra-regional; (b) Oslo region, inter-regional; (c) East region, intra-regional.

 

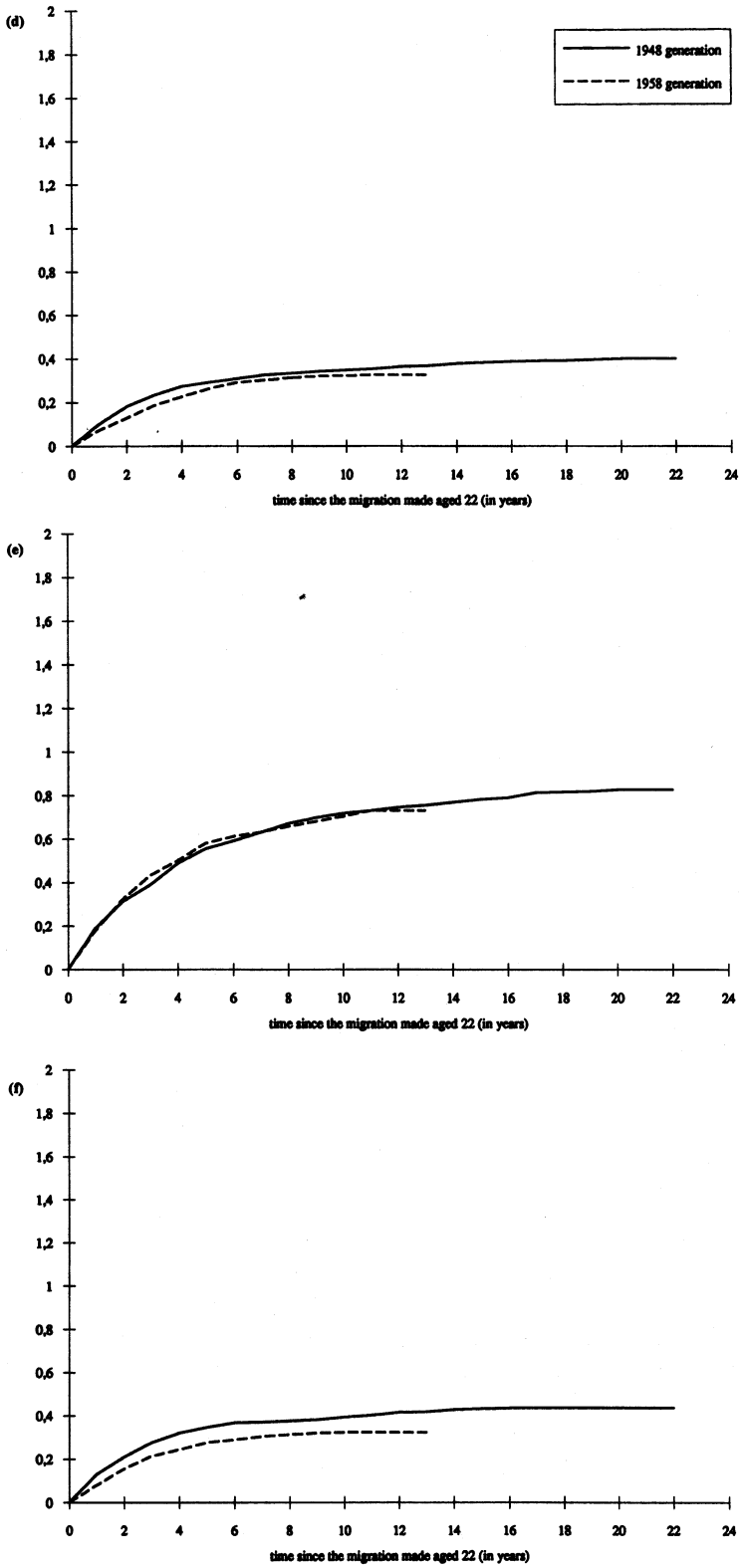


Figure 3. (d) East region, inter-regional; (e) South region; intra-regional; (f) South region, inter-regional.

 

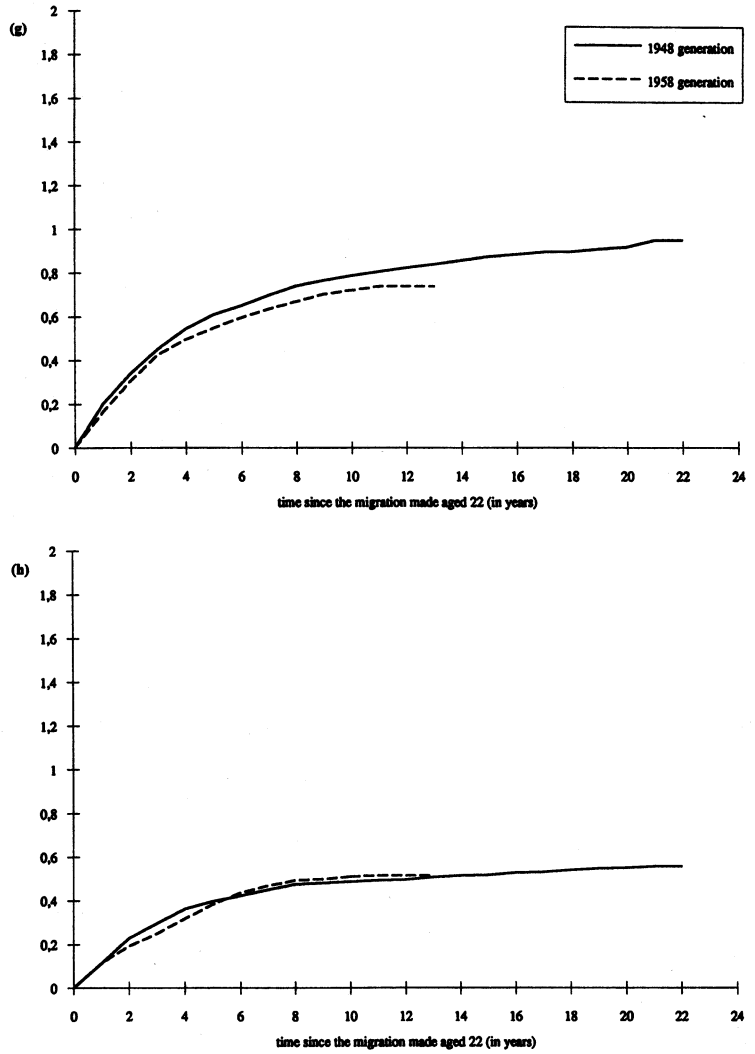


Figure 3. (g) Centre-North region, intra-regional; (h) Centre-North region, inter-regional.

Centre-North region, where local mobility alone has diminished.

For the different characteristics considered, non-parametric analysis reveals a multiplicative effect on the migration hazard rates. Use of Cox's model is thus appropriate and allows the socio-demographic determinants of migration behaviour to be identified. Our aim here is to make a spatial and temporal comparison of this behaviour. The spatial comparison involves examining how the determinants of the migrations (intra-regional and inter-regional) vary from one region to the other (region of residence of the individual after the migration made at the age of 22), while for the temporal comparison attention focuses on the changes in this migration behaviour between the 1948 and 1958 cohorts. A distinction is also made between men and women, given that migration behaviour generally varies widely according to sex.

The characteristics considered are the following: marital status (married/single), birth of one or more children, activity (active/non-active), type of activity, educational level, income, and type of migration made at age 22 (intra-regional/inter-regional). Earlier studies have in fact shown that these characteristics often have a considerable effect on migration behaviour: the stabilising role of marriage, at least for long-distance migrations; greater mobility and over

 

greater distances for highly qualified individuals; the low mobility of the farming population, and so on.

## SOCIODEMOGRAPHIC DETERMINANTS OF INTRA-REGIONAL MIGRATIONS

Taking all regions together, marital status has an important role in explaining a higher or lower propensity to migrate within the region (Tables 3 and 4): individuals who are married are in general less likely to change dwelling than the unmarried (mostly single people). This stabilising effect of marriage is stronger for women than for men, and it declines appreciably from the 1948 generation to the 1958 generation (to the point of being no longer significant among men born in 1958). The latter result can be explained by the development between these two generations of cohabitation, which in all probability has the same stabilising effect as the fact of being married while involving single people. In other words, the 1958 generation includes a relatively large number of individuals who, although not married, have a migration behaviour very similar to that of individuals who are, thereby tending to reduce the disparity between the two groups.

This effect also varies considerably from region to region. Being married at age 22 does not significantly reduce local mobility for men except in the West region (and, to a lesser extent, in the South and East regions) and this solely for the individuals born in 1948. For the women of these three regions, the negative effect of marriage is also much more significant than in the other regions, and it continues from one generation to the next. In the regions of Oslo and the Centre-North, the behaviour of married and single men does not differ significantly, while among the women of these regions, the 'under-mobility' of married women is only significant for those born in 1948.

It is thus possible to draw a contrast between, on the one hand, the regions of the West, East and South, where marital status has an important role in the propensity to change dwelling within the region, and on the other the regions of Oslo and the Centre-North, where the fact of being married at the age of 22 has a far less significant effect on local mobility.

The 'actives' of the 1948 generation, men and women alike, are on the whole neither more nor less mobile than the inactives of their region. In the 1958 generation, the actives have become a category of not particularly mobile individuals, this effect being very significant among the women, notably in the regions of the East and South. In the 1980s, having an occupation at the age of 22 has become a brake on local mobility, especially for women.

A closer examination of the effect of the type of activity among men shows that farmers, a category usually considered to have a low mobility, are not significantly less mobile than either the reference category (in this case the inactives) or certain other categories of actives (Table 5). A clear intra-regional 'under-mobility' among farmers is observed only in the South region, for men born in 1958. (Because of the small numbers involved this result is not statistically significant, but it becomes so when the farmers are compared with all the other categories.)

Three types of activity stand out for men in the 1948 generation: individuals belonging to the 'technical-scientific' and 'commercial' categories have a relatively high propensity to migrate within the region, and contrast with individuals of the 'clerical' categories who have a lower level of intra-regional mobility. In the 1958 generation, there is no significant disparity between the different types of activity, except in the Oslo region, where individuals in the 'commercial' and 'transport and communications' categories seldom change dwellings.

Among women, contrasts between different types of activity are much more significant in the 1958 generation than in that of 1948. Moreover, the effects of the different occupations vary greatly from one generation to the other. Among the active women born in 1948, only farmers are distinguished by a low intra-regional mobility (but not significant due to the small numbers involved: only 53 women). By contrast, women belonging to the 'technical-scientific' category, like the men, have a high propensity to change dwelling within their region. In the 1958 generation, the low propensity to change dwelling of the different occupational categories (and in particular the 'commercial activities' and the 'clerical' categories) reveals above all an active/inactive contrast, with the former being appreciably less mobile within their region than

 

Table 3. Effect of the different characteristics of men on their probability of migrating within the region after a migration at age 22, by region of residence.

| Characteristic | 1948 generation | | 1958 generation | |
|---|---|---|---|---|
| | $\beta$ | exp $\beta$ | $\beta$ | exp $\beta$ |
| *All regions* | | | | |
| Married | −0.19*** | 0.83 | −0.08 | 0.92 |
| Active | 0.05 | 1.05 | −0.04 | 0.96 |
| Highly qualified[a] | 0.29*** | 1.34 | 0.01 | 1.01 |
| Upper income[b] | 0.27*** | 1.32 | −0.29 | 0.75 |
| Lower income[c] | 0.28*** | 1.33 | −0.23 | 0.80 |
| Intra-regional migr. age 22 | 0.66*** | 1.93 | 0.74*** | 2.09 |
| *Oslo* | | | | |
| Married | −0.16 | 0.85 | −0.16 | 0.86 |
| Active | 0.08 | 1.08 | −0.23 | 0.80 |
| Highly qualified | 0.19 | 1.20 | −0.08 | 0.92 |
| Upper income | 0.26 | 1.30 | 0.00 | 1.00 |
| Lower income | 0.07 | 1.07 | −0.17 | 0.84 |
| Intra-regional migr. age 22 | 0.53*** | 1.70 | 0.54*** | 1.72 |
| *East* | | | | |
| Married | −0.18* | 0.83 | −0.04 | 0.96 |
| Active | −0.02 | 0.98 | 0.04 | 1.04 |
| Highly qualified | 0.32 | 1.38 | 0.16 | 1.18 |
| Upper income | 0.19 | 1.20 | 0.04 | 1.04 |
| Lower income | 0.40** | 1.49 | 0.11 | 1.12 |
| Intra-regional migr. age 22 | 0.62*** | 1.85 | 0.98*** | 2.67 |
| *South* | | | | |
| Married | −0.25* | 0.78 | −0.11 | 0.90 |
| Active | −0.15 | 0.86 | −0.32* | 0.73 |
| Highly qualified | 0.35 | 1.42 | 0.05 | 1.05 |
| Upper income | 0.51 | 1.67 | −0.35 | 0.71 |
| Lower income | 0.45 | 1.58 | −0.05 | 0.95 |
| Intra-regional migr. age 22 | 0.86*** | 2.35 | 0.60*** | 1.83 |
| *West* | | | | |
| Married | −0.32*** | 0.73 | −0.07 | 0.93 |
| Active | −0.02 | 0.98 | −0.08 | 0.92 |
| Highly qualified | 0.38* | 1.46 | 0.03 | 1.03 |
| Upper income | 0.05 | 1.05 | −1.01** | 0.36 |
| Lower income | 0.00 | 1.00 | −0.89** | 0.41 |
| Intra-regional migr. age 22 | 0.81*** | 2.24 | 1.20*** | 3.33 |
| *Centre-North* | | | | |
| Married | −0.06 | 0.94 | −0.16 | 0.85 |
| Active | 0.03 | 1.03 | 0.14 | 1.15 |
| Highly qualified | 0.22 | 1.24 | −0.07 | 0.93 |
| Upper income | 0.09 | 1.09 | −0.19 | 0.83 |
| Lower income | 0.12 | 1.13 | 0.01 | 1.01 |
| Intra-regional migr. age 22 | 0.99*** | 2.68 | 0.86*** | 2.35 |

[a] More than 12 years of education.
[b] 1948 generation: over 20,000 krone; 1958 generation: over 50,000 krone.
[c] 1948 generation: less than 20,000 krone (excluding no income);
1958 generation: less than 50,000 krone (excluding no income).
*** significant at 1%; ** significant at 5%; * significant at 10%
*Source:* Norwegian Population Register, Central Bureau of Statistics, Oslo.

 

Table 4. Effect of different characteristics of women on their probability of migrating within the region after a migration at age 22, by region of residence.

| | 1948 generation | | 1958 generation | |
|---|---|---|---|---|
| Characteristic | $\beta$ | exp $\beta$ | $\beta$ | exp $\beta$ |
| *All regions* | | | | |
| Married | −0.30*** | 0.74 | −0.28*** | 0.75 |
| Active | 0.08 | 1.09 | −0.22*** | 0.80 |
| High qualification[a] | 0.06 | 1.06 | 0.04 | 1.04 |
| Upper income[b] | 0.02 | 1.02 | 0.14 | 1.15 |
| Lower income[c] | 0.08 | 1.08 | 0.10 | 1.10 |
| Intra-regional migr. age 22 | 0.52*** | 1.67 | 0.58*** | 1.78 |
| *Oslo* | | | | |
| Married | −0.28*** | 0.75 | −0.16 | 0.85 |
| Active | −0.10 | 0.90 | −0.13 | 0.88 |
| High qualification | 0.20 | 1.23 | 0.07 | 1.07 |
| Upper income | 0.25 | 1.29 | −0.15 | 0.86 |
| Lower income | 0.14 | 1.15 | −0.13 | 0.88 |
| Intra-regional migr. age 22 | 0.40*** | 1.50 | 0.53*** | 1.69 |
| *East* | | | | |
| Married | −0.52*** | 0.60 | −0.28*** | 0.75 |
| Active | 0.10 | 1.10 | −0.34*** | 0.71 |
| High qualification | 0.00 | 1.00 | 0.08 | 1.09 |
| Upper income | −0.10 | 0.90 | 0.14 | 1.16 |
| Lower income | −0.01 | 0.99 | 0.11 | 1.11 |
| Intra-regional migr. age 22 | 0.60*** | 1.82 | 0.52*** | 1.69 |
| *South* | | | | |
| Married | −0.37*** | 0.69 | −0.64*** | 0.53 |
| Active | 0.28 | 1.33 | −0.58*** | 0.56 |
| High qualification | 0.07 | 1.07 | −0.26 | 0.77 |
| Upper income | −0.32 | 0.72 | 0.68** | 1.98 |
| Lower income | −0.30* | 0.74 | 0.57** | 1.76 |
| Intra-regional migr. age 22 | 0.56*** | 1.75 | 0.56*** | 1.75 |
| *West* | | | | |
| Married | −0.48*** | 0.62 | −0.31** | 0.74 |
| Active | 0.01 | 1.01 | −0.19 | 0.83 |
| High qualification | −0.02 | 0.98 | 0.06 | 1.07 |
| Upper income | −0.05 | 0.95 | 0.28 | 1.33 |
| Lower income | 0.09 | 1.10 | 0.26 | 1.29 |
| Intra-regional migr. age 22 | 0.65*** | 1.91 | 0.72*** | 2.05 |
| *Centre-North* | | | | |
| Married | −0.17* | 0.84 | −0.16 | 0.85 |
| Active | −0.03 | 0.97 | 0.03 | 1.03 |
| High qualification | 0.00 | 1.00 | 0.15 | 1.16 |
| Upper income | −0.15 | 0.86 | −0.34 | 0.71 |
| Lower income | 0.09 | 1.10 | −0.17 | 0.85 |
| Intra-regional migr. age 22 | 0.59*** | 1.80 | 0.73*** | 2.08 |

Key: see Table 3.

 

Table 5. Effect of occupation type on the probability of migrating within a region after a migration at age 22.

| | MEN | | | | WOMEN | | | |
|---|---|---|---|---|---|---|---|---|
| | 1948 generation | | 1958 generation | | 1948 generation | | 1958 generation | |
| Occupation | $\beta$ | exp $\beta$ | $\beta$ | exp $\beta$ | $\beta$ | exp $\beta$ | $\beta$ | exp $\beta$ |
| Farmer | −0.13 | 0.88 | −0.21 | 0.81 | −0.28 | 0.76 | −0.36* | 0.70 |
| Technical-scientific | 0.26*** | 1.30 | −0.03 | 0.98 | 0.13* | 1.14 | −0.17** | 0.85 |
| Clerical | −0.26** | 0.77 | 0.11 | 1.12 | 0.03 | 1.03 | −0.24*** | 0.79 |
| Commercial | 0.25** | 1.28 | −0.13 | 0.88 | 0.09 | 1.09 | −0.46*** | 0.63 |
| Transport-communic. | 0.05 | 1.05 | −0.11 | 0.90 | 0.08 | 1.08 | 0.03 | 1.03 |
| Industry-construction | 0.03 | 1.03 | −0.03 | 0.97 | 0.12 | 1.12 | −0.21* | 0.81 |
| Services | 0.07 | 1.07 | 0.07 | 1.07 | 0.11 | 1.12 | −0.20** | 0.82 |
| Other actives | 0.06 | 1.06 | 0.21 | 1.24 | 0.13 | 1.13 | −0.03 | 0.97 |

The marital status, the educational level, the level of income and the type of migration made at age 22 are also taken into account in the model.
*** significant at1%;
** significant at 5%;
* significant at 10%.
*Source:* Norwegian Population Register, Central Bureau of Statistics, Oslo

the latter.

For the men born in 1948, a high educational level at the age of 22 favours mobility within the region: the probability of migrating for a highly qualified man born in 1948 is 1.3 times higher than for a man with a lower qualification (Table 3). This positive effect of educational level is absent for the 1958 generation. For the women, regardless of the generation, educational level has no effect on this type of migration (Table 4).

Income level has a complex effect on local mobility, varying from one generation to the other. In the first of the analyses, the individuals were divided into two groups (upper income and lower income), the reference group being the individuals without an income. In order to get a more precise view of the influence of this variable, another model was made, into which were introduced five different income levels (taking the middle income as reference). This analysis was conducted for all the regions together.

As the distribution of individuals by income ranges had changed considerably between1970 and 1980 (Table 1), for each generation under review, thresholds were established with which to distinguish very low incomes, low incomes, middle incomes and high incomes. These thresholds varied therefore between the generations (see appendix). In addition, we excluded the individuals whose income was not reported and who represented respectively 5.8% and 0.5% of the migrants in the 1948 and 1958 generations.

For the men of the 1948 generation, a contrast exists between those with no income and who have a low propensity to change dwelling within a region, and those who do have an income, whatever its level (with a propensity to change dwelling that was slightly higher, but not significant, for the individuals who have the highest incomes) (Fig. 4a). For the women of this generation, intra-regional mobility is unaffected by income.

The behaviour of individuals and the effect of income are appreciably different in the next generation (Fig. 4b). The men born in 1958 and who had no income in 1980 had a propensity to migrate within the region that was higher (but not to a significant degree) than those with an income. Among young adult males, the 1980s thus saw an end to the intra-regional 'over-mobility' of individuals with an income. The behaviour of the women of this generation is also different from that of the 1948 generation, women with high incomes being distinguished in the 1980s by their high intra-regional mobility.

 

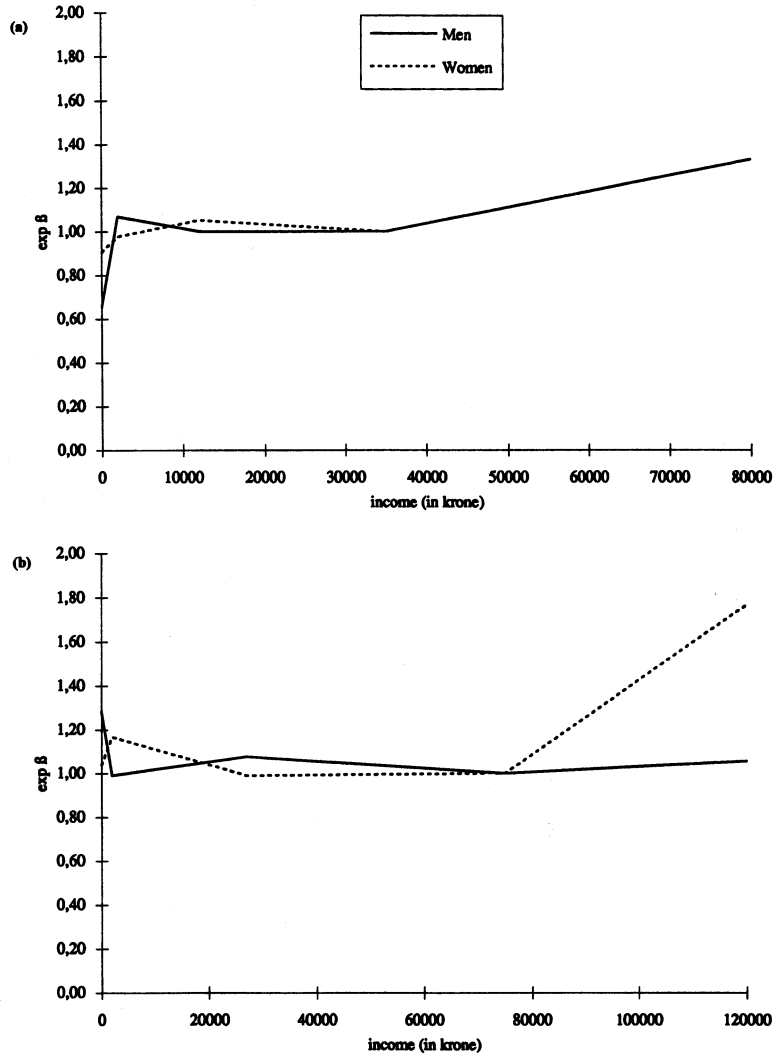


Figure 4. Effect of income on intra-regional migration. (a) 1948 generation. (b) 1958 generation.

The type of migration made initially (at age 22) has a determining effect on the probability of changing dwelling within the region, regardless of the region of residence. For the men of both generations, the fact of the initial migration being made within the region multiplies by two the probability that the next migration will also be within the region, compared with the individuals who at 22 had arrived from another region. Although this effect is somewhat weaker for women, it is still very significant. In other words, the fact of coming from another region reduces mobility within the host region, compared with the mobility of individuals from the region.

Interactions exist between the type of initial migration and the different characteristics considered earlier: the effects of these characteristics vary depending on whether the initial migration was inter- or intra-regional. All the results presented here refer to an average individual, as defined by the two criteria of initial and subsequent migrations (Figs 5a, 5b, 5c, 5d).

The fact of being married, which reduced the probability of migration within the region for men as much as for women in the 1948 generation, ceases to have a significant effect for the men whose initial migration had been inter-regional (Table 6). An identical effect is observed

 

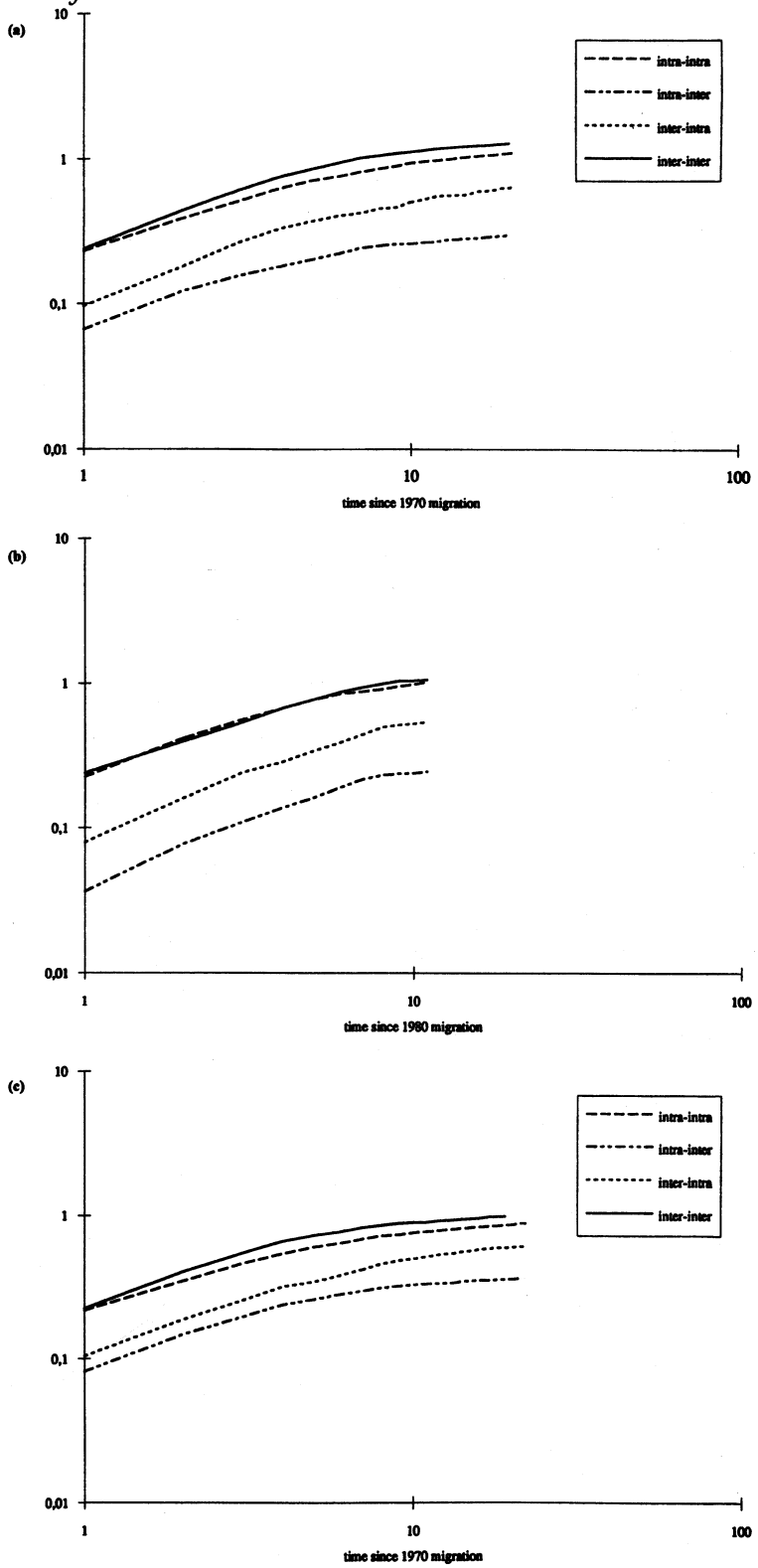


Figure 5. Cumulated migration hazard rates according to the type of initial and subsequent migrations (logarithmic scales). (a) men born in 1948; (b) men born in 1958; (c) women born in 1948.

 

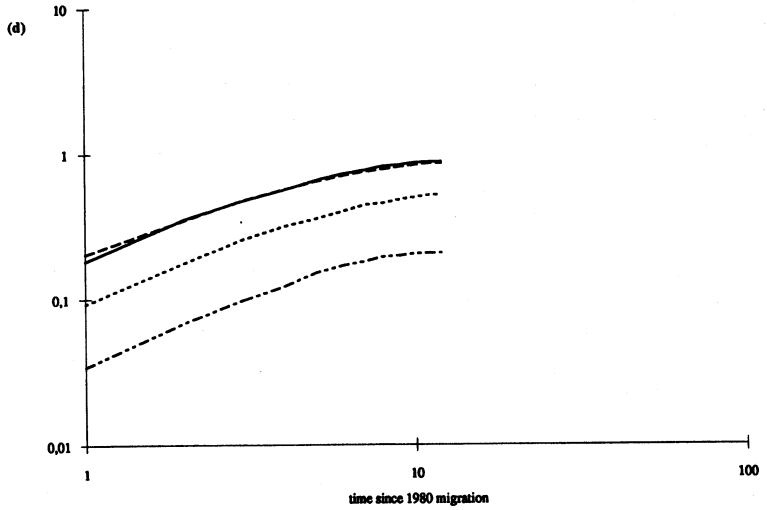


Figure 5. (d) women born in 1958.

for the women born in 1958. We can therefore conclude that the stabilising effect of marriage diminishes all the more quickly in the recent cohorts when the individuals have earlier experienced a long-distance move. It can be noted, however, that for men born in 1958 this effect also disappears for those who have initially experienced an intra-regional migration.

The positive effect of a high educational level on intra-regional mobility becomes significant for both men and women born in 1948 whose initial migration had been intra-regional, whereas without this distinction it was significant only for men. Thus is brought to light a

Table 6. Effect of various characteristics of individuals on their probability of migrating within the region, according to the type of initial migration made at age 22 (values of exp $\beta$).

| | Intra-regional initial migration | | Inter-regional initial migration | |
|---|---|---|---|---|
| Characteristic | Men | Women | Men | Women |
| *1948 generation* | | | | |
| Married | 0.81*** | 0.72*** | 0.93 | 0.78*** |
| Highly qualified | 1.41*** | 1.19* | 1.14 | 0.94 |
| Lower income | 1.11* | 1.07 | 0.74*** | 0.97 |
| Upper income | 1.21 | 0.00 | 1.36 | 0.01 |
| No income | 0.65*** | 0.90 | 0.66** | 0.95 |
| *1958 Generation* | | | | |
| Married | 0.91 | 0.74*** | 1.00 | 0.89 |
| Highly qualified | 0.88 | 1.09 | 1.23 | 0.92 |
| Lower income | 1.11 | 0.99 | 0.96 | 1.05 |
| Upper income | 1.05 | 1.23 | 0.82 | 2.58 |
| No income | 1.35 | 1.09 | 1.11 | 0.93 |

*** significant at 1 %;
** significant at 5%;
* significant at 10%.
*Source:* Norwegian Population Register, Central Bureau of Statistics, Oslo

 

category of highly educated women, a large proportion of whom present a high level of intra-regional mobility.

If the effect of zero income is little changed by the introduction of this type of initial migration, that of a low income is much more so. Two contrasting forms of behaviour are observed among the men of the 1948 generation depending on the type of initial migration made. The increase in the probability of changing place of residence within the region, for the men with low incomes, only applies to those whose initial migration had also been of this kind. For the others, there occurs a large and statistically significant reduction: the fact of having initially come from another region reduces the probability of making a migration within the region. It will be seen later, moreover, that an initial inter-regional migration greatly increases the probability of subsequently leaving the region.

The effect of these different characteristics on the probability of making an intra-regional migration can be illustrated by considering individuals with extremes of behaviour. For example, for 1970 let us compare a married clerical worker, with a low income and low educational level and whose initial migration was inter-regional, to someone in the commercial sector, single, with a high income and high educational level, and whose initial migration had been intra-regional. The former's probability of making an intra-regional migration is one-sixth that of the latter. In 1980, however, the differences between individuals with the same characteristics have diminished: the former's probability of making an intra-regional migration will now be half that of the latter. At this point in time, the least mobile within their region are farmers with a low educational level and whose initial migration had been inter-regional.

### Effect of Children

The migration behaviour of individuals undergoes a change with the birth of a child. The object is no longer to isolate the effect of an individual characteristic on migration but to comprehend the interaction between two events, the birth of a child and migration. To this end, a time-dependent variable is introduced into the model. The effect on individual mobility of the first and second births has been tested, by distinguishing the effect of a birth on migration in the same year as the birth, its effect in the year following the birth, and its effect on subsequent migrations (Fig. 6).

The birth of the first child significantly increases the probability of changing residence in the same year, especially for the 1948 generation. This increase in intra-regional mobility is still visible in the year after the birth, albeit not at a significant level for the 1948 generation. For

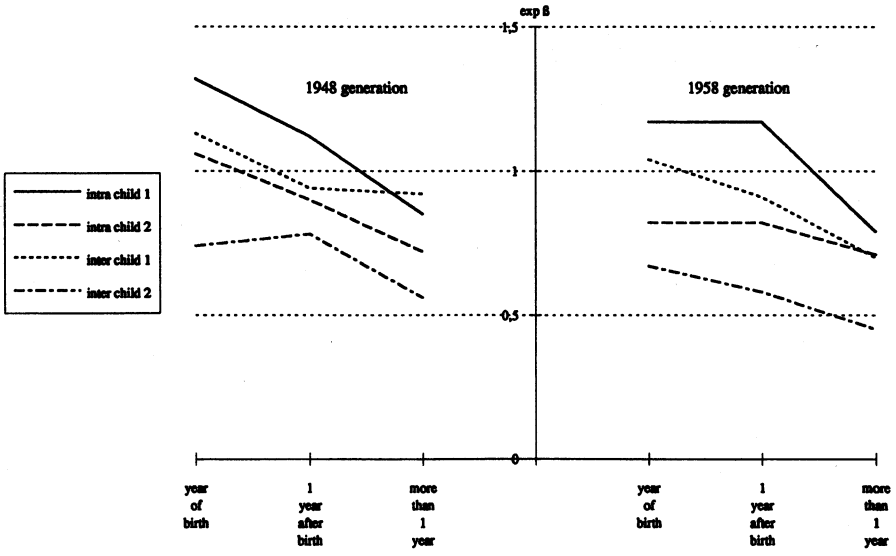


Figure 6. Effect of the birth of a child on migration.

 

this generation, then, we more often have an immediate mobility (or even slightly prior to the birth, by anticipation), whereas for the 1958 generation the change in dwelling associated with the first birth is as likely to occur in the year following the birth as in the actual year of the birth. More than one year after the birth, by contrast, the probability of changing place of residence is very low. During approximately one year, then, a first birth is responsible for an increase in short-distance mobility, but subsequently has a strong stabilising effect. The effects of the birth of a second child on the local mobility of individuals vary slightly from one cohort to the other. Individuals born in 1948 experience no change in their local mobility in the year of the birth. A slight fall in mobility is observed in the following year, but only becomes significant more than a year afterwards. Conversely, for the 1958 generation, the birth of a second child is reflected in a large fall in local mobility from the year of the birth.

## SOCIODEMOGRAPHIC DETERMINANTS OF INTER-REGIONAL MIGRATIONS

On the whole, the different individual characteristics have more significant effects on distant migrations than on local migrations. In other words, migration over long distances is more selective and involves the different groups of individuals less uniformly (Tables 7 and 8).

Being married has a strong stabilising role for women of both generations, resulting in a very significant reduction in their inter-regional mobility (except in the regions of Oslo and the Centre-North, where this effect is not significant). Among the men, marital status has a similar effect in the 1970s (albeit weaker than among women), but this effect disappears in the 1980s. In fact, for men the main variations occur between regions: a negative effect of marriage in the East, which increases from one generation to the next; a negative effect in the South, but which decreases from one generation to the next; an effect that is not significant in Oslo and the West; and lastly, in the Centre-North, an effect that becomes positive for men born in 1958. In the latter region, during the 1980s, the fact of being married is not an obstacle to distant mobility, and married individuals are more likely than single individuals to leave the region, contrary to what is observed in all other regions of Norway.

'Active' males are less likely to move out of their region than their inactive counterparts. This effect is particularly strong in the East (for both generations), in the South (just for the 1958 generation) and the Centre-North (for both generations). On the other hand, it is not significant in Oslo and the West. For women, occupational status has no influence on distant mobility, except in the Centre-North, where this effect is actually reversed between the genera-

Table 9. Effect of occupation type on the probability of migrating within a region after a migration at age 22.

| | MEN | | | | WOMEN | | | |
|---|---|---|---|---|---|---|---|---|
| | 1948 generation | | 1958 generation | | 1948 generation | | 1958 generation | |
| Occupation | $\beta$ | exp $\beta$ | $\beta$ | exp $\beta$ | $\beta$ | exp $\beta$ | $\beta$ | exp $\beta$ |
| Farmer | −0.40*** | 0.67 | 0.05 | 1.06 | −0.26 | 0.77 | 0.06 | 1.06 |
| Technical-scientific | −0.26*** | 0.77 | −0.10 | 0.91 | 0.10 | 1.11 | 0.04 | 1.04 |
| Clerical | −0.41*** | 0.66 | −0.26 | 0.77 | −0.16* | 0.85 | −0.41*** | 0.66 |
| Commerical | −0.46*** | 0.63 | −0.58** | 0.56 | −0.18 | 0.84 | −0.10 | 0.91 |
| Transport-communic. | −0.43*** | 0.65 | −0.41*** | 0.66 | 0.01 | 1.01 | −0.24 | 0.79 |
| Industry-construction | −0.49*** | 0.61 | −0.61*** | 0.54 | −0.46*** | 0.63 | −0.04 | 0.96 |
| Services | 0.25** | 1.29 | 0.00 | 1.00 | −0.06 | 0.94 | −0.08 | 0.92 |
| Other actives | −0.37 | 0.69 | −0.09 | 0.91 | −0.34 | 0.71 | 0.37 | 1.45 |

key: see table 5

 

tions: the probability of moving out of this region is high for the actives of the 1948 cohort but low for those born in 1958. The Centre-North region holds on to the young actives of the 1980s better than it did those of the 1970s.

Among the active men of the 1948 generation, those with the lowest propensity to leave their region are in the categories of 'industry-construction', 'transport-communication', 'commercial', 'clerical' and 'farmers' (Table 9). For active women in this generation, only those of the 'industry-construction' category stand out by their high degree of stability inside their region. Women in the 'farming' category also have a low propensity to leave their region, but the result is not significant due to the small numbers involved. In the 1980s, the behaviour of both men and women (born in 1958) in this category was reversed and their probability of leaving their region is actually higher than that of the other categories of actives. The effect of the type of activity varies greatly from region to region, however. In Oslo and the East (as well as in the South, although here only for the 1958 generation), the members of the 'farming' category are more likely to leave than any other category of actives, something which could in part explain their low intra-regional mobility. In the Centre-North, by contrast, it is the farmers who have the lowest level of long-distance mobility.

Educational level influences inter-regional migrations in the same way as intra-regional migrations, with a long period of education favouring mobility, but this effect is much stronger for long-range mobility, particularly among women. For the individuals born in 1948, this positive effect of a high educational level is as strong among men as among women, and in particular for the individuals of the East and Centre-North. In the 1970s, then, these two regions had a repulsive effect on highly educated young adults. In the case of the East, this high propensity to leave the region may be explained by the proximity of the Oslo region, where opportunities for qualified employment were probably more numerous (thus it is the attraction exercised by Oslo, rather than the repulsion exercised by the Eastern region, that seems to be at work here). Within the Oslo region, highly qualified individuals are indeed unlikely to leave for another region. In the case of the Centre-North, the strong propensity of highly qualified individuals to leave the region is probably explained by the limited number of highly qualified employment opportunities in the region.

In the 1958 generation, for all regions considered together, this positive effect of educational level on inter-regional migration is found to be significant only among women. In all the regions except Oslo, women with a high educational level have a high propensity to leave their region, whereas among men the high inter-regional mobility of qualified individuals is only observed in the East. The positive effect of educational level on long-range mobility is therefore reduced among the men from one generation to the next, whereas among women it is reinforced.

In the two generations under review, if we consider just the individuals who have an income, propensity to move outside the region is seen to fall as income rises, the effect being particularly clear for the 1958 generation (Figs 7a, 7b). The five ranges of income defined earlier are used, and non-declared income is excluded. Individuals with very low levels of income have the highest probability of making a long-range migration, whereas those with a high income have a much greater spatial stability (the members of the 1958 generation who had an income below 4000 krone in 1980 are nearly four times more likely to leave their region than those with an income above 100,000 krone). The men without income in the 1948 generation have an even higher propensity to leave their region than those with very low incomes, although this high inter-regional mobility of individuals without an income is appreciably reduced in the next generation.

Two characteristics, which could appear contradictory, thus favour inter-regional mobility of men (and this in both generations): a low income (or even no income at all in the 1948 generation) and a high educational level. It seems that there are various types of reasons for these inter-regional migrations: migrations of inactive individuals, possibly linked to seeking employment or to education; migrations of actives linked to economic uncertainty, that encourages individuals to look for a better position elsewhere; and lastly, migrations linked to a high educational level that makes individuals more demanding regarding their employment (qual-

 

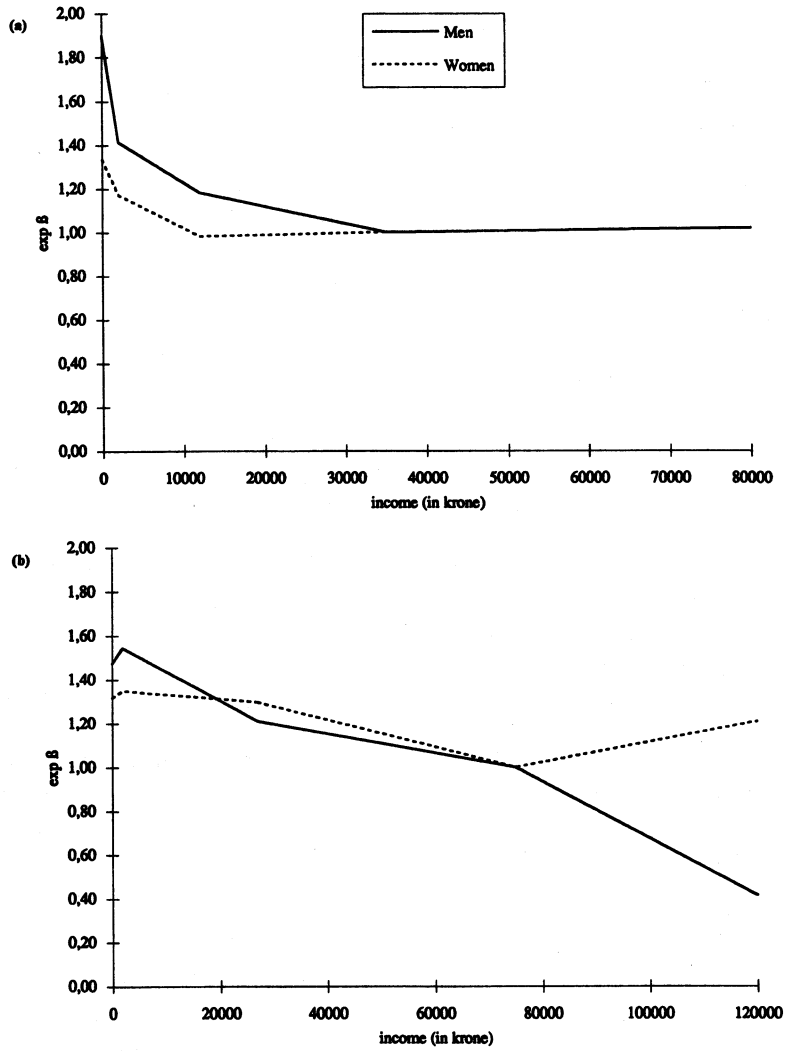


Figure 7. Effect of income on inter-regional migration. (a) 1948 generation; (b) 1958 generation.

ified work being scarcer and in general more concentrated geographically than unqualified jobs).

In the 1948 generation, for individuals with a high educational level and a high income, the effect of the former, encouraging them to leave the region, was dominant. In the 1958 generation, by contrast, the dominant influence was the stabilising effect of high income (is this a consequence of the economic situation which leads individuals not to change a job for which they receive a high income, whereas in the previous decade the opportunities for increasing income still further, at the cost of a distant migration, had been more numerous?). Among the women born in 1948, the influence of income on inter-regional migration is close to that observed among the men, with the most mobile being the women without income (inactives). In the next generation, the behaviour of women with low incomes is the same as that of the inactives, with a high propensity to leave their region.

The effect of income level on long-distance mobility is thus reasonably stable between the two generations and between the sexes, with the propensity to leave one's region falling as income rises. Interpreting the influence of income is not

 

Table 10. Effect of various characteristics of individuals on their probability of migrating towards another region according to the type of initial migration made at age 22 (values of exp $\beta$).

| | Intra-regional initial migration | | Inter-regional initial migration | |
|---|---|---|---|---|
| Characteristic | Men | Women | Men | Women |
| *1948 generation* | | | | |
| Married | 0.59*** | 0.32*** | 0.89* | 0.79*** |
| Highly qualified | 1.53** | 1.23 | 1.27** | 1.42*** |
| Lower income | 1.26** | 0.88 | 1.15** | 1.04 |
| Upper income | 1.21 | 4.65 | 0.96 | 0.88 |
| No income | 3.22*** | 1.62*** | 1.19 | 0.96 |
| *1958 generation* | | | | |
| Married | 0.87 | 0.47*** | 1.08 | 0.77*** |
| Highly qualified | 2.02*** | 1.81*** | 1.01 | 1.32*** |
| Lower income | 1.41** | 1.52*** | 1.13 | 1.18** |
| Upper income | 0.38* | 0.00 | 0.31*** | 0.00 |
| No income | 1.65 | 1.33 | 1.21 | 1.32 |

*** significant at 1%;
** significant at 5%;
* significant at 10%.
*Source:* Norwegian Population Register, Central Bureau of Statistics, Oslo.

entirely straightforward, however, for whereas income is measured at age 22, the migration studied here took place after this age. Given that the incomes of individuals are often subject to wide fluctuations at the start of their working lives, it is possible that incomes had changed greatly between age 22 and the date at which the migration occurred.

It was seen earlier that the propensity to migrate within a region is appreciably higher for individuals whose initial migration was of this type than for those coming from another region-.The same result is observed for inter-regional migrations. Individuals who had made a short-distance migration at age 22 have a probability of subsequently making a long-distance migration that is one-third that for those who had come from a different region at age 22 (the strength of this effect varying slightly depending on sex, generation and region of residence at age 22). In other words, when one comes from another region, one has a high probability of in turn leaving the host region. Greater precision could be given to this result by a study of return migrations. Be that as it may, migration behaviour does seem to be affected by a sort of inertia, whereby individuals tend to repeat the type of migration they have undertaken initially.

As before, some of the above conclusions are modified by significant interactions between the type of initial migration and the characteristics of the individuals. It may be recalled that the results presented here refer to an average individual as defined by the two criteria of initial and present migrations (Fig. 5).

Although the effect of marriage still operates in the same sense, its effect on inter-regional migration is now seen to be that of a brake: very strong when the initial migration was intra-regional; less strong, albeit still significant (except for the men born in 1958) with an initial inter-regional migration. For individuals who are already relatively fixed within their region, marriage increases their spatial stability, although with a lessening of its effect for the younger generations, the reduction being greater for men than for women (Table 10).

Similarly, the effect of a high educational level gives new results, albeit which still tend in the same direction. It is observed that for the men

 

with this level of education, even more than the women, an initial intra-regional mobility is often followed by an inter-regional mobility, and the more so in the more recent generation. By contrast, for those who initially came from another region, although their probability of making a new inter-regional migration remains higher than for individuals with a low educational level, these probabilities decline in the more recent generations, to the point of becoming nil for the men.

The effect of having no income, favouring a departure from the region, is highly significant only among the men and women of the 1948 generation whose initial migration had been intra-regional. It might be thought that this is a case of individuals who have made an intra-regional migration without finding employment, then being forced to make an inter-regional migration to continue the search. However, this effect disappears for the more recent generation. The effect of a low income operates in a similar way for men, although with an increase in the probability of leaving the region for the generation born in 1958, this effect then appearing also for the women of this generation.

As before, the effects of these different characteristics on the probability of making an inter-regional migration can be illustrated by considering the individuals in extreme positions. Compare for 1970, on the one hand, a married man, working in industry or construction, with a high income but low educational level and whose initial migration was intra-regional, with, on the other, a man in the technical-scientific category, unmarried, with a middle income but high educational level, and whose initial migration had been inter-regional. The technician's probability of leaving his region is nine times that of the construction worker. By 1980 the differences between individuals presenting the same characteristics have once again been reduced: the differential in their probability of migrating outside the region has fallen to seven to one. The least mobile will, however, have characteristics close to the former, working in industry or construction and having previously made an intra-regional migration.

Birth of the first child is responsible for an increase in distant mobility in the same year as the birth (Fig. 6), although this effect is only significant for the 1948 generation. In the year following the birth, the probability of leaving the region becomes relatively low and is reduced still further in subsequent years, particularly for the 1958 generation. The birth of the second child is reflected in a large fall in inter-regional mobility and the stabilising effect of births is seen to increase between the two generations.

## CONCLUSION

This article has shown that the geographical mobility of Norwegians having made an initial migration at the same age (22 years) differs considerably depending on their family-life status, educational level and occupational status, and that these effects vary from one generation to the other (born in 1948 or 1958). They also vary according to whether we are dealing with short-distance (intra-regional) or long-distance (inter-regional) migrations.

The propensity to move is influenced by the stage reached in the family life-cycle; the effect is important for the first generation, although less so for the second one due to the spread of cohabitation. Stabilisation of residence occurs after marriage, even if the birth of a child may be responsible for an increase in short-distance mobility, mainly during the year of the birth, in order to find a dwelling better suited to the family size.

Educational level also influences mobility. The higher the qualification, the higher the mobility rate, mainly for long-distance migrations. This result may be linked to the fact that a larger geographical area is required for highly specialised individuals. However, it is interesting to see that this influence does not hold for migrations from the more centralised region of Oslo.

Inter-regional mobility is lower for economically active men, while for women the slight reduction observed is not significant. It would thus seem that changing region is primarily a male strategy related to the search for employment. Among the economically active population, the type of activity and level of income play a more complex and varied role according to generation, sex and the kind of migration being considered. For males of the older generation, the propensity to make short distance moves is lowest for those with medium incomes and reaches its maximum for upper incomes. In the case of long distance migration,

 

however, the propensity to leave the region decreases as income rises, particularly in the younger generation.

When the previous move was intra-regional, there is a very high probability that the next move will also be intra-regional, and vice versa. This pattern changes little between the generations and reveals an important inertia in migratory behaviour.

To conclude, it should be emphasised that event-history methods permit a very detailed analysis of migration register data when the previous move was made just before a census date. Such chronological congruence means that the narrow range of individual characteristics supplied by the register can be enlarged with more detailed data from the census. Conversely, these results cannot be generalised to the entire mobility process of the Norwegian population, as is possible with a retrospective study.

## ACKNOWLEDGEMENTS

We would like to thank Nico Keilman, Lars Østby, Kjetil Sørlie and Øysten Kravdal for their comments on an earlier version of this paper.

## NOTES

(1) Under the terms of an agreement with the Norwegian statistical services, we were given access to the anonymised files created using these data by Kjetil Sørlie and Øysten Kravdal. A number of variables have had to be aggregated, with the result that the successive places of residence are only known at a regional level.

(2) Individuals still doing their national service at the age of 22 are more numerous in the 1958 generation than in the 1948 generation, which could account for the smaller proportion of migrants at this age in the 1958 generation (since individuals doing their national service are not registered as migrants).

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## APPENDIX – THE CHOICE OF INCOME RANGES

*(1) Division into three classes*

Migrants of the 1948 generation (income in 1970)

- low income: from 1 to 20,000 krone (45.8%)
- high income: over 20,000 krone (30.0%)
- no income or unknown (24.2%)

Migrants of the 1958 generation (income in 1980)

- low income: from 1 to 50,000 krone (46.3%)
- high income: over 50,000 krone (46.9%)
- no income or unknown (6.8%)

*(2) Division into five classes*

Migrants of the 1948 generation (income in 1970)

- very low income: from 1 to 4000 krone (4.9%)
- low income: from 4000 to 20,000 krone (40.9%)
- middle income: from 20,000 to 50,000 krone (29.8%)
- high income: over 50,000 krone (0.2%)
- no income or unknown (24.2%)

Migrants of the 1958 generation (income in 1980)

- very low income: from 1 to 4000 krone (3.5%)
- low income: from 4000 to 50,000 krone (42.8%)
- middle income: from 50,000 to 100,000 krone (45.2%)
- high income: over 100,000 krone (1.7%)
- no income or unknown (6.8%)

*Note:* some individuals have no (or unknown) income but have declared an occupation, while a large proportion of the economically inactive individuals declared an income.

 