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Migration and Long-Distance Commuting Histories and Their Links to Career Achievement in Germany: A Sequence Analysis

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Abstract

Moving and travelling extensively for job reasons is often seen as a way to achieve a successful career. Yet, evidence based on longitudinal data is limited. In this paper, we use a sequence analysis to study typical histories of intensive forms of work-related spatial mobility, i.e. migration, daily and weekly long-distance commuting and overnight business travel (called below 'high mobility'), and their links to career achievement. Using retrospective survey data from Germany, we show that a variety of high mobility histories coexist. While migrations occur mainly in the first years of the professional life, the chances of experiencing long-distance daily or weekly commuting and frequent overnight business trips remain stable over the career. Some evidence was found that long-lasting high mobility is associated with better incomes. Nevertheless, having repeated experiences of high mobility has no positive impact, ***per se***, on managerial responsibilities or socio-economic status. These findings suggest that high mobility has become a 'usual' feature in many job careers and is often a way of combining a distant job with a local attachment to a place, home or community, rather than a way of achieving upward career mobility. This study points out that, besides migration, long-distance commuting and frequent travel for job reasons should receive more attention in longitudinal research on spatial mobility.

Keywords: Mobility, Mobility Histories, Commuting, Business Travel, Career Achievement, Socio-Economic Status, Life Course, Sequence Analysis, Optimal Matching

Introduction

1.1 Spatial mobility practices for job reasons change over the life course of individuals. One professional career may be marked by several periods of extensive travel of variable length and type. A fixed-term contract with a company based some tens of miles away may lead individuals to opt for long-distance commuting for a couple of years. A job of sales manager or a family home in a city suburb may likewise require frequent travel and long commutes. When the distance to work is too large, people may decide to rent a second home near the workplace and commute back home at weekends (dual location households). Alternatively, they may prefer to move to avoid long commutes. Over the past decades, flexibility requirements and short-term projects in the labour market have substantially increased, making career trajectories more complex and spatial mobility requirements more likely (Harvey 1989; Callaghan 1997; Hardill & Green 2003). Some authors argue that this change reflects a shift in the general model of professional success. A present-day successful career would be less dependent upon climbing the career ladder within one single company than upon 'surfing' from one good job to another in a changing professional environment (Boltanski & Chiapello 1999; Feldman & Ng 2007 for a review). Thus, high mobility would be a key resource for extending the job search area and achieving a successful career.

1.2 Yet, to the authors' knowledge, no representative studies have examined histories of work-related spatial mobility in its various forms. Many studies have focused on specific populations particularly exposed to spatial mobility (international migrants, highly skilled professionals, long-distance commuters). Moreover, except from migration studies (see below), few quantitative surveys have dealt with past experiences of spatial mobility. Life course migration studies have examined mainly the interdependencies between single-event transitions (e.g. getting a new job, getting married, having a child) and the probability of moving, without analysing the whole ***trajectory*** of movements (for exceptions, see Stovel & Bolan 2004; Clark & Davies Withers 2008). This is regrettable, as the form and intensity of spatial mobility practices at a given moment may well result from the mobile living arrangements elaborated over time. Likewise, career achievement may be linked to mobility experiences that happened many years before. By moving and travelling extensively in the early stages of their career, workers may accumulate mobility abilities and human capital. In the long term, this accumulation can enable them to take advantage of better job opportunities than people who have hardly been mobile.

1.3 In this paper, we address these limitations by examining the whole ***sequence*** or ***trajectory*** of work-related migration, long-distance commuting and frequent overnight business trips (called below 'high mobility') over individuals' careers. This sequential approach accounts for the duration, timing, sequencing and type of high mobility practices. Our initial investigation examines the mobility sequences of about 750 people living in Germany, using ***optimal matching*** (or optimal alignment) to determine empirically the typical sequence patterns. Based on regression models, we then analyse how these patterns relate to career achievement, controlling for other factors known to influence socio-economic status.

High mobility as a life course issue

2.1 The life course perspective is based on three key concepts (e.g. Huinink & Feldhaus 2009).

Multidimensionality. The life course unfolds in different life domains that are interrelated. Activities in different spheres may be compatible, or even supportive, but they may also be conflicting. Research on the interplay between family events and residential mobility has for example pointed out that a child birth often goes along with a short distance move which adjusts the housing and environment situation, while it reduces the propensity for long-distance moves often motivated by employment decisions (see however Clark & Davies Withers (2008) for a more complex model).

Path dependency. Experiences and decisions in the early life course have later-life consequences. In particular, past experiences and accumulated resources restrict or extend the opportunities for future actions and decisions. People with a great deal of mobility experience are more likely to be mobile again, because they have accommodated their lives to their mobility through abilities and habits (Viry & Vincent-Geslin forthcoming 2014).

Multilevel structure. The life course of individuals unfolds in close relationship to the life courses of other people (concept of ***linked lives***). The partner's career or the health trajectories of aging parents, for instance, are likely to interact with a person's high mobility history. Context, in particular historical time and place, also plays an important role. The job opportunities in the region where the young adult is living or the quality of the transport system can strongly influence the chances of moving and commuting over long distances.

2.2 Previous life course studies on spatial mobility have mainly focused on migration and residential mobility, neglecting that movements may also manifest in ways other than changing the place of residence. A well-known finding is that people living in the same region for a long time are less prone to move than people who have recently moved (e.g. Clark & Davies Whiters 2008; Fischer & Malmberg 2001). Having a (working) partner, being married, having children, owning a house and being employed are all conditions that settle people in their area and hinder migration. Another important finding is that major life transitions (e.g. marriage, divorce or separation, widowhood, retirement, new job, unemployment) often coincide with migration (e.g. Cooke 2008). As unique as individual lives are, these life events are more likely to occur at specific stages over the life course, so that typical patterns of high mobility can be identified. Older people are, for example, less likely to move over long distances than young people because they more frequently have an open-ended working contract, a family and/or their own dwelling (e.g. Fischer & Malmberg 2001).

2.3 Over the course of the twentieth century, the ability to travel over increasing distances has enabled some people to opt for commuting rather than moving to distant workplaces (Green ***et al.*** 1999; Pooley ***et al.*** 2005). Long commuting distances enable people, among other things, to stay physically close to family and friends, continue living in the home they are attached to or that is affordable, enable their children to continue attending the local school or combine two jobs within the household (Rüger & Ruppenthal 2010). In sum, travelling extensively by high-speed train, highway or plane gives people the possibility to accept a distant job offer while keeping a strong spatial attachment to their place of residence (Vincent-Geslin & Kaufmann 2012; Schneider ***et al.*** 2008). These forms of intensive work-related travel are not limited to parents and property owners, however. A large survey in six European countries showed that young people, men, and lower and middle managers are more likely than older people, women and non-managers to make (daily or weekly) long commutes and frequent overnight business trips (Schneider & Meil 2008). In some situations, these forms of mobility are likely to be practised for many years (e.g. Schneider ***et al.*** 2008, Viry & Vincent-Geslin 2013), making spatial mobility not only an everyday life phenomenon, but also a phenomenon that has to be approached from a life-course perspective.

2.4 Although frequent business travel and long-distance commuting can partly substitute for migration, all these forms of mobility are likely to interact with one another and have a global impact on career progression (see next section). In particular, there is some evidence that long-distance commuters are more likely to have experienced (repeated) migration at earlier career stages than people living closer to work (Viry ***et al.*** 2013). Thus, an analysis of the entire series of high mobility experiences over the life course, instead of only single forms like migration or daily long-distance commuting, can lead to a better understanding of the impact of spatial mobility on career achievement.

High mobility and career achievement

3.1 Traditionally, it is assumed that work-related high mobility is positively associated with career achievement (e.g. Cooke 2003, 2008; Mulder & van Ham 2005; Lehmer & Ludsteck 2011; So ***et al.*** 2001; van Ham 2001, 2003). One reason is that mobile workers widen their job search area, thereby taking advantage of job opportunities outside their immediate surroundings and competing for more jobs. Secondly, career gains are likely to be greater if people move or commute to specific destinations with many job opportunities, typically large city centres and economically dynamic regions (Bassand ***et al.*** 1985; Fielding 1992). Furthermore, there are reasons to suspect that jobs requiring frequent business trips are, on average, better paid than other jobs, because they are demanding of time and effort (e.g. Aguilera 2008; Bonnet & Orain 2010). The impact of past migration experiences on career achievement was investigated by Mulder & van Ham (2005) in a large retrospective survey in the Netherlands. The authors found that migration histories have a positive long-term impact on men's career achievement. For women, only multiple migrations (three or more) were beneficial for their careers. Despite this last result, evidence on the role of repeat migrations on career achievement is still uncertain. In some cases, multiple migrations consist of return moves to the original place of residence that may be more motivated for private and family reasons than for career opportunities (see Mulder & van Ham 2005).

3.2 There are, however, two major limitations in the research reported to date. Firstly, evidence on the positive impact of past mobility experiences on career achievement comes mainly from migration studies. Little is known about the effect of past experiences of long-distance commuting and frequent overnight business trips. In a retrospective national study in the Netherlands, van Ham (2001) investigated whether or not accepting a distant job offer had an effect on career advancement. The relationship between long-distance migration and occupational success was thereby extended by also considering long-distance commuting as a potential instrument of career advancement (however without distinguishing between the two forms of mobility). The study found that people who accepted a job over a distance of 45 km or more are experiencing more career advancements compared to those who were less mobile. In a subsequent study, van Ham (2003) showed that the positive link between spatial mobility and career advancement found previously for job-to-job mobility also holds for a longer period of time. He concluded that high mobility serves as an instrument to accumulate human capital more rapidly and is beneficial for the career in the long run.

3.3 A second limitation of research in this area is the difficulty to disentangle direct from indirect effects of spatial mobility on career achievement. In particular, highly mobile people are more often men, highly-qualified people and full-time workers in the service and creative industries - conditions that often imply better job positions, higher wages and socio-economic status (Schneider & Meil 2008). Regarding education, one reason for mobility is that well-educated people tend to work in highly specialised jobs which need to be performed in specific places, typically large cities. In addition, well-qualified people are often more willing to move or work far from home to get an adequate job, in order to maximise the returns on their human capital investments (e.g. Mulder & van Ham 2005). Thus, when controlling for education

and other factors known to influence socio-economic status, a link between (past) experiences of work-related travel and career achievement is far from clear. A large cross-sectional survey on various forms of work-related high mobility in six European countries found that job prestige and occupational status do not differ strongly between highly mobile people and others (Lück & Ruppenthal 2010). People making frequent overnight business trips, those having a second dwelling near the workplace and commuting every weekend and, to a lower extent, daily long-distance commuters have overall higher incomes than people who are less mobile, but these differences were mostly explained by different job situations and socio-demographic variables than high mobility ***per se***. The lack of a direct link between high mobility and career achievement can be explained by the fact that, in some cases, long commuting distances may be mostly motivated by private and family reasons, like having a home in a peripheral area or a well-established community life in the place of residence, rather than reflecting a wider job search area chosen to maximise human capital returns. In some situations, long-distance commuting may even result from professional disadvantages. Workers with a short-term contract may be dissuaded from moving and some lower-paid workers have no other choices but to live at the outskirts of cities and commute to the centre because of unaffordable housing costs in more central areas (Green ***et al.*** 1999).

Summary and hypotheses

4.1 Based on previous research, five hypotheses are tested here. Hypotheses 1 and 2 postulate a cumulative process where past experiences of high mobility foster new ones and a better career progression. Hypotheses 3 and 4 suggest, instead, that high mobility and its links to career achievement are rooted in life-course processes. Alternatively, hypothesis 5 suggests no clear association between high mobility and career achievement in the long run.

> H1: People who experienced high mobility in their early career are more likely to experience it again later, in the same or different form. Mobility abilities acquired in long-lasting practices reduce the barriers to new mobility experiences. In some situations, previous mobility experiences can directly foster new ones, e.g. return move to the place of origin, long-distance commuting following a move to a city suburb. In contrast, people who have never been mobile before are likely to be more rooted in their social environment and less willing to be on the move.
>
> H2: People who have been highly mobile throughout their career are more likely to hold high job positions than people who have hardly been mobile. According to the cumulative advantage hypothesis (Merton 1988), individuals with past experiences of high mobility would be better prepared to be mobile again to take advantage of a career opportunity in a distant place. This cumulative process is sometimes known as the ***Matthew effect***. Small differences in terms of mobility experience, when they cumulate over time, accrue professional advantages that make individuals' careers within aging cohorts gradually more and more distinct from each other.
>
> H3: Long-distance moves are more likely to happen in the earlier stages of the professional life in a pre-child situation. Conversely, long-distance commuting and frequent business trips are more likely to happen in later stages of the career, when people with children and family homes are more firmly settled in a geographical area. This hypothesis draws on evidence that spatial mobility experiences intertwine with life-course events and transitions (Cooke 2008; Viry ***et al.*** 2008).
>
> H4: People who have been highly mobile in their early career and less so subsequently are more likely to hold high job positions than people who have hardly been mobile. People who have a successful career are more likely to have stopped being mobile once they were well-established in professional work. Because highly qualified jobs are more (inter)national in scope, high mobility in the earlier stages of the professional life, and in particular long-distance moves, would pay off. In later stages, these individuals would profit from the location-specific capital they have accumulated in one place or organisation to achieve a high professional status. In turn, their high status, resources and employability would allow them to find career solutions that do not require high mobility in the long run (by moving or finding a new job closer to home). The now classic studies by Fielding (1992) in the UK and Bassand ***et al.*** (1985) in Switzerland have highlighted such a role of ***escalator regions*** and migration in early career development.
>
> H5: Contrary to H2 and H4, high mobility experiences do not lead to better career achievement when controlling for other factors known to influence occupational success. High mobility in the long run would be more often a way of combining a distant job with a strong attachment to a place, home or community, rather than a way of achieving upward career mobility. This hypothesis is in line with the normalisation/inflation model whereby today's work-related high mobility has become something that is 'expected' and 'normal' among the labour force. Spatial mobility would, therefore, no longer be strongly connected with social upward mobility, but would rather be a way for individuals to maintain their status or even to avoid downward mobility (e.g. Limmer & Schneider 2008).

Data, measurement and method

5.1 The data come from the German sample of the second wave of the 'Job Mobilities and Family Lives in Europe' survey. In a first wave conducted in 2007, a random sample of people aged 25 to 54 from six European countries (Germany, France, Spain, Poland, Switzerland and Belgium) were interviewed by phone about their work-related mobility behaviour and various aspects of their life, including family and work situations (Schneider & Meil 2008). Highly mobile people at the time of the interview were additionally oversampled. A second wave was conducted in 2010 in Germany, including retrospective data on high mobility experiences over the career. 504 people, already interviewed in 2007, were re-interviewed in 2010 (30.3% response rate). In addition to this panel sample, 251 highly mobile people aged 25 to 54 were newly interviewed. As in the first wave, the oversampling of highly mobile people was based on a two-step random procedure. Private households with landline telephones were first randomly selected according to a randomdigit-dialing procedure (Gabler & Häder 1997). The target person was then selected by means of a screening interview. Only those persons aged 25-54 who were currently highly mobile for job reasons (or migrated over the last three years) were interviewed thoroughly. For the present analysis, six cases were eliminated because of incomplete responses on their job biography. The data are composed of a final sample of 749 individuals, of whom 43% (322) were highly mobile at the time of the second wave interview. The representative subsample of the population of Germany (where oversampled highly mobile people from first and second waves were excluded) consists of 468 individuals, of whom 13% (61) were highly mobile at the time of the second wave interview.

5.2 Respondents were asked about their current and past jobs of at least one year's duration since the age of 15. For each job reported, they were asked to indicate the beginning year, the end year, and if they were highly mobile in one or several forms for this job. Three forms of high mobility have been considered: (1) ***Daily long-distance commuters***, i.e. people commuting 60 minutes or more (one way) at least three days per week; (2) ***Overnighters***, i.e. people spending at least 60 nights per year away from home for job reasons (frequent overnight business trips, weekly commuting in dual location households,

seasonal migrants); (3) ***Migrants***, i.e. people who moved for job reasons over a distance of more than 50 km or across national boundaries (see Schneider & Meil 2008 for more information about these definitions and their underlying framework of spatial mobility). If the high mobility spell was different from the job spell, respondents were also asked to specify the beginning year and the end year of the mobility episode. When high mobility was practised during several periods within the whole job spell, respondents were asked to estimate the whole duration of mobility by summing up the different periods. The mobility episode was then arbitrarily placed at the beginning of the job episode. When respondents moved 50 km or more, or across national boundaries to get a job, the mobility episode was placed at the first year of the job episode.

5.3 Based on this information, whole individual sequences of high mobility histories were built from the age of 15 to the age of the respondent at the time of interview. Sequences were composed of seven possible states: (1) unemployed; (2) employed, no high mobility; (3) daily long-distance commuting; (4) frequent overnight business trips ('overnighters'); (5) migration/long-distance relocation ; (6) combination of daily commuting/overnight trips; (7) combination of migration/daily commuting or overnight trips.

5.4 The package TraMineR for the statistical environment R was used for the visualisation and the analysis of sequences (Gabadinho ***et al.*** 2009). We ran an optimal matching (or optimal alignment) analysis to group individuals with similar sequences and identify empirically common patterns of high mobility. Optimal matching algorithms determine the dissimilarity (or distance) between two sequences by minimising the 'cost' of transforming one sequence into the other, in terms of insertions, deletions and substitutions of states (Abbott & Forrest 1986; Abbott & Tsay 2000; Stovel & Bolan 2004). The cost of inserting/deleting one state and the cost of substituting one state ***i*** with one state ***j*** (a different work/mobility status) were all fixed to 1 per year. As an illustration, let's suppose two individuals of the same age entering the labour market at the same year and having experienced no career interruption. If the first individual commuted over long distances for seven years while the second has never been mobile for job reasons, the inter-sequence distance is 7. Other cost schemes were tested and finally rejected, because they did not lead to a more clearly interpretable grouping. An ascendant hierarchical cluster analysis using the Ward minimum variance method (Everitt 1993) was run on the inter-sequence distances (the dissimilarity matrix) to group similar patterns of sequences together (Gabadinho ***et al.*** 2009).

5.5 Because data included different age cohorts, sequences were incomplete and varied considerably in length. In particular, the mobility pattern of young respondents who entered late into the labour market could not be captured as precisely as in the case of older cohorts. Despite this, we decided not to limit the sequence analysis to older respondents or to the early career period, in order to use all the information from the data. Given the optimal matching procedure, sequences of similar length are more likely to be grouped together. However, the large variation in sequence lengths within each cluster suggest that sequences were mainly grouped together because they featured similar mobility patterns rather than because they were of similar length. The reliability of retrospective data was also a concern. Because respondents were asked about all their job and high mobility experiences of more than one year duration, the risk of forgetting or making mistakes, especially from the distant past, is relatively high. Retrospective reports are also fallible in the sense that respondents are likely to select or reinvent the past experiences to suit their current circumstances. Nevertheless, the number of inconsistencies and missing responses was low, so that it is reasonable to believe that the data are reliable.

5.6 Career achievement indicators, socio-demographic and occupational characteristics were surveyed in 2010 and therefore represent the status at the time of the interview. Career achievement was measured by four indicators. ***Open-ended contract (binary)***: Respondents who stated to have an open-ended work contract were coded 1; others (fixed-term contract, self-employed) were coded 0. ***Monthly personal (gross) income (metric)***: Income was measured in Euros. In case of categorical income specification (n=118, 15.8%) the mid-value of class interval was assigned. Missing income values (n=71, 9.3%) were replaced by OLS regression estimates (the correlation between original and estimated values was r=.604). ***Managerial position (binary)***: Respondents who reported to supervise employees were coded 1; others were coded 0. ***Job status (metric)***: Job status was measured by the International Socio-Economic Index of Occupational Status (ISEI), which captures the cultural and economic resources associated to a given occupation (Ganzeboom ***et al.*** 1992). Values range from 10 to 88, with high values representing high job status. Although distinct from it, this measure is strongly correlated with the occupational prestige based on popular evaluations (for a discussion about the ISEI score for measuring career achievement, see Mulder & van Ham 2005).

5.7 Sex was coded with female = 1 and male = 0. Age was measured in years. Educational level was captured by ISCED (International Standard Classification of Education) and coded into three categories: (0) lower-level secondary education or less (ISCED 0-2) (reference category), (1) upper-level secondary education (ISCED 3-4), (2) tertiary education or more (ISCED 5-6). Living arrangement was recoded into four categories: (0) with partner, with child(ren) (reference category), (1) without partner, without children, (2) with partner, without children, (3) without partner, with child(ren). Respondents working in the public/semi-public sector were coded 1; those working for an employer in the private sector (including the self-employed) were coded 0. Economic sectors were coded into three categories: (0) industry/secondary sector (reference category), (1) service/tertiary sector and (2) knowledge-based/'quaternary' sector. The agricultural/first sector was excluded from the analysis because of too few cases (1.5% of the sample). For all variables, cases with missing values were excluded from the analysis.

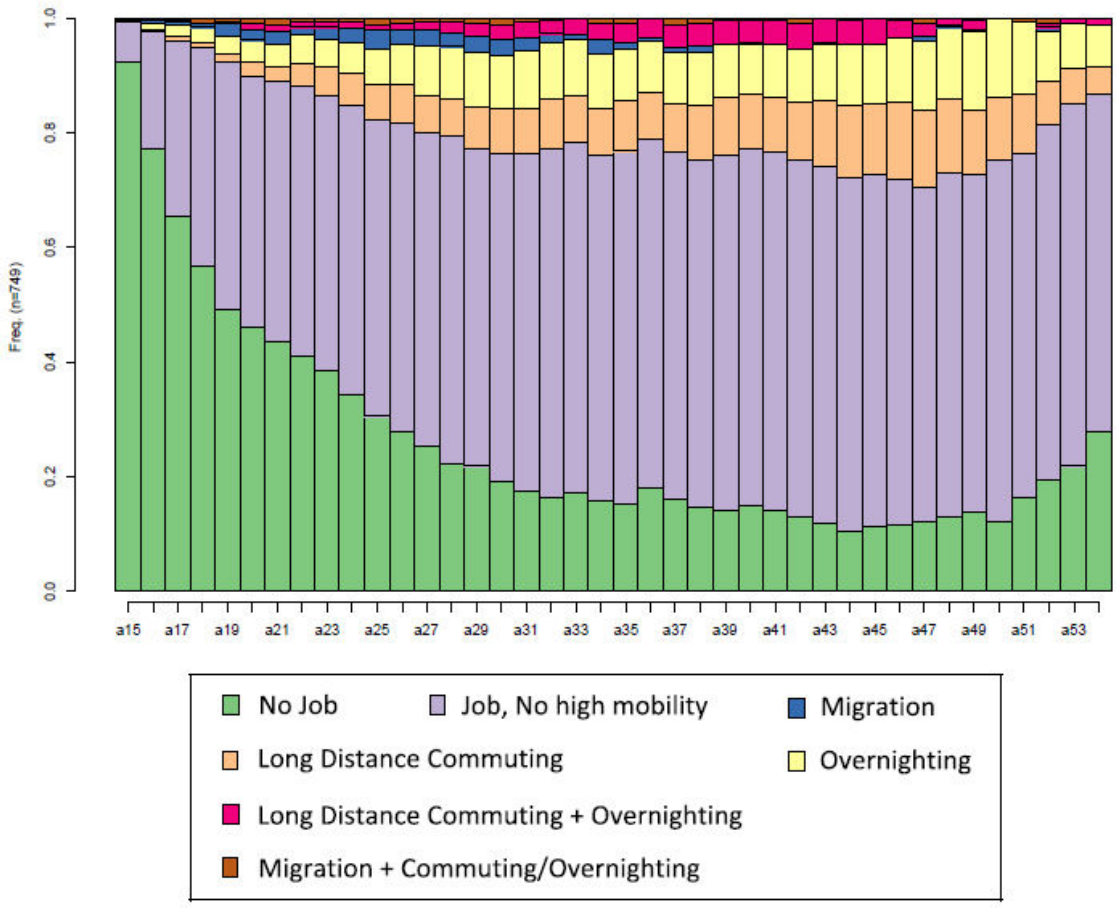
5.8 Two series of logistic/OLS regression models were estimated subsequent to the sequence and cluster analysis. The first series tested the effects of socio-demographic characteristics (sex, age, education and living arrangement) on typical patterns of mobility histories using the whole sample (including non-employed individuals at the time of the survey). The second series included mobility patterns as independent variables to test their effects on career achievement, controlling for socio-demographic and occupational characteristics (private/public employer, economical sector). For this second series of regressions, non-employed individuals were excluded. Because high mobility may be undertaken with the deliberate aim of a career promotion, these latter regression models cannot be regarded as strictly causal, but as a way to test the strength of the relationship between high mobility histories and career achievement.

5.9 To check the robustness of the results, several other regression models, not shown here, were also tested. In order to distinguish between short-term and long-term effects of mobility, a control variable was included, indicating whether the respondent was highly mobile at the time of the interview (or migrated over the last three years). Further models included the accumulated time in employment to control for differences in labour market experience, as well as age squared and age in categories to account for nonlinear effects of age. We opted for age as a continuous variable in final models because we had too few cases in the youngest age group (25-34 years) for some mobility patterns. Additionally, self-employed individuals were excluded from the model using ***open-ended contract*** as dependent variable. In all cases, major results did not differ significantly from those stated below. Finally, the two series of regression models were also run separately for men and women to examine whether sex moderates the observed effects. In some cases, substantial differences between men and women appeared and are discussed in the text.

Results

6.1 The graphs of Figures 1 to 3 depict the state distribution at each year of age for the whole sample, the male and female representative sample, respectively. Because of too few cases, years corresponding to ages 55-58 were excluded from the graphs. As expected (H3), migration is more likely to occur early in the career (between 18 and 30) and is very unlikely beyond the age of 35. By contrast, the rate of daily commuting and overnight business trips remains quite stable throughout the career. Interestingly, this rate does not decrease in the prime fertility period of age 25 to 35. Figures 2 and 3 confirm the well-established finding that high mobility behaviour is more prevalent among men than among women (e.g. Schneider ***et al.*** 2008; Lück & Ruppenthal 2010). However, we also see that this can be mainly traced back to differences in the proportion of overnight business trips and weekly commuting (in yellow and pink colours) - which is considerably lower throughout the career in the case of women.

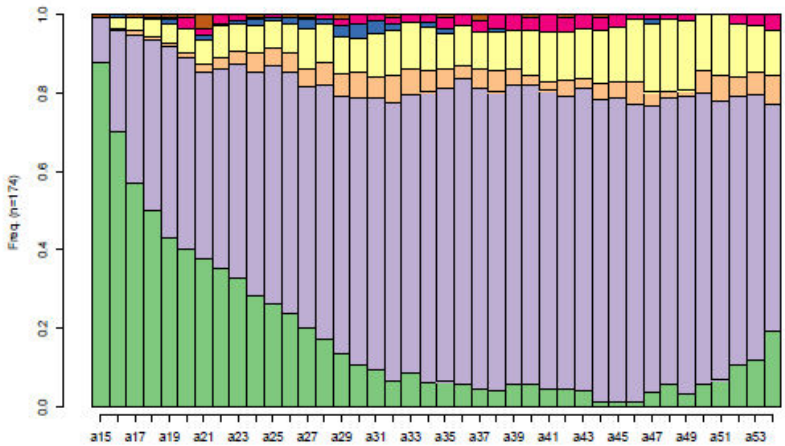
Figure 1: State distribution graph – whole sample (ages 15-54)

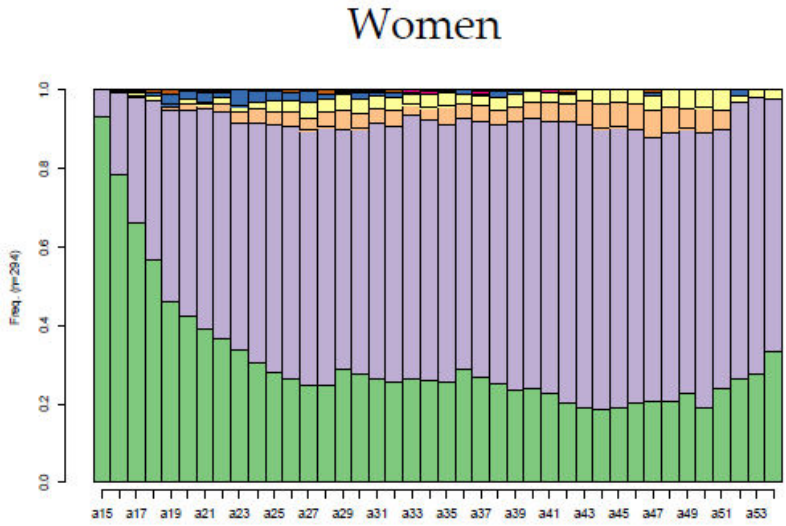


Legend: At the age of 30, around 19% of the sample is non-employed, 57% employed, not highly mobile, 8% long-distance commuters, 9% making frequent overnight business trips, 3% recent migrants, 4% combining different forms of high mobility.

Figures 2 & 3: State distribution graph – representative sample by sex (ages 15-54)

Men





Eight patterns of mobility histories

6.2 A cluster analysis was performed on the inter-sequence distances resulting from the optimal matching procedure. Four-to nine-cluster solutions were examined. The eight-cluster solution was chosen for further analysis, because it provided distinctive and interpretable patterns of high mobility. Figure 4 depicts the state distribution at each year for the eight typical patterns. Because of too few cases, years corresponding to ages 50 and beyond were excluded from all graphs. Figure 5 shows all individual sequences grouped according to the eight patterns. Within each cluster, the most frequent sequence is drawn at the very bottom of the graph, and the following sequences are sorted from down to top according to their increasing distance from this typical sequence.

6.3 In Type 1, 'Interrupted Career' (8% of the sample), respondents entered the labour market early and exited from it some years later - probably at the time they got married/had children, for most of them by the age of 30. A long period of professional inactivity then occurred. In a few cases, individuals started working again, but much later. Individuals from this group are characterised by no or very little experience of high mobility (average high mobility duration of 1.5 years). For some rare people, migration occurred at the beginning of their career or daily long-distance commuting at a later stage (age 40-45).

6.4 Type 2 'Early Entrance, Non-mobile' (22% of the sample) represented the largest group in the sample. They were mainly people who entered the labour market early and have had no experience of high mobility (average duration of 1 year). For some rare individuals, a high mobility episode occurred at the beginning of the career, but stopped after a few years. Individuals from Type 3 'Late Entrance, Non-mobile' (12% of the sample), like the preceding group, had few mobility experiences (average duration of 1.4 year). Nonetheless, they had their first job later, after a relatively long period of education. A few of them migrated at the beginning of their career, sometimes several times. Quite distinctly, individuals of Type 4 'Early Entrance, Commuters' (14% of the sample) are characterised by an early start in the labour market and a long period of long-distance daily commuting (on average 8 years among all individuals within the cluster and 12 years counting only those who practised this specific form of mobility), frequent overnight business trips (3 years/8 years) or a combination of both (2 years/8 years), which lasted until the time of the interview. In some cases, the episode of high commuting was preceded by some migrations at the beginning of the career. Considering all forms of mobility, individuals of this category were highly mobile for an average period of 13.8 years.

6.5 Individuals of Type 5 'Late Entrance, Short-term Overnighters' (6% of the sample) feature more heterogeneous and shorter sequences than those of the previous types. Their trajectories are characterised by a long period of education followed directly by one or more periods of high mobility, mainly frequent overnight business trips or a combination with daily commuting (average mobility duration of 4.7 years). These individuals have never worked without being highly mobile for their job. In some cases, people stopped working and experienced a more or less long period of occupational inactivity after their mobility episode. Like the previous category, Type 6 'Early Entrance, Instability' (20% of the sample) features a strong heterogeneity and is the group with the most complex sequences. Individuals in this category have a job history characterised by an early start in the labour market and a long period of work without being mobile, punctuated with many short periods of high mobility or occupational inactivity (average mobility duration of 4.3 years).

Figure 4: State distribution graphs (ages 15-49)

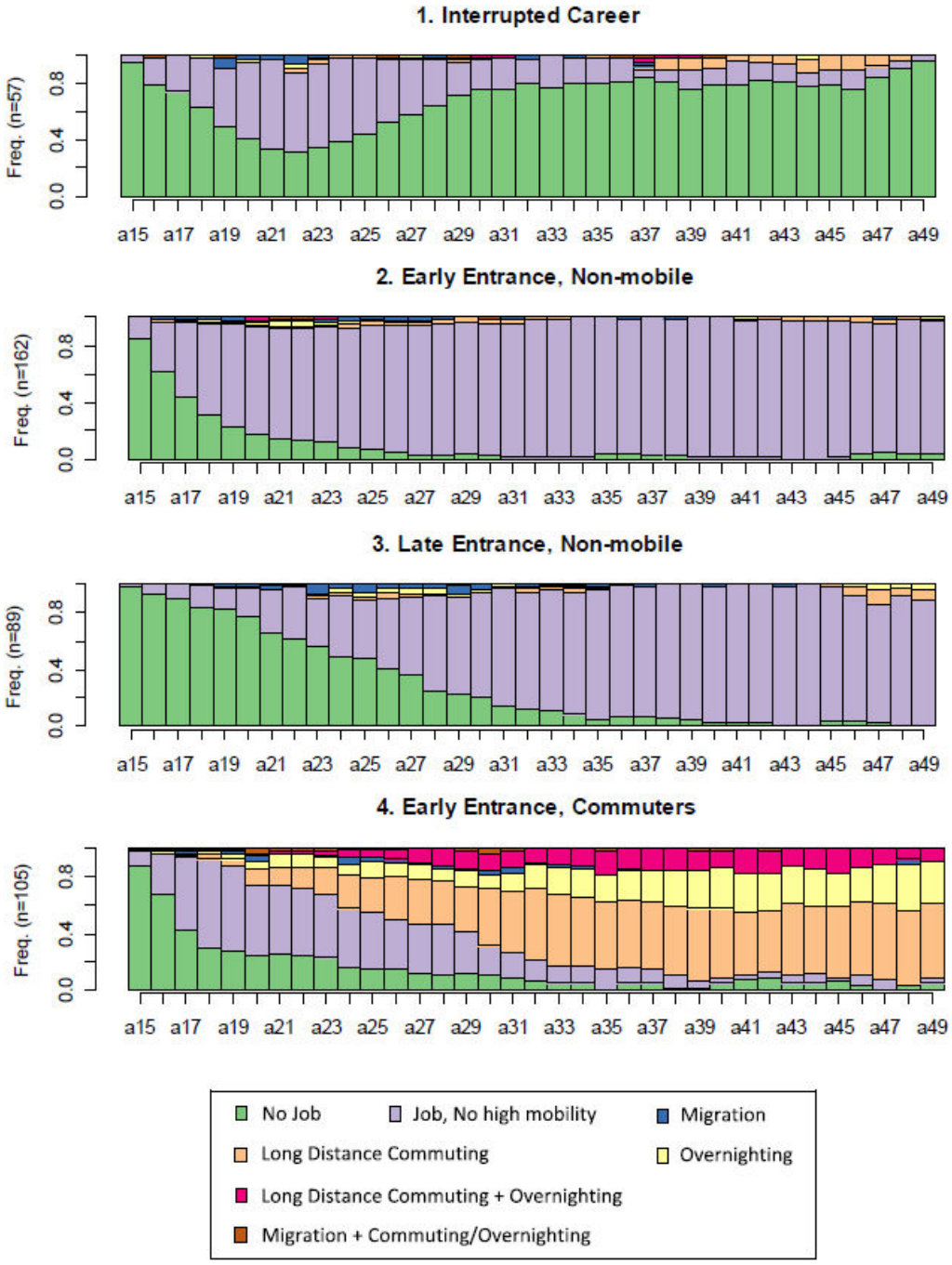


Figure 4: State distribution graphs (ages 15-49)

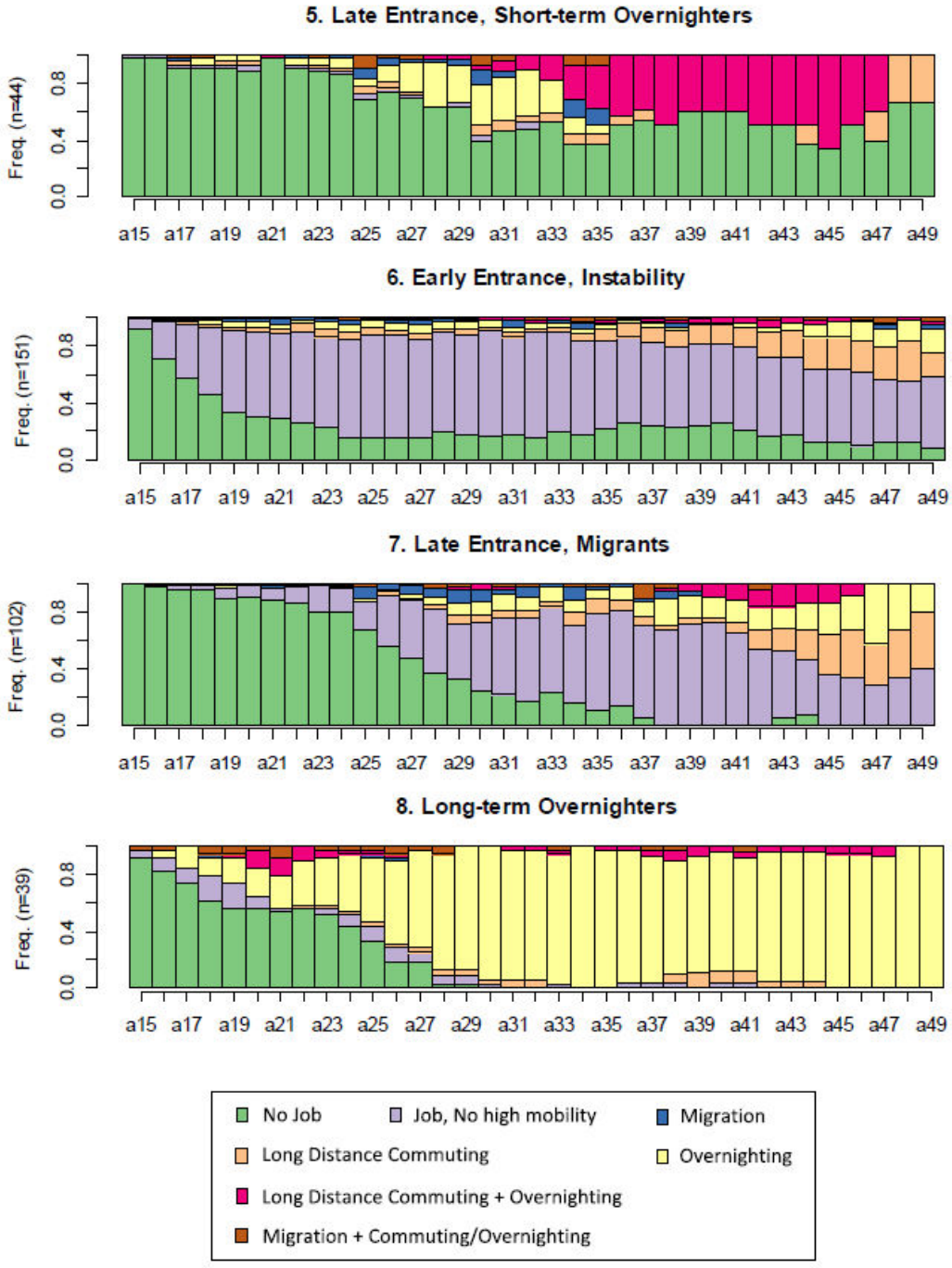


Figure 5: Sequences Graphs

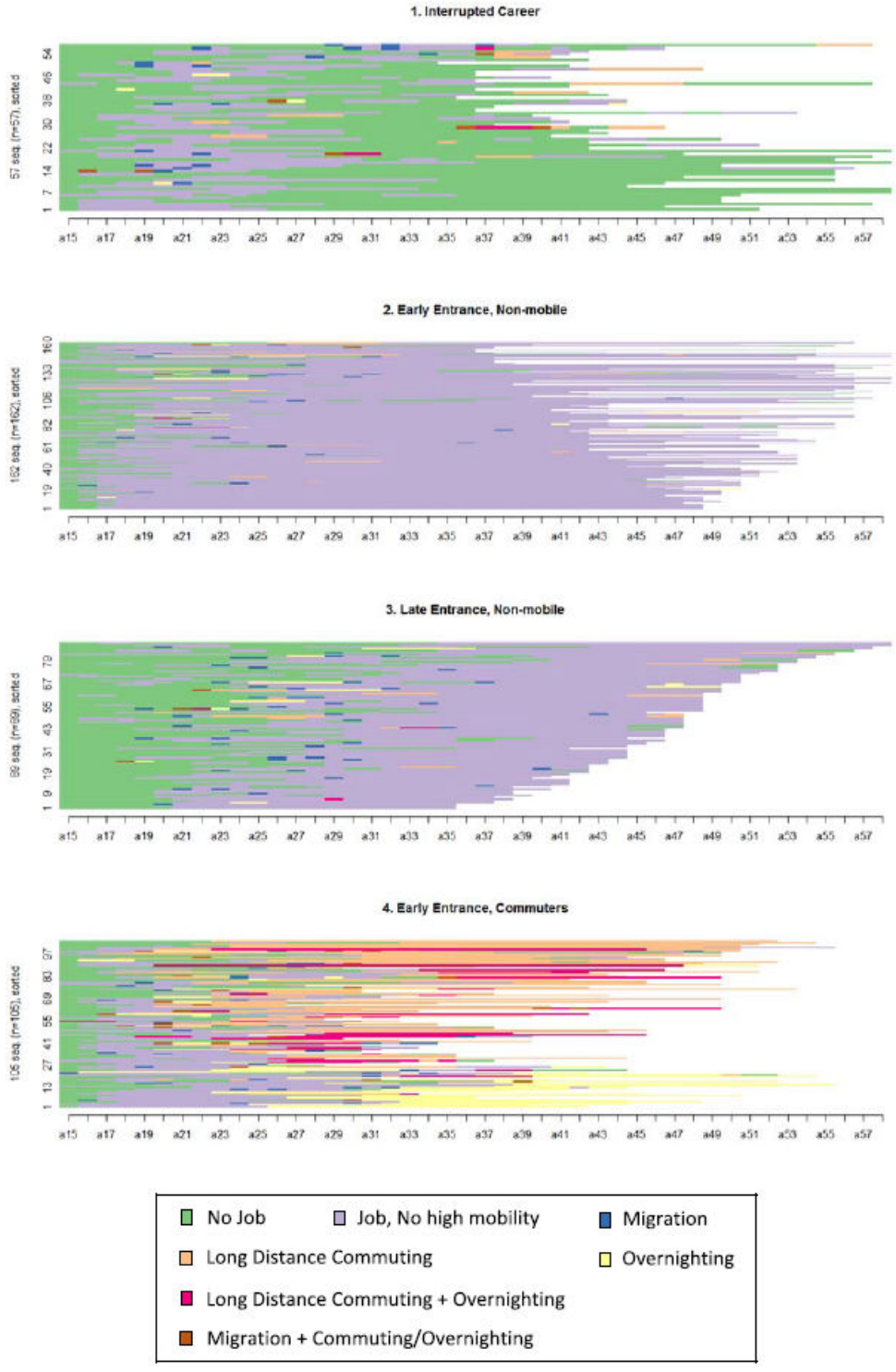
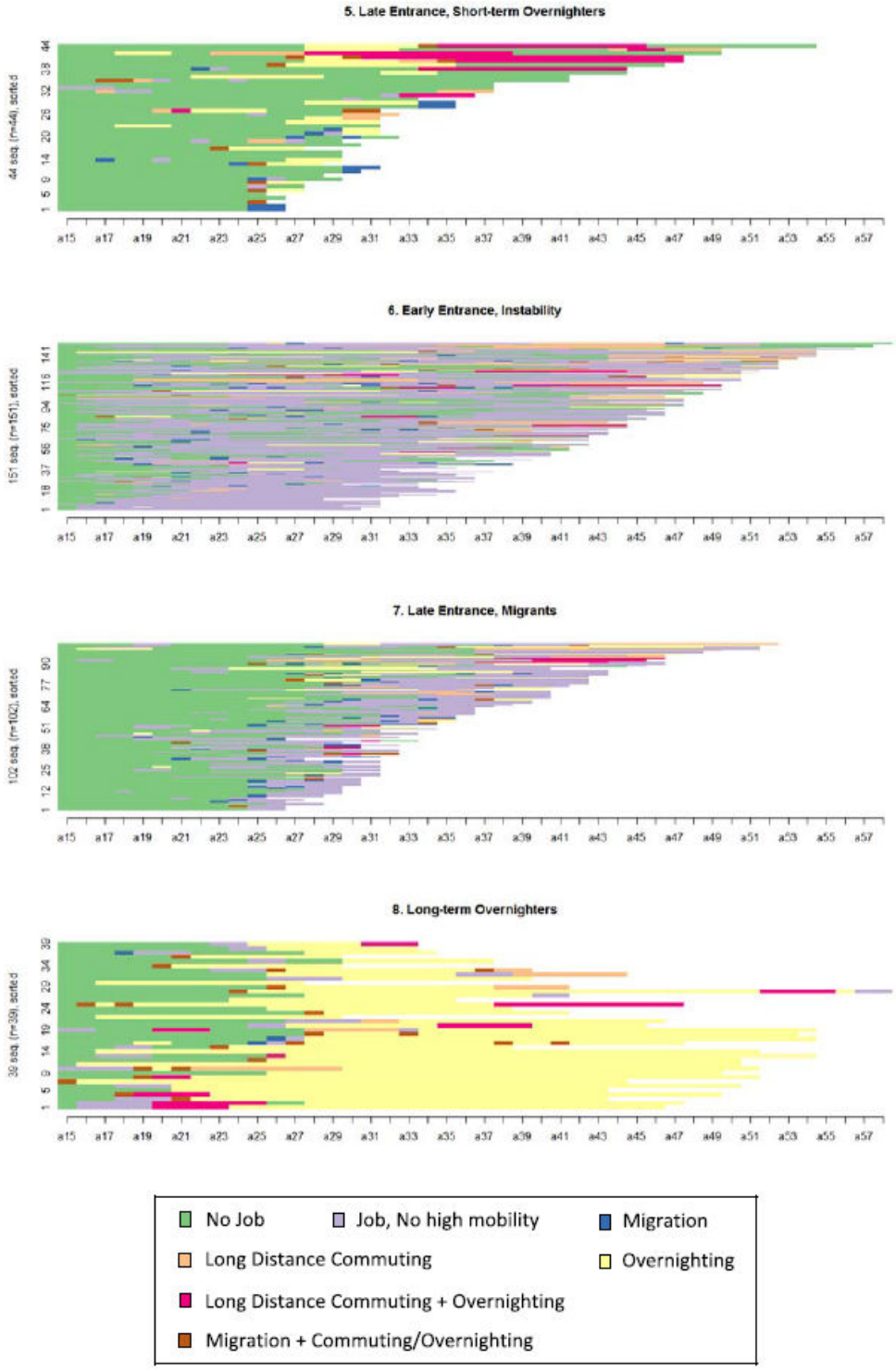


Figure 5: Sequences Graphs



6.6 Individuals of Type 7 'Late Entrance, Migrants' (14% of the sample) feature a typical trajectory of well-educated (see further analysis below), highly mobile people. They entered the labour market late and a majority of them migrated at the beginning of their career. For some individuals, this migration was the beginning of a series of long-distance moves. Among those who started making long commutes/frequent overnight trips (who are rather few within this cluster), about half stopped after a few years (in some cases by migrating) while the other half continued until the time of the interview. Because of this reason and the fact that migration represents a discrete event rather than an on-going process, individuals from this category experienced mobility over a relatively short duration (2.9 years on average). Finally, individuals of Type 8 'Long-term Overnighters' (5% of the sample) are characterised by an entrance into the labour market with a job requiring frequent overnights. This practice of high mobility then continued over the whole career (18.5 years on average).

6.7 We expected a cumulative process leading one group of the population to have repeated high mobility experiences over their career, while others would hardly experience high mobility (H1). This hypothesis is partly supported by the results of the present study. We found a clear partition between individuals of Types 1 to 3 who have (almost) never been mobile and individuals of Types 4 to 8 who experienced high mobility over many years and in all the possible combinations. However, the observed patterns of high mobility are more complex and diverse than a mere accumulation of mobility experiences over time. Individuals of Type 8, and to a lesser extent of Type 4, tend to experience a unique form of

mobility over their career that can be interpreted as 'on-going mobility' rather than 'accumulated mobility'. A substantial number of these people have been highly mobile over many years, probably because of a specific occupation or living arrangement, rather than because of a sheer accumulation of mobility experiences, where previous experiences foster new ones. Additionally, a large number of individuals of Type 7, and some of Type 6, stopped being highly mobile at a later stage of their career, so that they experienced high mobility during a relatively small number of years (on average 3 to 4 years). By contrast, high mobility histories characterised by late mobility experiences and no earlier experiences were relatively unlikely.

Patterns of high mobility and their links to career achievement

6.8 A first series of logistic regression analyses was run to examine the relationship between mobility patterns and socio-demographic characteristics (Table 1). Sex, age, education and living arrangement were included in the model. Separate regression analyses were made for each pattern of mobility histories, estimating the odds of following one pattern in comparison to the others.

Table 1: Logistic regressions of mobility patterns on socio-demographics (odds ratios, N = 730)

	1 Interrupted Career	2 Early Entrance Non-mobile	3 Late Entrance Non-mobile	4 Early Entrance Commute	5 Late Entrance Short-t. Overnight	6 Early Entrance Instability	7 Late Entrance Migrants	8 Long-term Overnight
Women (ref = men)	8.01**	1.07	1.50	.55**	.88	.91	1.10	.25**
Age	1.05*	1.14**	1.06**	.96**	.87**	1.00	.86**	1.01
Education (ref = basic or less)								
Upper-level secondary	.90	.41**	3.94**	1.04	1.12	.86	3.33**	2.33†
Tertiary or more	.64	.24**	5.02**	.45**	3.03*	.47**	11.58**	2.61*
Liv. Arrang. (ref = part. & child)								
No partner, no child	.14†	.98	.33*	1.65	.91	1.13	.81	.68
Partner, no child	.67	.74	.80	1.40	1.17	1.19	.52*	1.09
No partner, child	.66	.73	.60	3.37**	1.12	1.27	.46	-[A]
Constant	.00**	.00**	.00**	1.30	6.47†	.41	12.30**	.03**
Chi^2	49.75**	151.01**	55.25**	40.66**	59.80**	14.11*	156.01**	22.04**
Pseudo-R^2 (Nagelkerke)	.16	.29	.14	.10	.22	.03	.35	.09

** p<.01 * p<.05 † p<.1

Notes: contrast for dependent variable: Dummy-coding (Reference: all other patterns)

[A] Because of too few cases among Type 8 'Long-term overnighters', respondents with no partner, but children were excluded from model 8 (N=662).

6.9 An 'interrupted career' (Type 1) is more likely experienced by women, people of older cohorts and those living with partners and children. In particular, women have eight times higher odds and people living with partners and children have seven times higher odds of following this pattern, compared to men and people living without partner and children, respectively. The pattern 'Early Entrance, Non-mobile' (Type 2) is overrepresented among people with low education and people of older cohorts, in comparison with highly educated and young people. Individuals with a 'Late Entrance, Non-mobile' pattern (Type 3) have more often a high education. They are more likely to belong to older cohorts living with partners and children. An early entrance into the labour market followed by a long period of daily commuting/frequent overnight trips (Type 4) differentiates itself from other patterns because it mainly concerns men, less-educated people, and less expectedly, single parents. Lone mothers and fathers have 3.4 times higher chances of commuting daily over long distances than people living with partners and children. The effect of living arrangement is particularly noticeable for women, when men and women are analysed separately. Women living alone, those living in couples without children and lone mothers are more likely to have made long commutes or frequent overnight business trips for many years than women living with partners and children. Individuals with a 'Late Entrance, Short-term Overnighters' pattern (Type 5) are more likely to be young and highly-educated people. Careers characterised by an early entrance into the labour market and a comparatively strong instability (Type 6) are not well explained by the variables considered in the analysis. Only a low level of education is associated with this type of trajectory. However, separate regressions for men and women showed that men living in couples without children are more likely to follow this pattern compared to men living with partners and children, while the reverse is true for women. Young and highly educated people with partners and children are significantly more likely than their older and less-educated counterparts to experience a 'Late Entrance, Migrants' pattern (Type 7). In particular, people with higher education levels have 11.6 times higher odds of experiencing this pattern compared to people with basic education. Finally, people who made frequent overnight business trips over their whole career (Type 8) are mainly highly-educated men, compared to individuals with other mobility patterns. Men have four times higher odds than women of experiencing this mobility history.

6.10 A second series of logistic/OLS regressions was run to test the impact of mobility histories on career achievement, controlling for socio-demographic and occupational characteristics (Tables 2 and 3). The type of mobility history was set as the independent variable, with people in Type 2 'Early Entrance, Non-mobile' as the reference group. For these analyses, non-working individuals were excluded (11.3% of the sample, including 2.8% job seekers). The highest share of non-working individuals can be found among Type 1 'Interrupted Career' (51.8%, including 5.4% job seekers) and Type 5 'Late Entrance, Short-term Overnighters' (20.5%, including 4.5% job seekers). People from these two groups are more likely to be not working compared to those of Type 2 (reference group), even after controlling for socio-demographic characteristics (analyses not shown).

Table 2: Logistic regressions of career achievement on mobility patterns (odds ratios)

	Open ended contract	Managerial position
Mobility patterns (ref = 2 Early Entrance Non-mobile)		
1 Interrupted Career	.19**	.54
3 Late Entrance Non-mobile	.34*	.53*
4 Early Entrance Commuter	.64	.88
5 Late Entrance Short-term Overnighter	.06**	.45†
6 Early Entrance Instability	.39*	.71
7 Late Entrance Migration	.23**	.65
8 Long-term Overnighter	.41	1.21
Women (ref = men)	1.18	.53**
Age	.98	1.00
Education (ref = basic education or less)		
Upper-level secondary	.97	1.31
Tertiary or more	.68	1.47†
Liv. Arrang. (ref = part. & child)		
No partner, no child	.55†	1.05
Partner, no child	.63†	.91
No partner, child	.93	1.00
Public employer (ref = private employer)	2.65**	.97
Economical sector (ref = industry/secondary sector)		
Service/tertiary sector	.39**	1.22
Knowledge-based sector	.53*	.73
Constant	48.26**	1.59
Chi^2	84.95**	31.99*
Pseudo-R^2 (Nagelkerke)	.20	.07
N	619	619

** p<.01 * p<.05 † p<.1

Table 3: OLS regressions of career achievement on mobility patterns (unstandardised and standardised beta coefficients)

	Gross Income	Job status (ISEI score)
Mobility patterns (ref = 2 Early Entrance Non-mobile)		
1 Interrupted Career	-561.83†(-.05†)	3.62 (.05)
3 Late Entrance Non-mobile	-222.39 (-.03)	-.39 (-.01)
4 Early Entrance Commuter	660.17* (.11*)	.39 (.01)
5 Late Entrance Short-term Overnighter	-175.57 (-.02)	3.77 (.06)
6 Early Entrance Instability	-81.14 (-.02)	-.20 (-.01)
7 Late Entrance Migration	-219.82 (-.04)	4.34* (.10*)
8 Long-term Overnighter	1127.33** (.12**)	-1.66 (-.02)
Women (ref = men)	-1352.73** (-.31**)	-.91 (-.03)
Age	61.32** (.24**)	.15* (.09*)
Education (ref = basic education or less)		
Upper-level secondary	718.85** (.14**)	5.79** (.16**)
Tertiary or more	1572.41** (.36**)	14.91** (.49**)
Liv. Arrang. (ref = part. & child)		
No partner, no child	-383.81†(-.06†)	2.64† (.06†)
Partner, no child	214.44 (.04)	.72 (.02)
No partner, child	-11.45 (-.00)	.04 (.00)
Public employer (ref = private employer)	-485.41** (-.11**)	-2.31* (-.07*)
Economic sector (ref = industry/secondary sector)		
Service/tertiary sector	-345.05† (-.08†)	1.61 (.05)
Knowledge-based sector	-1.05 (.00)	7.70** (.25**)
Constant	1040.14†	36.32**
F	18.46**	18.04**
R^2	.34	.34
N	618	610

** p<.01 * p<.05 † p<.1

6.11 Overall, the hypotheses of a *clear* correspondence between high mobility histories and career achievement (H2 or H4) are not confirmed by the regression results. Two specific effects are, however, found, net of the control variables. Firstly, people with on-going commuting/frequent overnight trips (Types 4 and 8) are, on average, better paid compared to people who hardly experienced high mobility over their career. This effect appeared to be significant only in the case of men, when men and women were analysed separately. Secondly, those who entered the labour market late and have a migration experience (Type 7) are more likely to have a higher job status. Separate regressions for men and women revealed that the effect is especially strong for women. More in line with hypothesis 5, patterns exhibiting

repeated experiences of high mobility (Types 5 to 7) are, overall, weakly associated with high job positions, when socio-demographic and occupational characteristics are controlled for. Unexpectedly, less-educated people who experienced a non-mobile career (Type 2) have more often an open-ended contract and managerial responsibilities, in comparison with most other patterns of mobility histories. In particular, people with high educational attainment and little experience of high mobility (Type 3) were less likely to have managerial positions than their less-educated counterpart.

Discussion

7.1 Spatial mobility is a means enabling individuals to achieve desirable life goals, which cannot or can only partly be pursued at the place where they live. The balance between needs and possibilities in a place of residence changes over the life course. A new job, a promotion or a temporary contract may require migration or long-distance commuting. Housing and family changes, like purchasing a family home or getting divorced, may also be conducive to spatial mobility. At the same time, the increasing development of high-speed travel has enabled a growing number of people to practise diverse forms of high mobility, making possible new social and spatial combinations (Elliott & Urry 2010). In contrast to migration, commuting over long distances, living in a dual location household and making frequent overnight business trips are likely to last over a number of years in individuals' careers. The life course perspective offers a framework for exploring how high mobility practices change over time and are interrelated with life events and personal achievements.

7.2 In this paper, we have used a whole-sequence analysis to examine simultaneously the duration, timing, sequencing and type of work-related high mobility episodes. Optimal matching was used to compare complex sequences and identify main patterns of high mobility histories in Germany. We established that a variety of histories coexist, which are characterised by high mobility experiences. In a majority of situations, individuals experience different combinations of high mobility forms. Such an accumulation pattern is, however, not the only way of being highly mobile. A significant number of histories are characterised by a long and unique mobility episode of on-going mobility (daily long distance commuting or frequent overnight business trips). In some other patterns, individuals are highly mobile only during the first part of their professional life. It is particularly the case with individuals who interrupted their career (mostly women) and highly-educated people who migrated once or twice and stopped being mobile thereafter.

7.3 In line with previous research, we showed that migration occurs mainly during the first years of job activity and is very unlikely beyond the age of 35. In contrast, the probability of experiencing long-distance daily or weekly commuting, and frequent overnight trips, remains stable over the career. Interestingly, this probability does not decrease during the prime fertility period of age 25 to 35. The decision of a parent to abandon frequent commuting (if this decision is seen as feasible) after the child's birth to invest more time in family life may be masked by other household adjustments, such as commuting instead of moving far away, to keep family roots and ties (Schneider ***et al.*** 2008, Vincent-Geslin & Kaufmann 2012). Parents firmly settled in a location may then perceive long-distance commuting as the best option to preserve the integration of the family unit (in particular the one of the wife and children) within a social and familiar environment. The (West) German context, characterised by strong regional ties, the spatial proximity of medium-size cities and a gendered division of labour, may also contribute to the development of (male) long-distance commuting over the career.

7.4 We expected that (some) patterns of high mobility would be positively associated with career achievement. One hypothesis suggested that individuals accumulating high mobility experiences would be better prepared to be mobile again to take advantage of a career opportunity in a distant place. An alternative hypothesis was that successful careers are more likely among individuals who stopped being highly mobile at the mid-career stage. The present data support neither of these hypotheses. Instead, the overall results show that high mobility histories are only weakly associated with career achievement, when controlling for occupational and socio-demographic factors. Four specific effects have, however, been identified. Firstly, men making long commutes or frequent overnight business trips over their whole career are, on average, better paid than those having little experience of high mobility. In particular, those being regularly absent from home for job reasons tend to have high incomes but a fairly low job status. Their high mobility might have facilitated their access to well-paid jobs despite a low socio-economic status. Secondly, highly educated people who migrated early in their career (some several times) are more likely to have reached a higher job status than non-mobile people. For these well-qualified people, migration has presumably boosted their human capital return, although it did not result in higher income levels. Thirdly, the absence of high mobility appears to be a barrier to managerial positions for people with high educational attainment. Highly-educated people who have never or hardly ever been mobile during their career are less likely to be managers than their less-educated counterparts. Fourthly, individuals who accumulated diverse (and sometimes short) experiences of high mobility tend to have a lower job security (fixed-term contract) and fewer managerial responsibilities than people who have hardly been highly mobile. It should be noted, however, that individuals of the latter group belong predominantly to the oldest cohort of the sample with a greater job security than younger cohorts. Those people who entered the labour market in the 1970s and 1980s were probably more likely to stay in the same job, in the same place for a substantial period of time, compared to subsequent generations of workers (Grotheer & Struck 2003; Giesecke & Heisig 2010). Their job stability and work experience - sometimes within the same company - may also have contributed to managerial advancement. But these arguments certainly do not explain the whole phenomenon, since age was controlled for in the analyses.

7.5 Fundamentally, these findings suggest that, in some situations, high mobility is more a way to prevent a loss of social position, rather than fostering an upward social mobility. Spatial mobility would then have lost its 'distinctive character'. In a context of mass unemployment or the growth of irregular and insecure employment, the difficulty of finding a job in one's place of origin may drive people to move or commute, without the distant job leading to a higher occupational position than local jobs. In particular, fixed-term contracts, often associated with lower occupational positions, may favour long-distance commuting for a certain period of time. This may particularly be the case with people with career breaks and short periods of high mobility. Moreover, long-term daily or weekly commuting may more often be a way of combining a distant job with a strong attachment to a place, home or community than a way of obtaining a better paid job or a higher occupational position (Schneider ***et al.*** 2008; Vincent-Geslin & Kaufmann 2012).

7.6 Several limitations of the study should be mentioned. To begin with, the sequential approach consists of an exploratory analysis of high mobility histories. It does not aim to predict the occurrence of specific mobility episodes over time. A method like event-history analysis would be helpful to test rigorously the cumulative process of mobility experiences and to determine the most frequent chains of mobility episodes. The question remains as to how best to define a mobility episode, given its highly variable duration. Secondly, migrations have counted only as a one-year mobility episode in the sequence building. In the event that (repeated) migration is a better predictor of career promotion than long-distance commuting and frequent business travel, the relationship between high mobility and career achievement may have been underestimated. Finally, we measured career achievement at one point in time but at different stages of individuals' careers. Yet, older respondents are more likely to hold managerial positions and permanent jobs than younger ones. These cross-sectional measures were particularly delicate for young, well-educated respondents who entered late into the labour market. Some of them were still at the outset of their career and were likely to experience important changes in their occupational

status in the years to come. The fact that these individuals were more mobile than their less-educated counterparts may have led to an underestimation of the association between high mobility and career achievement. Further research based on panel data with repeated measures of both spatial mobility practices and job position would be necessary to investigate more accurately the links between high mobility practices and career progression.

7.7 Nevertheless, our results contribute to the knowledge about high mobility experiences over time and how they relate to the social structure. The study has demonstrated the importance of including a long-term perspective in quantitative research on high mobility. Research focusing on spatial mobility in only one form and at only one specific point of time neglects the changing nature of mobility arrangements over the life course.

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