



Steffen Hillmert

Regional mobility in early adulthood: The impact of qualifications

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Steffen Hillmert

Department of Sociology
University of Tübingen
Wilhelmstr. 36
72074 Tübingen
Germany

steffen.hillmert@uni-tuebingen.de

Abstract

This paper presents selected findings on the regional mobility of young adults in West Germany in the 1980s and 1990s on assesses the impact of formal qualification on the process of residential mobility. It draws upon recently collected data from the West German Life History Study (1964 and 1971 birth cohorts). These data allow to observe the mobility patterns of the cohort members over time and also to link this individual-level information with regional-level data. The analyses look at patterns and determinants of individual mobility with a focus on incidence and distance of residential mobility in the context of education, employment and family formation.

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1. Introduction

In recent years, research has become increasingly sensitive to regional aspects of social structures. Analytically, two aspects can be distinguished here. First, inequality research has focussed mainly on the *regional heterogeneity* in living conditions. Regional aspects are important context information to account for individual behaviour. In a second strand of research, *regional (spatial) mobility* has been the variable of interest. There have also been a number of studies where both aspects have been combined, with either regional disparities being determinants of mobility or (probably less frequent in social research) regional disparities being the result of mobility processes.

This paper follows this tradition of research, but intends to put a particular emphasis on aspects of the life course. It presents selected findings on the regional mobility of young adults in West Germany. In the first part of the paper, there is a brief theoretical discussion on the causes of regional mobility, focusing in particular on the role of education and training. The second part of the paper is a description of spatial mobility patterns in West Germany in the 1980s and 1990s. Again, the focus is on differences between qualificational groups. The paper looks at incidence and distance of mobility and investigates determinants on the level of individuals and regions. The analyses draw upon data from the latest stage of the West German Life History Study (1964 and 1971 birth cohorts). This allows to observe the mobility patterns of the cohort members over time and to link this individual-level information with regional-level data.

2. Theories of regional mobility

This section can be only a very brief overview over theories of regional mobility, but it introduces a number of central distinctions made in research (see also Wagner 1989, Kalter 1997). Already the early theoretical models (e.g., Stouffer 1940) focussed on moving costs related to distances in order to explain collective mobility. However, these rather mechanical models often proved to be too crude to explain empirical patterns of mobility. Therefore, micro-level explanations (e.g., following Sjaastad 1962) have become more and more common, looking at various costs and benefits of individual mobility decisions.

Generally speaking, in a utility-oriented framework, the cause of mobility is the difference between the individual aspiration level and the individual utility in a given 'situation', and regional mobility is one individual solution. Note that the present situation has to be assessed with respect to other situations: a rational actor will only move if the situation is *relatively* 'bad', i.e. there are better situations and opportunities elsewhere, and the costs of moving are relatively low. In addition to this, various other forms of individual mobility may be pursued in order to improve the individual position (and the assumption is that no other strategies are involved like lowering aspirations, acquiring additional resources etc.). In the sphere of the labour market, for example, these may include mobility between firms, occupations etc. Under the assumption of a particular form of utility-orientation, it becomes clear that regional mobility and other forms of mobility are closely related. In the case of the labour market, regional mobility is (only) one option to enhance career perspectives, to avoid unemployment, etc., so in principle, one form of mobility has to be analysed in the context of the other forms of mobility.

It should be noted that mobility decisions may often not follow the logic that the model of an individual rational actor assumes. In many cases, they may go well beyond the economic rationale and be rather idiosyncratic. But even if one sticks to a systematic theoretical model, there are, two important amendments to a micro-level perspective that have become increasingly relevant: the *household* dimension and the *life-course* dimension.

First, Mincer (1978) and others have argued that mobility decisions may not be primarily the consequence of the individual labour market situation, but may follow household or family-based considerations. Residential moves often take place as *joint moves* of couples and families. This means that economically dependent household members may follow the main earners rather than making decisions on the basis of their individual situation.

Second, and more generally speaking, mobility decisions and moves are embedded in the various dimensions of the life course. A comprehensive analysis of regional mobility has therefore to acknowledge the interdependencies between spheres of life and cumulative developments across stages of the life-course (Courgeau 1985; Wagner 1989). Sandefur/Scott 1981 even argue that age effects in regional mobility can be almost fully explained by the distribution of life-course stages (though this was not confirmed a number of other studies.)

Regional conditions (like the local employment situation) form an important part of the actor's situation, complementing the impact of 'lower-level' situations like the conditions in a

particular firm. Spatial mobility is likely if local opportunities are relatively ‘bad’ and opportunities elsewhere are relatively ‘good’, and a regional move will lead to better results than other forms of mobility. Technically speaking, looking at factors representing opportunities and constraints at different levels of aggregation simultaneously allows one not only to see who are the people who move but also to evaluate the relative relevance of individual and structural characteristics. While many regional-level analyses are confined to the observation of aggregate flows between regions, looking more closely at mobility processes therefore means to combine regional data with individual-level information.

3. Research questions: qualifications and regional mobility

Against the background of these general concepts, this paper focuses on differences in regional mobility between qualification groups. There is already quite a long literature on such differentials, and most studies have found two results: first, the higher qualified move more frequently; and second, they cover longer distances when moving.

A number of explanations have been proposed for this (see also Wagner 1989: 86-100). A first group of explanations places emphasis on differences in individual characteristics that follow different educational experiences: differences in information and other resources necessary for moving, but also differences in preferences and the individuals’ local social integration.

A second group of explanations focuses rather on structural differences, concerning in particular the systems of education and training and the labour market. Regarding education and training, it is stressed that there are regional differences in educational opportunities. This means that people from peripheral areas have to move if they want to attain particular (higher-level) qualifications. Regarding labour-market structures, two arguments can be distinguished. First, there is a *segmentation* of the labour market by qualifications. Workers have to go where there is demand for their specific qualification, if they want to make full use of their labour market potential. This demand may be unequally distributed among regions. Even if the qualification-specific labour market segments did not differ in this respect, the higher qualified would have a higher *need* to move because they have invested much more in their human capital. It would be very costly for them not to make use of it. Second, there is *competition* between qualification groups in the labour market. According to models like the labour queue model (Thurow 1975), workers can be ordered along a uni-dimensional scale according to (their) potential productivity. Their relative position decides about wages and employment chances. In the simplest form of such a model, someone in a higher position can

make use of all the opportunities of someone in a lower position – and also additional opportunities. With regard to opportunities distributed among regions, this means that the higher the position, the more (distant) opportunities one can use. Both arguments therefore lead to a higher level of regional mobility among the higher qualified; they have both greater needs and more opportunities for regional mobility.

Quite a lot of progress has been made in the more detailed analysis of qualification-specific regional mobility since longitudinal data have become available. What still needs to be extended in a more systematic way is what could be called *a life-course oriented analysis* which accounts for the fundamental characteristics of life courses in modern societies (cf. Mayer 2001): their multi-dimensional nature, their embeddedness in multi-level social structures, and the endogeneity of individual development.

With regard to qualification-specific regional mobility, at least four dimensions can be distinguished:

(1) *Spatial patterns*

Spatial mobility has mostly be analysed as uni-dimensional with a focus on mobility distances. But in fact, spatial mobility takes place in a two-dimensional space. Therefore, more complex mobility patterns can be analysed. A simple question in this respect is to what extent people ‘return’ to places they were already earlier in life (e.g., before attaining particular qualifications). If they make moves in addition to previous moves, do they move back or do they move even further away?

(2) *Temporal patterns and sequences*

When in the life course do qualification groups differ in their mobility behaviour? Do they so already before entering education and training (this would rather be regarded as a selection effect) or as a result of it? This relates to a more general question: To what extent is there individual ‘path dependency’ in the sense that earlier mobility experiences determine later mobility?

(3) *Family and household relations*

To what extent do family relations (partnership, marriage, children) interact with differences in mobility patterns between qualification groups? Empirical research has shown that the

degree of educational homogamy is relatively high, so it is difficult to separate between the effects of individual's and partner's education. However, it is already the problem of *coordinating* decisions that makes mobility for couples more difficult (and even more so for families).

(4) Interactions with regional situation

Regions differ with regard to the mobility behaviour of their inhabitants. But to what extent is this due either to differences in qualification structures – representing different educational opportunities – or to differences in the following (especially employment-related) opportunities?

These questions may define a research programme rather than research questions to be addressed in a single paper, but looking at the situation in (West) Germany, this paper will give at least examples for analyses representing research defined by these four dimensions.

4. Data

Analyses in a life-course perspective require information on regional mobility as well as on transitions in various other domains of life. There are previous studies on Germany (especially Wagner 1989), but they rather represent the situation in the post-war decades. A recently collected dataset that contains the necessary information are the retrospective data on the 1964 and 1971 birth cohorts in West Germany. They are part of the German Life History Study located at the Max Planck Institute for Human Development, and they were collected in cooperation with the Institute of Employment Research¹. The current project on these two cohorts has focussed on education, transitions from school to work and early working careers of West German women and men (see Hillmert/Mayer 2004). Approximately 2.900 men and women were interviewed. The data contain monthly information on education and training, employment, family and residential histories².

Regional information in the life-history data allow the combination with information from official statistics. In comparison to register-generated data (Haas/Möller 2001; Windzio 2004a,b), there are, however, a number of restrictions. First, there is considerable regional dispersion, already in the process of sampling (approx. 100 sampling clusters). This increases the quality of the representative sample, but in combination with the relatively small sample

¹ This project was supported by the European Social Fund.

² For information on data collection and sampling, see the data documentation (Hillmert et al. 2004).

size it also leads to the consequence that there are only relatively few cases per regional unit. Therefore, a strict multi-level design cannot be applied. As a result of the retrospective design, certain types of information (especially on income) are difficult to collect. Finally, data is restricted to selected cohorts.

However, using the data has also a number of advantages. First, all forms of employment (including, for example, civil servants, self-employed, and marginal workers independently of their social security status), education and training and non-employment are covered. Second, there is longitudinal information on partnerships (again, not in a strict household/multi-level design). For the individual life courses, full sequences are available; there is no left censoring, which is important for young people and in order to be able to observe returns etc. There is also information on inter-national moves (provided that the individuals have returned to West Germany). Finally, due to careful data collection and extensive data editing, the data quality can be expected to be very high³.

This paper focuses on residential mobility as, unlike employer-related mobility etc., this variable applies to the whole sample and for the whole observation window. A residential move is defined as a change of place of residence; moves within cities do not count as residential moves here. The focus is on mobility in youth and early adulthood. Therefore, our observation window starts with age 15. This means that the historical period of the 1980s and 1990s is covered by data on the 1964 and 1971 birth cohorts. There is some evidence that at least employment-related mobility has increased since 1980 (Haas 2000) while it had declined between 1960s and 1980s (Karr et al. 1987).

To separate immigration as a special case of residential mobility, the analyses in this paper use data only for the respondents who were either born in West Germany or immigrated before age 15. Table 1 summarises basic information on the data.

³ For a discussion on the importance of data editing see Hillmert 2002.

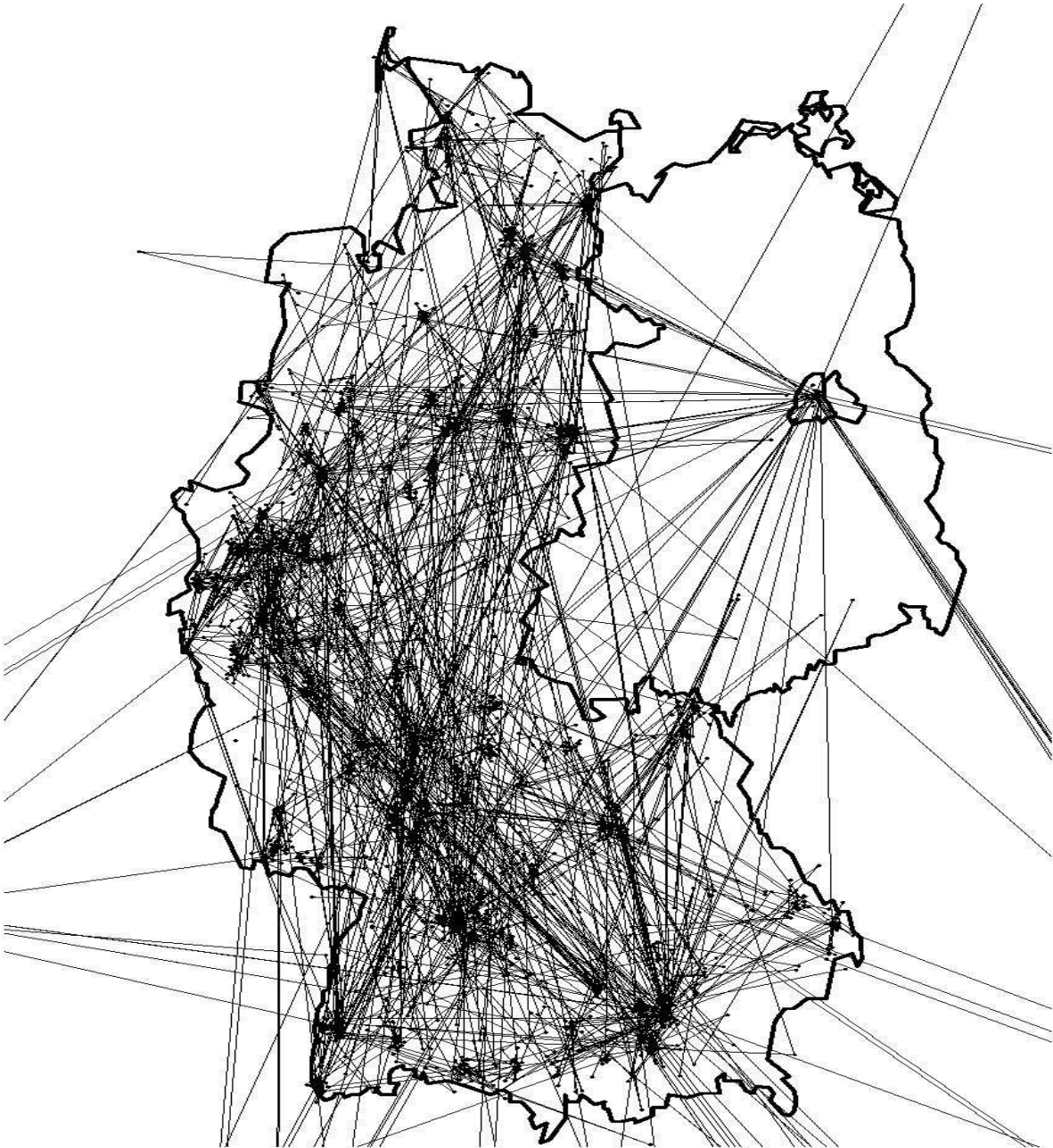
Tab. 1: Data description

Source	West German Life History Study, 1964 and 1971 birth cohorts	
Data collection	1998/99	
Observation window in this analysis	Age 15 – Age 27/34 Year 1979 – Year 1999	
N (cases) used for this analysis	2673	
- 1964 birth cohort	1355	
- 1971 birth cohort	1318	
- Men	1408	
- Women	1265	
Total moves	3360	
Proportion of persons moving at least once	31.1 %	

Figure 1 is a geographical illustration of the residential moves observed in the sample (for reasons of homogeneity, for the 1964 birth cohort only). One can see the considerable regional dispersion, which mirrors the main urban regions in West Germany. This may also serve as a first check of the quality of the sample: the observed distribution is a combination of the sampling process and the mobility found in the retrospective life histories.

It should be noted that the sample is restricted to West Germany in a specific way. The respondents needed to live in West Germany when the sample was drawn and they were interviewed (at age 27 or 34). In order to be eligible for our analysis, they also needed to be either born in West Germany or to have immigrated early. This means that at least at two points in the life course, they lived in West Germany, but they may have moved out of the country in between. Not least as a result of this definition, most of the observed mobility takes place within Germany, but there are also a number of inter-national moves.

Fig. 1: Residential moves in the sample after age 15; 1964 birth cohort



5. Empirical results

5.1 General description of residential mobility

This section provides a brief summary of the descriptive, age-related analyses of total residential mobility. In figure 2, the (monthly) probabilities of residential moves are displayed for the 1964 birth cohort. The upper line indicates the overall probability of a residential move in the particular age. One can see that the probability of moving is relatively low at the beginning and at the end of the observation window (age 15 and age 34); it peaks in the early 20s.

The two other lines indicate the proportions of training-related mobility and employment-related mobility respectively. Note that this information is not based on an explicit (subjective) statement, but is defined objectively as the coincidence of the start of a new training or employment episode and a residential move (within an interval of three months before and after this event)⁴. While in the younger ages, training-related mobility is more frequent than employment-related mobility (and in fact, most mobility events are related to training in this first interval), this relation gets reversed from the early 20s onwards.

Figure 3 presents two measures of moving distances along the life course. The first is (average) cumulative distance. By definition, this distance increases strictly with age⁵, and, starting around age 20, the trend is almost linear.

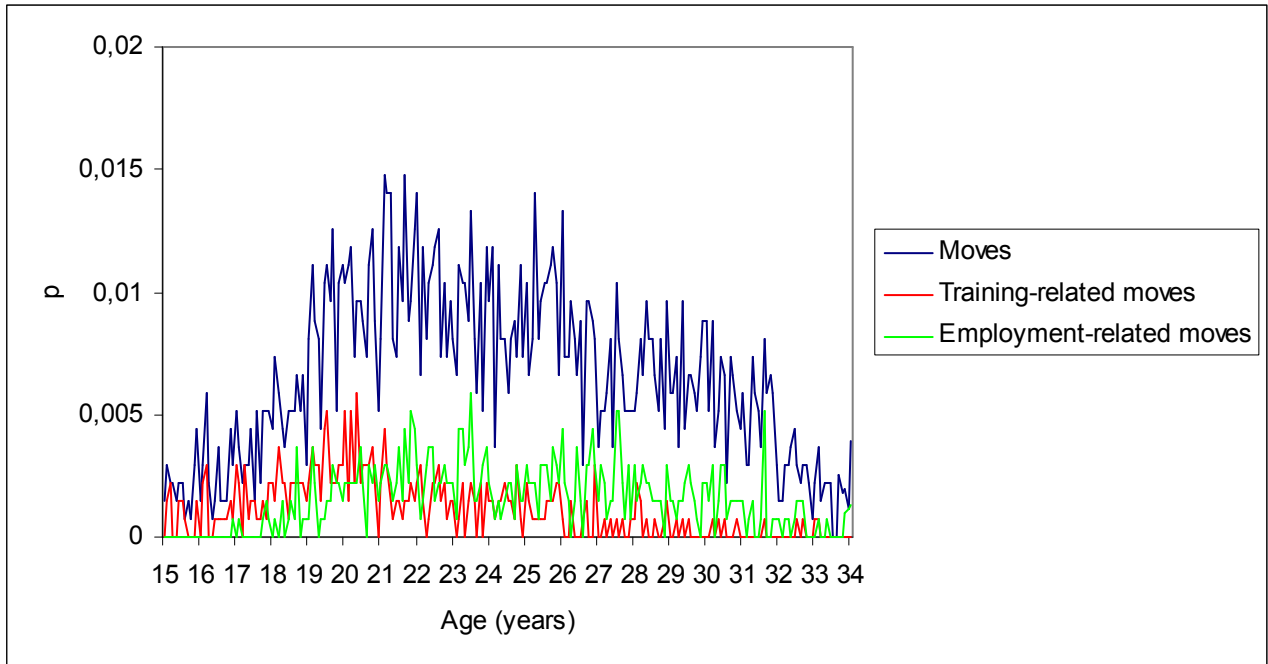
The other measure uses a fixed local point of reference. In this case, we use place of residence at age 15 as the ‘region of origin’. In this analysis, distances may grow if people move further away, but may also decrease when people move closer again to their region of origin. Our finding is that after an increase in the average distance until around age 22, this distance remains relatively stable with age (on a level of about 80 km).

These averages, however, cannot show the considerable heterogeneity in the data. As expected, one important dimension of differentiation is the level of qualification, and this is further investigated in the following section.

⁴ This means that no clear order of causality can be established.

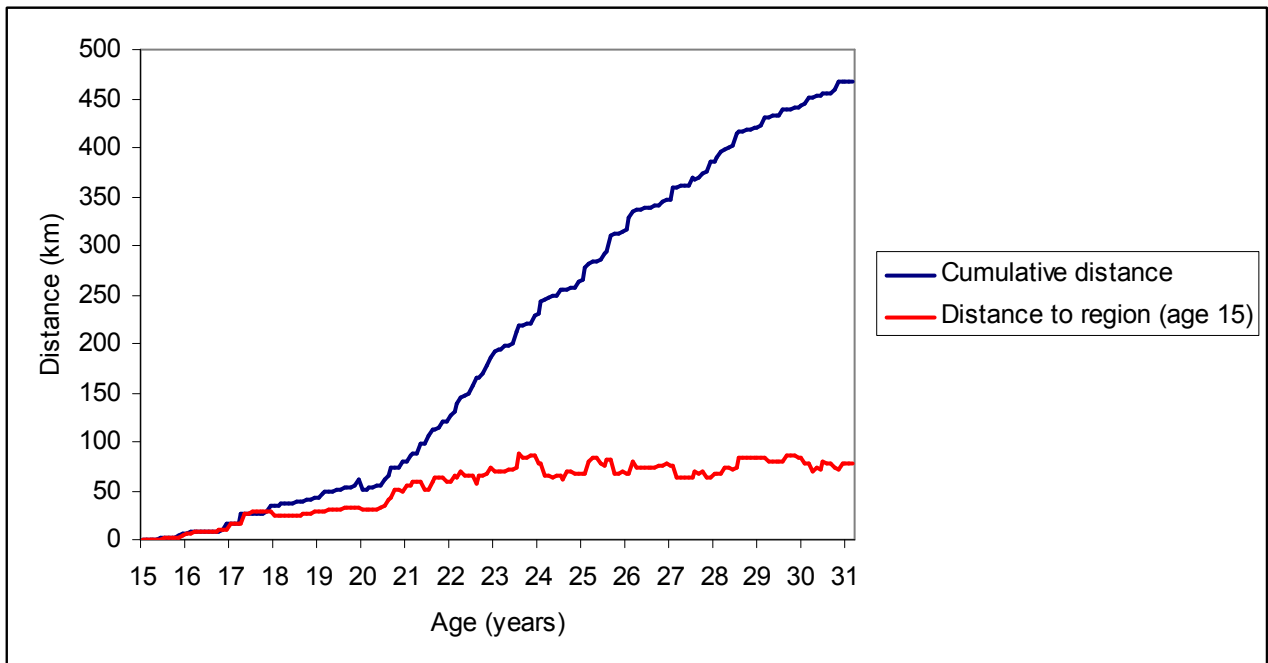
⁵ Minor deviations from this pattern are due to missing cases.

Fig. 2: Probability of residential moves, by age and relation to training and employment



Data: 1964 birth cohort.

Fig. 3: Average cumulative moving distance after age 15 and average distance to region of origin (at age 15), in km



Data: 1964 birth cohort.

5.2 Differences between qualification groups

In figure 4, one can get a first impression about the differences in residential mobility between qualification groups. Two broad qualification groups are distinguished: first, people who, within the observation window of this study, underwent academic training (at university or ‘Fachhochschule’); and second, all others.

Obviously, and in line with previous studies, the higher qualified both move more frequently and show a higher proportion of long-distance moves. In this simple analysis it is not clear whether they move already before or as a consequence of academic training, and whether they do so during (and because of) training or afterwards when they enter the labour market. What can also be seen in figure 4, however, is that especially among the higher qualified, there is a considerable proportion of individuals returning or ‘shuttling’ between two places.

Figure 5 compares the development of average cumulative moving distances between the two qualification groups. One can see that it is not before age 23 that the two groups begin to differ significantly, i.e. there is obviously no over-representation of ‘movers’ in higher education. From age 23 onwards, however, there is a marked and steady increase for the higher qualified while there is only a moderate increase for the lower qualified. This leads to a considerable difference in (average) mobility experience between the two groups in the early 30s.

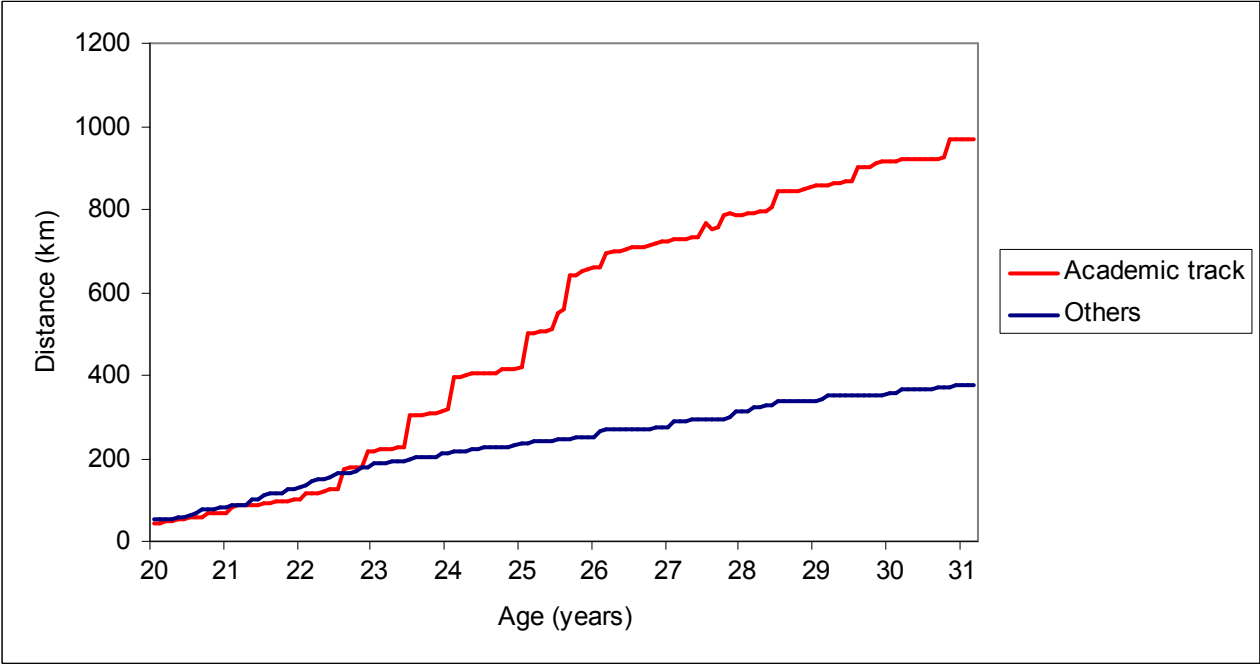
An important qualification to this result, however, is illustrated in Figure 6. Presented are the results from an analysis of the distance between present place of residence and region of ‘origin’ (place of residence at age 15). In contrast to the previous analysis, there is no steady divergence between the two qualification groups with age. Rather, it is confirmed what could already be observed in the geographical illustrations of figure 4. Especially among the higher qualified (and obviously immediately after completing higher education), a lot of people tend to ‘return’ to their home region. The result of this is that, between age 26 and 28/29, individuals from both qualification groups live in a comparable distance to their region of origin. After this age period, the higher qualified move further away again.

So far, our descriptive analyses have shown manifest relationships between qualification level and mobility behaviour, but they have made only very broad distinctions between qualification groups. To allow for an inclusion of a whole number of individual characteristics and situations as time-dependent covariates and (possibly) parallel states, in the final empirical section of this paper multivariate mobility analyses are set up as event history analyses.

Fig. 4: Residential moves after age 15 of persons with (above) and without academic training (below); 1964 birth cohort, weighted subsamples

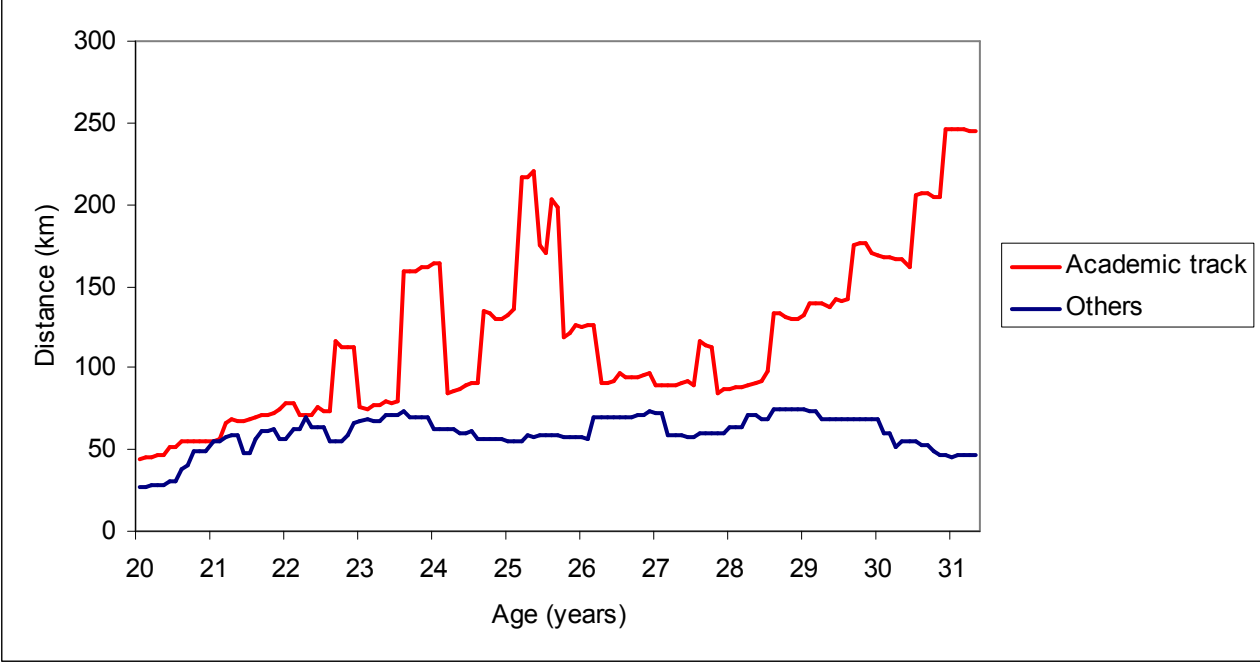


Fig. 5: Average cumulative moving distance (in km) after age 15, by age and educational level



Data: 1964 birth cohort.

Fig. 6: Average distance to region of origin (at age 15) in km, by age and educational level



Data: 1964 birth cohort.

5.3 Qualifications and residential mobility: multivariate analyses

In these analyses, a discrete-time event history model is applied, using a monthly split dataset. Analyses were conducted step-by-step; their results are summarised in table 2. Since the analyses are longitudinal, both birth cohorts can be combined even if they have different levels of mobility and different observation windows. To introduce a minimum threshold for more or less ‘distant’ moves, only residential moves that include a distance of more than 25 kilometres count as moves, and inner-city moves are excluded in general.

In model 1, a number of important individual-level variables are included: birth cohort, gender, and – as time-dependent variables – school and academic qualifications and present activity status. As an extension of this model, model 2 also controls for (residential) mobility experience by introducing the number of previous moves, which includes the moves before age 15. Model 3 extends the focus on individuals by including family-related variables: marital status, number of children, and their interactions with gender and qualification. Models 4 and 5 also contain regional-level information representing changes in regional employment situation (time-dependent, relative change in employment in the previous year, since 1981 on the Bundesländer level and since 1992 on a district level) and the size of the place of residence (coded on the basis of the year 2002) as well as their interaction with qualifications. In Model 5 includes information on individual qualifications while model 4 does not.

The results can be summarised as follows. In model 1, one finds that both school qualifications and, to a smaller extent, vocational and academic qualifications increase the likelihood of regional mobility, whereby the hierarchy of qualifications is represented by the magnitude of the effects. Especially for students who have acquired higher secondary school qualifications, finishing school is a period when regional mobility is likely.

Model 2 indicates that there is a considerable degree of endogeneity in individual life courses. The variable ‘mobility experience’ proves to be highly significant, meaning that earlier regional mobility is a good predictor for later mobility. One mechanism here is endogeneity in educational careers, so there is also a reduction in the education effects, compared to model 1, especially with regard to later degrees.

Model 3 shows that marriage has a strong negative effect on the probability of moving. This applies for both men and women. In contrast to human-capital oriented explanations, also the interactions with qualification are not significant. A significant negative effect of having children can only be found for women, and again there are no significant differences with regard to qualifications.

Tab. 2: Determinants of residential mobility: logit coefficients (discrete-time event history analysis/logit-model)

	Model 1	Model 2	Model 3	Model 4	Model 5
Individual-level variables					
Birth cohort 1971 (ref. 1964)	-0.05	0.04	-0.07	-0.20**	-0.14**
Woman	0.26**	0.19**	0.29**	0.38**	0.30**
Intermediate secondary school qualification	0.42**	0.41**	0.38**		0.38**
Higher secondary school qualification ('Abitur' etc.)	1.12**	0.98**	0.94**		0.98**
Vocational training	0.27**	0.18**	0.38**		0.39**
Academic degree	0.48**	0.25**	0.47**		0.53**
Leaving school (or up to 6 months after)	-0.71**	-0.64**	-0.60**	-0.07	-0.65**
Leaving school*Abitur	0.95**	1.02**	1.04**		1.18**
Leaving training (or up to 6 months after)	1.61**	1.64**	1.48**	1.71**	1.50**
In employment	-0.35**	-0.34**	-0.44**	-0.28**	-0.47**
Unemployed	0.43**	0.41**	0.33**	0.25**	0.27**
In military service etc.	0.59**	0.62**	0.56**	0.70**	0.54**
Previous mobility experience		0.21**	0.22**	0.24**	0.20**
Family-related variables					
Married			-0.71**	-0.73**	-0.71**
Married*Woman			0.23	0.29	0.22
Married*Abitur			0.27		
Married*Abitur*Women			-0.39		
No. of children			0.05	0.01	0.02
No. of children*Women			-0.42**	-0.50**	-0.49**
No. of children*Abitur			-0.14		
No. of children*Abitur*Woman			-0.24		
Regional-level variables					
Size of place of residence (ref. 20,000-500,000):					
- less than 20,000 inhabitants				-0.23**	-0.14
- more than 500,000 inhabitants				-0.17**	-0.11
- less than 20,000 inhabitants*Abitur					0.03
- more than 500,000 inhabitants*Abitur					-0.24**
Trend of regional employment situation				0.06**	0.07**
Constant	-6.52**	-6.93**	-6.83**	-6.31**	-6.76**
Events: residential moves	1991	1991	1991	1700	1700
N (months)	502672	502672	502672	454670	454670
chi ²	1855	2171	2336	1619	1958
Pseudo R ² (Nagelkerke)	0.07	0.09	0.09	0.07	0.09

* p< 0.1 ** p < 0.01

Model 4 indicates a curvilinear relationship between the size of the place of residence and mobility. Both out of small towns and big cities there is less mobility than out of medium-sized cities (see also Wagner 1990). If one compares model 4 with model 5, however, one can see that regional differences in mobility are to some extent explained by differences in qualification structures. When controlling for qualifications, the regional-level variables on town size lose their significance. An exception are the higher qualified in large cities, their mobility is particularly low. This could be a sign of a concentration of special opportunities for higher educated people (in terms of employment, but probably also in cultural terms) in the big cities.

6. Summary and discussion

The aim of this paper has been to further explore differences in regional mobility between qualification groups with a special focus on life-course related aspects. In line with previous studies we find that the higher qualified move more frequently and (cumulatively) over longer distances. With regard to the research questions proposed above (section 3), the results can be summarised as follows:

(1) Spatial patterns. A considerable proportion of training-related mobility – especially in terms of higher education – is obviously made up of returns to the regions of origin after finishing episodes of education and training.

(2) Temporal patterns and sequences. Qualification groups differ in their regional mobility behaviour not from the beginning, but as a consequence of education and training. There is also considerable path-dependency in mobility experiences on the individual level.

(3) Family and household relations. Family relations have a considerable negative impact on individual mobility behaviour. This is true for both the lower and the higher qualified, but while marriage effects apply to both genders, having children has significant consequences only for women. These patterns do not necessarily follow the predictions of economic theory.

(4) Interactions with regional situation. There is also some evidence that regional differences in mobility are to some extent, but not fully accounted for by differences in their qualification structure. This is an indicator of regional differences in both educational and other opportunities.

In general, the analyses underline once again the importance of education and training for the shaping of life course patterns in present society, not just in terms of employment chances, but also with regard to regional mobility.

Still, there are a number of ways in which the analyses presented in this paper could be extended. While the West German Life History Study contains some information on the employment situation of the respondents' partners, full information on their employment careers would be desirable in order to assess the relative (economic) position of the respondent within the household. Data comparable to respondents' data would lead to a 'multilevel structure' of the data (people in couples or households). A multilevel structure in regional respect could be achieved by grouping the life courses in aggregated regional units. Moreover, additional aggregate data, like information on (qualification-specific) unemployment and qualification structures, could be matched to the available individual-level data in order to get a richer description of regional conditions.

Finally, there is a general conclusion. Research on regional patterns of inequality and labour markets is mostly conducted on the basis of cross-sectional data from official statistics. On the other hand, life-course research is often done without accounting for regional differences in life conditions. This paper argues for a further convergence of these two strands of research. Labour market research and inequality research benefit from a life-course perspective, and life-course research benefits from an inclusion of the regional dimension.

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